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FRONT COVER

While the COVID-19 pandemic and subsequent lockdown restrictions in South Africa posed challenges for minerals processing solutions provider Weir Minerals Africa, the organisation still managed to conclude an important empowerment transaction in May. Its newly established South African operation – Weir Minerals South Africa – is a remarkable achievement that showcases the company's true commitment to transformation in the country. P4

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The silver lining

What's yours?

Good news has never been quite as exciting as it is now during lockdown. Achievements and successes seem a little harder to come by, so when they happen it is really worth celebrating.

Fortunately, the mining industry is no stranger to working within adverse conditions. As such, with a little more push, it has continued to excel in different areas – and you only need to read this edition for confirmation.

In light of this, I'd like to take the opportunity to share some positive news of my own – also driven by the consequences of dare I say it, COVID-19. With a mining journalism background that is approaching 16 years, I have been afforded the chance to share my extensive industry knowledge across Clarion Event Africa's entire mining portfolio. This will extend to helping develop and drive content for our three Africa-focusing mining events including *DRC Mining Week, Africa Mining Forum* and *Nigeria Mining Week* – in both a live and digital capacity.

This is not only an exciting prospect in terms of utilising my skills, connections and relationships to expand our company's mining vision but it will enable us to effectively, as a greater team, deliver the quality information our industry is looking for. The events side of the business also brings with it great industry contacts and information from 'on the ground' and through my position, I hope to leverage that information across our mining media platforms, from print through to online and social media.

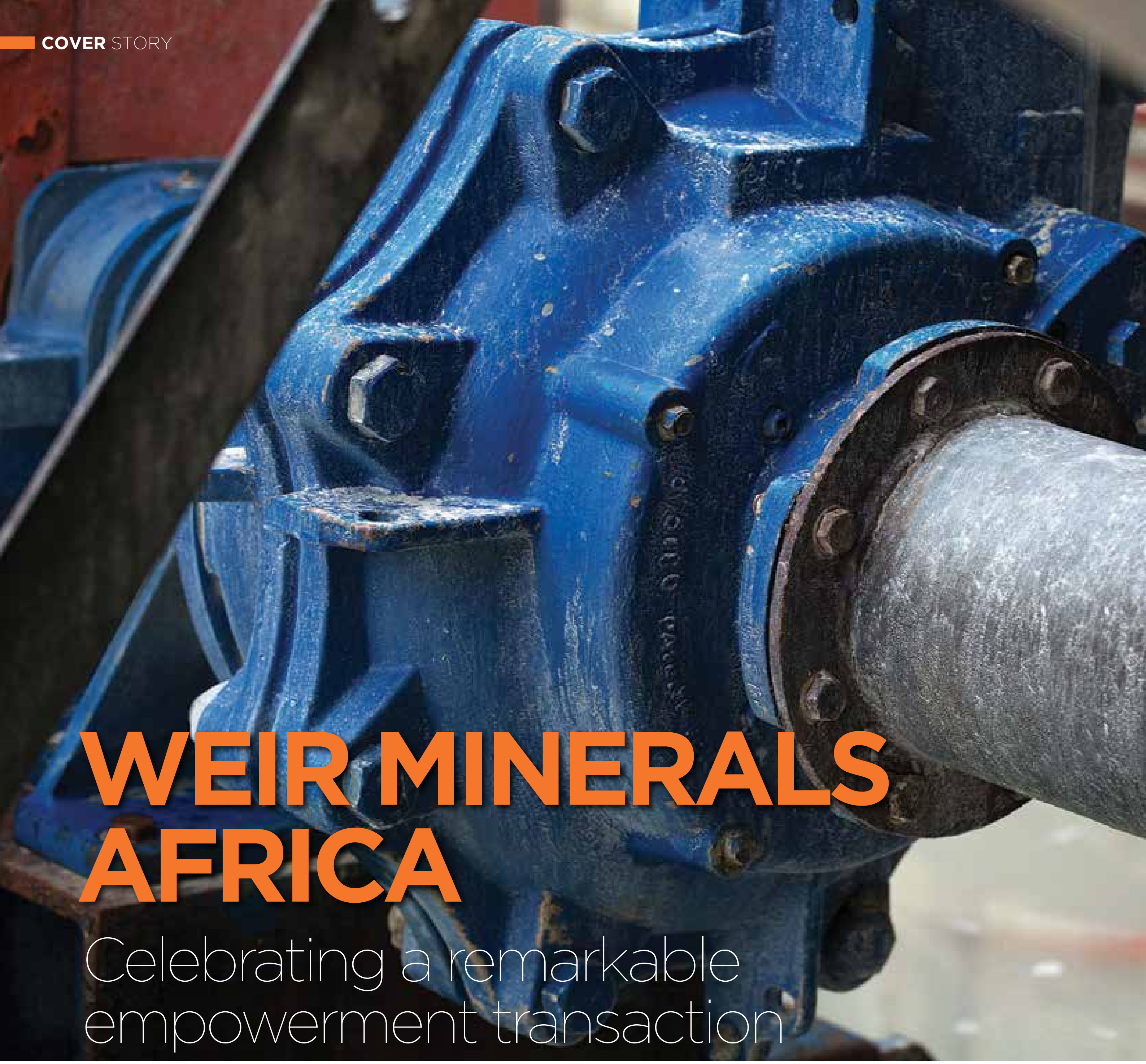
> " Achievements and successes seem a little harder to come by, so when they happen it is really worth celebrating "

Never before has one media/events house been able to offer our industry a fully consolidated platform for information sharing. I truly believe this has already positioned us uniquely in the industry and will continue to do so. I'm certain you will find yourselves continuously returning to our platforms to stay up to date but also to drive your own brand exposure and skills set to the widest possible mining market.

Laura Cornish, Editor-In-Chief, Mining Review Africa

Rest assured, I retain my position as the Editor-In-Chief of *Mining Review Africa* and will continue to play an active role in the direction the brand will pursue and I look forward to growing the title as a leading African mining focused title.

So in true style, we have found the silver lining on our cloud, and I'd love to connect with you and learn more about your own silver linings. Our September issue will pay tribute to those companies who have adapted their businesses to operate in our new world, so there is no better time to share this news with our readers. Let's connect and share! MRA



WEIR MINERALS AFRICA

Celebrating a remarkable empowerment transaction

While the COVID-19 pandemic and subsequent lockdown restrictions in South Africa posed challenges for minerals processing solutions provider **Weir Minerals Africa**, the organisation still managed to conclude an important empowerment transaction in May. Its newly established South African operation – **Weir Minerals South Africa** – is a remarkable achievement that showcases the company's true commitment to transformation in the country, writes **LAURA CORNISH**.

The newly incorporated Weir Minerals South Africa, whose assets include sales branches across the country, an assembly facility in Alrode, Gauteng, and a distributor network, is now 25.1%-owned by black empowerment partner Medu Capital, while the remaining 74.9% ownership remains under the Weir Minerals Africa umbrella.

"This long and fruitful journey began three years ago and was a process necessary to truly ensure the correct partnership and alignment between two businesses to deliver on all of our strategic objectives," says Weir Minerals Africa regional MD, Gavin Dyer.

R2 BILLION

The amount of private capital Medu Capital has raised since its inception in 2003

The deal was finalised in Johannesburg in May 2020.

"We have, over the years, made significant progress in terms of our employment equity, skills development, preferential procurement and socio-economic development," Dyer continues. "And we

The Warman pump is a well-established brand with an over 80-year history

Weir Minerals has a strong engineering team to support its customers' requirements

now have an organisational ownership structure that is more representative of the demographics of South Africa."

Strategic alignment

Choosing the right black economic empowerment partner is an incredibly important process – and one that requires complete confidence in knowing that both businesses can contribute meaningfully. Dyer has every confidence that the 100% black-owned Medu Capital, an investment and private equity focused business established in 2003, will deliver on this front.

