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For people who are serious about mining

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ON THE COVER

Brelko's innovativeness and solutions-driven approach has seen the manufacturer rise to become a supplier of choice to key mining projects.
See story on page 8.

COMMENT

Power play

The Russia-Ukraine war sees yet another power struggle playing out, the energy power struggle which, if the pundits are to be believed, will see South Africans parting with as much as R40 per litre for fuel in the not-too-distant future. This certainly puts a crimp in the works, especially when the call back to the office has been made and fighting rush hour traffic has become real again.

Russia is the world's third biggest producer of oil, behind the US and Saudi Arabia, exporting roughly 5-million barrels of crude oil a day, with more than half of that going to Europe.

Speaking at AfriSam's recent National Budget Breakdown function, Dr Azar Jammine, director and chief economist of Econometrix, explained that the invasion of Ukraine by Russia had intensified commodity shortages.

"If sanctions are imposed on Russia and if that country is unable to export what it normally does to the rest of the world, including oil, coal, gas and precious metals, especially platinum group metals (PGMs), this will push the prices of these commodities higher still," said Jammine.

Russia is the second largest producer of PGMs after South Africa.

And given the natural gas ties to Russia, many European utilities have started importing more thermal coal – yes coal, which over the past few years has been shunned increasingly by the world as it takes up cleaner energy sources.

How important are fossil fuels, coal, oil and gas to the world economy, you ask? Well, according to Afriforesight's Vinesh Chetty, in 2020 crude oil provided 31% of the world's primary energy consumption, thermal coal provided 27%, while 25% came from natural gas. The combined 83% of energy from fossil fuels far dwarfed the energy from hydropower, renewables or nuclear generation.

According to Jammine, in a world moving to energy efficiency and a just transition to carbon neutrality, investors had stopped investing in new coal, oil and gas ventures, even though it remained highly dependent on them today. "We have not yet succeeded in a just transition and in the interim there could be significant shortages of oil and coal, and that underlies the surge in the price of coal."

However, he pointed out that for the South African economy, the sharp rise in commodity prices would more than compensate for the increase in the price of oil; given that the "value of our mineral exports is roughly three to four times the value of our oil imports".

While this may be great news for miners and energy producers raking in the big bucks, for the consumer footing the bill for escalating fuel prices, this is cold comfort, especially given the knock-on inflation impact.

Interestingly, the just transition phase to carbon neutrality is also giving rise to the development of many new products and technologies to enhance energy efficiency, including developments in electric vehicles.

These new technologies and products rely heavily on minerals and metals. For instance, the development of electric vehicles relies greatly on commodities such as copper, palladium and rhodium. As a leading producer of platinum group metals, South Africa will continue to benefit from surging PGM prices.

The amplified Russia-Ukraine tensions have increased demand for gold as a safe haven for investment. In the recent past the price of gold has surged past the $2000/oz mark.

Soaring commodity prices have been a boon to the South African economy with miners making massive profits. Referring specifically to South Africa's budget, Jammine said SARS had collected R182-billion more in taxes than anticipated. The windfall was largely due to increased payments by the mining industry as a result of mining companies having benefitted from the current surge in commodity prices.

Still on the topic of energy and energy metals, in this edition we chatted to Prospect Resources MD Sam Hosack about the company's plans following the sale of its flagship project, the Arcadia Lithium project, to Chinese firm Zhejiang Huayou Cobalt (pg12).

We also caught up with the Minerals Council South Africa to find out just how junior and emerging miners are faring (pg 30) and to De Beers about its Diamond FutureSmart programme which underpins its sustainability drive (pg 18).

For our cover story we chatted to Brelko's MD Kenny Padayachee about celebrating 35 years in business, the road to success and the company's growth strategy going forward (see pg 8).

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Aggreko launches world's lowest-emitting power generation system

Mobile and modular power solutions provider, Aggreko, recently launched a revolutionary power system which, it said, will clean up to 99% of controlled emissions in mine power generation.

Aggreko global head of mining, Rod Saffy said the launch of the company's 1300 kW Ultra-Low Emissions package would significantly reduce a mine's environmental footprint without interfering with operations. "Our Ultra-Low Emissions package is a world-class power generation system that reduces practically all of the controlled emissions from generator exhaust streams," Saffy explained.

"Through a combination of a selective catalyst reducer (SCR) and oxidation catalyst, our Ultra-Low Emissions Package cuts carbon monoxide, nitrous oxide and hydrocarbon emissions to create a clean supply of power. Emission levels are 90% lower than the next best available technology on the market. We expect the 1300 kW Ultra-Low Emissions Package will revolutionise the way emissions from power generation are managed in mining and related sectors, greatly assisting them on their journeys to net-zero emissions by 2050."

Aggreko hybrid power plants combine renewables with battery storage and other sources.

Aggreko Power Generators Ultra Low Emissions Package.

Renewable energy power systems in action.

The 1300 kW Ultra-Low Emissions Package is suitable for temporary and long-term use and can be tailored to fit any project situation.

"Mining customers will benefit from knowing their operational emissions will be significantly cut-back, their carbon footprint reduced, and their air quality permitting standards met, ultimately increasing productivity on-site," said Saffy.

IAI updates sustainable bauxite mining guidelines

The International Aluminium Institute (IAI) recently updated its Sustainable Bauxite Mining Guidelines to elaborate on tailings management and longer-term community impacts and initiatives.

The revised guidelines focus on the aluminium industry's drive to ensure that bauxite mining is sustainable and minimises social and environmental impacts during operation and post-closure.

The report identifies key considerations for sustainable bauxite mining, including good governance, community impacts, health and safety and environmental management.

Commenting on the guidelines, deputy IAI director of sustainability, Pernelle Nunez, noted: "Sustainable bauxite mining is not a 'one-size fits all' prescription. It involves managing each risk with the best available technologies and strategies appropriate to the circumstances. These will be influenced by local climatic, geographic and environmental conditions, government policies, the regulatory framework and, importantly, community factors."

Around four to six tonnes of bauxite are needed for every tonne of primary aluminium produced. With demand for primary aluminium strong – the IAI forecasts growth from 64 mt in 2020 to 88 mt by 2050 – demand for alumina and bauxite will also grow.

The IAI recently updated its Sustainable Bauxite Mining Guidelines to elaborate on tailings management.

Janaina Donas, executive president of the Brazilian Aluminium Association (ABAL), said: "As a resource-intensive industry, the sector plays an even greater role as a catalyst of positive change and in the building of a sustainable future. These guidelines showcase successful examples of responsible mining, including operations in sensitive areas like the Amazon region, which demonstrate that it is possible to implement a business strategy that delivers value to society while also reducing the impact on the environment."

The first Sustainable Bauxite Mining Guidelines were produced in 2018 through the efforts of a coalition of global and national aluminium associations and companies. ■

Lithium (Spodumene) discovery on AfriTin Mining license

AIM-listed AfriTin Mining, an African tech-metals mining company with a portfolio of mining and exploration assets in Namibia, has announced the discovery of spodumene within its fully permitted mining license ML 129, situated 11 km of the company's flagship asset, the Uis Tin Mine.

Anthony Viljoen (CEO) commented: "The discovery of spodumene during our current exploration programme is an exciting development that highlights the significant potential of our licence areas in Namibia and provides a promising target for AfriTin's operations within the region. The company intends to conduct an exploration drilling programme on this target during 2022, with the aim of adding to our existing lithium resource at Uis. Lithium from these sources can be of interest to both technical and chemical lithium markets, the latter finding application in lithium-ion batteries."

The discovery of spodumene, the primary mineral used in the production of lithium-ion batteries, was achieved under the company's regional exploration programme over historical mine workings and greenfield opportunities in central Namibia. The mineralised pegmatites have a combined strike length of about 2 km and occur within the adjacent fully permitted mining licence, ML 129. They occur in close proximity to an existing arterial road and fall within the operational limits of the Uis Tin Mine. ■

AfriTin's Uis Tin Mine.

Asante Gold commences mining at Bibiani, Ghana

Exploration and development company, Asante Gold recently received environmental and mine operating permits necessary to commence open pit mining activities at Bibiani, Ghana's newest mine.

Open pit mining operations have started, with a focus on delivery of ore from the Strauss and Walsh satellite pits. Refurbishment of mine haulage roads, safety berms, waste dumps and mining benches are advanced. First ore has been delivered to the run of mine pad, more than a month ahead of schedule, the company said.

Douglas MacQuarrie, CEO, says: "Re-start of open pit mining at Bibiani after 17 years of restructuring and development marks an exciting milestone for Ghana, for Asante and especially for the community."

The Bibiani Mine plans to pour its first gold in Q3 2022 and to produce about 175 000 oz of gold in its first 12 months of operation. Thereafter, the Bibiani Mine plans to produce 220 000 to 270 000 ounces every year for a minimum of seven years.

Asante is planning to initiate development of an underground mine design at the PEA level of study in Q3 2022, with a view to developing an underground mine operation from 2026. This will provide significant overlap with open pit mining operations, which are currently scheduled to proceed into 2029.

Bibiani main pit.

Bibiani plant refurbishment work.

Namibian President Geingob visits Antwerp Diamond Centre

President Geingob of Namibia and Tom Alweendo, Minister of Mines and Energy, recently visited the AWDC (Antwerp World Diamond Centre). The visit included a tour within the Diamond Office, where the president had the opportunity to inspect a shipment of Namibian goods. The delegation also met with AWDC leadership and industry stakeholders.

Namibia is an important trade partner of the Antwerp diamond industry. The Southern African nation ranks as the sixth largest diamond producer in the world. In 2020, the country produced over 1.5 million carats, valued at $720,4-million. The majority of its rough diamond production comes from marine sources: diamonds that are found on the ocean floor as a result of river movements and ancient tidal basin flows.

In terms of trade between Antwerp and Namibia, diamonds play a significant role. In 2021, direct bilateral diamond trade amounted to over $-133 million.

President Geingob of Namibia on a recent visit to the Antwerp World Diamond Centre.

Akobo Minerals enters into partnership with Oromia Bank

Jørgen Evjen, CEO of Akobo Minerals.

Akobo Minerals, an Ethiopian gold exploration and mining company, recently signed a Memorandum of Understanding (MOU) with the Ethiopian commercial bank, Oromia Bank.

Under the terms of the MOU, Akobo Minerals and Oromia Bank will cooperate to develop domestic services related to financing new exploration and mining projects. Together, these services will support the advancement of Ethiopia's domestic mining industry.

Through their collaboration, Akobo Minerals and Oromia Bank hope to become the leading industry mining partner offering operational and financial services, respectively, for new ventures and projects in Ethiopia. Significantly, this co-operation goes beyond general corporate funding facilities and will also encompass community funding opportunities and the rollout of services to rural areas which do not presently have access to modern financial technologies and services.

Jørgen Evjen, CEO of Akobo Minerals, said: "By bringing our combined mining and banking competences and experience to the table, I believe we can offer substantial and innovative services that can further the development of the Ethiopian mining industry and local communities."

Tharisa unlocks value for BEE shareholders

Phoevos Pouroulis, CEO of Tharisa.

Platinum group metals and chrome co-producer producer, Tharisa Minerals, has acquired the remaining 26% shareholding in the company, in a landmark broad-based black economic empowerment (BEE) transaction.

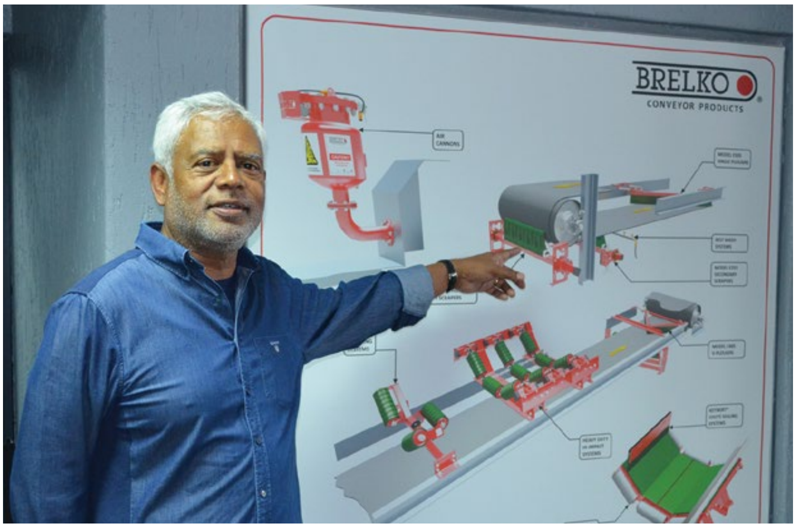
Tharisa offered 13.9-million new shares (equivalent to $25.6 million) in exchange for the 26% of Tharisa Minerals it does not own. Tharisa Mineral's principal asset is the long-life open pit Tharisa Mine, which produces platinum group metals (PGM) and chrome in a mechanised, low cost and energy efficient environment, with product beneficiation taking place on site. The company currently owns 74% of the ordinary shares of Tharisa Minerals, with the BEE shareholders Thari Resources owning 20% and The Tharisa Community Trust owning 6%.

