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For people who are serious about mining

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COMMENT

Standing the test of time

March 2025 holds a special place in *Modern Mining's* history – twenty years' ago, the publication produced its very first edition.

Marking a milestone of two decades of progress and stability, *Modern Mining* has withstood the test of time, having evolved from a purely print publication, to now having an extensive online and social media offering. Like the industry, the publication has had its ups and downs, facing off against 2008 financial crisis and then again, the Covid pandemic in 2019.

Leading underground mining contractor, Murray & Roberts Cementation, which was profiled in our very first edition, has been supporting the publication for the past two decades and once again appears in our *Modern Mining* Celebration feature. Murray & Roberts is the holding company and is over 100 years old. Murray & Roberts Cementation was formed 21 years ago when Murray & Roberts RUC and The Cementation Company (Africa) merged (pg 24).

Interestingly, Crown Publications, which has several publications in its fold, including, *Construction World, MechChem Africa, Electricity + Control, Sparks Electrical News, Capital Equipment News, Modern Quarrying* and *African Fusion*, turns 40 next year.

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Mining - not for the faint hearted

Mining is definitely not for the faint hearted, especially when key projects are located in jurisdictions where there is in-country conflict. Currently, miners with operations in the mineral-rich east of the Democratic Republic of Congo, which has been dogged by conflict for more than 30 years, find themselves caught between a rock and a hard place as fighting continues to escalate.

Numerous armed groups have competed with the central authorities for power and control of the potential fortune in this vast nation. Fighters from the M23 rebel group have taken control of most of Goma – a major city of more than a million people in the east of DR Congo.

Meanwhile, one of Africa's largest gold producers, Mali, which revised legislation on foreign mining companies, sees government decree allowing it to increase the 10% free state share in mining ventures up to 30% total ownership. The strong government stance sees mining houses sign the protocols, including Hummingbird Resources, which has its Yanfolila gold project located in southern Mali. Barrick, meanwhile, continues to have "constructive engagement with the Malian government as it seeks an "amicable solution that ensures the long-term sustainability of the Loulo-Gounkoto mining complex".

Following Barrick's restriction from shipping gold from the Loulo-Gounkoto mining complex in Mali, the company initiated the temporary suspension of operations while it continued to work towards a resolution. The Mali government's tough stance saw it detain Resolute Mining's CEO Terry Holohan for ten days, only releasing him after the company agreed to a $247-million settlement.

In this edition

The cover story for this edition is engineering and construction company, Fluor, which shares insight into a contract to construct two ventilation shafts for Anglo American Platinum's Amandelbult Dishaba Mine. Project completion is scheduled for June 2026 (pg 8).

The commodities outlook for this month focuses on coal, with Menar's MD, Vuslat Bayoglu, enlightening readers on the latest developments in the coal space. According to Vuslat, owing to the significant growth in emerging Asian economies, coal demand is likely to exceed the 8 billion tons mark once again this year (pg 10).

Meanwhile, gold explorer, Newcore Gold, will have its shoulder to the wheel over the next two years as it advances its Enchi Gold project towards production and construction development decision (pg 12).

For an interesting story on how innovators are generating revenue from waste materials, turn to page (16) and for insight into whether government is making headway into the issue of illegal mining, take note of the FSE's Mariette Liefferink article on page 30.

As always, our regular columnist, Dr Ross Harvey, provides some interesting insights in his column titled: What is Trump's game? (pg 36). ■

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New partnership advancing Africa's mineral processing agenda

Tabono, a growth partner focused on driving economic development across Africa, has acquired a 33% stake in Minprotech, a company specialising in advanced mining technology solutions, particularly in mineral processing and chrome beneficiation. Minprotech is also 51% black owned, underscoring its commitment to promote economic transformation and empowerment in the South African mining industry. By maximising recovery of metallurgical grade concentrate from tailings, Minprotech transforms waste streams into valuable resources. This process maximises resource recovery and significantly reduces the environmental impact of mining, offering a sustainable approach that is essential as African mining seeks to remain competitive on the global stage. This acquisition demonstrates a commitment to driving innovation, sustainability, and operational efficiency beyond the borders of South Africa and into Africa. Tabono CEO Reon


Tabono CEO Reon Barnard.

Barnard explained: "This deal bucks the broader trend in the African mining sector, where many companies have been slow to adopt new technologies and sustainable practices due to the high upfront costs and uncertain returns." ■

SAPICS appoints Thato Moloi as new president


Thato Moloi is SAPICS new president.

Supply chain industry body, SAPICS, has appointed Thato Moloi as its new president. Moloi, who has served on the SAPICS board of directors for almost three years, takes over from outgoing president MJ Schoemaker. Commenting on the current state of the supply chain sphere as he takes the helm of SAPICS, Moloi says: "Today's turbulent supply chain landscape calls for a new breed of supply chain manager. Our profession must navigate continuous technological advances and shifting global dynamics while meeting customers' demands for speed, quality, affordability and sustainability. Adaptability and innovation are the keys to success in supply chains today. Whether this means leveraging Artificial Intelligence (AI) and automation, accelerating sustainability or rethinking traditional supply chain models, the need to innovate is more critical than ever. SAPICS has been elevating, educating and empowering supply chain professionals in South Africa and across the continent since 1966. We will ensure that our SAPICS supply chain community keeps pace with change, continuously improves and is resilient and innovative by giving them all the knowledge, strategies, tools and techniques needed." ■

Relentless focus on safety delivers a record 2024 safety performance

The record low number of fatalities and advances in health on South African mines in 2024 is a result of the collaboration between all stakeholders who share the vision of Zero Harm and support the interventions and programmes developed by the Minerals Council South Africa in partnerships with its members.

The Minerals Council, an advocacy body whose members account for 90% of annual mined production by value, notes that the 42 fatalities reported for 2024 is a new all-time low for the industry and continues the encouraging overall downwards trend in deaths on mines. In 2022, the industry reported 49 fatalities, which was then a record low, but there was a regression to 55 fatalities in the following year. There was a 24% year-on-year decline in fatalities in 2024.

Injuries declined by 16% year on year to 1,841 in 2024 from 2,181 the year before. Occupational diseases declined by 17% to 1,864 cases in 2024 from 2,233 the year before. ■


Industry reported 42 fatalities for 2024 - a new all-time low for the industry.

Barrick's Twiga partnership drives value creation **in Tanzania's economy**

Dual-listed Barrick Gold Corporation has injected over $4.24 billion into the Tanzanian economy since establishing the Twiga joint venture with the government in 2019, contributing $888 million in 2024 alone. Twiga comprises the North Mara and Bulyanhulu gold mines. At a media briefing, Barrick CEO, Mark Bristow said the Twiga partnership remained a leader in Tanzania's extractive industry, creating thousands of jobs, supporting local businesses and funding critical community projects. "We spent $573 million on national suppliers and service providers last year, representing about 83% of our total spend in-country. Additionally, 75% of all our payments to suppliers and service providers went to indigenous companies, exceeding our target of 61%," Bristow said. Thanks to Barrick's policy of local employment and advancement, 96% of its 6,185-strong workforce are nationals.■

Barrick has injected over $4.24 billion into the Tanzanian economy since establishing the Twiga JV with the government in 2019.

Additional power supply secured for Roan to re-start

Jubilee, a diversified metals producer with operations in South Africa and Zambia, recently received approval for its new power supply agreement in Zambia - power delivery commenced on 20 January 2025. This enables the company to restart the Roan concentrator and ensures a stable power supply going forward.

The additional power supply agreement, executed with a new broad based power provider, secures access to a distributed power base from multiple sources of generation, minimising the reliance on a single supply source and mitigates risks associated with localised power network distribution limitations. The power supply has been delivered at a cost comparable to the company's existing power agreement, offering both economic and operational stability.

Jubilee Metals is set to restart its Roan concentrator at its project in Zambia.

Says Leon Coetzer, Jubilee CEO: "The Jubilee team demonstrated great resilience in overcoming the recent power challenges at its Zambian operations. The commencement of the additional power supply successfully addresses current power supply limitations that affected Roan's ability to operate historically. We now turn our attention to preparing the plant for re-start and remain focused on delivering reliable production and operational resilience." ■

Hummingbird signs Mali Protocol

Hummingbird Resources signs Mali Protocol.

AIM-listed Hummingbird Resource's subsidiary, *Société des Mines de Komana* SA (SMK), recently reached agreement with the Government of Mali regarding application of the 2023 Mining Code for its Yanfolila Gold Mine.

Key terms include Yanfolila's migration to Mali's 2023 Mining Code with the Mali State granting a 2% reduction on the Special Tax on Certain Products rate (ISCP) for the duration of the new establishment agreement.

The agreement includes a settlement payment totalling FCFA 10 billion (about $16.4 million), payable in two equal instalments of FCFA 5 billion each, with the first payment due within five working days of signing and the second payment by 30 June 2025. Additionally, the company has agreed to waive historical VAT credit claims in the sum of FCFA 10 billion, collectively settling all tax and customs matters prior to 31 December 2023. Under the agreement, the company commits to providing a comprehensive operating plan, addressing capital investments required to maximise current production and extend Yanfolila's mine life.

The state has confirmed its commitment to renew key exploration permits, alongside approving an extension to the Komana Mining Permit perimeter, supporting the company's broader strategy in Mali. In additionally, the Government of Mali has exercised its option to increase its ownership in SMK to 20%, with immediate effect, from the 10% the state currently holds. ■

Bankan Gold project ESIA approved

ASX-listed Predictive Discovery (PDI) reports that Guinea's Ministry of Environment and Sustainable Development (MEDD) has approved the Environmental & Social Impact Assessment (ESIA) and issued the Certificate of Environmental Compliance (ECC) for the Bankan Gold project. The ESIA and ECC provides the necessary environmental certificate required for PDI to apply for Bankan's Exploitation Licence. This is a significant de-risking step as it confirms the MEDD's support for development of the Bankan Project located in the Peripheral Zone of the Upper Niger National Park.

Both the NEB and BC deposits and the entire development area for the Bankan Project as set out in the Pre-Feasibility Study (PFS) lie outside of the Buffer Zone.

Bankan Gold project receives ESIA approval.

The next steps

Resource definition drilling programmes are continuing at the Fouwagbe and Sounsoun targets in the Argo area, with the aim of completing maiden Mineral Resource estimates at these targets, as well as the 800W target in the NEB area, during Q1 2025. Exploration drilling is also ongoing in the Argo and Bokoro South areas.

The Definitive Feasibility Study is advancing according to schedule, and is on track to be completed in the second half of 2025, the company said. ■

Giyani secures Special Economic Zone licence for its HPMSM plant

TSX-listed Giyani Metals Corp., developer of the K.Hill battery-grade manganese project in Botswana, has secured a 50-year Special Economic Zone (SEZ) Investor License for its battery-grade manganese (HPMSM) commercial plant site to be built in Botswana. The award of the SEZ License designates Giyani's commercial plant as a Single Factory Special Economic Zone. The commercial plant will be located adjacent to its K.Hill manganese mine site, near Kanye, Botswana. Charles FitzRoy, CEO of the company, commented: "Securing the SEZ License for our commercial plant is a transformative step for Giyani, and an important milestone on our path to becoming a leading producer of battery-grade manganese, particularly as our demo plant nears first production and we look ahead to the next stages of progress. With the addition of significant benefits such as corporate tax reduction and fast-tracked issuance of permits for skilled personnel, this licence not only supports sustainability ambitions but has clear economic and operational benefits that will ultimately catalyse commercial plant construction." ■

Fluor to construct **two ventilation shafts for Anglo American Platinum's** Amandelbult Dishaba Mine

Leading engineering and construction company, Fluor, was awarded an engineering, procurement, and construction management (EPCM) contract by Anglo American Platinum, to construct two new ventilation shafts at the Dishaba Platinum Mine located in Thabazimbi, Limpopo, South Africa.