"This is an investment management company that specialises in private equity, with a focus on establishing entrepreneurs to grow and develop businesses, by providing long-term capital and skills. The company has a proud record of investing in 30 businesses in diverse sectors including healthcare, retail, engineering services, steel, manufacturing, mining, and financial services, and has an owner managed structure with a motivated and committed management team," he outlines.

With a flat corporate structure which enables quick decision making, Medu Capital's experienced management team will provide robust board participation as well as good strategic input and involvement, particularly in financial aspects.

"The Weir Minerals business brings a lot of value-add to Medu Capital as well," Medu Capital co-founder and director Ernest January continues. "Through this investment we are given the opportunity to invest alongside an established and internationally supported business, the Weir PLC holding company, which was established in 1871 and today employs over 15 000 people globally."

Part of the global Weir Group PLC, Weir Minerals Africa serves primarily the mining sector around Africa and the Middle East. It also manufactures world-class mineral processing equipment for export to international group destinations. Listed on the London Stock Exchange, the Weir Group's engineering heritage dates back almost 150 years.

"With its extensive local investment in skills, service capability and manufacturing capacity in South Africa, the Weir Group has always been supportive of our empowerment drive," Dyer says. "This strengthens our position as a local technology leader serving global markets."

"The high-quality products and brands of Warman and Envirotech are highly regarded and established brands in the industries in which they operate," January continues. "We also believe in the company's operating model, which is to

> "The high-quality products and brands of Warman and Envirotech are highly regarded and established brands in the industries in which they operate,"
>
> **ERNEST JANUARY**

Employee skills development and diversity has been key for Weir Minerals over the years

The company grows talent within the business through its successful skills development programmes

partner with their customers over the lifespan of operations, providing services and spares to sustain their mines. The company's design, engineering and technical capabilities, combined with its high-quality standards and global reach, have led to impressive long-term customer relationships and a strong track record," January further points out.

"Ultimately, Weir Minerals Africa met Medu Capital's investment criteria (our investment rate is one out of 40 transactions reviewed) – evidence of its sound business model and good management," January highlights.

The deal further ensures that Weir Minerals

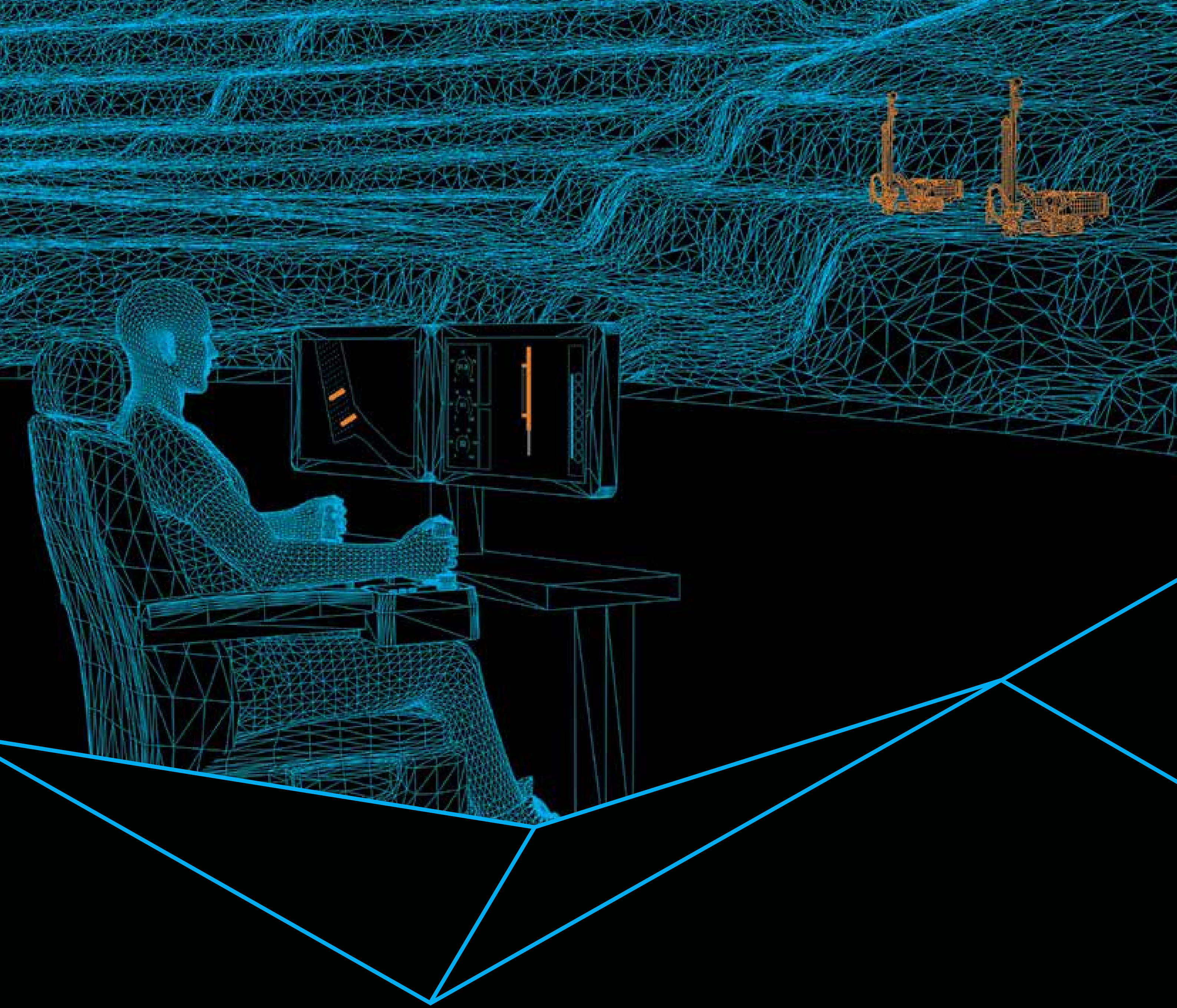
> "We now have an organisational ownership structure that is more representative of the demographics of South Africa,"
>
> **GAVIN DYER**

Africa, through its South African subsidiary, continues to enhance its value proposition to its customers in the mining industry. "Our locally focused company is now in a position to fully support the imperatives of Mining Charter III," Dyer notes. This is becoming increasingly important to the South African mining industry and enables Weir Minerals South Africa to cater to the industry's regulatory needs.

The road ahead

"This deal unequivocally demonstrates our commitment to the South African market, which we continue to believe holds significant business upside for Weir Minerals Africa and the Weir Group PLC," Dyer reiterates. "With an alignment of strategic priorities with our new partner, we have positioned this business to retain a market leading position. Weir Minerals South Africa looks forward to seeing Medu Capital quickly becoming an active partner in guiding and fostering its future success."

Concludes January: "We are proud to be associated with Weir Minerals and support the company's aim to achieve and maintain a competitive B-BBEE rating. We look forward to working with the management team to complement its value proposition to customers and are excited to be participating in the company's growth." MRA



Electra Mining Africa

Stakeholder engagement at the forefront

The exhibition space has been hard hit by the COVID-19 pandemic as social distancing and restricting numbers at public gathering are imposed. This has led to the postponement of this year's ***Electra Mining Africa***. While there will be no live event, the show's organiser, **Specialised Exhibitions**, has put together a comprehensive digital offering to encourage stakeholder engagement. **GERARD PETER** finds out more from company MD **GARY CORIN**.

Electra Mining Africa has showcased many firsts in innovation and technology since its first show in 1972. This year's event, which was scheduled to take place from 7 to 11 September at the Johannesburg Exhibition Centre, was due to showcase products and expertise from scores of local and international mining-focused exhibitors. However, in line with new health and safety measures, Corin is confident that postponing *Electra Mining Africa 2020* was the right decision to make. Furthermore, in order to deal with the rising number of COVID-19 cases in South Africa, the show's venue has also been converted into a 1 500 bed field hospital until the end of the year.