Phoevos Pouroulis, CEO of Tharisa, commented: "We believe this agreement is a landmark transaction. It is truly empowering and in the spirit of the Minerals and Petroleum Resources Act. Local stakeholders have been central to Tharisa's success, and we want to ensure they continue to benefit from the value we create from Tharisa's flagship mine, as well as our other value-add assets. As public shareholders of Tharisa, they will benefit from diversification and the broader success of the company, receive dividends, and create financial flexibility." ■

Tharisa mine.

Brelko celebrates 35 years in business

From being the new kid on the block trying to muscle in on an already well-established segment of the mining business 35 years ago, Brelko is today firmly established as a premium quality supplier of conveyor belt cleaning equipment locally and in the SADC region. Brelko's innovativeness and solutions-driven approach have seen the manufacturer rise to become a supplier of choice to key mining projects which, says Brelko's MD Kenny Padayachee, is an achievement well worth celebrating.



MD Kenny Padayachee pointing to the Brelko product range.

Established in 1987, Brelko has grown from humble beginnings to become a renowned brand. "When we started out 35 years ago, we operated from rented premises in Selby, Johannesburg and in 2009 we were fortunate enough to acquire premises in Booysens, south of Johannesburg. As we grew and expanded the business, we revamped the factory to house cutting edge, custom designed technology, to meet our evolving needs. Our staff complement has grown from 27 people to 220 people. And our mantra of continuous product improvement has seen us refine and improve our range to the extent that we currently have numerous international patents, and trademarks in about 90 countries," explains Padayachee.

Early on, the company identified gold and platinum as ideal sectors that, while tough, would be rewarding given that they contain some of the most arduous and challenging materials to handle.

"We realised that to be successful in these markets we had to continuously enhance and improve our product range. In fact, it was during the early 1990s that an engineer at one of the gold operations in the Carletonville area undertook a survey of the four Brelko conveyor belt cleaning items of equipment to test the efficiency of the products in relation to spillage control.

"According to the results of the three-month survey, the efficiency of our products significantly improved the grades achieved by the mine as the products were able to contain the ore within the conveyor belt. Essentially, if the equipment can keep the raw materials on the conveyor belt as opposed to spilling out, you help the client improve productivity and profitability," explains Padayachee.

Brelko's innovativeness and solutions driven approach have seen the manufacturer rise to become a supplier of choice to key mining projects – Padayachee.

Below: Brelko's products being assembled ahead of shipment to mines.

Right: Brelko designs, produces, installs and services all its products.

A panoramic view of Brelko's manufacturing facility.

This focus of meeting clients' needs has seen the total transfer point spillage control provider supplying its product range to numerous mining projects, including those of Anglo American, Sasol, Exxaro and Sibanye-Stillwater, and has seen the company expand beyond just gold and platinum.

This was done by following diversified mining houses as they developed projects across various commodities, including iron-ore, coal and new age minerals such as manganese, copper and cobalt.

"Brelko continues to be successful in the SADC region – in the early days we identified new projects as they took shape and supplied our products into these projects. We followed platinum development into the Great Dyke of Zimbabwe; coal and gems into Mozambique; diamonds, uranium and magnesium into Namibia, and De Beers as it developed and progressed its diamond operations in Botswana.

In 2002, Brelko took a leap of faith and entered international markets, focusing on English speaking countries initially and establishing an office in Colorado, in the USA.

A year later, it opened an office in the United Kingdom, allowing it to springboard into European countries, including Greece, France, Belgium and Germany.

This followed with master distributors in Australia, South America (Chile, Argentina and Peru) and the Middle East (Dubai and Saudi Arabia).

More recently, after years courting gold projects in Kazakhstan, the manufacturer has made headway and secured an order valued at R8-million.

South Africa accounts for the lion's share of Brelko's business at 50%, with the rest of Africa and the US-Europe each accounting for 25%.

Research and development

Underpinning the Johannesburg-based company's success is its relentless focus on product innovation and continuous investment in improving processes that drive efficiency and enhance product performance.

Brelko has 48 service teams that service its products on mines across the country.

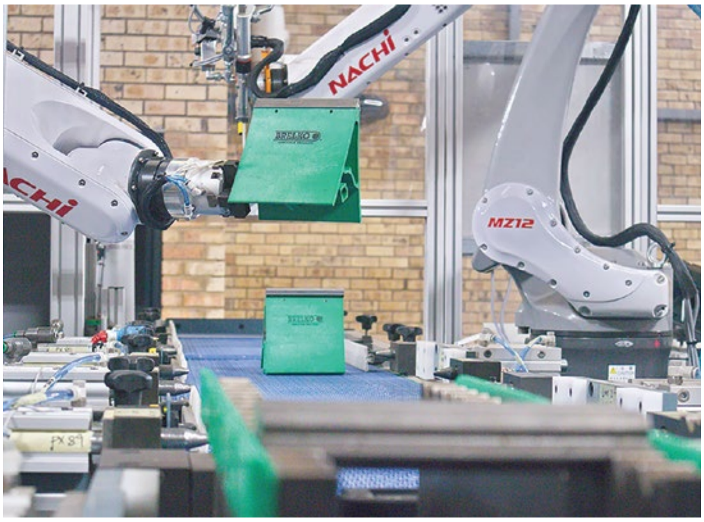
"Brelko's hands-on solutions driven approach requires that we regularly engage our customers, acquiring feedback on the challenges they face in ore transport so we can devise solutions to improve efficiency, and thereby productivity, and ultimately ensure a smooth operational process. In fact, our approach has led to numerous product enhancements which, in turn, have led to us landing an increasing number of contracts," he explains.

Brelko's culture of innovativeness is underpinned by its focus on research and development (R&D), which incorporates weekly R&D meetings where staff thrash out problems and come up with innovative solutions for clients and inhouse improvements.

"It is at one of these R&D meetings, more than

Left: The new robotic gluing and assembly machine improves efficiency, accuracy and production rates.

Below: Brelko's innovative product range helps to improve productivity.



Products being prepared before being sprayed with high-quality paint.

a decade ago, that it was suggested we establish professional service teams for regular onsite inspection at each of the mining operations equipped with Brelko's products. Each team would consist of two qualified specialists who would drive to site daily to monitor and service our equipment and ensure sufficient stockholding for a smooth workflow."

Brelko's strength lies in its people, who continue to evolve the business – Padayachee.

This suggestion was adopted and the move has been a game-changer and a great pay-off.

At Brelko, we take time to carefully unpack the hurdles, looking for the opportunities that may arise – Padayachee.

"For instance," explains Padayachee, "ten years ago, Brelko had product on just six conveyor belts at Anglo Platinum's Mogalakwena mine, but through the dedicated efforts of our service teams, the business has flourished such that by 2018 we had product on more than 210 conveyor belts on site. The same is true for Exxaro's Grootegeluk Coal Mine, where Brelko was initially contracted to provide a few small conveyor belt products – today, Brelko supplies and services more than 186 conveyor belt units at the mine. This is largely thanks to our attentive onsite service teams."

Brelko has 48 service teams that service its products on mines across the country and in the SADC region.

Coupled with this drive for "product perfection" as it looks to be the "Rolls Royce" of conveyor belt cleaning equipment, is the focus on delivering locally manufactured products. This means that Brelko designs, moulds, assembles, packages, distributes and installs its products on mining sites, as well as servicing and maintaining it.

"Our aim is to take local manufacturing to a whole new level and become as self-sufficient as possible. We take absolute pride in the fact that we are a one-stop shop – that we design, produce, install and service all our products," says Padayachee.

Brelko's innovativeness extends to its facility which is increasingly becoming automated.

Apart from expanding the footprint of the facility from 7 500 m^2 to 16 000 m^2 of factory and offices in the past two years, Brelko has injected just over R60-million in factory upgrades, including the acquisition of custom designed equipment.

Its most recent purchase is a R9-million robotic gluing and assembly machine that improves efficiency and accuracy, reduces wastage and significantly improves production rates.

"Like all companies," notes Padayachee, "Brelko experiences challenges, but it is how you view the obstacles and what you do about them that is important. At Brelko, we take time to unpack the hurdles, looking for opportunities that may arise. Take for instance the level five hard lockdowns associated with the Covid-19 pandemic, where sending out our service teams was a challenge. We used this time to progress in-house projects that would otherwise have taken years to complete, such as our spray booth project and new warehouse and dispatch centre."

People power

Brelko's strength lies in its people, who continue to evolve the business. "A case in point is our Friday R&D meetings which are robust, with plenty of ideas for improving the business value chain. Brelko staff are extremely loyal with a large contingent of our employees having worked in the business for decades – in fact, many started off as youngsters straight out of school and rose through the ranks."

According to Padayachee, the company values its relationships with clients and suppliers, going the extra mile to ensure that customers are satisfied and its suppliers are paid timeously, especially its SMME supplier base, which is paid weekly.

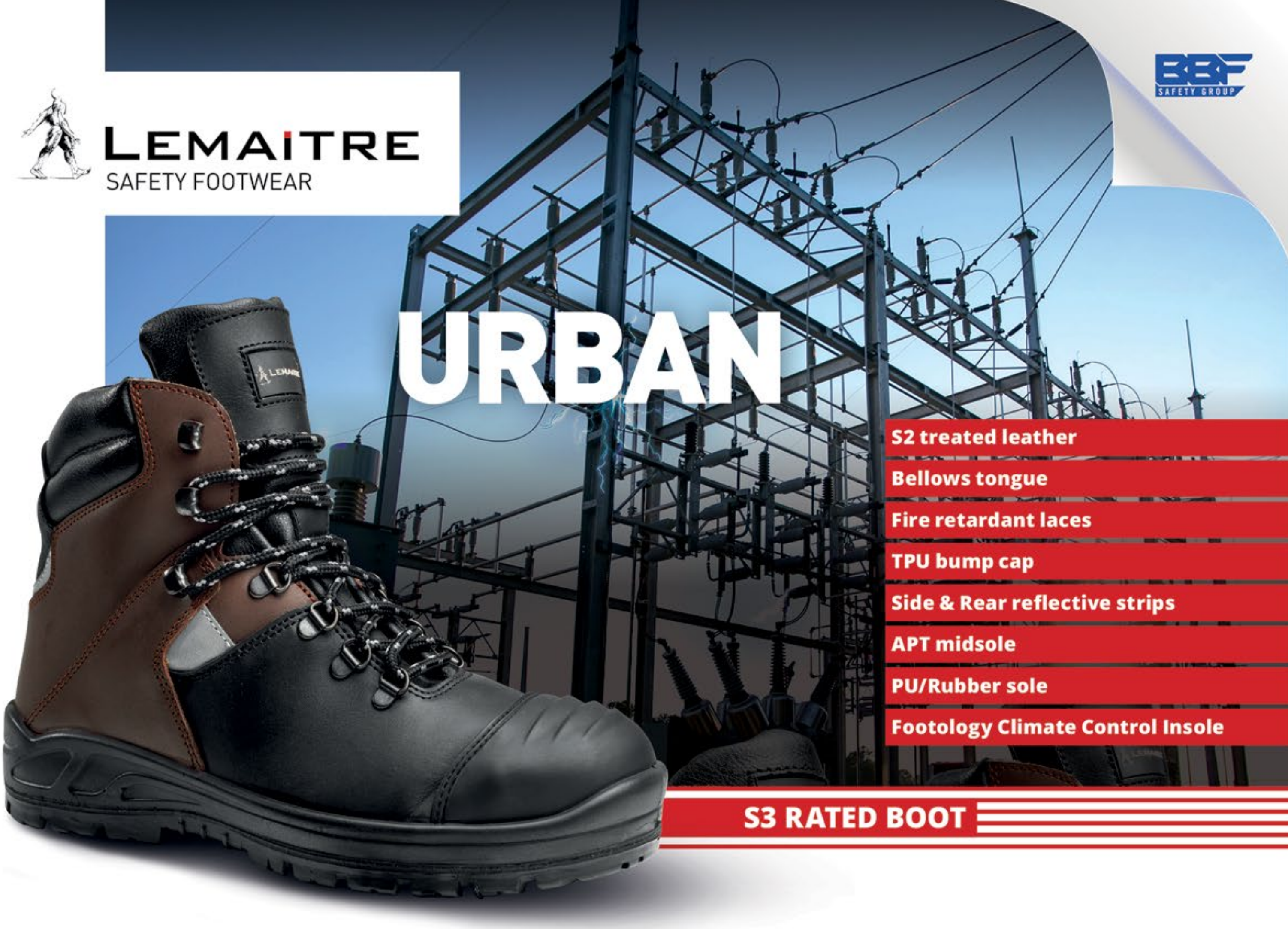
Brelko also has strong relationships with engineering and project houses such as DRA Mineral Projects, Sandvik Mining, Tenova, FLSmidth, Hatch and ELB Engineering.