The contract includes the installation of a bifurcated fan on the upcast shaft and a bulk air cooler on the downcast shaft to enhance underground ventilation. According to Charl Klopper, Executive Projects Director & Global Underground Mining Lead at Fluor, the two ventilation shafts are crucial for providing workers at deeper underground levels with cooled fresh air, enabling them to perform their duties safely.

"The contract was awarded following the successful completion of a feasibility study by Fluor on the ventilation shafts. The feasibility study was awarded in December 2021 and concluded in December 2022 with board approval to proceed to project execution. The project was commended for the quality of the feasibility study, as well as the completeness and adherence to the Anglo-American PLC Investment Development Model – Investment Criteria by Stage. Fluor was awarded the EPCM contract on 6 February 2023," explains Klopper.

Fluor has a long history of executing some of the most complex projects in the mining and metals industry across Africa and the world.

The company is involved in underground mining projects ranging from scoping studies, prefeasibility studies and feasibility studies to full engineering, procurement, fabrication, construction, and project management.

For more than 60 years, the EPCM specialist has been providing innovative solutions to mining projects across six continents in major mining markets, including bauxite and alumina, copper, diamonds, gold, iron-ore, lithium, mineral sands, nickel, rare earths, uranium and other metals.

Scope of work

The project scope of work involves 2,240 metres of underground mining development and 1,908 metres of raise bore development to implement the two shafts. On the surface, the upcast shaft will feature a bifurcated ventilation fan setup, while the downcast shaft will include a horizontal bulk air cooler. Fluor also designed the electrical overhead lines, as well as the roads and terraces leading to the two construction sites.

Fluor's responsibility is the overall design integration as well as the main electrical sub-station designs.

Discussing shaft development, Klopper explains that the upcast shaft, which is designed with a bifurcated extraction fan setup, will be raised bored to a depth of 815m. The loading of the raise bore chips will be undertaken by a new multi material loader (SQL), after which, the raise bore chips will be transported to the shafts where it will be blended before extraction out of the mine.

The downcast shaft, meanwhile, which is designed with a horizontal 10-Megawatt bulk air cooler, will be raised bored to a depth of 1093m (17 level) and drop raises will be excavated to

18 and 19 level providing fresh cooled air to the lower working levels. As with the development of the upcast shaft, the SQL will load the raise bore chips and transport them for blending and then out of the mine.

The project will be headed by the Fluor South Africa office as an Integrated Project Team model with the client.

"Fluor's multi-disciplinary engineering teams have the experience and capability to manage and perform the engineering, design, procurement, logistics, construction management, and commissioning of all underground material handling and infrastructure systems," says Klopper.

Project completion is scheduled for June 2026.

Important Dates:

- The contract for the feasibility study was awarded in December 2021 and concluded in December 2022 with a board approval to proceed to execution.
- Fluor was awarded the EPCM contract on 6 February 2023.
- Project completion is earmarked for June 2026. ■

Corporate Social Responsibility

Fluor has been involved in several programmes, including:

- Fluor sponsorship of 30 Anglo American Platinum athletes at the Tumela Marathon in the Marakele National Park in 2023.
- For Mandela Day in 2022, the company sponsored stationery for a nearby school at Amandelbult.

Instead of dying, King Coal has just relocated to Asia.

Coal continues **to endure where it is most welcome**

An interesting study published by the *Economic Journal* draws a compelling link between the prosperity of European cities and their proximity to coalfields from the 18th century onward. These economic hubs needed to be physically close to coal mines to industrialise and succeed. The study suggests that European cities located at least 49 kilometres from the closest coalfield grew by 21%, contributing to a significant leap forward in their development.

By Vuslat Bayoglu, Menar MD

Things have changed, and today, European nations under the influence of ambitious green policies – feel they no longer need reliable fossil fuel generated power. This despite the fact that power prices in the region have skyrocketed as EU countries persist with the gradual phase-out of fossil fuels, more especially coal. The UK became the first major economy in the EU to shut down its last coal-fired power station in Nottinghamshire last year. At first glance, such developments might give coal critics a reason to celebrate and cement their argument that coal's fate has been sealed.

However, the world is bigger than the West, and coal has secured dominance on the opposite side of the global map. Instead of dying, King Coal has just relocated to Asia, where it is most appreciated. Anyone looking for answers to how coal will likely perform in the foreseeable future should turn their attention eastwards. Countries like China, India and Indonesia account for a large portion of global coal consumption.

In its attempt to maintain energy security, China is making massive investments toward building new coal mines and coal-fired power stations. According to the Global Energy Monitor, China is developing more than 1.2 billion tons of coal mining capacity, accounting for over half the projects across the globe. To support its large population and rapidly growing economy, India is also not backing away from coal.

By 2023, India had consumed more coal than two continents, namely North America and Europe, combined. Indonesia also relies heavily on coal, accounting for 67% of the country's electricity generation. So, it is clear that coal's prospects remain high, where it is still needed and appreciated for its remarkable power generation abilities.

Investments in renewable energy are crucial for long-term sustainability.

Coal will continue to form a crucial part of the global energy mix.

Countries like China, India and Indonesia account for a large portion of global coal consumption.

Reliable and affordable energy resources are critical in parts of the world where millions of people still need to be lifted out of poverty.

Because of the significant growth seen in emerging Asian economies, coal demand is likely to exceed the 8 billion tons mark once again this year. Meanwhile, the World Bank predicts that although coal prices will fall between now and 2026, they will remain higher than pre-pandemic times. Coal will continue to form a crucial part of the global energy mix as emerging nations further industrialise their economies. Countries will still face mounting pressure and unrealistic expectations to transition away from coal at warp speed. Still, the shift will remain slow due to infrastructure constraints, energy security concerns, and economic considerations.

The IEA also forecasts that global electricity demand will grow at a faster pace in the coming three years due to an improved economic outlook for both developed and emerging economies. With such growth expected, countries will need reliable and affordable resources to generate enough baseload power. The transport and residential sectors and data centres for technologies like AI will be among the key drivers for increasing electricity demand. Electricity consumption by data centres alone could reach over 1,000 TWh by 2026. AI is so energy-intensive that some experts have warned that it could lead the world into a more profound power crisis. As dystopic as it may sound, unfortunately, this might very well be the case without resources like coal that are efficient enough to produce reliable baseload. As global demand for electricity rises, demand for coal is unlikely to drop significantly. While investments in renewable energy are crucial for long-term sustainability, coal will continue to play a critical role in meeting the growing power needs of emerging economies in future. ■

Drilling underway at Newcore Gold's Enchi Gold Project in Ghana.

Newcore Gold advances Enchi Gold project towards production decision

There is no better time to be in the gold mining business than now when the precious metal has soared above the $2600/oz mark and is speeding towards $3000/oz. As an explorer gearing to make the jump to producer, new kid on the mining block, Newcore Gold, is in the right space at the right time.

With an eye to advancing its flagship asset – the Enchi Gold Project in Ghana – to a construction decision, Canadian gold exploration and development company, Newcore Gold's immediate focus is on taking its asset up the value curve, in readiness for the start of a prefeasibility study (PFS) in 2025, CEO Luke Alexander tells *Modern Mining*.

Located on one of Ghana's two prolific gold producing belts, the Enchi project is situated in the southwest of the country along the Bibiani Shear Zone. Southern Ghana is considered one of the world's most productive regions for gold discoveries, with gold majors such as Newmont, Gold Fields and AngloGold Ashanti, enjoying success in the region.

The Enchi project is a 1.7-million-ounce asset in a district hosting several gold deposits greater than 5 million ounces. The project stretches along more than 40 km of the Bibiani Shear Zone.

According to Alexander, 2025 will be a busy year aligned with completing work for a PFS, of which drilling is a key component.

"We continue to target both resource conversion and resource expansion and other project de-risking elements, including metallurgical test work, hydrological, geotechnical as well as environmental and social baseline work. We plan to complete these key aspects by the end of next year."

Spotlight on drilling

The district-scale Enchi project has identified five deposits and an additional four mineralised zones and prioritised over 20 additional targets for further investigation.

Newcore's multi-pronged exploration approach outlined potential resource growth along strike at all five deposits (Sewum, Boin, Nyam, Kwakyekrom, Tokosea).

According to Alexander, the property, which covers 248 km² along a prolific gold belt, offers large exploration upside.

The exploration opportunity at Enchi remains largely underexplored and untested. To date, Newcore Gold has identified more than 20 pre-resource targets across its property with less than 10% being explored. All deposits and targets remain open along strike and at depth, with potential for resource growth in both shallow oxides and within the deeper sulphide mineralisation.

"The average vertical depth of the pits is only down to 75 metres, which means we have only scratched the surface in terms of unlocking the huge opportunity that the project offers long-term. From an exploration perspective, there are several Greenfield targets

A RC drill rig operating at Newcore Gold's Enchi Gold Project in Ghana.

– in fact, over 20 targets at various stages of development. Furthermore, we have district scale exploration upside that offers the opportunity to extend mine life and grow the overall size of the resource."

The explorer recently announced positive drill results from a 10 000-metre drill programme underway at the Boin Gold Deposit, which the company commenced in July.

First results from the RC drilling at the Boin Gold Deposit are part of the resource growth and infill programme designed to convert Inferred Resources to Indicated Resources. RC drilling intersected 1.96 grams per tonne gold over 62.0 metres from 139 m in hole KBRC288, including 2.31 g/t Au over 25.0 m from 139 m.

"All holes drilled intersected gold mineralisation, proving the potential for future resource growth at Boin."

Discussing the milestones achieved in 2024, Alexander highlights an updated Preliminary Economic Assessment (PEA) released in June, which supports positive results from an independent PEA, completed by engineering and project management consultancy company, Lycopodium Minerals Canada.

The PEA provides a base case assessment of developing Enchi as a low capital intensity, open pit, heap leach operation, processing 8.1 million tonnes per annum (mtpa) using contract mining.

Next two years - shoulder to the wheel

As Newcore looks to make the jump to producer, the goal over the next few years is to move the project towards a construction development decision.

"By the first half of 2026, we anticipate having completed a PFS, at which stage we will be able to have discussions related to project finance and construction, and work towards a definitive feasibility study (DFS) decision."

> "By the first half of 2026, we anticipate having completed a PFS, at which stage, we will be able to have discussions related to project finance and construction and work towards a definitive feasibility study (DFS) decision."

The project offers several upsides, including a robust production profile with a low-cost structure "driven by a technically straightforward, open pit, heap leach operation and low strip ratio".

The project has an average annual gold production of approximately 122,000 ounces; with peak gold production in year six of approximately 155,000 ounces and 1.1 million ounces gold recovered over a nine-year life of mine.

The initial capital cost of developing the Enchi mine is estimated at $106 million (including a 20% contingency) and a short payback period of 1.6 years.

"The project has a LOM strip ratio of 2.67 to 1, mined grade of 0.60 g/t Au and gold recovery of 81.8%. The operating cost is estimated at $801/oz of gold, cash costs of $934/oz of gold and all-in sustaining costs (AISC) of $1 018/oz of gold."