"Not having the live event this year is the right decision for all stakeholders involved," states Corin. "The safety and well-being of our exhibitors, suppliers, visitors and the industry as a whole continues to be of paramount importance to us."

Corin readily admits it is a challenging time but says the strength of the *Electra Mining* brand has ensured that Specialised Exhibitions can still interact with various stakeholders via a myriad of digital event offerings, before, during and after the week of the digital show. "Our entire team has been directly in contact with the +800 exhibitors on our database. During the week of *Electra Mining Africa*, we are going to be engaging with our partners on a digital scale, including doing media activations and webinars," explains Corin. He adds that the company will be working closely with trade associations and visitor interest groups such as mining companies and professionals such as mechanical and chemical engineers.

Stakeholder engagement focus

With lots of workshops and live demonstrations, there is a clear distinction between *Electra Mining Africa* and other market offerings. "If you look at the large annual mining conference that happens in Cape Town – a city where little or no mining takes place – that conference draws politicians, policy makers and investors.

"*Electra Mining Africa* is more nuts and bolts where the core focus is procurement, demonstrating new technologies and showcasing suppliers, rather than focussing on investment or policy. As such, our visitors typically hold senior

"*Electra Mining Africa* is recognised by industry as being more than just a show; it's a tradition,"

GARY CORIN

operation positions in mining and are looking for tangible alternative solutions such as automated service offerings for practical applications," adds Corin.

This poses quite a challenge for Specialised Exhibitions as it would be seemingly impossible to replicate some of the live demonstrations digitally. However, Corin adds that the company is in no way trying to replace the live event with a digital offering. Rather, it is merely providing a way keep the conversation between various stakeholders going during the COVID-19 pandemic. As such, the digital programme will focus on stakeholder engagement and stimulating interaction between the various interest groups.

In addition, between now and Electra Mining Africa 2022, there will be a number of face-to-face interactions. "This includes *Electra Mining Botswana*, the *Local Manufacturing Expo (LME)* and *KZN Industrial Technology Expo (KITE)*, all taking place next year. Granted, these exhibitions may be regional but they attract plenty of interest from many South African companies," explains Corin.

Better suited visitorship

The impact of the coronavirus will have far-reaching consequences for the exhibition industry going forward and Corin believes that the sector will never be the same again. "A lot will be determined by the political and scientific landscapes," he adds. "For example, there are some countries that are developing a COVID-19 vaccine and the sooner one becomes available, the quicker we can return to 'normal'. That said, there will be significant changes in various sectors such as international air travel which will be scaled back and become more focused. The same thing will happen in the exhibition space."

On a positive note, the way forward for *Electra Mining Africa* is that the show will now attract a more qualified visitor. "Mines employ thousands of people, so it is important to ensure that we attract the right type of visitor. There will be a fundamental shift in the way we currently manage our visitorship. Technology will play a key role in ensuring that we attract the correct type of visitor. Now, by vetting online applications in more detail, we can even guide people to the exact exhibition hall that they will be interested in. Yes, the footfall numbers will reduce but you will get a better quality visitor which will benefit exhibitor and visitors."

The next live version of *Electra Mining Africa* will take place from 5 to 9 September 2022. This will also mark the 50th anniversary of the popular mining exhibition and Corin is looking forward to putting on another world-class event in 2022. "*Electra Mining Africa* is recognised by industry as being more than just a show; it's a tradition," he concludes. MRA

DID YOU KNOW?

SCAN THE QR CODE FOR MORE INFORMATION ON *ELECTRA MINING AFRICA* 2022

The right commodity in the right region will ensure that bank funding is within reach

Image: 123RF.com

Money matters

Securing funding from banking institutions

The mining sector is dealing with the 'new normal' – but in this post-COVID-19 world, will banks have enough appetite to fund African mining projects? **GERARD PETER** finds out from **Rand Merchant Bank's (RMB) HENK DE HOOP** and **KHANYISILE MOSHOESHOE**.

De Hoop is RMB's Business Development Director of Mining while Moshoeshoe is a Resources Sector Focus Lead in the bank's resources team. The bank has funded a number of mining companies and projects in recent times such as Asanko Gold (now called Galiano Gold) in Ghana, Gamsberg Zinc project in South Africa and First Quantum Minerals' operations in Zambia.

Despite the impact of COVID-19, Moshoeshoe says that banks will still consider funding projects. "We are very clear that mining is an essential part of most African economies. Look at Zambia where copper mining is big or Botswana for diamonds. So, while the supply dynamics might change post-coronavirus, banks will continue to fund the right mining projects on the continent," she explains.

De Hoop adds that the coronavirus pandemic has placed a lot of pressure on all funding institutions, including commercial banks, because the existing

> "We cannot change legislation every five years to the extent that South Africa has,"
>
> **HENK DE HOOP**

broader client base needs to access liquidity as a result of the severe business interruptions. However, he states that it is encouraging that the bank's mining client base has not been a significant strain on RMB. "This is because mining companies haven't had the type of sustained interruptions such as, for example, the automotive industry, where up to 90% of business was affected. Granted, there have been a few force majeure situations, but none of them as significant as the impact on other industries," he states.

De Hoop admits that it is not easy to convince a bank to finance a project, particularly juniors. This is partly a result of the severe crunch in the mining sector a few years ago. This forced a lot of banks to relook at what part of the risk curve they want to play in. Subsequently, banks started putting more conditions in place for project funding. "One of the weaknesses identified is that a junior company still needs to have a very strong sponsor among its shareholders before we can consider a project. As a bank, we need the assurance that the shareholders are going to be there in times of financial strain.

"Some banks have had their fingers burnt because the projects were very lightly capitalised and the owners pinned their hopes largely on bank funding to carry a project. In times of distress, the banks needed to carry a project to completion while the shareholders ran for the hills and this is not appealing to us. We will definitely look at juniors but will be very selective when it comes to the commodities, the quality of the project and who the shareholders are."

Moshoeshoe adds that having an experienced management team and shareholders is important, especially in the wake of COVID-19. "We also look at the cost of the operation, how much it costs to get your product out to the market versus your competitors, particularly in commodities that are highly volatile. Therefore, having a track record showing that you have run a successful project before is crucial. Also, it is easier to assess and consider funding a project if you are mining commodities that have a benchmark pricing or can be hedged."

Stringent funding conditions

As consumer habits change along with social activism calling for greener economies, De Hoop says that Environmental, Social, and Governance (ESG) is becoming increasingly important when it comes to securing bank funding. In this regard, there is now a whole set of checks and balances that ensure that no money is lent without those being adhered to. "Firstly, we subscribe to the Equator Principles that ensure a very rigorous assessment of all important environmental and social risk factors. It is also a reporting standard that we use as project progress, where we track to see if a company is sticking to its promises to mine responsibly. Fortunately, a lot of these companies go beyond what the local regulations stipulate with regards to mining," he comments.

> "While the supply dynamics might change post-coronavirus, banks will continue to fund the right mining projects,"
>
> **KHANYISILE MOSHOESHOE**

Meanwhile, looking at South Africa, De Hoop says that more needs to be done to encourage greater investment in its mining sector. Much of this has to do with the country's regulatory regime. "The battle between regulators and industry has given South Africa a very bad name and has created a fractious relationship. As a result, we are missing opportunities. We need to find the middle ground that looks at providing enough incentives to attract investments in mining rather than focussing solely on the social imperatives of the required changes in the industry," he adds.

De Hoop also calls for a more predictive regulatory regime. "We cannot change legislation every five years to the extent that South Africa has. It creates uncertainty and raises required returns to offset this risk. It will make a huge difference if we can commit to a charter with a lifespan of at least 15 years."