"We actively invest in our people – staff and clients alike – by affording them in-house training and upskilling opportunities. An improved skills-set translates to improved business and customer service," concludes Padayachee. ■

Brelko supplies products into key local and Africa projects

- ❑ Syama Gold project, south Mali
- ❑ The Kamoa Copper Project, Democratic Republic of Congo
- ❑ Karowe Diamond Mine, Botswana
- ❑ Konkola Copper Mines, Zambia
- ❑ Medupi and Kusile power stations
- ❑ Exxaro's Grootegeluk and Belfast coal mines
- ❑ Sappi Saiccor, KwaZulu-Natal

LEMAITRE
SAFETY FOOTWEAR



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Prospect Resources MD Sam Hosack.

Prospect Resources eyes new opportunities

Following the sale of Prospect Resources' flagship Arcadia Lithium project, located on the outskirts of Harare in Zimbabwe, to Chinese firm Zhejiang Huayou Cobalt, the company is actively investigating new energy metals opportunities. By *Nelendhre Moodley*.

Late last year, Prospect Resources announced the proposed sale of its 87% interest in the Arcadia Lithium project to energy lithium-ion battery material producer Zhejiang Huayou Cobalt (Huayou), for around $378-million.

To date, Prospect Resources has funded all exploration and development activities at Arcadia but took the decision to identify potential partners to fund the next stage to construction completion. Huayou Cobalt is a new energy lithium-ion battery material producer with three major business segments: research, development and production of cathode materials; research, development and production of battery precursor, and development of battery metals resources.

The Huayou transaction delivered the most attractive risk-adjusted, post-tax value outcome for Prospect shareholders through-the-cycle – Hosack.

"Having received a number of competitive offers we concluded that the Huayou transaction delivered the most attractive risk-adjusted, post-tax value outcome for Prospect shareholders through-the-cycle," says Prospect Resources MD Sam Hosack.

In 2016, Prospect Resources acquired the Arcadia hard rock lithium project and undertook extensive metallurgical test work to upgrade Arcadia's ore body, which contains petalite (containing 4% lithium oxide) and spodumene (containing 6% lithium oxide). Arcadia is a high-grade, large-tonnage deposit consisting of a series of stacked mineralised pegmatites which extend for over 3 km of strike length.

According to Hosack, the project represents one of the best untapped lithium projects globally, with an optimised definitive feasibility study already completed. It is estimated that the project will produce an average of 147 000 tonnes per annum (tpa) of spodumene and 118 000 tpa of petalite concentrates during its 18-year life of mine.

In a bid to illustrate project viability, last year Prospect Resources completed construction, commissioning and commenced production on the Arcadia pilot plant. "With the support of Zimbabwe's government, Prospect has developed a world-class lithium project that, under the guidance of a leading global player in Huayou Cobalt, will be developed into one of the world's best lithium mines," says Hosack.

It is expected the transaction will be completed in late Q1 or early Q2 2022. "With Huayou set to become the custodians of Arcadia, the project and Zimbabwe stand to benefit from its capability and balance sheet strength," he adds.

Prospect Resources' Arcadia Lithium project, located on the outskirts of Harare in Zimbabwe.

Seeking new battery and electrification metals opportunities

Even as Prospect Resources is in the process of selling its interest in the Arcadia lithium project, the African-focused exploration and development company is already scoping out new opportunities in Zimbabwe and sub-Saharan African countries. "As we complete the Arcadia transaction and build on our existing experience and portfolio of battery and electrification metal projects, we would love to take advantage of the favourable governance to do it all over again in Zimbabwe, should the right opportunity present itself," says Hosack. Having experienced significant support from the Zimbabwean government in the development of the Arcadia project, he lauds it for 'walking the talk' in ensuring the country is "open for business".

"As we progressed the project towards a finance and production ready phase, the Government of Zimbabwe supported our endeavours in several

Above: The Arcadia Lithium project in Zimbabwe.

Left: Prospect Resources has sold its 87% interest in the Arcadia Lithium project to Zhejiang Huayou Cobalt for around $378-million.

Prospect Resources is already scoping out new opportunities in Zimbabwe and sub-Saharan African countries– Hosack.

ways, including designating Arcadia with National Project Status, processing grant approvals and permits timeously, and declaring the project a Special Economic Zone early in 2019. This support has helped to ensure the project retains its status as one of the best, untapped lithium deposits globally, and ensures that Zimbabwe attracts the right calibre of investor to fund and further develop its lithium industry," notes Hosack.

Although Prospect Resources intends to distribute the bulk of its net sale proceeds to its shareholders, it will retain a cash balance of between AUD$30 million and AUD$60 million to progress battery and electrification metal projects in Zimbabwe and evaluate, acquire and advance new battery and electrification metals projects globally.

"Our growth strategy is underpinned by our proven ability to leverage our capabilities in progressing projects and delivering value, evidenced with Arcadia, where we take the project from discovery and advance it through the development process. We see the largest upside opportunity in securing exploration projects with near term resource targets and with the Zimbabwean government's support, systematically de-risking them, proving up the value with each objective achieved.

"Having the skills and capabilities within the board and team, and substantial experience within the lithium market, we believe we are able to produce favourable outcomes on an accelerated basis, in relation to project development timelines," explains Hosack.

Over the next few years, the company expects to find suitable projects that fit within its strategy. "There will be several key milestones over the next 18 months, including analysis and acquisition of potential projects, exploration programmes such as rock chip sampling, trenching, and drilling as well as technical and economic assessments to systematically de-risk and prove the viability of projects that we may acquire," he concludes. ■

Lithium market

- ❑ Demand for lithium has increased significantly in recent years, primarily driven by decarbonisation and mass adoption of electric vehicles.
- ❑ Major supply deficits have been forecast in the near term, resulting in increases in pricing, and while new supply is incentivised, new projects take time and effort to develop before they become producing assets.
- ❑ While supply and demand dynamics in every market inevitably change over time, Hosack sees a compelling multi-decade opportunity for battery and electrification minerals in Zimbabwe as the decarbonisation movement grows globally.

Prospect Resources completed construction, commissioning and commenced production on the Arcadia pilot plant.

George Bennett, CEO of Rainbow Rare Earths.

Rainbow Rare Earths works to fill supply gap

From a relatively flat rate in 2020, rare earths elements have seen a meteoric escalation in commodity price, a reflection of dawning market realisation that their demand for use in LEDs, permanent magnets, electric motors, sensors, and many other components used in smartphones, flat screens, and cars, is quickly outstripping supply.

Rainbow Rare Earths, a London-listed company with assets in Burundi and South Africa, is working to fill the supply gap. The company announced last month that ongoing test work at the Phalaborwa project in South Africa has provided additional optimisation opportunities for the process flowsheet, and confirmed that the chemical extraction of separated Rare Earth Oxides from gypsum tailings stacked in unconsolidated dumps derived from historic phosphate hard rock mining will be possible.

"The world is waking up to the fact that without key materials and commodities, and a ready supply of them, there cannot be any sustainable energy transition, nor a serious commitment to a global net zero emissions target," says George Bennett, CEO.

"It's all very well to take fossil fuel projects offline, but if there is no reliable supply of what are now called "strategic metals", such as the rare earths used in the permanent magnets that generate electricity in renewable energy turbines – particularly wind – then net zero is an empty promise."

In the past week, the Pentagon announced plans to boost the stockpile of rare earth elements, cobalt, and lithium. This comes in the wake of the US Geological Survey publishing the updated list of 50 mineral commodities (the list includes the rare earths Neodymium, Praseodymium, Terbium, and Dysprosium) critical to the US economy and national security, after an extensive multi-US agency (including the Departments of State, Energy and Defence) assessment. These four rare earth elements are the key rare earths that Phalaborwa will produce.

"Mineral criticality is dynamic and reactive to long term projections on supply chain, identifying vulnerability to potential disruption. While we are an African focused company, the inclusion of Rare Earths in this list as grounds for national security of the world's largest superpower, evidences the need for new and independent supply.

"Currently, 90% of refined rare earth products are supplied to the global market by China. We only have to look at what the events of the past few weeks in Ukraine have done to the gas prices, and to economies on the whole, to see that reliance on one producer, or major producing nation, for strategic commodities has a broad reaching impact on independence and sovereignty.

Core drilling for bulk density and resource definition at Phalaborwa in 2021.

Phalaborwa Pumping Dam Gypsum residue stack B, pumping acid water off the stack for core resource drilling in 2021.

"The exciting thing about the Phalaborwa test work is that the data we are collating in conjunction with ANSTO minerals and K-Tech, is enabling us to fully optimise the flow sheet, with potential for 99.5-99.9% purity separated rare earth oxides. The project is advancing the chemical processing of these critical minerals from historic gypsum waste, in order to leave pure, 'clean' gypsum stacks, and provide a key resource necessary for the green transition. Phalaborwa is also unique in that it has low levels of Thorium and Uranuim, resulting in much lower radioactivity than other deposits across the world.

"We have some exciting news in the pipeline and are bolstered by the latest news from the US proving the key role that rare earths will play in the future of the global economy and in the green transition," says Bennett. ■

The Permanent Magnet alternator used to generate electricity in wind turbines, converting the kinetic energy of the wind into electrical energy.

Coal, oil and gas are still doing well in 2022

By Vinesh Chetty – deputy chief economist & head of energy commodities at Afriforesight

Late 2021 and early 2022 have shown that the world is still reliant on fossil fuels for energy. Prices have increased rapidly, making mining and extracting thermal coal, crude oil and natural gas very profitable.

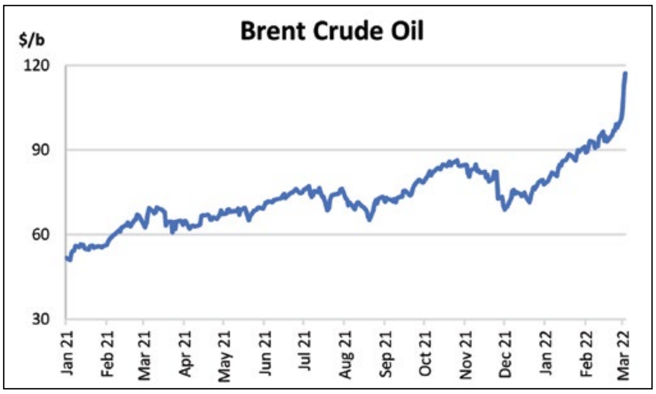
While many companies and investment firms have chosen to turn their backs on fossil fuels, coal, oil & gas continue to be pivotal to the world economy. In 2020 crude oil provided 31% of the world's primary energy consumption, thermal coal provided 27%, while 25% came from natural gas. The combined 83% of energy from fossil fuels far dwarfed the energy from hydropower, renewables or nuclear generation.

Since the start of 2021, fossil fuel prices have increased rapidly on rising demand and tight supply. While most of the world's attention has been on rising crude oil prices, natural gas and thermal coal prices have also increased rapidly. After the Covid-induced demand reductions of 2020, consumption of all three fossil fuels ramped up in 2021.

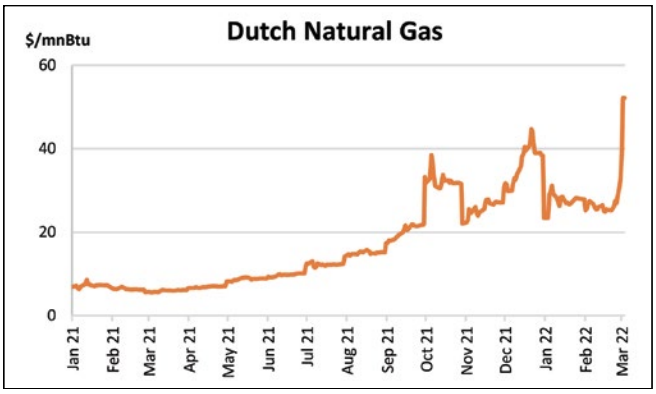
While demand for crude oil grew across multiple sectors on the back of an improving global economy, supply remained constrained by the OPEC+ alliance (OPEC+ is a group of oil exporters, led by Saudi Arabia and Russia). While OPEC+ started to pump more crude oil in 2021, they did this at a slower rate than rising demand, leading to increased prices. Diesel demand increased on strong growth in the mining, freight and agricultural sectors. Petrol demand rose on strong travel demand, particularly after cancelled 2020 holiday plans due to Covid lockdowns. While jet fuel demand trailed other fuel products, it too saw an increase in demand in 2021 as more international flights were allowed.

The requirement for natural gas increased in 2021 due to rising industrial activity as well as low renewable energy generation, particularly in Europe. As the demand for electricity grew and renewables failed to hit their generation targets, European utilities turned to using more natural gas-fired power. While Europe generally receives most of its natural gas imports from Russia via pipelines, supplies were often lower than expected, forcing Europe to buy more liquified natural gas (LNG) on the seaborne market. Piped natural gas from Russia is relatively inexpensive and LNG, which is more expensive, can see wild price swings. Europe drove up LNG prices in 2021 as it bought in large volumes from a tight market, where most cargoes are sold on long term contract to Asian customers.