M&A hots up in the gold space

With gold bulls expecting the price of the precious metal to soar above the $3000/oz mark by next year, the commodity remains highly attractive and sees the M&A arena hotting up as mining companies hunt for deals.

The Enchi Gold project is located in a tier one jurisdiction of the

CEO, Luke Alexander and Greg Smith (VP Exploration) with the team at site reviewing the drilling underway at Newcore Gold's Enchi Gold Project in Ghana.

Luke Alexander (CEO) and Greg Smith (VP Exploration) standing next to a drill collar at the Sewum South target at Newcore Gold's Enchi Gold Project in Ghana.

African mining world, which was recently in the spotlight for the acquisition of US-based Newmont Corp's Akyem gold project in Ghana, by China's Zijin Mining Group, for $1 billion.

Apart from the Zijin/Newmont deal, Gold Fields recently acquired Osisko Mining for $1.6 billion and AngloGold Ashanti forked out $2.5 billion for Centamin.

"On completion of the Zijin Mining deal, Ghana will have four of the top 10 largest gold producers with significant operations in-country, including Newmont, Zijin, AngloGold Ashanti and Gold Fields. From an investor perspective, Newcore Gold is 45% institutionally owned, which means that there exists a real recognition by precious metals focused institutional investors of the tremendous upside of our Enchi project. From a management and board level perspective, the key players have significant skin in the game, owning 18% of Newcore," he explains.

"While Newcore Gold will keep all avenues open, entertaining discussions with various corporates, our eye is firmly on taking the project towards a construction decision and ultimately to production," concludes Alexander. ■

Luke Alexander (CEO) with Greg Smith (VP Exploration) reviewing core at the core shack facility at the Enchi Gold Project in Ghana.

One miner's trash is another's treasure: The innovators generating revenue from waste materials

Whilst traditional mining methods, namely open-pit and underground mining, will long be needed to meet the ever-growing demand for minerals, a few key innovators, across a range of commodities, are finding success with a more unconventional approach – extracting commodities and generating value from waste. This lower cost, more sustainable approach, perhaps deserves more recognition for its ingenuity and economic potential.

The Mooinooi processing plant, part of the Sylvania Dump Operations in South Africa.

Technological advancements and the implementation of innovative approaches to mineral extraction and processing have generated new opportunities for companies to take waste materials, by-products and tailings, and turn them into a consistent source of revenue.

Ferro-Alloy Resources, a London-listed vanadium producer, is – arguably – the paradigm for this. In November of last year, the market's attention was captured by its announcement that it had confirmed the commercial potential of producing a carbon black substitute (CBS) product from its vanadium process at the Balasausqandiq project in Kazakhstan.

Carbon black, a $20 billion global commodity, is chiefly used in the production of car tyres. Ferro-Alloy's CEO, Nick Bridgen, notes carbon black as "an essential component of all rubber" – simply put, it's "what makes rubber black". Traditionally, manufacturing the commodity has required the incomplete combustion of oil or gas in an oxygen depleted atmosphere, making it both expensive and highly polluting.

An independent study has confirmed the viability of Ferro-Alloy's CBS product for use in the manufacture of vehicle tyre sidewalls and other rubber uses. The substitute can be recovered from the company's vanadium circuit through simple flotation methods, which is far more environmentally friendly than traditional methods, emitting just 0.36 to 0.6 tonnes of CO_2e per tonne of CBS. Standard carbon black production emits between two to five tonnes of CO_2e per tonne.

The CBS by-product is set to provide the company with a hugely significant secondary revenue stream, valued at a projected US$110 million per year in revenue, which is comparable to the company's main vanadium project.

Additionally, capital and operating costs for the CBS product are expected to be relatively low, with production involving only a simple flotation plant, milling, pelletising and drying equipment. Furthermore, the EU is reportedly considering forcing carbon black producers to purchase carbon credits in order to export their product to the trading bloc, costing producers an estimated $144-360 per tonne. Ferro-Alloy, as a more carbon efficient producer, would attract far lower costs, helping maximise revenues.

Staying in Kazakhstan, London AIM-quoted Central Asia Metals, or CAML as its often known, extracts material from waste dumps at its Kounrad copper project. CAML's dump leach, solvent extraction and electrowinning operation, near the southeastern city of Balkhash, is a low cost, consistent copper producer.

CAML's innovative process, which reprocesses the waste dumps of the adjacent historical open-pit mine, begins with the distribution of a weak leaching agent over the top of the dumps via an extensive network of dripper pipes. Copper within the rock is leached out by the solution and slowly drains through the dump, down to the natural ground level where it flows out into collector trenches. From there, the solution is pumped into storage ponds, and then onto the processing plant where it undergoes solvent extraction. The final stage is known as electro-winning and involves plating by electrolysis, creating copper sheets with at least 99.99% purity.

CAML's method avoids the high costs of drilling or blasting and, as a result, Kounrad regularly finds itself in the lowest quartile of the global copper cost curve. On average, the process only costs $0.78 per lb of copper.

The copper plating process in the electro-winning building at Kounrad.

These low costs are part of the reason that CAML is able to pursue such an attractive dividend policy, paying out nine pence per ordinary share in the first half of the 2024 financial year. It is testament to the company's management and strategy that they have turned Kounrad's waste dumps into a unique and highly valuable asset that utilises waste material to provide a significant revenue stream. CAML has extracted approximately 160,000 tonnes of copper cathode to date at Kounrad, generating a total revenue exceeding $1 billion.

Sylvania Platinum is another London-listed miner which, like its Kazakh-operating peers, generates value primarily from discarded material, albeit in South Africa. The company is producing platinum group metals (PGMs) from its Sylvania Dump Operations (SDO), and is soon set to add chrome to its production profile from the Thaba Joint Venture (JV) with Limberg Mining Company.

The SDO is comprised of six chrome beneficiation and PGM processing plants focusing on the retreatment of PGM-rich chrome tailings from host mines in the Bushveld Igneous Complex. At these mine sites, Sylvania re-treats current and historic tailings, as well as run-of-mine material, leftover from the host mine's operations. In return for reprocessing this material, and giving any recovered chrome back to the host mine, Sylvania is able to retain the PGMs whilst constructing new, cleaner and safer tailings facilities at the host site. This approach is low-cost and cash generative, avoiding the high costs of underground mining.

> "As the largest PGM producer from chrome tailings re-treatment, Sylvania is well regarded in the industry, which has generated additional growth opportunities for the company."

As the largest PGM producer from chrome tailings re-treatment, Sylvania is well regarded in the industry, which has generated additional growth opportunities for the company.

The Thaba JV is Sylvania's latest strategic partnership, through which the company has been granted access rights to extract chrome and PGMs from the primary ore and tailings at the Limberg Chrome Mine. Perhaps most notably, it marks the first occasion in which Sylvania will share in the revenue from both the chromite and PGM concentrates. The JV represents an opportunity for Sylvania to leverage its existing expertise, which has been proven and reinforced through the success of the SDO, to diversify away from a reliance on PGMs. This addition to Sylvania's production profile further derisks the company's portfolio as, historically, neither commodity has been in a down cycle at the same time.

Sylvania's shrewd approach is proof that non-traditional mining methods can not only work hand-in-hand with more common, traditional methods but can also generate significant profits; indeed, even in a weak PGM price environment, Sylvania remains profitable and continues to pay a dividend.

Even though extracting commodities from waste may not be possible at every mine, these three companies demonstrate that there are opportunities worth exploring. With the impact of mining on our planet under a microscope, perhaps more companies will re-examine existing processes and deposits and ask 'what is left?', or 'what is being left behind?'. ■

Modern Mining celebrates 20 YEARS IN BUSINESS

March marks a major milestone in *Modern Mining's* diary – twenty years in business – an accolade in the business-to-business print media segment.

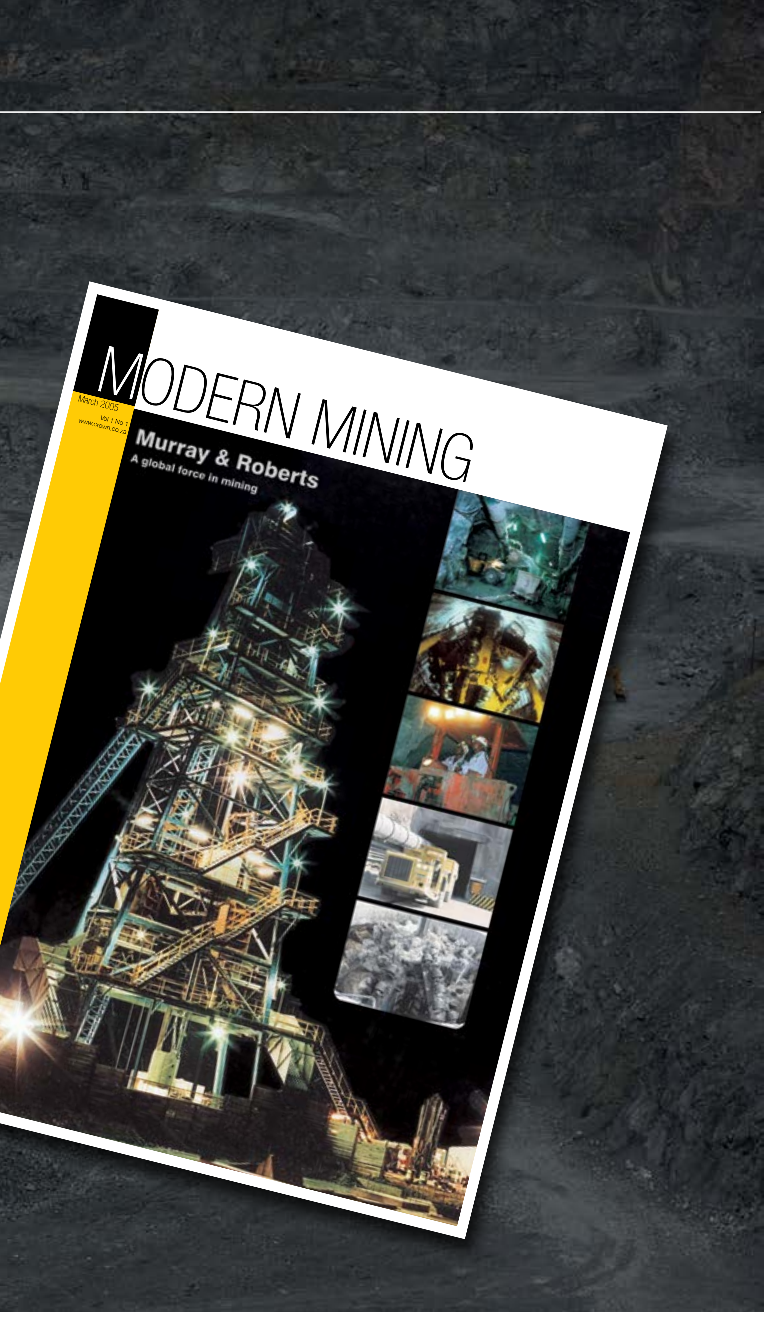
Modern Mining's former editor, Arthur Tassell.

Bennie Venter, former sales manager of *Modern Mining*.

March marks a major milestone in *Modern Mining's* diary – twenty years in business – an accolade in the business-to-business print media segment.