He further adds that investors are also reluctant to invest in the country because of high regulated input costs. "If you look at underground mining, these operations consume a lot of power, not only for transport and logistics but also cooling and ventilation. If 50% of your cost is labour, and 20 to 25% is power, this leaves very little flexibility for mine management to manage costs in a highly cyclical and often marginal industry. Another important major cost for the bulk producers is Transnet and related port costs. We need to find a way of becoming more competitive in this area and not automatically assume that pushing above-inflation price hikes to the locked-in client base every year is okay.

"Also, we need to make exploration as easy as possible in South Africa as that generates the project pipeline in mining. This has been a hurdle in the past but fortunately, this is changing as government has realised that there is very little exploration happening as opposed to the rest of Africa. However, now we need to follow through with solving the other challenges that the South African mining sector faces," he concludes. MRA

Meeting with local traditional authority leadership in Limpopo

Talking to mining communities

About mine closure

In theory, everyone involved in mining understands that a mine has a limited life and will eventually deplete its ore reserves and close; however, the likely impact of closure on communities is generally not a topic that many stakeholders want to discuss.

According to Adel Malebana, senior social scientist at SRK Consulting, there has been some recognition of the value of this engagement by certain large mining houses. "We have seen corporate policy starting to respond to this issue," she starts. "In some companies there are guidelines on how to engage with stakeholders on issues of mine closure, and there is growing awareness that this needs to be done sooner rather than later in the mine's life cycle."

On the other hand, there is also a pervasive attitude in the mining industry that prefers to avoid the topic. After all, it could demotivate employees and affect the running of the business – especially if the process is left until the mine is already struggling to remain viable.

There is currently no legal requirement to engage with communities on closure issues until very late in the mine's life. As part of mine closure, mine owners are commonly required by law to undertake an environmental authorisation process. In South Africa, for example, this is driven by the fact that the decommissioning of the operation is a listed activity in terms of the country's National Environmental Management Act (NEMA). This process includes stakeholder engagement, which is often the first time that local communities and other affected stakeholders officially hear about the impending closure of the mine.

"History has taught us that mines have tended to engage with local communities mainly as part of the requirement of authorisation processes," Malebana notes. "More recently – as mines acknowledge the demands of their social licence to operate (SLO) – there have been more engagement platforms created to reach out to communities."

These platforms, however, often have their own focus areas which do not include mine closure. In most cases they might be more focussed on specific areas of activity, such as corporate social investment projects.

She highlights that there are various stakeholders that rely on the mine, who need to be considering the impacts that closure will have on them. For labour unions and mine employees, an important engagement platform in the South African context is the Future Forum, which is required as part of Social and Labour Plan obligations in terms of the Minerals and Petroleum Resource Development Act (MPRDA).

"In other instances, where there are payments being made for lease agreements and royalties, community structures and leadership need to be well informed and in advance," she says. "Mines also often support the building and operation of community infrastructure like schools; the partners in these kinds of projects need early information on the mine's plans, so that they can strategically plan their sustainability going forward."

She notes that it remains common for mine-supported projects to collapse when a mine downscales or closes – as there is insufficient planning for handover that ensures long-term survival.

"Another aspect to consider is the expectation held by future generations," says Malebana. "In mining towns, school learners will often be encouraged to pursue studies that align with a potential career on a mine. If there is an awareness that the mine will not always be there – or indeed specific knowledge of when a mine might close – these expectations could be better managed."

Part of the mine's SLO is therefore to help these groups and individuals to mitigate the effects of closure, by planning ahead. However, difficult past relationships with local communities – including various legacy issues – can make mines reticent to initiate any engagement on the impacts of closure. At the same time, there is often a sense of denial, even within the communities themselves, about prospects of closure.

"This makes it vital that engagement starts early in the mine's life, so that the subject is 'normalised' and is not seen by communities as just an argument to push through retrenchments, for instance," she emphasises.

The views of mine stakeholders – from employees to other community members – should also be encouraged, as valuable contributions to closure solutions. This is best done at a time when the mine is operating profitably, so that ideas to make communities more resilient can be turned into plans and implemented. Collaborating in this way also allows communities and partners to identify closure opportunities and own the solutions, thus improving their chances of success.

She reveals that while mines often try and keep closure discussions confidential, they need to remember that employees – and the communities they live in – are usually aware of what is taking place. Communities may also formulate their own interpretations of events, which could lead to tensions.

"Word of mouth is still the most common means of information sharing, hence people will interpret messages as they understand them if there is no clear guidance from the mine," Malebana explains. As in crisis communication, mines need to take the initiative and be the first source of information on mine closure. This demands that their information is correct and credible, and should create the opportunity for stakeholders to act constructively in response.

Exploring 'social closure' of mines

All mines will close, and this closure has a profound and often devastating impact on surrounding communities and towns. It is accepted that responsible mines have a central role to play in mitigating this impact, by helping improve the resilience of local economies in the face of mine closure. How to facilitate such a 'social transition' away from dependence on mining is a complex task.

This article is the fifth, and last, in a series where professionals from SRK Consulting share experience, lessons and insights that contribute to resolving this inevitable challenge. It tackles the conundrum of how a mine should engage transparently with community stakeholders about mine closure. MRA

↑ **From left to right: Adel Malebana, Lisl Fair, Ashleigh Maritz and Jessica Edwards**

KEY TAKE-OUTS FROM THE SERIES:

- *Article 1: Sustainable social transitioning to life after closure*
  - Begin with a paradigm shift in corporate thinking
  - Communities are not just passive beneficiaries
  - Appreciate the assets in a community
  - Use these assets to build socio-economic sustainability
- *Article 2: Lessons learnt in self-sustainable community projects*
  - Avoid dependency on mine only
  - Business training for self-sufficiency
  - Broaden customer base beyond mine
- *Article 3: Economic diversification in the local economy of a mine*
  - Promote diversification through supply chains
  - Build capacity in smaller suppliers
  - Support informal sector with training, infrastructure
- *Article 4: Launching retrenched employees into new avenues*
  - Conduct skills audit
  - Address problem of over-indebtedness
  - Create options with retrenchment packages
- *Article 5: Engaging communities to plan for mine closure*
  - Start closure engagements early in mine life
  - Build the right platforms for communicating
  - Be first with information, and be credible

July 2020

Top 5 trending stories on miningreview.com

Uranium: A bull market is under way

The growing uranium supply deficit, accelerated by COVID-19 pandemic related production cuts, has seen the price for uranium skyrocket – making it the world's best-performing major commodity right now. With the suspension of operations at four notable uranium mines, the spot price has surged to US$33/lb in May from $24/lb at the start of the year.

Image: 123rf.com

Mantashe admitted to hospital with COVID-19 complications

The Minister of Mineral Resources and Energy, Gwede Mantashe, was admitted to hospital after

Credit: governmentza

testing positive for COVID-19. It was the minister's third round of tests conducted since the outbreak of the virus. Mantashe had been in self isolation and working from home.

RBPlat opens a 200-bed COVID-19 field hospital in Rustenburg

Royal Bafokeng Platinum has opened a 200-bed field hospital in Rustenburg, at a cost of approximately R10 million, to support government's already overburdened resources in the fight against COVID-19. It will provide initial COVID-19 medical treatment to its employees and communities.

Pensana Rare Earths lists on London Stock Exchange

Pensana Rare Earths has been admitted to the official list of the FCA and to trade on the London Stock Exchange's

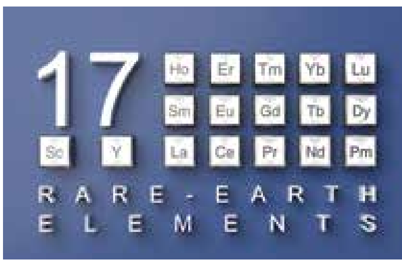


Image: 123rf.com

main market for listed securities. "The US$16 trillion post COVID-19 stimulus programmes are transforming the renewable energy sector, supercharging the demand for critical rare earth magnet metals," states Paul Atherley, Chairman of Pensana Rare Earths.