Facing rapidly rising natural gas prices, many European utilities started to import more thermal coal and where Europe had generally been moving away from coal use in recent years, when faced with low renewable availability and extremely high natural gas prices, many countries went back to reliable coal-fired baseload. Coal prices increased due to strong demand from Asia. India experienced severe coal shortages at many power plants during 2021, leading to increased imports and high prices paid. Power utilities in Japan and South Korea also



Source: ICE through Refinitiv



Source: ICE through Refinitiv

Demand for coal remains strong.

ramped up thermal coal imports due to extremely high natural gas prices and fears of LNG supply shortages, owing to European competition. Global thermal coal supply worsened further in January 2022, when Indonesia temporarily banned exports to improve domestic power plant inventories.

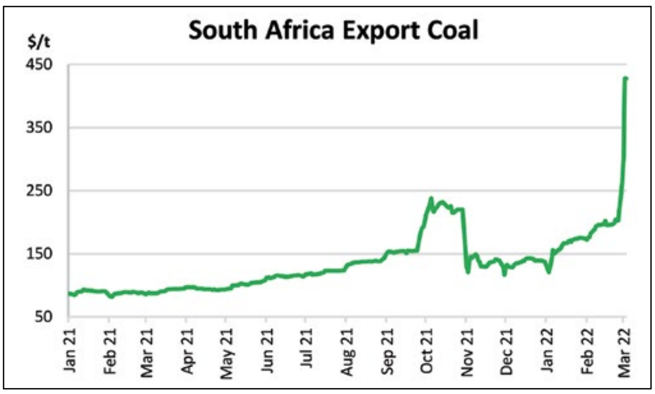
Although rising fossil fuel costs have been harmful to heavy energy industrial users, they have been a boon to miners and extractors. Internationally, oil & gas majors raked in massive profits. The so-called Supermajors (BP, Eni, Chevron, ConocoPhillips, ExxonMobil, Shell and TotalEnergies) turned excellent profits in 2021 owing to high oil & gas prices. In the South African context, the advantage of higher fossil fuel prices will be seen in thermal coal miners' results. While Exxaro and Thungela have not yet released their 2021 financials, both have released trading statements showing excellent expected 2021 earnings. Unlisted Seriti should also have done well in 2021, as should smaller listed coal companies such as MC Mining and companies with large exposure to coal, like African Rainbow Minerals.

Early 2022 has seen fossil fuel prices continue to increase. Russia's invasion of Ukraine has again created energy supply fears, as Russia is a major supplier of all three fossil fuels. At the beginning of March 2022, Brent crude oil was trading at over $110 per barrel, Dutch natural gas (the European benchmark) had reach $50/mnBtu while thermal coal has rocketed to over $400/t, see graphs below.

These prices were up sharply from the start of February. Crude oil is up 29% from early February, while natural gas has increased by 95% and thermal coal is up an eye watering 143%. Compared to a year ago, crude oil is up by 100%, natural gas up over 700% and thermal coal up over 400%. These increases show that in times of trouble, energy utilities return to tried and tested energy generation methods and are that they are willing to pay incredibly high prices to diversify their supply away from Russia. While Russian energy exports have not themselves been sanctioned, it is difficult for buyers to purchase and receive goods from Russia. Making payments is tricky due to sanctions on Russian banks and many shipping and insurance companies have chosen not to deal with Russian products. These events make it incredibly profitable to be an energy supplier from outside of Russia.

The world's return to fossil fuel since 2021 shows that these fuels remain reliable at times when energy is needed. The price increases of 2021 and 2022 show that demand remains strong while the announced, and expected, company profits explain that fossil fuel extraction and mining is a business worth staying in.

Updated 03 March 2022



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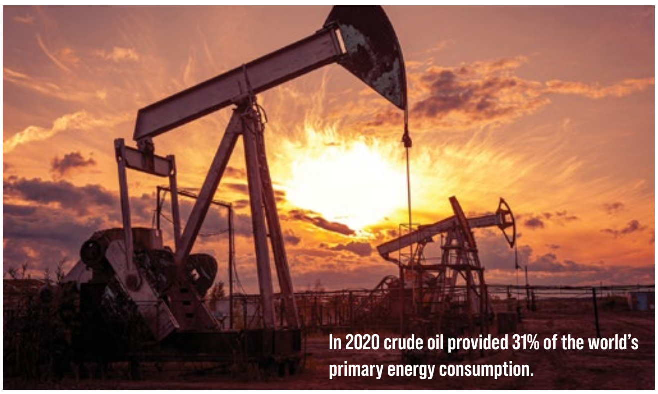


In 2020 crude oil provided 31% of the world's primary energy consumption.

De Beers is future ready with Diamond

Technological advancements continue to underpin the clean, green sustainable drive as businesses push the boundaries in search of innovative ways to reduce their impact on the environment, lower their carbon footprint, improve productivity and drive the agenda beyond zero harm. Diamond miner De Beers Group is walking the talk, using Diamond FutureSmart Mining, an innovation-led approach to carve out a sustainable future for mining, writes *Nelendhre Moodley*.

De Beers Group CEO Bruce Cleaver signs the company's Safety Pledge at the CEO Safety Summit.

Diamond FutureSmart Mining is set to play a key role in De Beers Group's future as it combines technology and digitalisation to deliver a new approach to sustainable mining. This focus aligns with expectations from consumers, communities and stakeholders for miners to do business in a way that takes cognisance of issues related to the natural environment and sustainability.

"So important is sustainability that our recently released *2021 Diamond Insight Report* identified sustainability as a key mega trend across all consumer sectors," says De Beers Group head for safety and sustainable development, Dr Urishanie Govender.

The top five sustainability considerations for diamond consumers in the study were protection of the environment, fair worker treatment, conflict-free sourcing, supporting local communities and diamond origin.

"Consumers want to ensure that the diamonds they purchase reflect their values. They now see responsible business and sustainability considerations as ranking alongside the quality and design of their jewellery in terms of their importance to a purchase decision. Our approach to sustainability – *Building Forever* – seeks to meet consumer expectations in the various aspects of our work. For example, when it comes to our goals to Protect the Natural World, we are committed to being carbon neutral across all our operations, reducing our water footprint by 50% and achieving a net positive impact on biodiversity – all by 2030. We are also using the latest technology to support provenance programmes that will communicate the origin and impact of every diamond we discover and sell," she explains.

Given the enhanced global focus on sustainability, De Beers Group established its Building Forever Sustainability Framework which targets the creation of long-term positive impacts on the environment, communities, industry ethics and equal opportunity.

"Building Forever sits at the heart of our business strategy and targets our ambition of being the pioneer of a new diamond world. As such, we are rolling out a number of sustainability initiatives under this programme," explains Dr Govender.

One such initiative is the implementation of a Carbon Neutral Roadmap.

"The development and implementation of the Carbon Neutral Roadmap has progressed significantly, with a Group-level strategy for Scope 1, 2, and 3 in place, and detailed Carbon Neutral Roadmaps already developed for Debswana, Namdeb, and Debmarine. A detailed action plan to get us to carbon neutrality across our operations by 2030 is being implemented – the plan centres on the delivery of the tools, resources, and knowledge needed. Added to this, is a Scope 3 baseline assessment and strategy that looks at the Group's indirect emissions along the diamond value chain that has also been completed," says Dr Govender.

Greenhouse gas emissions are categorised into three groups or 'scopes' by the most widely-used

FutureSmart

Venetia Mine with Venetia Underground Mine shaft in the background, South Africa.

Dr Urishanie Govender De Beers Group Head of Safety and Sustainability.

Gary van Eck Group Principal Safety Lead.

international accounting tool, the Greenhouse Gas (GHG) Protocol. Scope 1 covers direct emissions from owned or controlled sources while Scope 2 covers indirect emissions from the generation of purchased electricity, steam, heating and cooling consumed by the reporting company. Scope 3 includes all other indirect emissions that occur in a company's value chain.

Diamond FutureSmart – building next generation operations

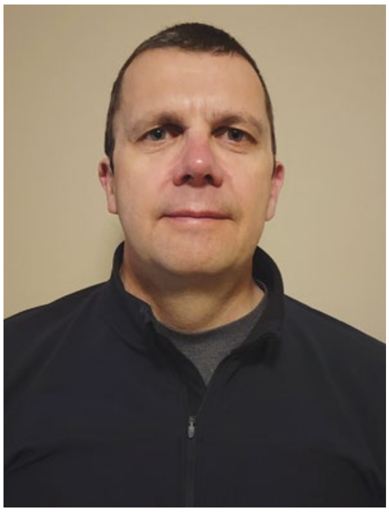
With diamond deposits getting older, deeper and a lot harder and more expensive to mine, De Beers Group is focused on implementing "the best and smartest technology" to help deliver on its projects.

According to Marc Lincoln, project manager for Diamond FutureSmart Mining, De Beers Group is pioneering innovations for its future mines using technology to change the current mining paradigm and significantly reducing the footprint of the mining process.

"Adopting the Diamond FutureSmart strategy allows us to undertake precision mining which, for instance, promotes minimal use of energy, water and capital. In this way, we are able to address several issues, including a smaller footprint and reduced wastage," he says.

Among the initiatives underway to dramatically reduce the footprint of new mines, De Beers Group will use modular plants and dry stack process waste, which will eliminate the need for extensive tailings disposal dams.

The miner is also eyeing renewable



Marc Lincoln Project Manager Diamond FutureSmart Mining.

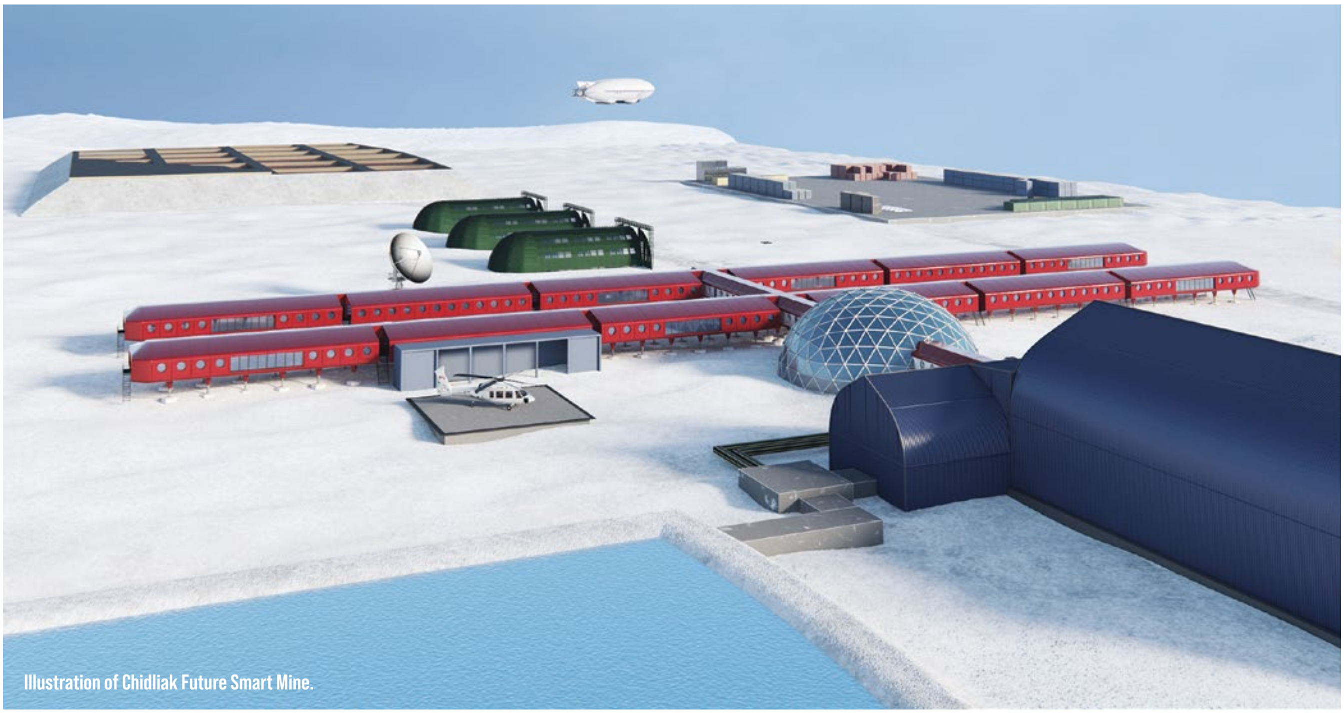


Illustration of Chidliak Future Smart Mine.

Illustration of Chidliak Future Smart Mine.

energy initiatives to help it to meet its climate change targets.

Although current operations are heavily reliant on fossil fuels to power operations, plans are in place to move to renewable energy. De Beers Group is already progressing preparation for an on-site solar project at Venetia mine in Limpopo – South Africa's biggest diamond mine. The 60 MW solar PV project, which will produce around 150,000 MWh/year, is scheduled for commissioning before 31 December 2024.

De Beers Group is also looking to adopt hydrogen to power its equipment. Its parent company, Anglo American, is currently piloting the use of a hydrogen truck at its Mogalakwena mine in the Limpopo province.