Launched in March 2005 by Crown Publications founder, Jenny Warwick, *Modern Mining*, initially headed by former editor Arthur Tassell and former sales manager, Bennie Venter, has become integral to the Crown Publications stable. Interestingly, Crown Publications, which began operating in 1986 – 39 years ago – is, itself, on the cusp of celebrating a milestone – 40 years in 2026. In addition to *Modern Mining*, the media house has a line-up of eight publications, these being *Construction World, MechChem Africa, Electricity + Control, Sparks Electrical News, Capital Equipment News, Modern Quarrying* and *African Fusion*.

Modern Mining was launched at a time when the mining sector was booming and competition among the various mining publications stiff. Since then, the industry has faced-off on the 2008 financial crisis and eleven years later, the Covid-19 pandemic, which, together with the evolution of the Internet of Things (IoT), has done much to obliterate the importance of print publications.



The IoT resulted in an aggressive uptake of online offerings, and sidelined print media. As a result, several business-to-business publications have transitioned to alternate monthly editions.

Fortunately, *Modern Mining*, has stayed the course and remains one of only two monthly mining publications in the country. The publication has evolved with the times and broadened its offering beyond print and now includes a strong online and social media presence, offering clients greater value for money.

According to Venter, who worked on the publication from its inception until June 2022, in the latter part of 2004 the late Jenny Warwick realised the need for a dedicated mining magazine and co-opted Venter to establish the viability of a monthly mining publication.

Having worked on a competitor publication in the 1990s, before joining Crown Publications in January 2005 to assist with the launch of *Modern Mining*, Venter polled his industry contacts to determine the appetite for another mining magazine and was met with enthusiasm for a new publication.

Explains Tassell: "At that point in time, there were several publications covering mining in South Africa and one other that covered mining in the rest of Africa, so we positioned *Modern Mining* as a publication that would bridge this gap and cover mining from the Cape to Cairo."

Modern Mining took shape as a publication that would focus on modern mining techniques and cover mining projects, largely on the African content.

"It was serendipitous. Well-respected mining editor, Arthur Tassell, took the helm as editor of *Modern Mining* and we worked together to make the magazine a success," says Venter.

The first issue of *Modern Mining*, which had a profile of Murray and Robert Cementation as the cover story, paved the way for a solid publication, which today continues to deliver 12 editions per year.

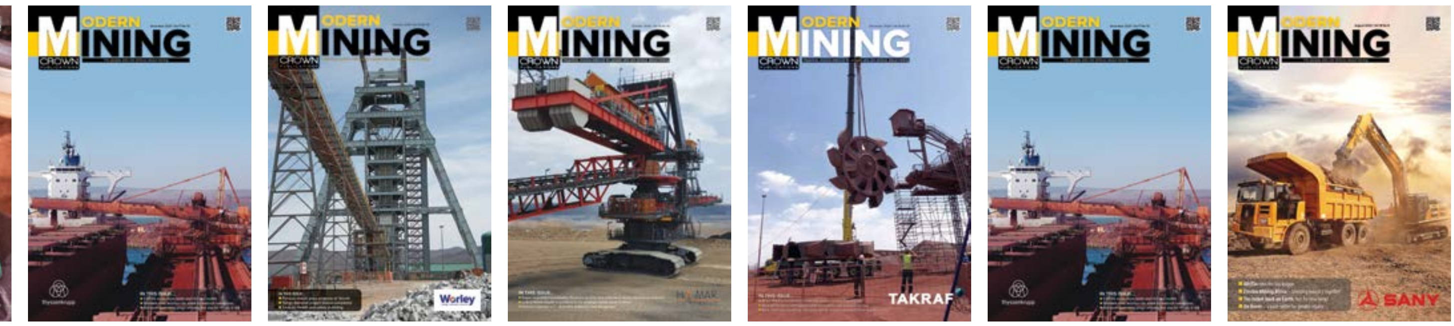
"The launch of *Modern Mining* came at a time of fierce competition from other mining magazines and, while the first two years were challenging, the publication gained traction and established its presence as a credible monthly magazine. The publication's success was closely linked to strong editorial by Arthur Tassell and Jenny Warwick's leadership as well as the close collaboration between the editor and sales manager," explains Venter.

Among the highlights of being editor of *Modern Mining*, Tassell fondly remembers his countless mine visits across the continent, from the very first – a visit to Anvil Mining's Dikulushi copper and silver mine in the Democratic Republic of the Congo (DRC) followed by Randgold's Loulo gold project in Mali.

In his 15-year tenure at *Modern Mining*, Tassell visited and reported on many mines across the continent, making his way through the majority of African countries with significant mining sectors, including Burkina Faso, Ghana, Tanzania, Mozambique, Zambia, Zimbabwe, Botswana and Namibia before retiring from the publication in 2020.

"On the back of the mining super-cycle in 2006-2008, which was driven by Chinese demand for metals such as copper, cobalt, iron ore, zinc and manganese, *Modern Mining* did well financially. These were fantastic years until the global financial crisis hit in 2008. Although this hit the magazine hard in the short term, it made a strong comeback once the crisis had passed."

The *Modern Mining* team has attended every Investing in Africa Mining Indaba since 2006, barring the Covid pandemic, when the event was an online offering. ■



Bell Equipment's versatile Bell Tracked Carrier is designed for short-haul applications in soft underfoot conditions and remote, hard-to-reach areas, making it ideal for Mukona Group's application.

Mukona Group customises **Bell Tracked Carrier for geotechnical testing**

The Bell Tracked Carrier is proving its versatility for the Mukona Group, an accredited Level 1 South African owned engineering company based in Midrand, Gauteng that recently opened a branch in Meerensee, Richards Bay. The Group's geotechnical and geo-environmental division, Mukona In-Situ Testing, has customised a Bell TC7A Tracked Carrier to accommodate their Cone Penetration Testing (CPTu) equipment to enable them test on remote mine sites.

Established in 2017, the Mukona Group has two additional divisions allowing them to provide a complementary and holistic offering to clients. Mukona Consulting Engineers offers civil, structural and geotechnical consulting services to consulting engineers, contractors, private companies and clients within the public sector. Mukona Geotechnics provides specialised geotechnical construction services including site investigations, piling and lateral support to industrial customers, state owned companies (SOC) including the mining sector.

Mukona In-Situ Testing, established in partnership with UK-based In Situ Site Investigation, specialises in Cone Penetration Testing (CPTu) techniques, electronic Vane Shear Testing (eVST), Seismic testing, Marchetti Dillatometer, MOSTAP Sampling, Installation of Vibrating Wire Piezometers, Inclinometers, and Pressuremeter testing to determine and characterise the in-situ properties of the soil. CPTu is used most frequently on mines to check is the in-situ properties for stability analysis and design of geotechnical structures.

The company's experienced team has worked onshore, near-shore, and offshore on various projects in Southern and East Africa, Middle East, and Europe. Clients are drawn from the construction industry and include mines, road authorities, port authorities, and local governments.

As part of its comprehensive geotechnical services, Mukona In-Situ Testing has various rigs, which varies from small, medium and heavy rigs capable of pushing up to 22 tons and carries out Cone Penetration Testing, Seismic Marchetti Dilatometer Testing (SDMT), Meanard Pressuremeter Testing, and MOSTAP Soil Sampling.

Solly Phalanndwa, a Professional Engineer and Managing Director of the Mukona Group, says: "We are committed to providing our clients with accurate and reliable data by combining the use of high quality, cutting-edge technologies and equipment with highly skilled and trained field staff. Quick response times and quality reporting ensures we meet our clients' unique project requirements."

Solly explains that Mukona In-Situ Testing has a 6x6 truck fitted with CPT equipment but finds its accessibility is limited. "We bought the Bell Tracked Carrier because of its easy access on mines. It appealed to us that the Tracked Carrier can navigate through swampy areas, go up almost every slope, and traverse deep sands."

This is largely due to the Tracked Carrier's unique balanced six-roller undercarriage with compound walking beams that provide an evenly spread footprint with optimal ground pressure contact and less track-point loading.

To make the Bell TC7A fit for purpose, Mukona customised it themselves by removing the bin and fitting their own CPT equipment. In addition, a 7-ton plate was fitted to increase the machine's weight for optimal pushing capacity during testing. Outriggers were installed to the front and back of the machine to lift and level the machine for testing, centralising the weight.

Solly said the machine arrived on a mine site in Zimbabwe on 8 December and will work there until May 2025. ■

Complete engineering solutions

BMG – which celebrates over 50 years of business - is a complete process solutions provider to all sectors of industry, which means customers can access essential quality branded engineering components, technical services and support from one reliable supplier. This integrated approach guarantees lower production costs and higher efficiencies.

The BMG team focuses on every customer's specific requirements and provides the correct components to improve machine performance, enhance reliability and extend maintenance intervals and service life for most mining and industrial systems.

The company's commitment to ensuring each plant maintains full production, encompasses a 24-hour customer process support for production efficiency and reliability centred maintenance.

Specialist divisions comprise bearings, seals and gaskets, power transmission, drives and motors, materials handling, tools & fasteners, hydraulics, filtration, lubrication and field services.

An important focus is BMG's Technical Resources division, which ensures dependable solutions – from the initial design concept, specification, manufacturing, quality control, commissioning to support of equipment in use.

The team works closely with customers in all sectors, including mining and quarrying, agriculture, food and beverage plants, water and wastewater treatment facilities, oil, gas and petrochemical plants, as well as construction, engineering and general industry.

BMG is a complete process solutions provider to all sectors of industry.

BMG's extensive branch network in South Africa is supported by 22 branches in Tanzania, Ghana, Zambia, Mozambique, Swaziland, Namibia, Botswana and the DRC. Expansion opportunities are currently being investigated in East and West Africa. ■


FUTURE-PROOFING MINING
FOR THE NEXT 100 YEARS
Actively setting new standards and driving the mining sector towards a more sustainable future
EFFICIENT MINERAL EXTRACTION
SUSTAINABLE EXPLOSIVES
INITIATING SYSTEMS AND ELECTRONICS
SMART DELIVERY SYSTEMS

Early technology adopter drives safe productive mining methods in Africa

It has been 20 years since Murray & Roberts Cementation forged its current brand, building a global contract mining services company from the merger between Murray & Roberts RUC and The Cementation Company (Africa).

Nurturing a culture of safety has reaped rewards for Murray & Roberts Cementation.

In a happy coincidence, this important event was featured as the cover story in *Modern Mining's* very first edition in March 2005, observes Graham Chamberlain, New Business Director at Murray & Roberts Cementation.

"In that first edition, our Group Executive Director at the time was interviewed about the prospects for the business in its early days, and it is exciting to see how the company has made the most of the bold direction it took two decades ago," Chamberlain says. "This merger, combined with a number of other strategic acquisitions around that time, allowed us to offer myriad specialist services for which we have become well known."

He highlights how Murray & Roberts Cementation has grown well beyond its roots as a traditional mining contracting company into a high-tech provider of a wide range of value-add mining services. To quantify its output over the past two decades or so, he cites numerous milestones.

On the shaft sinking side, the business has sunk 21 shafts – a total of 15 000 m of vertical sinking – since 2001, and significantly 15 of these since 2012. Equally impressive are the raiseboring figures, which reflect that it has conducted some 72 000 m of raise drilling – or 300 m a month on average.

"We have embraced various technologies to achieve this productivity, including the Rotary Vertical Drilling System (RVDS) from Micon in Germany," he says. "In fact, we successfully completed 93 projects using this well-proven equipment and methodology."