Palladium market stands Waterberg JV project in good stead

The long-term market fundamentals for palladium remain robust thanks to strong demand on the back of a continued supply deficit. This equates to a bright future for the palladium-dominant Waterberg JV project, located on the Northern Limb of South Africa's Bushveld Complex.

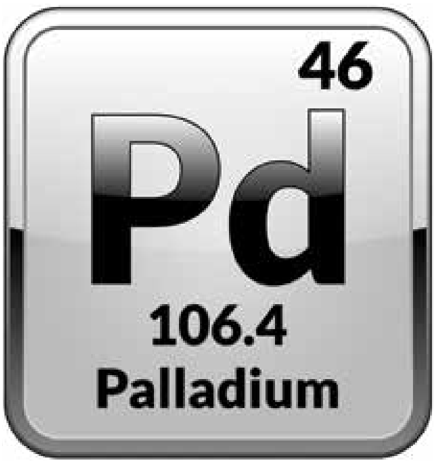


Image: 123rf.com

Despite its relative rarity, mined mainly as a by-product of nickel and platinum mining, palladium is the dominant and most abundant of the PGM's within the Waterberg metal basket, which comprises 63% palladium, 29% platinum, 6% gold and 2% rhodium. MRA

Visit www.miningreview.com for more news and analysis on a daily basis and be sure to sign up for our daily newsletter as well.

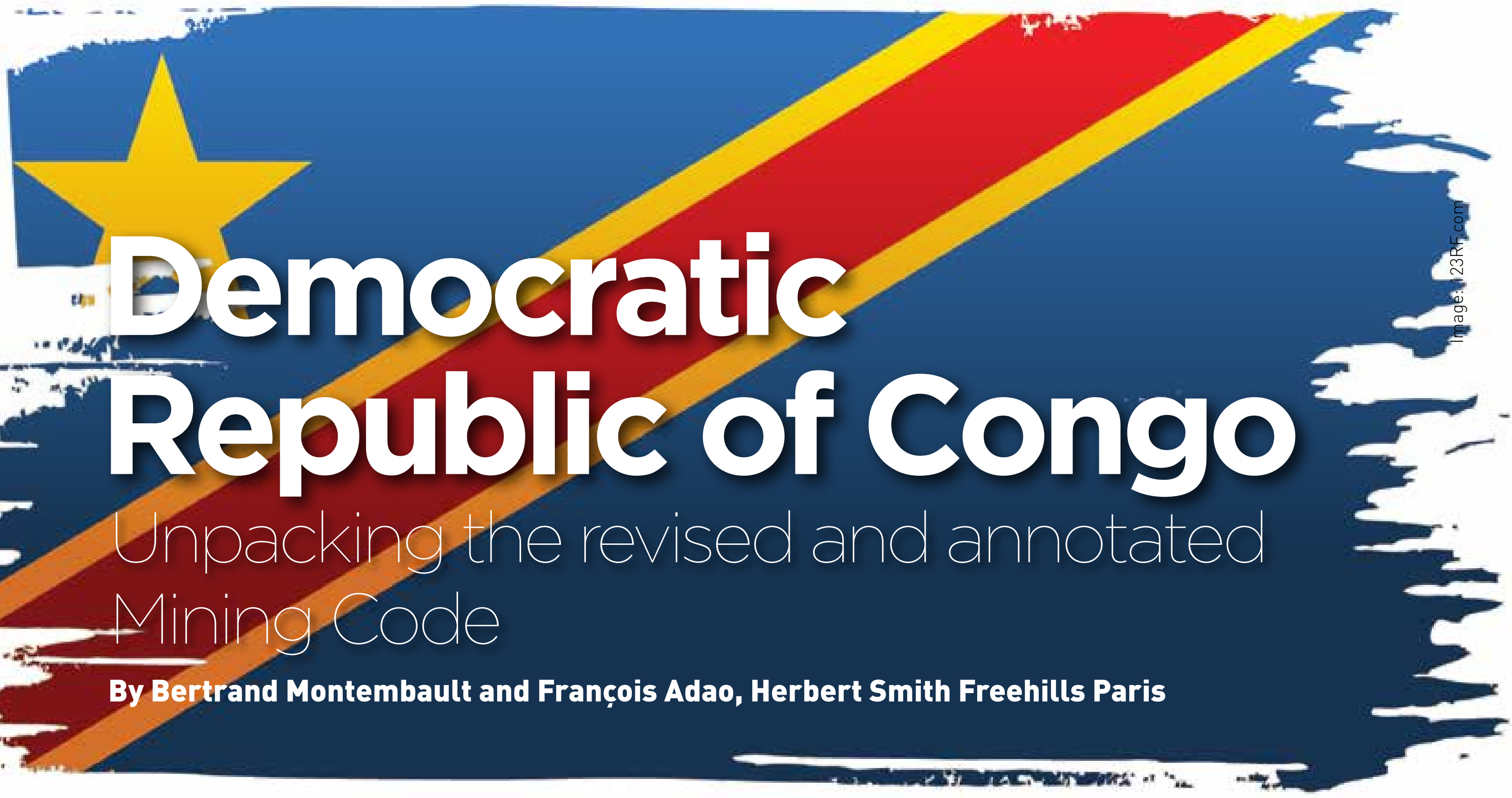


Image: 123RF.com

Democratic Republic of Congo

Unpacking the revised and annotated Mining Code

By Bertrand Montembault and François Adao, Herbert Smith Freehills Paris

In July 2020, the DRC mining registry published an annotated version of the 2002 Mining Code as amended in 2018 (the Revised Code). The announcement of this publication had raised the hope that certain points of the reform would be clarified, given the tensions it had created between the mining industry and the government. However, on the key points of the revision (stabilisation, repatriation of export proceeds and local ownership), the annotations have not provided satisfying answers. In our opinion, despite their lack of particular legal significance, these annotations may nevertheless guide a judge or an arbitrator in the interpretation of the amended texts.

The promulgation on 9 March 2018 of the Revised Code amending the 2002 Mining Code was followed on 12 June 2018 by the publication of the Revised Decree of 8 June 2018 amending and supplementing the 2003 Mining Decree of 26 March 2003.

The Revised Code and the Revised Decree (new legislation) officially aim at rebalancing the mining revenues in favour of the state, with the 2002 Mining Code and the 2003 Mining Decree (former legislation) perceived as having failed to generate substantial revenues for the country's development. However, the new legislation has also caused enormous tensions between companies and the government.

Despite intense lobbying by mining companies, before and after the promulgation of the law, the Revised Code was far from corresponding to their expectations and, according to some, to the content of the discussions underway for nearly seven years on the revision of the 2002 Mining Code.

In the official announcement of 9 March 2018, the President stated that he had "taken note of the concerns raised by the representatives of the operators" and that these "will be taken into account through a constructive dialogue with the government on the measures for the implementation of this law, with a view to finding common ground on the specific problems raised following the repeal of the former law". Accordingly, the President instructed the government "to open such consultations as soon as possible". It seems, however, that these statements have not been followed up with the effects expected by the sector.

In 2017-2018, the DRC had unprecedented bargaining power, with the prices of the main minerals (cobalt, copper and gold) on the rise. This allowed the authorities to simultaneously impose a new code and to renegotiate Gécamines' joint-venture agreements with private sector operators. However, the drop in the prices of certain minerals changed the balance of power, even leading to the suspension of operations at the country's main cobalt mine.

On 6 November 2019, the Minister of Mines launched a popularisation campaign of the Revised Code that results from the recommendations of a September 2018 Mining Conference in the DRC and was further included in the priority actions of President Félix Tshisekedi. Officially, the objective of the campaign is to ensure the Revised Code's proper understanding and efficient administration. However, the context of falling prices and fears of investors turning away from the country certainly played a role in the government attempt to restore investors' confidence.