"This is an innovation that De Beers will adopt at its diamond operations in the near future," says Lincoln, who adds that such initiatives will go a long way towards simplifying the process and reducing costs when a mine reaches the end of its life.

The world's largest diamond recovery vessel, the *Benguela Gem*.

New diamond initiatives targeting FutureSmart

The development of De Beers Group's wholly-owned Chidliak deposit in Canada is underpinned by the Diamond FutureSmart strategy, says Lincoln.

The project is currently at prefeasibility study stage with the Diamond FutureSmart team undertaking desktop studies related to mining, energy, transportation and remote technology to ensure that the project meets and surpasses its sustainability goals.

De Beers Canada acquired the Chidliak project in September 2018 and is targeting production from Chidliak by as early as 2030.

"Chidliak will have a significantly smaller footprint when compared to traditional operations. Our vision is that it will be fully powered by renewable energy, equipped with remote connectivity, a remote operating centre, operate in real time off-grid and have fewer people working on the mine," explains Lincoln.

Further to this, the diamond miner is busy developing the Venetia Underground Project (VUP) which is now roughly 60% complete and set to deliver first production sometime between Q4 2022 and Q1 2023.

The VUP will extend the life of Venetia mine up to 2047. Over the course of its life, it will treat about 134-million tonnes of material containing an estimated 88-million carats, translating into about 5,9 mt per annum.

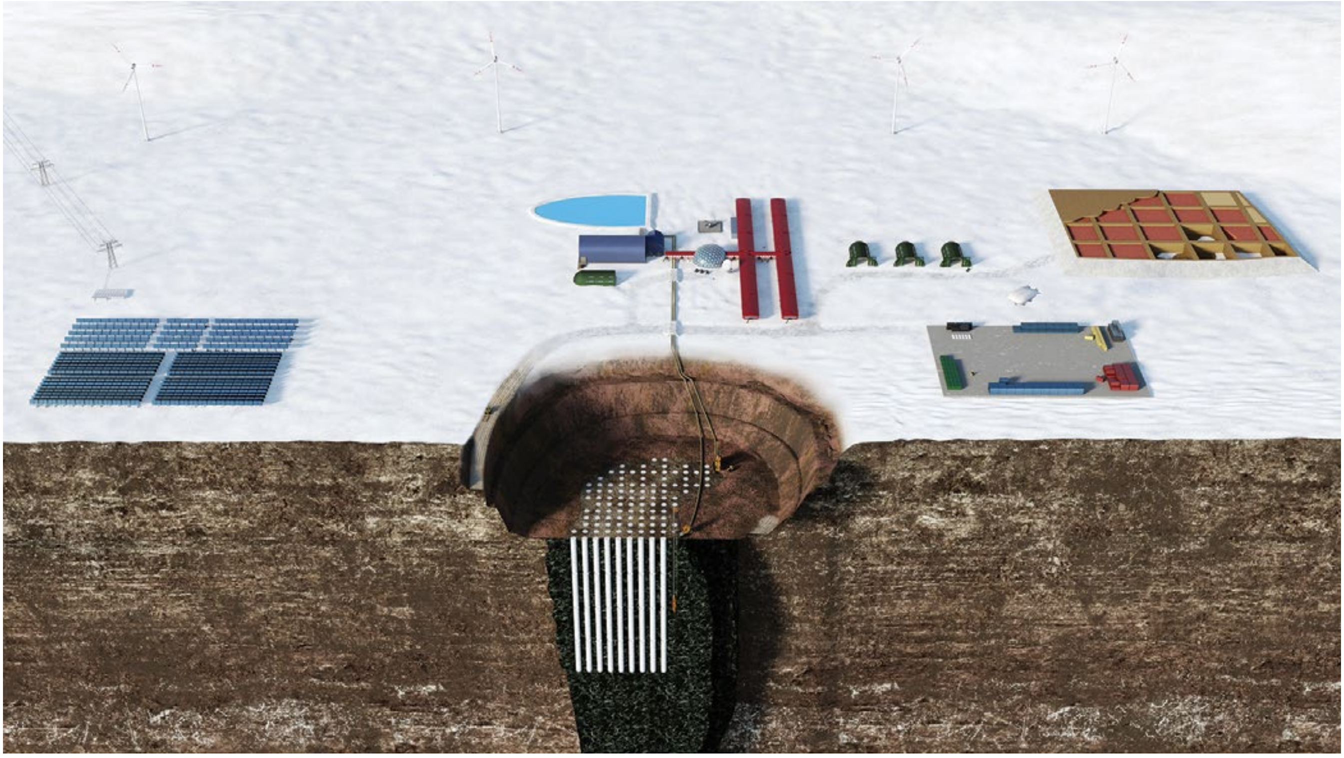


Illustration of Chidliak Future Smart Mine.

The $2,2-billion VUP is the single biggest investment in South Africa's diamond industry in decades.

Also on the agenda is official inauguration of the world's largest diamond recovery vessel – the *Benguela Gem* – this month.

The new 177 m vessel which recovers diamonds from the seabed at a depth of 90 – 150 m, will increase offshore diamond production in Namibia by around a third, explains Lincoln.

Pioneering Brilliant Safety

Hand-in-hand with its drive for a future with sustainability at its heart is De Beers Group's focus on safety, which sees the company targeting "Beyond Zero Harm".

According to Gary van Eck, Group principal safety lead at De Beers Group, the miner's strategy is to transform the safety culture from reactive to inherent, given that safety permeates across all facets of its operations.

To achieve its ambition of going Beyond Zero Harm, De Beers Group has embarked on a journey to Pioneer Brilliant Safety – a new safety initiative based on the 'four Cs' of culture connectedness, cultivation of values and competence. Together, these will work to underpin De Beers' safety performance.

"We believe that people are our strongest link and want to ensure that safety is inherent in all that we do. We aim to take safety beyond the mine fence into our homes and communities."

To achieve this, De Beers is harnessing digitisation to improve its decision-making capabilities and adopting technology to automate functions such as critical control monitoring and data analysis and to drive the adoption of relevant action.

"Underpinning our safety initiative is the De Beers Technology 4 Safety (T4S) programme which was developed based on the principle of safer, smarter, and better to ensure that critical controls are proven effective 100% of the time".

To make sure that its safety culture is well embedded and that everyone is working to eliminate risk proactively, the miner has implemented high potential hazard (HPH) reporting which is used to proactively identify risks. The learnings from the report are shared with all its employees.

"In 2018 we embarked on a programme to eliminate fatalities by identifying the risks at the workspace that caused the fatalities. A key part of the programme was to foster open, honest relationships and focus on psychological safety to ensure all individuals know that they have the right to speak up and to stop work at any time if they believe it not to be safe. In this way, individuals felt safe enough to identify and report risks before the risks became incidents, injuries or fatalities. The initiative has been so successful that last year alone, 921 HPH incidents were identified and reported before they could cause harm."

"By adopting these safety measures, we seek to remove people from catastrophic risk situations and eliminate fatalities," says van Eck. ■

De Beers Diamond FutureSmart mining

- Diamond FutureSmart Mining is De Beers Group's innovation-led approach to sustainable mining
- These are the step-change innovations set to transform the nature of mining – how De Beers Group sources, mines, processes, moves and markets its products.

Pilot Crushtec leans on mining as construction

On the back of soaring commodity prices, miners and mining contractors are scrambling to unlock increased production output and are turning to larger fleets to do so, says equipment supplier, Pilot Crushtec.

Francois Marais, director sales and marketing at Pilot Crushtec.

Charl Marais, sales manager at Pilot Crushtec.

Although the sale of unit quantities has decreased, the scale of the units sold has dramatically increased, with Pilot Crushtec selling "far more machines" that are capable of 450 – 600 tph and greater in production quantities, than machines sales within the 150 – 200 tph range.

"The biggest impact on our business has come from our mining contracting clients who have had to swiftly upscale their fleets in order to honour new mining contracts as mining majors look to capitalise on robust commodity prices. The slack in the construction sector has seen the aggregates business, which accounted for 50% of business, now accounting for just 20% – 30% and mining taking the lion's share at roughly 70% of business," director sales and marketing at Pilot Crushtec Francois Marais, tells *Modern Mining*.

Marais is quick to point out, though, that there has essentially been no structural change in the business in as much as there has been a shift in focus and, given Pilot Crushtec's speedy turnaround times in fleet delivery and extensive stockholding, it has been a smooth transition.

The Lokotrack LT120E is a mobile jaw crusher especially for primary crushing; this hybrid crushing plant can be operated by plugging into an external network or by the 420 kVA onboard diesel generator.

The equipment supplier has an extensive reach in Africa, supplying equipment to both the mining and construction sectors as far afield as the Democratic Republic of Congo. While Zambia, Zimbabwe, Botswana, Namibia, Mozambique and Madagascar remain key areas, the company also exports to dealers in Australia, New Zealand, Switzerland and the UK.

"We have a far-reaching client base but the core of our business is really focused around South Africa and the neighbouring region. The scale of the projects into African territories in terms of the aggregates business has been fairly significant and far stronger than it has been in South Africa. Certainly, the construction sector in neighbouring regions has been more robust, especially in the DRC, which has a strong construction sector pipeline of projects currently being rolled out."

However, equipment sales into Botswana, Namibia and Zambia have largely been driven by commodities-related applications.

2022 outlook

Pilot Crushtec remains upbeat about the year ahead, given the resurgence in demand for aggregates, with a number of road and commercial construction opportunities being rolled out and the continued hope that the South African government infrastructure spend will finally filter through.

With industry pundits forecasting strong commodities demand over the next few years, the equipment manufacturer believes that global tensions will also play an important role in entertaining robust demand, "certainly over bulk commodities such as coal and iron ore," says Marais.

"We expect the change to green energy will continue albeit at a slower pace, which is unfortunate,

sector recovers

Installation and commissioning of the new Metso HP300 cone module.

The Lokotrack ST2.8 & ST2.8E has the biggest eccentric throw on the market to make it the best unit for the screening of top soil, demolition waste and river gravel.

The Lokotrack LT330D mobile cone crusher is an electric-driven mobile crushing and screening plant that combines a cone crusher and a screen on the same chassis.

but this means that coal will continue its bull-run in the short-to-medium term (12 – 24 months). For us, the region is easy to access and service and we have been doing so for the past 30 years," says Marais.

Lending a helping hand to junior and contract miners

On the back of strong commodities demand, expectations are that more junior and contract miners will potentially enter the sector. In fact, in the recent past, there has been a definite increase in the number of new junior miners entering the fold, especially in the coal sector.

"Over the past 30 years, we have dealt with a number of contractors who are small-scale emerging miners in their own right. These miners don't have massive resources, huge infrastructure such as fixed plants, or sometimes even a mining right. Often, the new junior and contract miner does not have the knowledge to make comparative assessments on available equipment options and we have assisted those who require guidance to select the correct equipment to match their contract requirements," explains Marais.

While well-established mining majors have extensive in-house resources related to technical knowledge and expertise within their core teams, the same cannot be said of junior miners and mining contractors.

And unlike mining majors who operate large fleets and have service and maintenance contracts and equipment replacement policies in place, the emerging miners often enter the market by securing contracts with little or no experience and certainly no fleet of equipment – often purchasing the required equipment for specific contracts.

"It is critical that mining contractors collaborate with suppliers or OEMs who have the depth of understanding of these market differences and the technical insight to provide the most suitable solution. For Pilot Crushtec it is about so much more than just selling a piece of equipment to an end-user – to us it is about ensuring that the equipment matches the contract throughput requirements while providing the assurance of optimum performance and reliability, coupled with the necessary technical backup when needed. Over the years, we have guided numerous junior and contract miners through the process of upscaling operations, running them successfully and ensuring they deliver on their tonnages every month. Our approach targets mutual success, both for ourselves and our clients."

Equipment trends

According to Charl Marais, sales manager at Pilot Crushtec, aside from miners focusing on safety and requiring that equipment has the latest safety features, another key trend influencing the equipment market is an increasing demand for dual power units that are able to operate independently or to be linked to an external power source. The advantages associated with dual power units are lower costs and a reduced environmental impact.

"Increasingly, our contracting clients are opting for dual power equipment – this works in our favour as Metso has an extensive range of jaw and cone crushers that come complete with a dual power solution. The dual power kits offer ease of maintenance and ease of onsite equipment mobilisation," he explains. ■

Pilot Crushtec

- ❑ Pilot Crushtec supplies a full range of cost-effective, heavy-duty, fit-for-purpose jaw, cone and impact crushers as well as screens, feeders, conveyors, mobile lighting plants and dust suppression cannons.
- ❑ These products are ideal for secondary and tertiary applications in quarrying, mining, recycling, infrastructure and construction.