Among the standout applications of RVDS in South Africa was the 950 m deep ventilation shaft at Ivanplats' Platreef project in South Africa's Limpopo province. Achieving a remarkable 99,95% accuracy over the full length of the shaft, the deviation from target was only 500 cm.

"We are also very proud to have worked with clients on four major greenfield projects where we built up operations over a few years and then handed them back to the client to run as owner-operators," says Chamberlain. "These transitional projects are known for their challenges, so it has been professionally very satisfying to successfully complete so many of these."

Underpinning much of its progress has been the company's commitment to training; the South African mining sector saw a rapid decline in training as the industry contracted and mining houses unbundled. In terms of skills development, the Murray & Roberts Training Academy at Bentley Park in Carletonville grew its capability to train for artisanal, supervisory and management level including the courses necessary for the blasting ticket and other government tickets of competency.

"We have filled this gap in the mining sector to the extent that the blasting ticket examinations are actually conducted by the Department of Mineral Resources at our Bentley Park facility," he explains.

He notes that mines' formal investment in

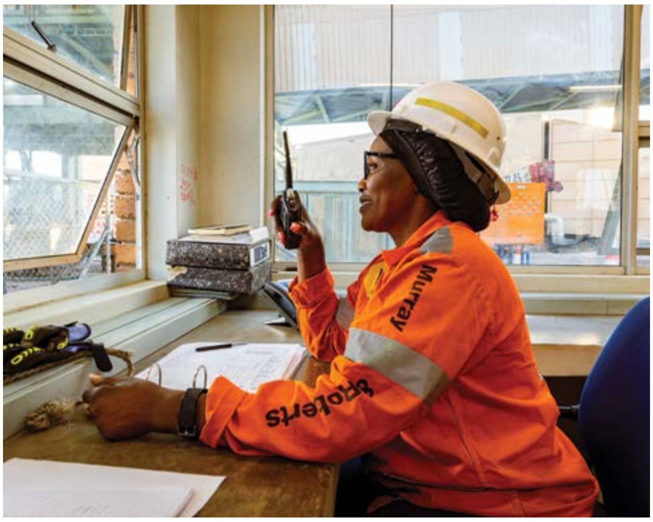
research and development also declined as the industry shrank, leaving another gap that needed filling. In this instance, Murray & Roberts Cementation has adopted the strategy of partnering closely with original equipment manufacturers (OEMs) to test and apply the latest technologies relevant to mining.

"This has been particularly important in our efforts to continuously improve the safety of our work – which is traditionally regarded as high risk due to the historic proximity of workers to high energy areas," says Chamberlain. "In addition to our various safety strategies, we regard it as vital to mechanise certain activities so that workers are not exposed to the related risks."

An example of such a relationship is the company's link with Germany-based Herrenknecht, global leaders in mechanised tunnelling. Among the solutions available through this collaboration is the combination of caisson shaft sinking methods with a roadheader.

"This would allow us to achieve a pre-sink or even a short shaft in ground with less than 100 MPa to the depth of about 300 m – and a diameter of up to 20 m – without the presence of a single human being in the shaft itself," he says. "Potential local applications that come to mind include the coal fields, for shallower and wider shafts, as well as any shaft sinking project where weathered or oxidised ground is encountered near surface."

This technology has been well established through its application on over 100 sites, in contracts as diverse as underground parking lots and launch pads for tunnel borers. An advantage is its compact size, making for a small footprint, as well as the fact that no headgear needs to be established.



Murray & Roberts Cementation sets the benchmark in shaft sinking, combining world class expertise, advanced technologies and an unwavering commitment to safety.

"There are plenty of other technologies, too, that would make mining in Africa safer and more productive," he continues. "These include mechanised tabular reef extraction and blind boring using machines that are mobile and quick to set up; it's really all about speed of deployment and removing people from the contact area."

Chamberlain emphasises that Murray & Roberts Cementation is a committed early adopter, always seeking opportunities to bring value through proven off-the-shelf solutions from other countries or even other industries. This also comes through in its training methodologies, where simulation and virtual reality are used alongside underground mock-up facilities.

"We believe that the right mechanical technology should be able to raise safety levels and drive down mining costs – making lower-grade deposits more viable and creating opportunities for expanding mining activity," he says.

As an indication of its safety commitment, Murray & Roberts Cementation recently achieved 8 million fatality free shafts – spanning a dozen years. Social investment has also been a high priority with various education-focused initiatives conducted over the years – from hardware in schools to supporting sanitary pads campaigns in poor communities, so that girls do not miss any schooling. Investments have been made in borehole drilling for groundwater and even a mobile science and mathematics laboratory for schools – made available through the whole Murray & Roberts group.

"In conclusion, we place the real value of our business in the experience of our people," he says. "In our field, this is an irreplaceable asset that develops only with time spent in projects and in consciously learning from every contract."

The company is set to expand in Africa, having set up fully incorporated structures in strategic African locations; it is looking forward to serving more mining clients in countries such as Zambia, Botswana, Namibia and Ghana. ■

Global institute launched to drive implementation of tailings standard

The Global Tailings Management Institute (GTMI), an organisation dedicated to improving the safety of mine tailings facilities worldwide, was launched in South Africa recently. It has been founded by the International Council on Mining and Metals (ICMM), the United Nations Environment Programme (UNEP) and the UN-backed Principles for Responsible Investment (PRI).

The GTMI will drive the responsible management of tailings facilities throughout their lifecycle. The goal is to achieve zero harm to people and the environment, by overseeing an independent assessment process through which tailings facilities worldwide will be audited and certified.

The GTMI will oversee the implementation of, and conformance with, the Global Industry Standard on Tailings Management (GISTM). Companies seeking to meet the Standard are required to prioritise safety, and enhance accountability through public disclosures at all tailings facilities.

ICMM, UNEP and PRI convened the Global Tailings Review shortly after the Brumadinho dam collapse, which killed 272 people in Brazil in 2019. In August 2020 they published the GISTM and the establishment of the institute is the next transformative step.

The GTMI's mission

The core function of the GTMI is to manage the assurance framework. This will be supported by raising awareness and encouraging the adoption of the GISTM, sharing knowledge and best practices for responsible tailings management, and transparently disclosing auditing outcomes.

Why South Africa?

"South Africa is an effective and appropriate location for the institute due to its significant mining sector, skills and experience in tailings management, and legal and professional expertise," said Rohitesh Dhawan, Chief Executive Officer of the ICMM.

"The country has at various times been at the forefront of mining practices and technology globally. The GTMI will benefit from that positive legacy, while contributing to the future growth and sustainability of the mining industry in the country. We are grateful for the support of the Department of Mineral Resources and Energy and the Minerals Council of South Africa in the establishment of the institute," he added.

Establishing a multi-stakeholder board

A critical first step for the GTMI is to elect a board of directors who will represent the entire ecosystem of communities and industries impacted by tailings facilities.

The co-convenors are inviting applications from the following groups:

- Mining Industry
- Potentially affected communities
- Indigenous Peoples
- Investment community
- Insurance and banking Industry
- Technical and academic community
- Environmental experts
- Mining workforce
- Regulatory authorities

Once the board is in place, the GTMI will recruit a CEO and Chief Technical Officer who will establish a committee to oversee all technical matters. Independent auditors will also be recruited, trained, and accredited to evaluate and certify tailings facilities. "UNEP is working towards making the mining and metals value chain more sustainable and to minimise its impact on the environment and human health," said Elisa Tonda, Chief, Resources and Markets at UNEP. "The multi-stakeholder governance of the GTMI is critical to ensure transparency, accountability and ultimately build trust among all actors, which will contribute to a more responsible mining sector." she added. ■

> "South Africa is an effective and appropriate location for the institute due to its significant mining sector, skills and experience in tailings management, and legal and professional expertise."

BME underpins mines' green targets with decarbonisation focus

Driving down carbon emissions while optimising production has become a key imperative for mines, making BME's strategic contribution through quality blasting and metallurgical processing more valuable than ever.

Dr Ramesh Dhoorgapersadh, General Manager for Operational Excellence & SHERQ at BME.

Nishen Hariparsad, General Manager Technology and Marketing.

The process of decarbonising has much to do with reducing energy consumption, given that most electricity generated in countries like South Africa is coal-fired. Energy efficiency therefore translates almost directly into a lower carbon footprint, and invariably into cost savings.

Through continuous innovation over the past four decades, BME has developed emulsions, equipment and electronic initiation technology that enhance mines' environmental sustainability efforts on various fronts. According to Dr Ramesh Dhoorgapersadh, General Manager for Operational Excellence & SHERQ (Safety, Health, Environment, Risk and Quality) at BME, the company's commitment to productivity and sustainability has allowed its mining customers to improve their mining efficiencies – which impacts importantly on the energy they consume.

Responsible care

"Raising the bar in environmental and safety standards is part of our corporate culture," says Dhoorgapersadh, "and aligns with the purpose of the Omnia Group – innovating to enhance life, together creating a greener future."

BME's success in putting vision into action is regularly recognised by industry bodies – the most recent accolade coming from the Chemical and Allied Industries Association (CAIA). In October, BME was named as runner-up in the Responsible Care® Sustained High Performance Awards – for continuous improvement in overall performance of the business.

"Our approach ensures that we safeguard and protect not only our employees but also the environment and the communities in which we operate," he says.

Through the value chain

Following a rebranding by the Omnia Group, BME now operates through two core divisions. BME Blasting Solutions specialises in explosives and initiation systems, while BME Metallurgy provides advanced mining chemicals and metallurgical processing solutions. This allows the company to contribute at both the front and back end of the mining cycle.

"This means that we break rock through blast design and execution, but also contribute to mineral processing in the plant," said Nishen


A controlled blast using BME's AXXIS initiation system.


BME's sustainable dual salt emulsions.

Hariparsad, General Manager Technology and Marketing. "Our sustainability focus includes raising performance efficiency across the value chain."

As a pioneer in electronic initiation systems, BME's AXXIS® technology allows mines to improve the quality of their blasting, said Hariparsad. Among the advantages of its electronic initiation technology is the precision and flexibility of the delay-timing, as well as the ability to plan large blasts. Blast design software such as BME's Blastmap™III allows not only the development of complex firing patterns, but the simulation of blasts for improved certainty and results.

A key benefit of being able to plan and control blasts with precision is that this optimises the fragmentation of blasted rock to make loading and hauling phases more efficient in terms of their energy consumption. Good fragmentation also means that less energy and time is lost to the breaking of oversize rocks before loading and crushing.

Another way that mines gain efficiencies is by planning and detonating larger blasts. BME's flagship AXXIS Titanium® can initiate up to 20 000 detonators per blast, which means that the pit needs to be cleared for blasting less often. Reducing this disruption makes for a more streamlined and efficient operation.

Dual emulsion chemistry

The chemistry of BME's dual salt emulsions ensures that they reduce the environmental impact of blasting, explained Hariparsad.

"Dual salt emulsions are less harmful in terms of nitrate contamination and greenhouse gas emissions than single salt emulsions," he said. "In a single salt emulsion, only ammonium nitrate is used, whereas a dual salt emulsion could contain calcium nitrate or sodium nitrate. These emulsions are less susceptible than traditional explosives to nitrate leaching, which can cause environmental damage and threaten a mine's compliance with local legislation."

Emulsions are also manufactured at lower temperatures, which helps to reduce power consumption and carbon emissions. The manufacturing process of cold emulsion requires lower temperatures than the equivalent processes for single salt emulsions – demanding significantly less energy for heating.