In this context, the DRC mining registry (CAMI) initiated the compilation and commentary of the new legislation's provisions in the form of a "Revised and Annotated Mining Code" published in July 2020.

Content of the annotations

The Revised Code introduced important changes, the scope of which remains uncertain due to difficulties of interpretation or the lack of clarity of certain provisions. Against this background, one would have hoped that the annotations would have provided substantial clarifications to the most problematic amendments of the Revised Code. However, the overall outcome has not fully met these expectations.

The annotations can be divided into three types:

- The first type merely paraphrases the new legislation and contains cross-references to the relevant provisions of the Revised Code;
- The second shows changes made by the revision, highlighting additions, deletions and differences between the new legislation and the former legislation. They are at the heart of the government's pedagogical exercise;
- A very limited number of annotations are substantially interpretative or explanatory.

One area of concern for miners has been the increase in royalty rates for various mineral substances. Article 241 of the Revised Code refers to Article 524 bis of the Revised Decree, which in turn refers to a decree of the Prime Minister for strategic substances and an inter-ministerial order for other mineral substances. The annotation merely describes this situation. Moreover, the annotation of the definition of strategic minerals confirms that the government's authority to declare certain substances as strategic, and thus to trigger a 10% royalty rate, is discretionary.

Another area of concern has been the tightened restrictions on the maintenance of export proceeds abroad and the repatriation requirement[1]. The Revised Code provides that the repatriated portion[2] may not be used to finance the transactions listed in Article 264 of the Revised Code which include the payment of goods and services from foreign suppliers in the absence of equivalent goods and services on the local market, the acquisition of imported equipment, the payment of dividends to non-resident shareholders and the repayment of shareholder's loans. With this provision, the government has greatly restricted the free disposal of funds by mining companies. Here again, CAMI merely paraphrased the legislator.

The content of the new local ownership requirement has also raised questions[3]. It is not clear whether the requirement applies only upon the issuance of a new mining licence[4] or to existing titleholders as well. The annotation does not provide any answer in this regard.

With regard to subcontracting, despite the clarification of the concept of "legal person governed by Congolese law and with Congolese capital" provided by the preamble of the Revised Code, further clarification would have been useful to indicate whether the "Congolese" of the preamble can be a legal person. However, CAMI's annotation is a mere paraphrase.

The most awaited annotations concern the transitional period and the stabilisation. The question is whether the 10-year stabilisation of the 2002 Mining Code in the event of amendments thereto protects its beneficiaries from the 2018 revision. Regarding the transitional period, by stating that "the legislator repeals the conventional regime and opts for the immediate application of the provisions" of the Revised Code, CAMI's explanatory annotation removes any ambiguity that may have existed on this subject. With respect to stabilisation, the annotation has not lifted the uncertainty for holders of existing licenses and merely states that a legislative amendment beyond the five-year term from the coming into force of the Revised Code is directly and indiscriminately applicable to everyone.

Legal value of the annotations

It would be questionable to recognise any legal value to these annotations, published by a public scientific and administrative institution under the supervision of the Minister of Mines, since they do not correspond to any category of administrative acts. Unlike a traditional circular, which designates a note of service by which a superior informs his or her subordinates of his or her interpretation of a law, the annotations are not primarily intended to inform CAMI's agents, but are part of a pedagogical exercise for all stakeholders. However, these annotations may still be useful to a judge or an arbitrator in interpreting the new legislation.

Despite the absence of substantial annotation under the most significant amendments of the Revised Code, the publication of the Revised and Annotated Mining Code remains unprecedented and thus worthy of note. However, due to the lack of substantial input, the stakes in determining the legal nature of the annotations are not very high. MRA

References

1. The repatriation requirement is now set at 60% (previously at 40%) during the period of investment amortisation and 100% thereafter.
2. According to Article 269 of the Revise Code, this portion is intended to cover domestic expenses in favour of residents.
3. The Revised Code includes a new requirement for 10% of the shares in a mining company to be held by Congolese citizens.
4. As is the case for state participation, in addition to the further 5% at each renewal.

About the authors

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Bertrand is a partner at international law firm Herbert Smith Freehills LLP, based in the firm's Paris office. He is qualified as a lawyer in France and has almost 30 years of experience helping international businesses, whether new entrants to the Africa market or established operators on the continent, on various aspects of their operations and projects in Francophone Africa, mainly in the natural resources and energy sectors.

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SCAN THE QR CODE TO READ HERBERT SMITH FREEHILLS' NOTE ON THE DRC'S REVISED MINING CODE

AVZ Minerals

DRC's lithium front-runner on the cusp of development

Aerial photo of the Manono project

ASX-listed lithium developer AVZ Minerals will soon reach the turning point at its Manono lithium and tin project in the Democratic Republic of Congo (DRC) as it begins development of the country's most significant lithium discovery. CHANTELLE KOTZE speaks to MD NIGEL FERGUSON about how it all came together.

Four years since the acquisition of the Manono project in December 2016, around the same time that electric vehicles became mainstream and demand for lithium resultantly picked up, AVZ Minerals is still progressing at pace with project development.

After making a name for itself on the back of record pegmatite intersections of between 299 m and 341 m at Roche Dure – one of two main pegmatites within Manono, Carriere de l'Este being the second – the company hasn't disappointed and has worked diligently towards the Manono definitive feasibility study (DFS), which it released in April 2020.

IN SHORT

AVZ Minerals will make an indelible mark on the history of the DRC when it breaks ground at its Manono project – said to be the largest undeveloped hard rock lithium resource globally in terms of grade, mine life and expandability.

The highly-anticipated DFS proved that both the 2 Mtpa and 5 Mtpa scoping study models were feasible and that the Manono project would be both economically viable and highly robust with strong financial metrics.

Despite the positive 4.5 Mtpa DFS outlook, Ferguson says that the duration and effects of COVID-19 are likely to be used as a yardstick to measure which of these development models would be most feasible going forward.

The DFS indicated that Manono could produce a product mix of 700 000 tpa of lithium spodumene concentrate, or SC6 concentrate (containing 6% lithium) and 45 000 tpa of highly-valuable primary lithium sulphate (containing 80% lithium) over a 20-year life of mine based on a 4.5 Mtpa operation.

The addition of the primary lithium sulphate product will see 153 000 tpa of the 700 000 tpa of SC6 concentrate being used as feedstock to produce 45 000 tpa of primary lithium sulphate.

To do this, the DFS plots out a plan to develop Manono in potentially two stages: the first stage entailing a dense-media separation (DMS) recovery producing SC6 concentrate, with an added calcining circuit to produce a lithium sulphate; and the second stage combining additional processing by adding a carbonate or hydroxide circuit to the plant, to produce the lithium carbonate or hydroxide product.

Costing US$179 million, the lithium sulphate plant will be easily repaid by producing a higher value lithium sulphate for use in hydroxide conversion

Drilling at Roche Dure

Drilling on top of the orebody at Roche Dure

On-site drilling

plants – a product that fetches a much higher price of about US$7 400/t, compared to SC6 prices of around US$430/t as modelled in the DFS.

The addition of the primary lithium sulphate concentrate could result in a massive transportation cost saving, as transport currently makes up a significant portion of the company's operating costs, explains Ferguson.

AVZ Minerals therefore aims to increase the ratio of primary lithium sulphate production while decreasing the amount of SC6 product as the project progresses.

Moreover, the processing flow sheet also allows for the recovery of an estimated 828 tpa of tin as well as additional tantalum and niobium from hard rock ore, plus an additional estimated 600 tpa of alluvial tin and tantalum, which will be secured from local artisanal miners.