Crushers and materials handling equipment from its range of mobile tracked and semi-mobile, skid-mounted equipment crush and move millions of tonnes of:

- Aggregate
- Mine ore
- Construction and demolition (C&D)
- Waste material
- Blasted rock and river gravel

Leveraging Sandvik's collaborative approach

In today's uncertain world, the importance of making correct procurement choices, especially those that carry large investments, cannot be stressed enough. For their big-ticket surface drilling equipment purchases, mining contractors can leverage Sandvik Mining and Rock Solutions' collaborative strategy to ensure long-term business success.

Vanessa Hardy, business line manager - surface drills at Sandvik Mining and Rock Solutions.

Equipment selection is a principal factor in the overall success of mining contractors. Sandvik Mining and Rock Solutions' strategy of offering not only a wide range of surface drills, but partnering with customers to understand their unique application/operational needs and providing a fitting solution, ensures increased uptime, productivity, safety and, more importantly, profitability for mining contractors.

As the first unit operation in the mining process, explains Vanessa Hardy, business line manager surface drills at Sandvik Mining and Rock Solutions, the drilling function sets the scene for the efficient execution of other downstream processes such as blasting, loading and hauling, as well as crushing and screening. Poor drilling thus poses increased risk of production losses and safety incidents.

Wide range

To meet mining contractor's diverse needs, Sandvik Mining and Rock Solutions offers a wide range of boom drills, catering for both construction and mining applications. On the mining front, the range starts from the Pantera™ DP1500i to the larger Leopard DI650i, capable of drilling hole diameters from 115 to 227 mm. In fact, the most prominent models in the mining range are the Pantera DP1500i and the Leopard DI550 and DI650i.

AutoMine for surface offers key advantages such as increased operator comfort and safety, while getting optimal performance from the machine.

The Pantera DP1500i is a top-hammer drill capable of drilling holes with diameters from 115 to 140 mm. Its versatility and the ability to tram around sites makes it the widely preferred solution on opencast mines across southern Africa," explains André Blom, key account manager, Surface Drills, Sandvik Mining and Rock Solutions.

The Leopard DI550 and DI650i are down-the-hole (DTH) drills ideal for production drilling in medium to large open pit operations. They are mostly deployed to drill 140-, 165- and 172-mm hole diameter sizes.

Selection matters

The key to drilling success hinges on the selection of the right equipment for the right application. Sandvik collaborates with customers to ensure they have the correct machine for their unique site requirements.

"Poorly drilled holes lead to substandard outcomes – poor fragmentation, uneven pit floors, substantial amounts of oversize rock – thus negatively impacting on load and haul operations as well as the efficiency of the crushing and screening process," says Blom.

The secret, adds Hardy, lies in selecting the right machine for the right job. "An incorrectly selected drill won't achieve desired blast outcomes – it's as simple as that," she says.

"We expect customers to know what they need for their application, but in most cases our experienced sales team works closely with our customers to ensure they have the right machine for their application and operational conditions."

Aftermarket

In today's operating conditions, customers should do their research before they make crucial buying

for contract mining success

Left: The Leopard DI550 and DI650i are down-the-hole (DTH) drills ideal for production drilling in medium to large open pit operations. Right: The Pantera DP1500i is a top-hammer drill capable of drilling holes with diameters from 115 to 140mm.

decisions, urges Hardy. Of critical consideration for the contract miner should be the service delivered after the product has been supplied.

"We believe that a machine is only as good as the aftermarket support provided," says Hardy. "This approach has been a key differentiator for us and a major business driver in recent years. Based on this collaborative approach, we have seen increased business growth in the surface division in the past few years, culminating in our record year in 2021."

Hardy says customers can make peace with infrequent machine breakages, but it is how the supplier resolves the problem that makes all the difference. Amid increasing cost pressures, she says, mining contractors must prioritise a supplier that is sensitive to the cost of downtime and low productivity.

Technological advancement

The continuous rollout of modern technologies – anchored by trends such as automation and digitalisation – is changing the face of drilling. With its AutoMine automation system for its iSeries range of intelligent drill rigs, Sandvik Mining and Rock Solutions is a leader in this area.

Hardy says automation represents a new era in safety outcomes, given its ability to take operators out of harm's way. Automation, she adds, has opened doors for remote working, with options ranging from an operator standing on the bench within line-of-sight of the rig, to operating from a control room which can be kilometres away from site.

"The key advantages are increased operator comfort and safety, while getting optimal performance from the machine. The range of sensors and automatic settings – which allow the machine to operate at its best – also protect the equipment from being pushed too hard. This, in turn, reduces maintenance costs and lowers total cost of ownership," says Hardy.

Although customers in Africa have expressed interest in automation, Hardy says the uptake is still incredibly low. "However, we identify the need, and are ready whenever the customer is," she says.

Training

As the complexity of machinery increases, so too does the need for operator training to ensure safe and efficient operation of machines. Given that technological advancement is an ongoing process at Sandvik Mining and Rock Solutions, Hardy says the company continuously evolves its operator training regime to keep up with continual advances in technology.

"Operator training is crucial. We believe the operator is the difference between the best or the worst reputation of our machine," says Hardy. "For every machine sale, we offer OEM-certified training packages. For larger and more complex machines such as the Leopard™ DI650i, operators are afforded a minimum of 20 days' training."

Electra Mining

Visitors to this year's Electra Mining Africa exhibition, scheduled for September 5 – 9, will learn more about the new Pantera™ DP1600i, the big brother to the Pantera™ DP1500i.

"Still to make its way to the local market, this machine offers the highest power in its class for improved penetration rates, and it can be customised with a variety of options to meet specific requirements. It drills holes with diameters from 102 to 178 mm," concludes Blom. ■

The DP1600i offers the highest power in its class for improved penetration rates, and it can be customised with a variety of options to meet specific requirements.

Moolmans cementing its position as Africa's premier contract miner

Earlier this year, President Ramaphosa declared that "Mining is vital to our economy and will continue to be for the foreseeable future." He added that we should "grasp the opportunities that exist in this sector so that mining can help guide our path to a more inclusive and equitable economy".

Moolmans offers comprehensive services in both surface and underground applications.

As a contract mining company with more than 60 years' experience across the African continent, Moolmans understands better than most the role that mining can play in helping achieve national development goals. Its vision, closely aligned to that of its parent company, the Aveng Group, is to provide a better life for its stakeholders, which include shareholders, employees, customers and the communities that host its operations.

Offering comprehensive services in both surface and underground applications and across various commodities, Moolmans has earned a solid reputation in the industry for exceptional reliability and performance.

"For us, being Africa's premier contract miner means that not only do we demonstrate the highest standards of safety, keen environmental management and exemplary social responsibility but also that our people love working for us, our host communities celebrate our presence, and our customers choose us to execute large and complex projects," says Jerome Govender, Moolmans' Managing Director.

A renewed focus on increasing work in hand has seen Moolmans tendering for contracts for existing clients and new projects, both in South Africa and beyond the country's borders, with a specific focus on West Africa and SADEC countries.

"We are thrilled that in the past few months, we have successfully concluded a number of high-value contract renewals at some of our largest projects," Govender says. "This is testament to the value-added relationships we have with our customers and the confidence they have in our abilities to deliver according to plan."

With decades of executing quality projects for blue chip customers and a history of working in remote and difficult environments, Moolmans' success is based on several key factors.

A relatively new but strengthened executive team brings diverse expertise and extensive experience, along with a new energy and innovative ideas, to invigorate growth of the business. In addition, the mining company's senior operational team has a combined experience of almost 500 years, with each member averaging around 20 years in the industry. Complementing this is a workforce of more than 3 000 employees, including – among others – skilled and experienced operators, disciplined project managers, qualified engineers, SHEQ professionals and a range of support staff, all grounded in a culture that is completely customer centric.

"We pride ourselves on our collaborative approach, working closely with our customers and

Right: Moolmans is a contract mining company with more than 60 years' experience across the African continent.

Below: Mining is vital to our economy.

Above: Moolmans implements advanced control technologies for notable improvements in recovery for key customers.

Right: The company prides itself on its collaborative approach, working closely with its customers and suppliers.

suppliers to identify and implement improvements that will drive down unit costs and optimise efficiencies," explains Govender.

Importantly, Moolmans operates one of the largest and most diverse fleets of mining equipment in Africa and, through a restructured Aveng, has the balance sheet strength to supplement that fleet with specialised and additional equipment if a project demands it. Further, the company employs sophisticated maintenance software to achieve the highest levels of equipment reliability and volume production.

In recent years, Moolmans has achieved notable improvements in recovery for key customers on the back of the implementation of advanced control technologies. Maximising production volumes is largely dependent on optimal equipment efficiencies and predictability, which in turn is reliant on proven and robust maintenance strategies.

Moolmans implements three levels of intervention, underlining a shift to a more technology-driven digital approach to ensuring high maintenance maturity.

Firstly, the online asset maintenance tool, AMT, is applied throughout its operations to provide real-time visibility of asset performance, condition and cost which offers the ability to identify and manage any issues as soon as they arise. Secondly, its intensive '27 step' maintenance management procedure allows the mining company to consistently deliver high levels of equipment availability and utilisation. Thirdly, Moolmans employs the SENSMINING production management system to optimise onsite safety and productivity by recording critical data in the production environment and applying state-of-the-art operator safety features in both its surface and underground mining services.

Robust and dynamic risk management is an important part of the company's strategic business processes and a key element in achieving its vision and protecting its hard-won business reputation. This includes responsible stewardship of the natural environments in which Moolmans operates, and ensuring respect for and upliftment of the communities that host its diverse and widespread operations.

Govender explains the company's approach to ensuring that business activities maximise the return from natural resources in support of local economic empowerment and social development: "As a contract mining operator we are often not as deeply rooted in local communities as the mining rights holders. However, we are committed to ensuring all our mining operations are geared towards delivering maximum benefit to the local communities through our intensive localisation approach and training strategies."

Moolmans largely achieves this through employing local community members to execute works, training and developing local citizens in mining and other portable skills, and implementing agreed community development strategies.

Moolmans is an accredited training provider through the Mining Qualification Authority (MQA) in South Africa and typically establishes training centres on all major sites to facilitate employee training, which is fundamental to delivering on the company's commitment to high-performance and reliability. Regular successful compliance audits by the Department of Minerals Resources and Energy on Moolmans' training strategy, processes and facilities speak to the quality of the training delivered by the company, which helps to optimise safety of operations, reduce machine downtime and increase productivity.

Through these centres, the company also routinely trains previously unskilled people from the local communities to operate, service and maintain advanced mining equipment, and the company can proudly boast that it has upskilled more than 1 000 people to operate surface mobile machinery. In certain instances, recruits from the local community have also progressed through the ranks to supervise mining operations to the highest standards of safety and productivity.

"The global mining industry is on an upward trend on the back of positive commodity price outlook for the medium to longer term. I am confident that Moolmans is well-positioned to take advantage of this upswing, with premier people, premier equipment and premier systems ready to deliver strong and sustained customer value," concludes Govender. ■

Mineral Council South Africa's head of Junior and Emerging Miners Desk, Grant Mitchell.

Junior and emerging miners tackle policy issues

South Africa's junior miners have emerged strong from the Covid-19 pandemic, tackling policy issues head-on and addressing challenges related to the debilitating red-tape that has, for years, stymied growth in the local mining sector. To gain insight into just how junior and emerging miners have fared over the recent past, Modern Mining's *Nelendhre Moodley* caught up with Mineral Council South Africa's head of the Junior and Emerging Miners Desk, Grant Mitchell.

"Although the junior mining sector as a whole has managed to ride out the Covid-19 storm reasonably well, one or two of our member companies have had to liquidate. Most juniors, however, are fairly resilient, nimble and adaptable and have survived reasonably well, aided, to a large extent, by the commodity boom, particularly commodities that are in high demand such as diamonds, copper, iron ore and platinum," says an upbeat Grant Mitchell, Mineral Council South Africa's head of the Junior and Emerging Miners Desk

Junior and emerging miners currently represent well over 40% of the total Minerals Council membership – Mitchell.

While Mitchell believes that the small to mid-tier producers, especially in strong-demand commodities, will see sustained growth in the next few years, he cautions preparedness for unexpected events.

"As we know, mining commodity booms are not cast in stone and unforeseen events – such as the Covid pandemic – can change mineral demand quite quickly. In the South African context, we also face major challenges in relation to energy, water and transportation. And Transnet currently finds itself in a dire situation, largely due to cable theft disrupting freight services."

On the positive side, membership of the Junior and Emerging Miners Desk (JEMD) has grown steadily over the past few years, and currently totals 38 members, excluding associations such as the South African Diamond Producers Organisation, which consists of roughly eighty members. Junior and emerging miners currently represent well over 40% of the total Minerals Council membership, which records growth of around 10% per annum in junior membership comprising small producers, explorers and developers across all commodity clusters.

"Mineral Resources and Energy Minister Gwede Mantashe has gone on record backing the junior and emerging mining sector, particularly given that it supports the building of a cadre of black industrialists. Roughly half of our junior mining members have CEOs drawn from previously disadvantaged groups

Most juniors miners are fairly resilient, nimble and adaptable.

and include two female CEOs and a number of female COOs. In addition, a number of our members are fully black-owned and managed companies."