In addition to producing less carbon emissions, there is also an efficiency benefit in the supply chain process. The emulsion needs less time to cool, and this improves the efficiencies related to handling and transportation.

BME has been an environmental pioneer in the use of recycled oil as a fuel agent in its emulsions, he noted.

"By doing this, the company is able to remove millions of litres of potential hazardous used oil from the market each year, avoiding the possibility of water or land contamination," he said. "The strategy for collecting this used oil is a further enhancement of BME's ESG contribution, as it engages a network of small businesses in a highly controlled process."

Supporting mining's green targets

Dhoorgapersadh highlighted that mining's focus on ESG has contributed to the mining value chain becoming increasingly integrated, with the ESG performance of suppliers impacting on the mines' own strategic targets.

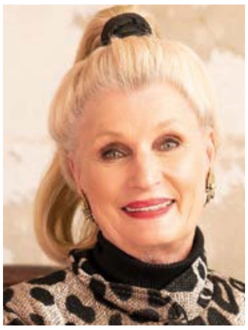
"In line with the approach of the Omnia Group, BME has embraced the concept of triple bottom line reporting – to include economic, social and environmental relationships," he says. "We integrate economic development, environmental quality and social equity into our practices as part of our value proposition to stakeholders."

This is an essential aspect of partnerships in the mining sector today, as local and global benchmarks require that mines include the performance of upstream and downstream stakeholders in their ESG assessment. In the measurement of carbon emissions, for instance, mines need to take into account not just their own Scope 1 emissions, but those Scope 2 and Scope 3 emissions associated with activities outside of their own businesses.

"We consider our ESG focus as key to our business values, and are proud that our efforts support our mining customers as they achieve their own green goals," he said. ■

Illegal mining – **is government making headway?**

The recent Stilfontein illegal mining saga, which held the public's interest for a good few months, culminated in the deaths of over 70 illegal miners and the rescue of close to two hundred and fifty. As it stands, South Africa has over 6 000 abandoned mines, many of which are targets for illegal mining. Given that the responsibility of abandoned mines lies with the Department of Mineral Resources and Energy (DMRE), the question arises: Is government doing enough to address the situation? *Modern Mining* recently spoke to Mariette Liefferink, CEO: Federation for a Sustainable Environment (FSE) for some insight.



Mariette Liefferink, CEO: Federation for a Sustainable Environment.

An image of Illegal miners who were arrested by the South African Police for illegal mining and the rape of 8 women at North Sands dump in Krugersdorp.

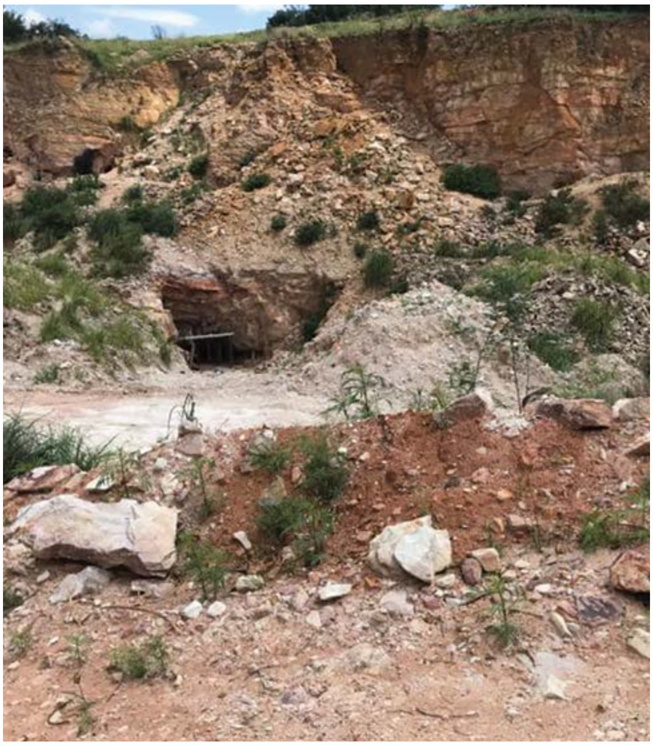
> "Over the past months, the operation has led to numerous arrests and efforts to dismantle underground mining networks. Since October 2024, more than 1 000 miners have resurfaced from the abandoned Buffelsfontein mine."

According to Liefferink, much more needs to be done. She explains that from a policy perspective, the National Mine Closure Strategy, which has reference to economic succession and economic diversification, and derelict and ownerless mines, has been drafted but the signing off on the strategy by the Minister of Mineral Resources and Energy has been in abeyance since May 2023.

"The Artisanal and Small-Scale Mining (ASM) Policy has been published but is not implemented. Policies and strategies are not legally enforceable. However, it is important to note that to make it enforceable, these policies and strategies must translate into regulations and amendments in our current legislation. South Africa is known to be rich in policies and strategies but very poor in implementation," she says.

The ASM Policy aims to create a formal ASM industry that can operate in a sustainable manner and contribute to the economy, while it also aims to deter illegal mining.

Liefferink adds that the rehabilitation of ownerless and derelict mines, which have been abandoned without fulfilling all legal obligations,



Illegal miners using open shafts that were abandoned following Mintails' liquidation.

Illegal miners mining within the West Rand following the liquidation of Mintails.

require urgent environmental rehabilitation.

"Failure by the Minister of Mineral Resources and Energy to direct the Regional Manager of Mineral Resources and Energy to take the necessary measure to prevent pollution or ecological degradation of the environment and to make an area safe, has resulted in the proliferation of illegal mining."

Examples of mines that were liquidated and where the DMRE did not implement Sections 45 and 46 of the MPRDA, are the Blyvooruitzicht Gold Mining Company within the Far West Rand; Siva Mining within the Klerksdorp/Orkney/Stillfontein, Hartbeestfontein area; Mintails within the West Rand; Central Rand Gold within the Central Rand. "This has resulted in an explosion of illegal mining and has added significant risks to communities."

Operation Vala Umgodi

However, the good news is that under Operation *Vala Umgodi*, South African authorities have, since December 2023, been trying to disrupt the illicit gold mining economy by cutting off water, food and other supplies to the miners working underground. A case in point is the Stilfontein saga, which saw police first descend on the abandoned Buffelsfontein Gold Mine in August 2024 as part of Operation *Vala Umgodi*.

Over the past months, the operation has led to numerous arrests and efforts to dismantle underground mining networks. Since October 2024, more than 1 000 miners have resurfaced from the abandoned Buffelsfontein mine.

In more good news, the DMRE, in collaboration with Mintek, recently sealed off open shafts by backfilling the entrances to the shaft with concrete within the Rivelea area with the express aim of preventing illegal miners access to the underground workings.

According to Liefferink, the costs for the sealing the open pits were paid from Treasury and not – as would be expected - from the rehabilitation funds from Central Rand Gold, the liquidated mining company responsible for the open pits.

"The Riverlea Community has alleged that although the open shafts were sealed, the area was not rehabilitated. A subsequent challenge that has followed, is that illegal miners have reopened some of these sealed shafts and accessed underground workings through the shafts and open pits."

Risks associated with derelict and ownerless mines

The Council of Geoscience has ranked derelict and ownerless mines according to their environmental risk. The aim of the ranking exercise was to identify priority sites for rehabilitation. The clusters of mines identified as posing a high environmental risk are:

All gold mines from the Free State to Evander	High environmental risks due to uranium
Gold mines related to the greenstone belts of Mpumalanga	High risks due to arsenic
Gold mines related to greenstone belts in Limpopo Province	High risks due to the presence of antimony and in some cases, mercury
All asbestos mines	
The copper mines in the Springbok area	Water related risks due to the presence of bismuth
Pegmatites in Northern Namaqualand	Risk are primarily due to radioactive components or bismuth

The EC950E has seen a massive uptake in the mining market in southern Africa.

High uptake for large Volvo excavators in southern Africa

As mines and their contract mining counterparts place value on more efficient and productive operations, Babcock has over the years seen increased demand for its large Volvo excavators – the EC550E, EC750D and EC950E – which are widely used across southern Africa.

As the mining industry in southern Africa shifts its focus onto efficiency and productivity, large Volvo excavators are playing a crucial role in helping the industry operate successful operations. David Vaughan, MD of Babcock's Equipment business, says that Volvo models at the heavy end of the excavator scale, from 55-90 tonnes (t), have enjoyed a huge uptake in southern Africa.

"The three large models – the EC550E, EC750D and EC950E – have amassed more than 300-unit sales since the arrival of the EC750 in 2016, the first of the three models to be launched in the local market. The units have been deployed across commodity areas, from coal to hard rock mining, and everything in between," says Vaughan.

> "The three large models – the EC550E, EC750D and EC950E – have amassed more than 300-unit sales since the arrival of the EC750 in 2016."

EC550E

Having made its local debut in October 2022, the EC550E is the newest of the three models. In just over two years, the unit has already proven its mettle in southern Africa, with a sizeable number of units deployed in coal, diamond and hard rock applications.

At a time when productivity and efficiency have become non-negotiables for mining and quarrying projects, customers have been impressed by up to 40% more productivity and up to 25% increase in fuel efficiency. In addition, the machine also punches above its weight with production capabilities well in line with machines in the 60-65 t range, especially in bulk material handling operations such as overburden and other high-volume materials.

Ideal for mining, quarrying and large infrastructure projects, the new 55-t excavator breaks the industry norm of production having a direct link to operating weight. This is achieved through Volvo CE's ground-breaking Independent Metering Valve Technology (IMVT) hydraulic setup, in conjunction with a totally new engine trim on the D13 block and electrohydraulic command for the joysticks.

"As a result, the machine 'fights' well outside its weight category, offering production in line with bigger class machines

The EC950E comes powered by a 446-kW Volvo D16 engine.

in the 60-65 t range, despite the decals only stating 55-t," explains Lance Mannix, GM Sales at Babcock's Equipment division.

Thanks to the next generation electro-hydraulic system with IMVT and engine/pump optimisation, which lowers engine rpm while optimising power, customers can take fuel efficiency to a whole new level. The main control valve uses IMVT, the latest pioneering innovation from Volvo, said to be the most high-performing hydraulic system in the industry. It provides significantly more precise control compared to a conventional system and contributes up to a 25% improvement in fuel efficiency.

"The IMVT is probably the biggest news as it is an industry first in this excavator size class. It involves a new concept main control valve (MCV). Instead of a conventional spool-type MCV, Volvo has built an MCV with dedicated valves – one each for feed and return for each actuator. This means that the pumps pump exactly according to demand at any given time, subject to the precise and exact requirement of oil for any specific actuator," says Vaughan.

Productivity is a parameter of absolute significance to excavation applications. With that in mind, Volvo CE paid particular attention to increased productivity when developing the EC550E. Customers can brace themselves for up to 40% more productivity.

The machine can fill a 35-40-t hauler or highway truck with just four to six passes. The result is optimum pass-matching and high production at a lower cost per tonne of operation.

"The EC550E can fill a Volvo A35G or A40G articulated hauler with four to six buckets, which is considered a well-balanced match in the industry. It also means that Babcock now offers two perfect match excavators for A35G or A40G haulers in southern Africa – the EC750D and the EC550E," says Mannix.

EC750D

The EC750D has been one of the best sellers in the large excavator category for Babcock. With more than 200 unit sales, the EC750D made its debut in 2016, succeeding the previous EC700B, which sold more than 50 units in the market.