Of this total product mix, AVZ Minerals expects the SC6 concentrate to account for 50% of revenue, the primary lithium sulphate to account for 45% of revenue and the hard rock tin to account for 5% of revenue. The tantalum and niobium credits have not been modelled as yet, says Ferguson.

Expected to cost US$ 545.5 million (including a 10%, or $49.59 million contingency) to build, the Manono project would have a post-tax net present value of US$1.028 billion and an internal rate of return of 33.15%, with life of mine net profits after tax estimated at US$3.779 billion on a 100% basis. The pay-back period, post tax is 2.25 years.

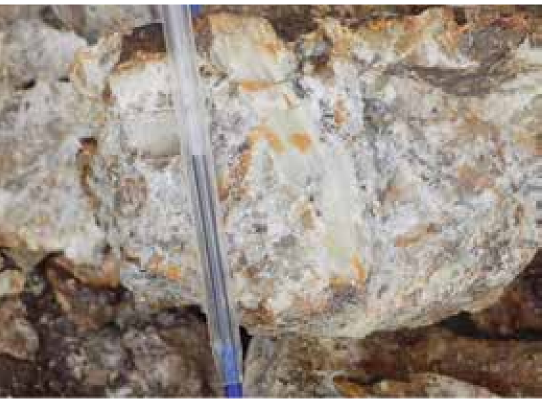
AVZ Minerals is currently underway with encouraging project finance discussions with several Australian and international financing groups, from which the company received a number of preliminary indications of possible financing structures including bonds, equity and loan instruments.

Offtake agreements are also being negotiated with several companies. The company's major shareholder, Yibin Tianyi, is showing interest in securing significant tonnages of SC6 product, while several other lithium convertors are either approaching AVZ or vice versa, regarding securing offtake agreements not only for the lithium products, but also for tin, tantalum and niobium, says Ferguson.

Moreover, he believes that the 46 000 tpa of primary lithium sulphate produced will be suitable for off-takers

WHAT THEY ALSO SAID

As we edge toward construction, dependent on global COVID-19 restrictions, we are working hard towards finalising discussions with the DRC government on the special economic zone terms and parameters as well as securing offtake agreements before the end of the year. Once these decisions have been made we will incorporate this into our financial model and re-approach our financiers with the updated terms based on the latest modelling with the aim of reaching financial close as soon as possible.



↑ Rock chip sample

↑ On-site offices

who are looking to reduce their own supply chain cost through buying already processed lithium products to reduce their own operational working capital risk.

As the company edged closer towards development, it issued pre-mining infrastructure tender packages worth approximately US$300 million in June.

The tenders, which will be awarded once AVZ Minerals makes a final investment decision to mine at Manono, includes the process plants EPC package, the Kabondo-Dianda intermodal staging station, diesel storage facilities and supply package, site buildings and enterprise resource systems.

"Final pricings on the various tenders are expected back this quarter at which point we expect to be in a position to award these contracts, pending COVID-19 travel restrictions being lifted and a financial investment decision being reached," says Ferguson.

SEZ discussions progressing well, indicating positive upside at Manono

Following the execution of a binding MoU with the Ministry of Industry for the development of a Special Economic Zone (SEZ) in the Tanganyika Province, Ferguson says that discussions with the DRC government are progressing well.

The purpose of the MoU is to set up the terms for collaboration and negotiation between the Ministry of Industry and AVZ Minerals with a view to establishing the 'Manono Special Economic Zone' in the Tanganyika Province and the development of basic infrastructure within the zone.

Development of the Manono project and associated infrastructure for mining operations, including the export of lithium, tin and tantalum product, would be at the core of these developments.

The defined geographical area of the SEZ will initially include all essential infrastructure such as water, power (the Mpiana Mwanga hydropower facility) and roads including the Manono licences to facilitate a successful mining operation.

The company expects some of the applied taxes, customs and duties in the modelling to be waived or significantly reduced under the AVZ and DRC Government's Special Economic Zone agreement, which is still currently being negotiated.

A focus on responsible supply chains

Tin and tantalum – two of the 3T minerals (tin, tantalum and tungsten) – represent beneficial future by-products of lithium ore processing at Manono. As a result, AVZ Minerals obtained preliminary iTSCi membership in June, which is aimed at assisting upstream companies to implement OECD guidelines, thereby enabling continued access to international markets and economic and social development for miners and communities across large areas of Central Africa.

The company's iTSCi membership aligns its practices with OECD guidelines on 3T supply chain responsibilities and the American Dodd Frank Act 1502 for conflict mineral and metals supply chain management.

Ferguson says that joining and being recognised by the iTSCi due diligence and traceability programme and its adherence to the OECD due diligence guidance for Responsible Supply Chains is a key part of AVZ's focus on local community and government engagement, a guidance that is more targeted towards artisanal mining.

Moreover, AVZ Minerals is further ensuring responsible sourcing and supply of tin and tantalum by formalising the mining of artisanal-mined alluvial tin and tantalum deposits on its mining lease. It is the company's intention to create a local artisanal mining co-operative of registered and approved artisanal miners – in order to create as many jobs as possible for local Manono people who would not otherwise be able to obtain jobs at Manono and to legalise the mining activity under its mining licence.

Thus the artisanal miners would be assured of an income, while AVZ Minerals would ensure that their health and safety were taken care of and that no underage mining took place. AVZ Minerals would then secure the tin directly and exclusively from compliant miners who had authorisation to work in artisanal areas on the mining lease. This would enable the company to comply with all the conditions required to meet international ethical standards of mining. MRA

SIZE ✓ SCALE ✓

The Roche Dure mineral resource now stands at 400 Mt, grading at 1.65% lithium oxide (Li2O), 715 ppm tin and 34 ppm tantalum as reported in May 2019. Additionally, the Roche Dure deposit has reported JORC-compliant tin and tantalum resources of 275 Mt, grading at 962 ppm tin and 38 ppm tantalum for 264 550 t of tin metal and 10 450 t of tantalum metal. At this size, Roche Dure stands as one of the largest and highest grade undeveloped hard-rock lithium deposits in the world.

In addition to Roche Dure, the Carriere de l'Este deposit has the potential to be a separate resource of equivalent or larger size and at least equivalent grade, as at Roche Dure. It also has the potential to provide a higher grade feed stock for additional processing plants that may be established onsite in the future or for blending with Roche Dure ore.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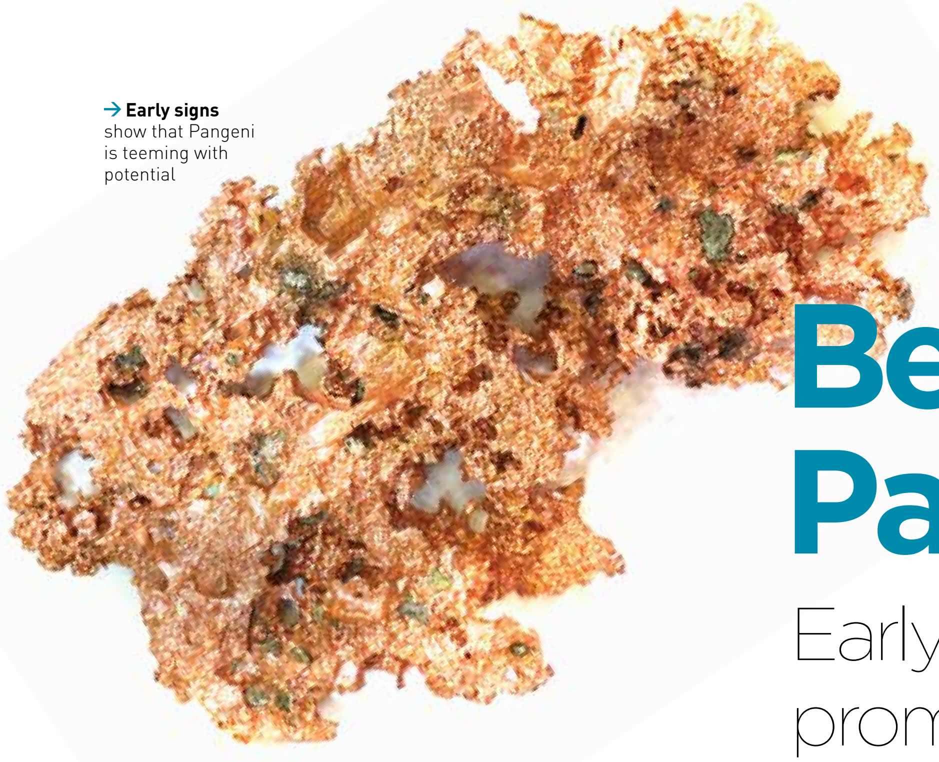