Given the lengths to which the JEMD goes to assist its members, it's no wonder that membership is growing by leaps and bounds. In fact, in a bid to further assist its members, the JEMD will soon be launching a new mentorship programme which will see its larger member companies mentoring and supporting junior members.

"In this way we will keep mentorship in-house. Our previous efforts at mentorship using retired executives had a reasonable level of success, so we have revitalised the process."

Mitchell is also quick to point out the effectiveness of the JEMD's Leadership Forum which meets quarterly, and adds that the chair of the forum sits on the board of the Minerals Council. "This means that junior mining is firmly on the agenda in the overall strategy of the Minerals Council."

Aside from distributing information to its members, the JEMD provides expert advice on new policy requirements through its various specialist departments at the Minerals Council and addresses frequent queries from its members. Queries are often related to the implications of the amendments to the NEMA Act and the deteriorating security situation, including illegal mining and cable theft, at the mines.

"The Minerals Council has a comprehensive strategy in place to counteract criminal activity and we have junior representatives sitting on these security committees," Mitchell explains.

The JEMD provides annual webinars to a wide audience on subjects relevant to the sector, including new technological innovations that are useful to junior miners. "The webinars are well supported,

Junior miners complain of long delays in the granting of mining and prospecting rights.

Energy metals such as platinum, copper, manganese and nickel are abundant in South Africa.

Membership of the Junior and Emerging Miners Desk has grown steadily over the past few years.

drawing over a hundred delegates all with an interest in the junior mining sector. They are free of charge and form part of our public education programme."

Importantly, the JEMD conducts research with and on behalf of its members, including for instance, research into health and safety statistics of junior companies. "Conducting and unpacking research for our members helps us to better understand the sector and become more effective lobbyists," Mitchell says.

Tackling policy challenges that stymy junior miners' growth

The sector's resilience and determination to succeed has seen it stand strong against most challenges, including the pandemic and a regulatory environment that is not conducive to growing the junior mining sector.

"Our members complain of long delays in the granting of mining and prospecting rights, lack of co-ordination between the various government departments, including those related to environmental affairs, water and sanitation, power and the Department of Mineral Resources and Energy itself. Processing an application can take up to three years. Considering that a country like Botswana is able to process an application in under six months, this puts the South African junior mining sector at a severe disadvantage as a mining investment destination," says Mitchell.

With junior and emerging miners highly dependent on external funding to launch their companies and projects, unacceptably long delays often exasperate funders who sometimes pull out of deals.

"Investors target opportunities with quick return on investment and seek jurisdictions with an efficient mineral rights administrative system in which to invest," explains Mitchell, and in a bid to help its members and improve on the existing policy framework, the Minerals Council has been engaging with government.

"At a policy level, the JEMD, led by the Junior and Emerging Miners Leadership Forum, spent the better part of a year lobbing government for an improved policy framework that attracts exploration investment. Currently we have dropped below 1% of global exploration dollars.

Junior and emerging miners are highly dependent on external funding to launch their companies and projects.

"Exploration is the life-line of the South African mining industry. The Northern Cape, in particular, contains many minerals that are being used in the development of new 4IR technologies and is an area that currently requires significant investment," says Mitchell.

The JEMD put forth proposals to National Treasury in late 2020 advocating for the adoption of the Canadian "flow through share" tax incentive model to stimulate exploration spending.

"A number of major law firms assisted us on a pro bono basis to ensure that the proposal was not merely an idea, but a well-crafted document tailoring the Canadian model to our tax regulatory system. In addition, a team of economists looked at the economic impacts of exploration activity on the fiscus. To date, there has been no indication that Treasury will adopt this system. However, the model is in place should government choose to go this route."

The JEMD has also been a part of the Exploration Revival Task team which comprised the DMRE, the Council for Geosciences, and the Minerals Council. The team drafted the Exploration Implementation Plan which was finalised in January last year.

"The plan is yet to be released for public review. In his 2022 State of the Nation Address President Cyril Ramaphosa referenced the exploration strategy, reporting that it would soon be released. The Minerals Council and its members are keen to see the strategy enacted as it will kickstart this important sector of the mining industry."

The JEMD's efforts have also extended to assisting the DMRE draft specifications for the new Mining Cadastre system which replaces the dysfunctional SAMRAD system. According to Mitchell, a request for a 'bespoke' model to be built from the bottom up in which all parts of the application process would feed into a 'one-stop shop' was released by the DMRE in August last year. The intention is to ensure that the new model will streamline the application process.

"The Mineral Council's view is that it would be better to adopt an off-the-shelf internationally proven system, however we will wait to see who wins the tender and how they propose to proceed implementing it. Our concern is that any replication of the SAMRAD system could take years and be equally dysfunctional when proven systems are already available for rapid, efficient implementation."

Despite these challenges, Mitchell is of the view that there is a strong appetite for investing in the local mining sector given the great mineralisation that South Africa holds. "The Northern Cape, for example, is a treasure trove of minerals, particularly those such as zinc, manganese and copper used in new energy technologies. However, to attract investors, our regulatory regime needs to be streamlined and modernised. The Prieska copper/zinc project in the Northern Cape run by Orion Minerals is an example of a new investment into the mining sector. This is particularly pertinent as it is a junior mining company that plans on investing in Greenfield exploration – a critical component for a longer-term growth of the South African mining industry."

In his 2022 SoNA, President Cyril Ramaphosa announced the appointment of Sipho Nkosi to head up a team to cut red tape across government. Great news for the mining sector which has long been lobbying government in this regard. ■

Many smaller empowerment companies have entered the mining industry through coal mining.

Conducting and unpacking research for our members helps us to better understand the sector and become more effective lobbyists – Mitchell.

Energy metals – are they attractive to junior miners?

- ❑ Minerals that support new energy technologies such as platinum (fuel cells), copper (solar PV systems) manganese and nickel (batteries) are abundant in South Africa and well within the ambit of exploitation by the junior sector.
- ❑ According to Mitchell, the smaller deposits are ideal for juniors as larger producers' economies of scale preclude mining smaller deposits.
- ❑ "Aside from PGMs remaining critical for hydrogen fuel cell applications, both in the manufacture of hydrogen and the fuel cells themselves, coal continues to be an attractive commodity for the junior mining sector, this despite a strong international lobby which is pushing for the abandonment of coal as an energy source. Coal will continue to be part of the energy mix in South Africa for some time, but in the longer-term it is no longer a viable energy source. It is important to note that many smaller empowerment companies have entered the mining industry through coal mining – in fact, the majority of our junior members are in coal," says Mitchell.

Bring back to life old gold mines, boost ESG investments for South Africa

By Sunday Mabaso, CEO of Vahlengwe Mining Advisory and Consulting

Recent statistics released by StatsSA indicate that the South African mining sector continues to contribute immensely to the country's GDP, despite the current challenging economic environment. This good performance is attributed mainly to the high commodity prices of gold, platinum group metals and iron ore. In particular, the economic growth for gold mining in the past two years has seen various mining houses declare very healthy profits in their annual performance reports.

Resuscitating old gold mines can help invigorate the economy.

This is an indication that there is an opportunity for mining companies to pursue abandoned gold mining assets, particularly those closed for reasons related to liquidation and low-grades. Blyvoor Gold Operations, Central Rand Gold Mine (CRG), and Mintails, are examples of gold mining assets that were abruptly discontinued due to liquidation and which subsequently exposed local communities to environmental and social risks.

The adverse effects they pose remain unaccounted for, which causes challenges for stakeholders, namely regulators, local municipalities, landowners, property developers and communities at large. The biggest challenge is that most of these operations were closed with no financial commitment to rehabilitation of the areas post closure of the mines, despite this being a requirement of the Department of Mineral Resources and Energy (DMRE).

There is an opportunity for mining companies to pursue abandoned gold mining assets.

We also cannot ignore the fact that there is a significant disconnect in the Mineral and Petroleum Resources Development Act (MPRDA) and the Companies Act regarding liquidated mining companies, which limits the powers of the DMRE on enforcing post mine closure requirements. It can further be argued that Section 28 of the National Environmental Management Act (NEMA) empowers the DMRE as a competent authority to hold the directors of the liquidated mining companies to account for environmental damages. However this has, to date, not proven to yield the required accountability for reasons including transitional arrangements in the MPRDA and NEMA.

Despite all of this, it is encouraging to see that companies such as Pan African Resources and Amatashe Mining have shown an interest in pursuing some of the assets mentioned above. This will grant regulators the opportunity to rectify the loopholes and ensure that there is full implementation of closure requirements for sustainable livelihood post-mine closure, as proposed in the Draft Mine Closure Strategy published by the DMRE for comment.

Notwithstanding the Mine Closure Strategy is still a draft; it proposes strategic plans that can be implemented immediately to remedy the challenges experienced by current mine closures for future sustainable development; a phenomenon which remains a huge challenge for regulators to resolve with current abandoned mines.

A win-win opportunity for all

The interest shown by some companies to resuscitate these assets, as well as interest to come, should be welcomed by all stakeholders involved as:

- It brings hope to local communities for the rehabilitation of their environments and job creation.
- The DMRE is now able to rigorously implement mine closure strategies.
- Prospective miners can advance their environmental, social and governance (ESG) strategies and investments.

For the past century, gold mining has propelled the economic development of Johannesburg to the world class city status it holds today. If this is anything to go by, one can only encourage all stakeholders involved to proactively support the ESG investments as these could potentially assist in ameliorating the economic hardship brought by the Covid-19 pandemic through much-needed job creation, local economic development, and the sustainable livelihood of local communities.

This support should go far in attracting prospective investments in the gold sector and to restore to glory to what was previously the cornerstone of South Africa's mining industry. ■

Landowner consent requirement withdrawn for mining related EA applications

By Garyn Rapson, partner and Tendai Bonga, senior associate, Webber Wentzel

Garyn Rapson, partner at Webber Wentzel.

Tendai Bonga, senior associate at Webber Wentzel.

In welcome news for mining companies, the contentious landowner consent requirement, introduced in June 2021, has been withdrawn for mining related environmental authorisation or waste management licence applications.

With effect from 3 March 2022, consent is no longer required for environmental authorisation (EA) or waste management licence (WML) applications for mining related activities, where the EA/WML applicant is not the owner or the person in control of the land intended for such activities.

This consent requirement was introduced through a raft of amendments to the Environmental Impact Assessment Regulations (EIA Regulations) which were gazetted on 11 June 2021. The contentious requirement had resulted in several unintended consequences, including the (in some cases indefinite) deferment of mining related EA/WML application submissions, in instances where landowner consent had been unreasonably withheld.

In response to the regulation 39(b) amendment, the Minerals Council South Africa (MCSA) launched a court application to review and set aside the introduction of the consent requirement. The MCSA also engaged the Department of Forestry, Fisheries, and the Environment (DFFE) in parallel to the judicial proceedings, with the objective of seeking alignment on this impractical requirement. It is anticipated that the court proceedings will now be withdrawn.

The withdrawal of the consent requirement is a welcome development and aligns with the Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA), which together with the National Environmental Management Act 107 of 1998 and the EIA Regulations, provide a more than adequate stakeholder consultation framework.

This regime is complemented by the internal remedy available under section 54 of the MPRDA in terms of which parties can agree on commercial terms relating to access to land, or as a last resort, request the Department of Mineral Resources and Energy to intervene, where access to land is unreasonably withheld. The withdrawal is backdated so it is as if this consent requirement never existed.

The Minister indicated that her reason for the withdrawal was because of lack of consultation, which seems to leave the door open for DFFE to try and re-introduce this requirement in future (this time not through the back door). ■

VEGA launches new radar sensor

Measurement technology specialist VEGA recently launched its VEGAPULS 6X radar sensor - a sensor for all applications.

VEGA recently launched its VEGAPULS 6X radar sensor.

"Ultimately, it's not the sensor that counts, but what users can achieve with it in their individual applications", says Florian Burgert, VEGA product manager. "Just knowing that they've chosen the best possible instrument solution, and that they'll reach their goal faster with it, makes a big difference in their everyday operations."

Selecting the right frequency or determining the DK value of the medium are no longer obstacles, because choosing the right sensor specifications has become much easier. The new configurator asks for the type of application and then quickly determines which sensor version is required. The entire procedure now consists of just a few mouse clicks, the company said.

Above: VEGAPULS 6X is a measurement solution that delivers perfect results.

Right: The VEGAPULS 6X fulfils strict requirements for security of system access and communication control.

VEGAPULS 6X is measurement solution that delivers perfect results independent of the media properties, process conditions, vessel shapes and internal installations.

Four-stage, all-round protection

VEGAPULS 6X offers decisive technical innovations as it is equipped with a comprehensive safety concept. The certified sensor has exceptional SIL characteristics and provides the necessary operational safety to minimise risks in safety-related applications.

Another increasingly important focus is cybersecurity. In this regard the VEGAPULS 6X conforms to IEC 61511, which fulfils the strictest requirements for security of system access and communication control. It thus guarantees comprehensive process security, right through to the control system.