Specifically designed for challenging applications, the 70-t Volvo EC750D crawler excavator is powered by a Volvo D16 engine delivering increased horsepower and improved fuel efficiency. For a more productive and fuel-efficient operation, the new electrohydraulic system puts superior control in the operator's hands. Utilising intelligent technology, the easy-to-use system controls on-demand flow and reduces internal losses in the hydraulic circuit.

This is combined with a constant high-pressure system for greater digging force and reduced cycle times, particularly when working with hard and heavy materials, as well as a reinforced heavy-duty boom and arm for increased reliability and machine uptime. The EC750D's increased bucket capacity delivers more tonnes per hour, while the increased horsepower, hydraulic pressure and flow enable the machine to perform at optimal capacity, loading more material in one load for greater productivity.

EC950E

Following its launch in 2017, the EC950E has seen a massive uptake in the mining market in southern Africa. With over 424 kN of breakout force and 408 kN of tearout force, the EC950E offers a combination of power and stability to handle the high-capacity duties in tough conditions such as hard rock mining, coal mining and big quarry applications.

Powered by a 446-kW Volvo D16 engine, the EC950E comes with an enhanced hydraulic system which increases pump power for a fast, smooth and efficient operation, and places control in the operator's hands. Using intelligent technology, the system controls on-demand flow and reduces internal losses in the hydraulic circuit.

Combined with Volvo's ECO Mode, the hydraulic system reduces loss of flow and pressure to achieve greater fuel efficiency. The integrated work mode allows operators to choose the best work mode for the task at hand, from I (Idle), F (Fine), G (General) to H (Heavy) and P (Power max).

The EC950E features a wide track gauge, long track length, a retractable undercarriage and an optimised counterweight, resulting in a well-balanced solid machine. All machine interfaces – including joysticks, keypad and LCD monitor – are ergonomically positioned and designed for optimum control and efficiency.

Support

The three Volvo models benefit from Babcock's unparalleled aftermarket support in the region, which is why most fleet owners in southern Africa are increasingly choosing to have their machines serviced by the capable Volvo dealer through service contracts. The contracts are flexible and tailored to meet each customer's unique operational needs.

"Local fleet owners are increasingly giving the responsibility of servicing machines to the original equipment manufacturer (OEM) or supplier through service contracts, allowing them to focus on their core business of production," says Vaughan. "We have therefore seen increased uptake of our service contracts in recent years, with more than 1 350 Volvo CE machines currently on service contracts."

Service contracts, adds Mannix, help mitigate the risk of unexpected breakdowns, reduce costly repairs and extend the lifespan of critical assets. In addition, contracts offer a predictable cost structure, allowing businesses to plan budgets and avoid unexpected expenses associated with unplanned maintenance events.

"A major benefit of Babcock's service contracts is increased machine uptime. The machines are serviced by experts, thus the scheduled downtime related to maintenance is kept to a minimum. Machines are also serviced according to OEM specifications all the time, resulting in longer asset lifecycles," concludes Mannix. ■

Sandvik's SAM brings power of digital **to crushing and screening operations**

Following its recent Africa launch at the Electra Mining Africa exhibition in Johannesburg, the Sandvik Digital Assistant (SAM) is already seeing enthusiastic uptake among users pursuing the benefits of the digital mine.

Ali Jumaa, Digital Product Manager for Sandvik Rock Processing.

SAM is a tool for all players in this value chain – from operators and technicians to managers and purchasing departments.

This dynamic and ever-evolving platform from Sandvik Rock Processing is part of the company's new Automation and Connectivity System (ACS), according to Ali Jumaa, Digital Product Manager for Sandvik Rock Processing. SAM is built on the data that the ACS generates and is changing the face of crushing and screening operations.

Jumaa highlights that it is a tool for all players in this value chain – from operators and technicians to managers and purchasing departments – making their jobs easier while providing a complete overview of the crushing and screening operation.

"SAM combines a wide range of tools, information and guidance in one place for our customers," he says. "We like to describe SAM as a digital assistant that is always available to help our customers with their day-to-day operations."

Maintenance and site managers, for example, get the ability to track the performance of all their equipment from the convenience of a laptop, tablet or mobile phone. Similarly, the mine's purchasing department has direct access to the SAM web shop allowing them to quickly and seamlessly find the correct part numbers, create shopping lists and submit orders directly to the OEM.

"For service technicians, SAM gives them the ability to find up-to-date documentation on the equipment they are working on," he said. "SAM also assists operators who are looking for ways to increase operational uptime and availability. The platform provides 24/7 alarm alerts with recommended actions, which is a vital early warning service to avoid unplanned stoppages."

He highlights that SAM has been developed – like other Sandvik products and services – in line with the concept of a proactive user journey. This begins with the customer's initial contact and purchase, where they begin their partnership with the company.

"The journey develops into different stages, and at each point they might need certain kinds of support from us to benefit optimally from the partnership," he says. SAM also leverages the company's continuous advancements in automation, such as the ACS-c 5 for the Sandvik 800i cone crusher series.

"Sensors on the crusher components collect various data that is used to regulate and control the operating parameters of the crusher," he says. "This automation system is the source of data for SAM as well as the engine for EDGE processing of data and insights; the data is further transmitted through a gateway to the cloud where we provide an additional layer of calculations and AI models."

Data analytics therefore plays a vital role in SAM, he emphasises, and Sandvik Rock Processing is continuously building features to detect issues in advance. This is an important part of the proactive user journey, where services and digital tools are combined to deliver early warning of any

The Sandvik Digital Assistant (SAM) is already seeing enthusiastic uptake among users pursuing the benefits of the digital mine.

SAM combines a wide range of tools, information and guidance in one place for our customers.

Maintenance and site managers get the ability to track the performance of all their equipment from the convenience of a laptop, tablet or mobile phone.

SAM provides 24/7 alarm alerts with recommended actions.

impending issues.

"With the ongoing advances in data analytics and AI, we can increase our predictive maintenance capabilities," he says. "The wear on the liner and mantle can be monitored, for instance, and can be analysed in terms of historical data to give customers a more accurate forecast of service intervals."

Using the integrated SAM platform, customers can then access the relevant technical manuals for their equipment, find the exact spares they need and place the order to restock their inventory. Jumaa highlights that a key benefit of the SAM system is that it makes data understandable in a visual way. The customer can see in high resolution exactly when the crusher has been operational or idling, for example, and can identify gaps in their operation through that user-friendly data visualisation.

"With our recommended actions, we can help the user to find the right solution for their problem and reduce their downtime," he explains. "In one of our recent installations, we were able to work with a customer to reduce the crusher's idling time by more than 10%, which made big improvements to their productivity and our common environment."

The system also allows alarms to be more carefully managed, to avoid unnecessary plant stoppages. He emphasises that the continuous improvement of SAM is based on close collaboration with customers and understanding of their needs.

"Every SAM feature we create is based on our regular contact with the user," he explains. "We conduct interviews with them and visit their sites, to ensure that we are focusing on the most relevant features."

This also leads to the platform's interface being intuitive and user-friendly, he adds, so that customers do not need extensive training on how to use it. There are even features incorporated in the SAM platform that teach customers how to use and get the best results from the system.

Jumaa notes that there has been a significant shift in the market in recent years when it comes to how customers view and appreciate the technology that drives efficiency and reduces total cost of ownership.

"Just a couple of years ago, we were still finding some segments of the market were still asking where exactly the value was to be found in installing these digital systems – or how complicated they would be to operate," he says. "Today, the attitude globally, including in Africa, is shifting towards customers asking us how quickly it can be applied, as they see immediate potential for production, savings and operational improvements."

The more sites at which SAM is installed, the more valuable it becomes to the whole community of users, he points out.

"As we learn more from our global installed base of crushers and screens, we leverage AI to give deeper insights to customers in understanding how their equipment is performing," he concludes. ■

COLUMN

What is Trump's game?

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

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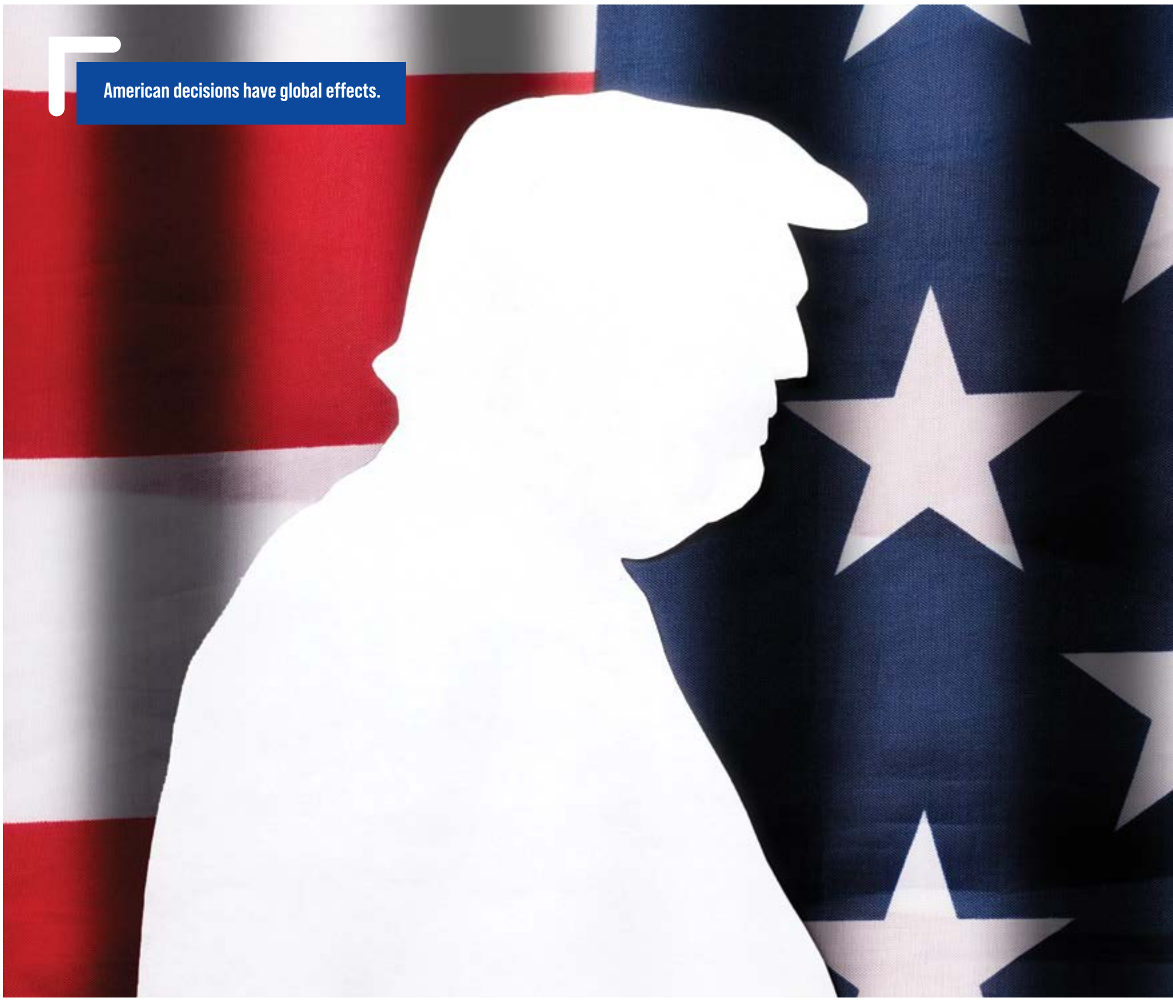

American decisions have global effects.