VEGAPULS 6X radar sensor can be used for all applications.

An important third aspect of its extensive safety features is its self-diagnosis system.

It continuously monitors the function of the sensor and recognises if it has been impaired in any way, thus contributing significantly to higher plant availability and sensor performance.

Central to these important features is a new, second-generation radar chip directly from VEGA.

VEGA product manager Jürgen Skowaisa, explains that in its scope and functionality, the chip is unique. It is characterised by its low energy consumption, high sensitivity, scalable architecture and universal applicability. The radar antenna system and the chip are connected directly to each other, without any cable, for maximum performance.

Focusing on the application

The actual task of level sensors is to help users and make it easier for them to monitor their industrial processes.

Skowaisa sums up in two words the strategy VEGA is pursuing with VEGAPULS 6X: "Maximum simplification. Until now, there have been many different sensors that could be used for an application, but with VEGAPULS 6X, there is one sensor for all applications. Our customers can even order a sensor that has been factory calibrated and is customer-specific down to the last detail; it only has to be installed and connected. It doesn't get any easier than that." ■

Tharisa partners with Liebherr

Tharisa Minerals has partnered with Liebherr to operationally test two T 236 mining trucks and one 72t PR 776 dozer as part of Tharisa's ESG initiative to reduce its carbon footprint.

The state-of-the-art mining machines, which boast more efficient engines and fuel systems, arrived on site and have begun operation as part of the production fleet under the supervision of Tharisa's mining team and Liebherr Mining Africa, the company said.

The long-term, real-life tests aim to ensure the trucks reduce diesel consumption and costs while testing the machines' ability to deliver a minimised environmental footprint and still deliver on production metrics, which are in line with Tharisa's drive for a more sustainable mining environment.

Tebogo Matsimela, head of ESG at Tharisa, commented: "Our commitment to reducing our carbon footprint by 30% by 2030 and becoming net carbon neutral by 2050 is in action and includes using efficient technology. When we announced our targets, we already had an action plan in place and the intention to meet, if not exceed, our 2030 target. Liebherr has been a partner to Tharisa, and like all our other partners, we constantly challenge them to come up with innovative, cost-saving and environmentally friendly solutions that ensure our materials, which themselves are necessary for a more sustainable world, are produced in a sustainable manner." ■

Liebherr Mining advances Zero Emission Programme.

Liebherr is a partner to Tharisa Minerals.

Tectra Automation appoints new GM

Tectra Automation recently appointed Paul Springorum to the role of general manager. Springorum brings with him a wealth of leadership experience and vast industry knowledge to his new role, the company said.

Springorum's career began in 1996 when he was appointed as a sales representative at GEC Alsthom. He has since climbed the management ranks at leading global companies, including: Group Schneider, Shaw Controls of the Zest Electric Group and Schneider Electric SA. For the past four years, Springorum has served as the MD of Knorr-Bremse SA, where he was responsible for the company's strategic development, including BBBEE level improvement, shareholding structure, localisation and process improvement.

Tectra Automation is a Bosch Rexroth South Africa company. ■

Training supervisors for a mechanised, automated future

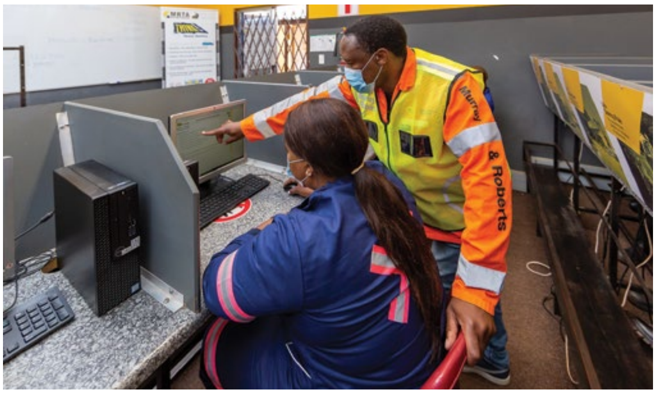
Smart mining is a key focal point of leading underground mining contractor Murray & Roberts Cementation, and its digitisation strategy is strongly supported by its approach to supervisor training.

Cementation operates an extensive training facility at its Bentley Park premises, outside Carletonville.

"The Fourth Industrial Revolution is having major impacts on how we mine, so it is to be expected that our training focus must adapt accordingly," says Tony Pretorius, education, training and development (ETD) executive at Murray & Roberts Cementation. "To underpin our digital strategy as a business, our training is evolving in terms of its outputs and its methodologies."

Pretorius says that technology is improving safety and productivity in mining by facilitating automation, through either line-of-sight or tele-remote operation of equipment.

This places new demands on supervisors, in their task of influencing better team performance. The company is introducing a range of digitisation initiatives in its projects, including a condition monitoring system to track and monitor the health of trackless mining machines (TMMs).



Cementation prepares supervisors with a series of e-learning modules.

The Murray & Roberts Cementation Training Academy (MRTA) at Bentley Park near Carletonville prepares supervisors with a series of e-learning modules including TTM appreciation, supervisory soft skills, legal liability, and mine-specific standards and procedures.

"The course teaches supervisors about various personality types, their respective strengths and weaknesses, and how the brain influences the behaviour of those personalities," he says. "This helps our learners to understand the different approaches inherent in personality types, and to take these into account in developing their leadership skills."

The training itself leverages the use of two-dimensional and three-dimensional animations in the classroom, as well as interactive touchscreens. Supervisors are also exposed to the virtual reality space, where they are required to identify workplace hazards and risks and apply measures to manage these risks. ■

Mbuyelo Mining Contractors purchases its 30th Volvo truck

To mark Mbuyelo Mining Contractors' purchase of its 30th Volvo truck, equipment supplier Babcock presented the mining contractor with a uniquely branded Volvo A40G articulated hauler, sporting MMC's signature blue and company logo on the 'nose' of the truck.

Mbuyelo Mining Contractors recently purchased its 30th Volvo truck.

MMC has steadily increased its fleet of Volvo Construction Equipment over the past six years and has purchased 28 Volvo A40G articulated dump trucks and two other Volvo machines for its mining operations in Belfast, Hendrina and Delmas.

Part of the Mbuyelo Group, a well-established home-grown mining company, MMC's blue-sky thinking has seen the company expanding its mining contractor operations over the past decade. Kurhula Bilankulu, engineer at MMC, said the company started off by purchasing rebuilt machines for mining operations, until it was able to purchase its own new machinery. Today, MMC has the capacity to move 1.3 million cubes of material with its own equipment.

Bilankulu cites value for money, reliability and fuel efficiency as some of the reasons for their continued support of Volvo ADTs. "The Volvo A40G ADTs are ideal for open-cast mining as they are powerful enough to go up the ramps at steep gradients. One of the standout-features is the stats analysis software system installed in the machine, which enables us to improve on efficiencies." ■

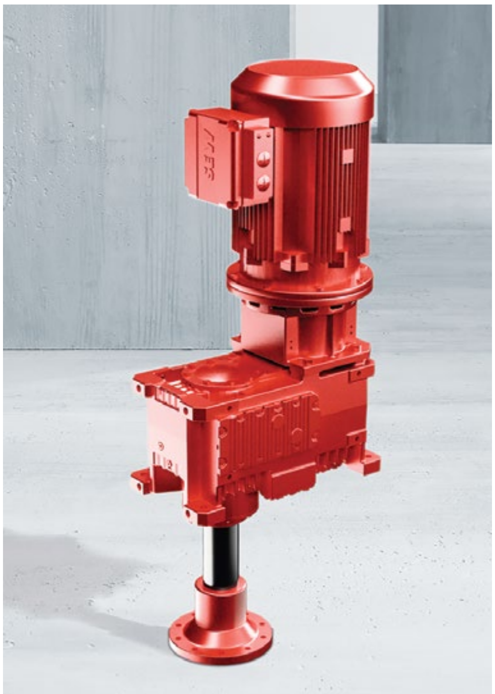
Kwikspace launches KWIK Kit

Manufacturer of prefab and modular buildings, Kwikspace recently launched KWIK Kit, a prefabricated structure – rapidly supplied and delivered in component form, together with detailed construction drawings – that enables the client to carry out construction. The product is ideal for use in locations where mobile prefabricated units cannot be supplied (due to poor road conditions or area restrictions, for example). The KWIK Kit units are quickly constructed, either on a concrete slab for permanent use or on a chassis, allowing the building to be relocatable.

Ready in 2-3 weeks from order, the KWIK Kit offers a speedy solution. "The kits can be shipped across the globe, easily and flexibly delivering various dimensions for all types of applications," explains Talita Losper, client relations manager, Kwikspace. The KWIK Kit is available in two formats – the KWIK Premium (a lightweight and easy-to-assemble unit) or the KWIK Fire (heavier but offering favourable fire ratings).

It is available in a range of different unit types, including ablutions and toilet facilities; dormitories; residential units; isolation wards; kitchens or canteens; clinics; offices; boardrooms; classrooms; tuck shops; storerooms; control rooms and remote camps. The KWIK Kit contains electrical and plumbing components, but customers have the option of ordering additional items, such as verandas, window blinds, air-conditioners, fire extinguishers and chalk boards. ■

SEW-Eurodrive expands capability to slash lead times



SEW-Eurodrive has expanded its capability at its new Aeroton facility.

SEW-Eurodrive's expanded capability out of its new Aeroton facility will include the assembly of SEW MACC air-cooled condenser drives for delivery at a rate of three units per week, slashing current lead times from overseas OEMs by around 36 weeks, the company said.

Built as part of SEW-Eurodrive's M-Series modular industrial gear (IG) units, the MACC is a purpose designed gearbox solution for driving the modern fan-based air-cooled condenser (ACC) systems used in steam-driven power generation plants.

"The first SEW-MACC drives were installed in the Northern Cape," says Jonathan McKey – SEW- Eurodrive's national and Africa manager for business development, sales and marketing. "This was followed by a further 24 units, which have now been installed at a utility station in Limpopo – and these Size 09 MACC drives are the largest ever built by SEW-Eurodrive."

The units were assembled in SEW-Eurodrive's factory in Nelspruit, but a new assembly line is now being built in Johannesburg to take production capacity to the next level.

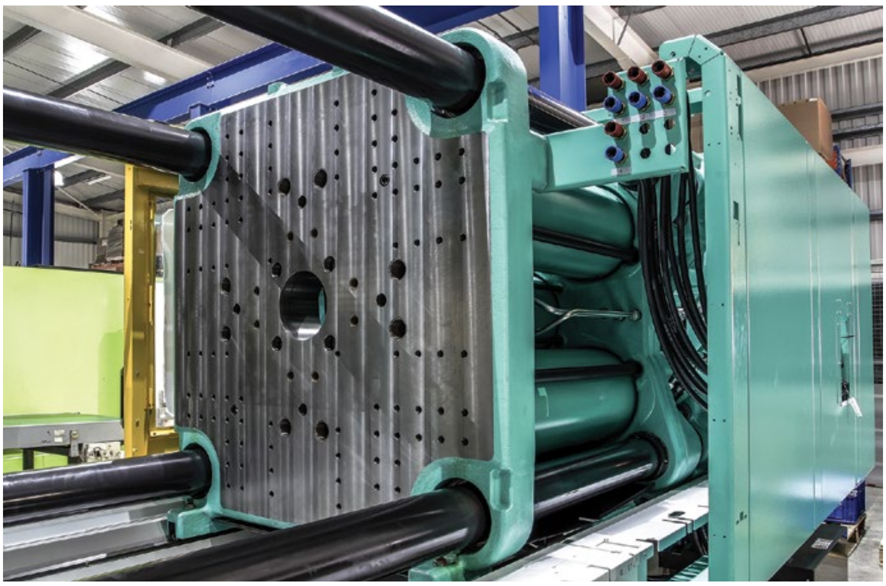
Jonathan McKey: SEW-Eurodrive's national and Africa manager for business development, sales and marketing.

The modular approach will enable the new facility to custom-assemble SEW MACCs to suit any local power station at a rate of two to three units per week.

Gates expands PRO Series product line with launch of ProV hydraulic hoses

Global provider of application-specific fluid power and power transmission solutions, Gates has expanded its PRO Series hydraulic hose portfolio with the launch of the new ProV product line. The Gates PRO Series line of professional-grade hydraulic hoses offers performance tailored specifically to hydraulic applications across multiple end-markets such as agriculture, construction, mining, injection moulding, general industrial manufacturing equipment and many others. Leveraging Gates' deep application knowledge, materials science expertise and process engineering capabilities, the full line of PRO Series products delivers the performance, reliability and design flexibility to meet the wide range of demands seen in today's hydraulic systems, the company said.

The new ProV hoses expand Gates' existing PRO Series hose range, further enabling engineers to evaluate and optimise system designs to ensure the right solution for each application. "Gates offers hydraulic hose and coupling solutions that lend market leading performance, durability and value to all modern hydraulic applications," said Tom Pitstick, senior vice president of strategic planning for Gates.



Gates recently launched its new ProV product line.

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