One may say a lot about Trump. As Bono said when introducing U2's best song at Red Rocks in 1984: "There's been a lot of talk about this next song...maybe, maybe too much talk... this song is not a rebel song; this song is Sunday Bloody Sunday". So perhaps there has been too much talk about Trump. But Trump's behaviour is likely to have bloody consequences, quite literally. And, unfortunately, American decisions have global effects, so we must talk about it. The most pressing thing, which might seem far from mining, is to talk about the abrupt pause to foreign aid recently executed by Trump.

Foreign aid is a controversial subject. In 2008, three scholars published a paper called The Curse of Aid, cited 1,193 times since. The opening line of the abstract states: "Foreign aid provides a windfall of resources to recipient countries and may result in the same rent seeking behaviour as documented in the "curse of natural resources" literature." Strikingly, the lead author – Simeon Djankov – worked for the World Bank at the time. The research work was clear that foreign aid had a negative impact on institutional quality larger in effect than oil rents. "We find that aid is a bigger curse than oil."

This is important work, as it provides a caution against the idea that aid always helps, which reminds me of a book called When Helping Hurts, and another I reviewed in 2010 called Dead Aid. Aid, if not directed towards building strong domestic institutions through which broad-based development can thrive, can become one more rent source for elite capture. As the Djankov paper points out, stronger incentives for rent seeking seem likely to reduce the quality of democratic institutions and the checks and balances in the governments of recipient countries. In the second half of the 20th Century, an estimated US$2,3 trillion was spent on aid, and the results are not impressive. Clearly, a rethink is in order.

Consider, for instance, the dynamics of what might happen when official "development assistance" and "aid" become a large portion of a country's annual budget. Let's take Rwanda, an aid darling despite shocking democratic credentials. In 2022, it received US$1,12 billion (constant 2021 US$) in total aid, about one twelfth of the country's GDP. US$170.38 million of this came from the US. Health expenditure in 2021 (the last year for which there is data) was US$73.53/capita. In Angola, by way of comparison, aid flows were far lower in total in 2021 (US$247 million) than in Rwanda. And, while GDP is much larger (US$82.4 billion) than Rwanda's, domestic healthcare expenditure was US$114.77 per capita. That is US$41 per capita

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To move aid from being a curse to a blessing requires the same strategic moves as ensuring that natural resources become a blessing.

more than Rwanda. How can it be that in Rwanda, per capita healthcare expenditure is lower than in Angola, while aid flows are significantly higher?

One answer might be that most of Rwanda's aid is allocated towards education and infrastructure. Let's grant that, for the sake of the argument. The bottom line, though, is that countries receiving large aid grants are not seeing a concomitant improvement in institutional quality. And it is clear from decades of economics research now that institutional performance is a primary determinant of long-run economic performance. Djankov and his co-authors did not suggest, however, that all aid should necessarily go towards promoting better institutions per se. Nonetheless, aid, like mineral rents, "can be appropriated by corrupt politicians without having to resort to unpopular, and normally less profitable, measures like taxation... When revenues do not depend on the taxes raised from citizens and business, there is less incentive for accountability."

Indeed, at the aggregate macro-economic level, the data does not look good. For sub-Saharan Africa, US bilateral aid flows have increased from US$1.3 billion in 1999 to a peak of US$13.18 billion in 2021 (in current US$), while GDP per capita over the same time moved from US$1,178 to US$1,559 (in 2015 constant US$). On this metric, the return on investment has been extraordinarily poor. We don't have a counterfactual, though, so one might argue that over those 22 years, the absence of US aid could have resulted in a declining GDP per capita.

Either way, it does not follow from the above that Trump is right to turn off the aid tap overnight. That is clearly senseless and destructive. This is not just because it creates enemies of former friends in the international domain, or because it hurts individuals and communities currently dependent on aid. Moreover, some aid-funded programmes have strong positive effects in respect of improving development outcomes. Randomised control trials (RCT) that evaluate the outcomes of specific projects became very popular for a time, and some projects had amazing results. The problem there, though, is that the RCT can only tell you that a project worked (or didn't) in that context. It tells us nothing about how a project might be transposed (or scaled) into a different context. Nonetheless, aid distribution can surely be reconfigured to ensure incrementally better results at the micro-level that will eventually result in changes at the macro-level.

It is not enough to assert that simply because the macro results show a negative correlation between aid dependency and GDP per capita growth that aid should be cut. Of course, the US has indicated that the freeze is temporary and has been implemented to conduct reviews of current funding to ascertain its efficacy. Ninety days hardly seems like enough time for that exercise, though. In the meanwhile, the negative impact on current recipients is likely to make Trump many more enemies than friends. Moreover, it will harm long-run health and educational outcomes. Three months without anti-retroviral treatment, for instance, will create irreversible long-term damage for individuals.

To move aid from being a curse to a blessing requires the same strategic moves as ensuring that natural resources become a blessing: strengthen institutions. While it is true that aid and subsidies are often seen as politically irreversible, if they have baked-in performance metrics (like a required annual improvement on the World Bank's governance indicators) from the start, then we might start to see better outcomes. That would be a preferable approach to turning off the taps arbitrarily and abruptly. ■

Railveyor announces **strategic partnership with Deebar**

Global haulage company, Railveyor, has appointed Deebar as their official sales representative in South Africa. This partnership is a pivotal step in Railveyor's global expansion, enhancing its capabilities in this dynamic and resource-rich region, according to Tas Mohamed, CEO of Railveyor. As a leading supplier of innovative mining solutions, Deebar led the installation of an earlier Railveyor system at Phakisa Mine, a Harmony Gold-owned operation in South Africa. This project exemplified the power of combining Deebar's local expertise with the advanced technology of the Railveyor system – to deliver an efficient and sustainable materials handling solution. "We are thrilled to deepen our partnership with Deebar," said Mohamed. "Their proven track record and deep understanding of the South African mining landscape make them an ideal partner as we continue to innovate and provide solutions that align with the industry's needs." Through the strategic agreement, Railveyor and Deebar will collaborate on new opportunities across South Africa, offering clients state-of-the-art material haulage systems that prioritise efficiency, sustainability, and safety. The partnership underscores Railveyor's dedication to forging meaningful relationships that drive progress in the mining industry, he said. ■

Railveyor, has appointed Deebar as their official sales representative in South Africa.

Kangra delivers ambulance to Mpumalanga government

A much-needed life-saving vehicle that will reduce emergency response time in Mkhondo was handed over to the Mpumalanga Department of Health on 21st January 2025.

Fitted with standard medical equipment, the ambulance will serve communities under the Mkhondo local municipality. It is designed to provide relief for injured or sick residents who need urgent medical assistance while in transit to health facilities. The purchase of the vehicle and the fittings were part of the commitment by coal mining company, Kangra, to fully implement its Social and Labour Plan. The ambulance was unveiled during an official handover ceremony held at the Driefontein Community Health Centre. Kangra invested R1.2 million to purchase and customise the Volkswagen Crafter in line with the Department of Health's specifications. Mkhondo Municipality Executive Mayor Ngelosi Ndhlovu said, "The ambulance can penetrate remote or underserved areas, guaranteeing that a greater number of community members receive emergency medical treatment." ■

Kangra invested R1.2 million to purchase and customise the Volkswagen Crafter.

Rapid interest in Weir modular **wheeled plant concept**

The WMWP features a TRIO TC 36 cone crusher designed for secondary and tertiary crushing.

Since its official introduction earlier this year, the Weir Modular Wheeled Plant (WMWP) has generated a lot of interest amongst customers in southern Africa. This was particularly apparent at Electra Mining Africa, where the first commercial unit on display was one of the major attractions on the company's stand. From inception, the introduction of the WMWP concept was aimed at addressing specific customer needs in the market. Based on Weir's feedback collection, the most relevant and useful aspects of the design were always going to be mobility and ease of deployment – parameters of paramount significance to contractors who seek to easily move their plants on and between production sites. "Given that the design of the WMWP concept addresses these specific customer needs, we have seen immediate acceptance in the marketplace. In addition to mobility and ease of deployment, the concept offers the flexibility of a mobile plant and the productivity of a static plant. From an economic point of view, customers can also enjoy the mobility of the plant without the complexity associated with additional maintenance obligations for components such as diesel engines and tracks related to mobile tracked units," says Hakan Karlsson, Director Crushing and Screening at Weir. Weir used Electra Mining Africa to showcase its first commercial unit, the Weir Modular Cone/Screen WMWSC36-5162, a combination of a TRIO® TC36 cone crusher and a TRIO® TIO 5162 double-deck screen on a single trailer. The plant can be operated as a standalone unit or as part of an existing plant. It can also be integrated as a fully mobile solution, highlighting the versatility of Weir's wheeled modular plant offering. ■

Tough chain and induction hardened sprockets for longevity


Tsubaki Titan chain.

BMG's Tsubaki Titan chain series offers significant improvements in wear-life, particularly in demanding applications, like abrasive and dusty conditions, the company said. "Selecting the right chain for every job is critical, especially in harsh conditions where dust and abrasive particles infiltrate moving parts and significantly shorten the lifetime of standard chain. This damage results in high costs caused by downtime, production loss, replacement parts and labour," says Carlo Beukes, Business Unit Manager, Power Transmission division, BMG. "Tsubaki Titan chain, which offers previously unobtainable wear-life in harsh conditions, combines key features of the existing premium Tsubaki GT4 Winner chain, with new specifications which have been designed to deliver extended wear performance. "Advanced features for the Titan series, not only extend service life of the chain, but also reduce maintenance costs and minimise downtime. Another advantage is the reduced frequency of swapping out old chain for new, which contributes to a significant reduction in the Total Cost of Ownership." An important feature of Tsubaki Titan chain is the use of seamless bushes that incorporate lube grooves. These bushes, which are precision-made ensure the smoothest possible operation to help minimise wear. Added to this, the specially designed lube grooves ensure oil is retained at the point of contact, where the chain needs it most. This limits the wear between pin and bush, significantly improving the wear life. Tsubaki Titan pins have a special surface coating that provides an extra hard, yet low-friction surface, further extending service life. Standard Tsubaki Titan Chain is available from BMG in sizes 12B to 32B. Additional sizes, multi-strand and attachment options will be available on request. ■

Jet Demolition supports mining houses meet their ESG commitments

Jet Demolition supports mining houses to achieve their Environmental, Social and Governance commitments.

The demolition of aged and redundant infrastructure and undertaking assessments and studies of current infrastructure to determine appropriate and industry-specific cost provisions for future demolition activities, are just two of the ways that Jet Demolition supports mining houses to achieve their Environmental, Social and Governance (ESG) commitments. The removal of redundant infrastructure, especially during ongoing operations, also allows for the removal of unsafe structures, thus lessening the burden on ongoing maintenance, further conserving resources. Large mining houses generally have a long-standing working relationship with environmental specialists that offer guidance regarding the legislative and social responsibilities of the mine. "We support these relationships by offering demolition services and solutions tailored to site-specific requirements, with a focus on removing redundant infrastructure without impacting ongoing operations," explains Kate Bester, Contracts and Project Manager at Jet Demolition.

The company is equipped and experienced in delivering turnkey demolition services, with final rehabilitation of the impacted footprint included within the scope of services. ■

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- The outlook for new PGMs projects
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