→ **Early signs** show that Pangeni is teeming with potential

BeMetals' Pangeni

Early signs show promising potential

TSX Venture-listed **BeMetals'** Pangeni copper project is located in the north-west region of the Zambian Copperbelt, an area where very little exploration has taken place to date. This is mainly due to the extensive sand cover in the region. While still in the early stages of exploration, the company's president and CEO **JOHN WILTON** tells **GERARD PETER** that the project shows much promise.

IN SHORT
Pangeni is located in an underexplored region of the Zambian Copperbelt, an area which is also attracting attention from the majors.

BeMetals was founded by some of the co-founders and principals of B2Gold Corp. Currently, the company is expanding its portfolio of two key projects, to look at both precious and base metal opportunities. Wilton is a geologist with 30 years' experience in the minerals industry, where he has played a key role in the acquisition, exploration, and development of various base and precious metal projects around the world. His experience also includes 15 years' exploration work in Zambia. Thus he knows the region well and has a good grasp of how to conduct business in the country.

In addition to Pangeni, the company is also pursuing an interest in its high grade South Mountain polymetallic zinc-silver-gold-copper project located in south western Idaho, USA. Currently in the underground advanced exploration stage, the project has historically produced high grade zinc, silver, gold and copper. According to Wilton, the projects complement each other and the company is progressing both in tandem. "We have access to public capital markets and are well supported. This is a result of the team's including an exceptional board of directors with years of experience in successfully raising funds and delivering good value to shareholders," highlights Wilton.

As stated earlier, the Pangeni project is located in the north-west part of the Zambian Copperbelt. While there has been little historical exploration, the region now has the attention of major mining companies who are looking to discover and develop tier one copper mines – all of which bodes well for BeMetals' aspirations for Pangeni. The licence spans 575 km² of the Zambian Copperbelt, within the Lufilian Arc; and is underlain by prospective host rocks known to host major copper mines in the Central African Copperbelt that are largely covered by a thin veneer of Kalahari sands on the property.

The company is progressing Pangeni with two local partners. The first is Pangeni Mineral Resources, a private Zambian company which is the licence holder for the project and provides various important support services to the project. The second is Copper Cross Zambia, a privately owned prospect generator group that manages the project with BeMetals and is a technical partner on Pangeni. Field exploration teams and geology are managed by Remote Exploration Services (RES), who have been the company's boots on the ground on this project since inception, with Blurock Mining based in Kitwe as the drilling contractor.

The company's exploration has been slightly hampered by the onset of the COVID-19 pandemic. "Obviously, with international travel being stopped, it has been hard to get boots on the ground to do fieldwork but we do have a team in Zambia who is ensuring that we can safely keep Pangeni going," explains Wilton.

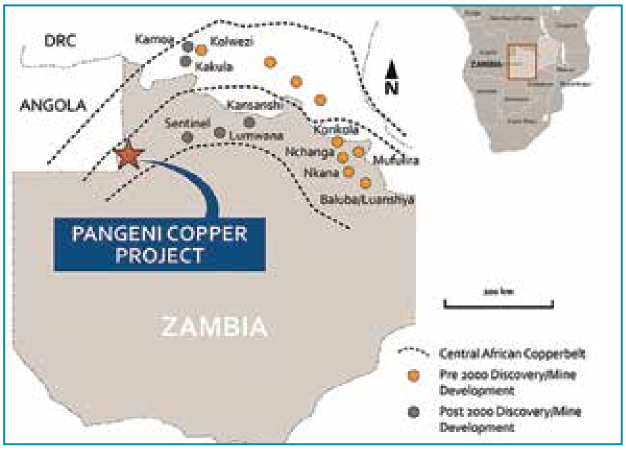
Searching for a world-class deposit

According to Wilton, magnetic airborne survey data, flown over the project, indicates that Pangeni has plenty of potential. Currently, BeMetals is focusing on using this data to generate targets and then conduct shallow aircore drilling through the sand cover to get bedrock samples to look at the bedrock geology and geochemistry. This step is followed up by diamond drilling. "Thus far, we have identified a number of prospects that have delivered meaningful copper interceptions in terms of thickness and grade," he states.

In October last year, BeMetals announced promising results from their latest diamond drilling programme at Pangeni. This programme comprised seven shallow drill holes totalling 1 275 m to test three high-priority targets. The results returned intersections of 5.50 metres grading 0.53% copper in drill hole D2-C1 and hole D2-C2 intersected 5.56 metres grading 0.47% Cu. Other prospects returned drilling samples of 0.5 metres grading between 1.22% and 2.73% copper..

"We were very encouraged by the results of the first diamond drilling programme, completed by BeMetals, at Pangeni," adds Wilton. "These results successfully confirmed the prospectivity of this project to deliver potentially a tier one scale, copper discovery." The company is now focussing on conducting aircore drilling to vector towards higher grade mineralization at existing prospects and to look for more copper targets under the sand cover for the remainder of 2020.

→ **The project is located** in a little explored part of Zambia



> "Our findings thus far show promise and our intention is to ensure that we can discover a world-class deposit,"
>
> **JOHN WILTON**

Wilton concludes that the company's approach to exploring this property, through highly experienced interpretation of airborne magnetic data with follow-up aircore drilling to generate copper targets beneath the Kalahari sand cover, has proved to be successful and cost effective. "We will now fully integrate this data and design the next phase of exploration. "It is still early days but our findings thus far show promise and our intention is to ensure that we can discover a world-class deposit. MRA

Central Copper Resources

Putting in the mileage to open up a new copper province

Privately owned and funded junior, **Central Copper Resources**, is looking to bring a well-recognised but unexploited copper-rich area of the Democratic Republic of Congo (DRC) to account. The western region, about 70 km from Kinshasa, is home to the company's **Mbamba Kilenda** (MK) copper project, which could be the starting point to opening up a major new copper territory in the country, CEO **KEVIN VAN WOUW** tells **LAURA CORNISH**.

Historic exploration defined the mineralisation around the MK project during the 1950s and 1960s and has, since then, always been known to contain high copper grades. "But it is also known to have a fairly complex geological structure, which in the past has been a deterrent from developing new mines in the region," Van Wouw starts.

IN SHORT
Could the development of the Central Copper Resources' MK project in western DRC be the key to unlocking further mining projects in the unexploited region?

With an honorary background and tertiary education in metallurgy, supported by an active role in international business for much of his career over the last 30 years, Van Wouw is well-equipped to understand the metallurgical needs of the project as well as the financial steps and processes to move it forward. He has fulfilled the role of CEO of Cradle Arc, founded and run various private companies and prior to that was projects director at LionOre Mining International. Previously, he was senior project manager for the Ngezi and Mimosa platinum projects while working for DRA International.

Current focus

Van Wouw established Central Copper Resources just before the commencement of lockdown in South Africa where he is based. The company is supported by its primary shareholder – Cape Town based African Minerals & Exploration Development (AMED), whose parent company is based in Luxembourg.

"AMED first became involved in the project in 2013 as a private equity player. It has injected over US$20 million into advancing the project over the years through drilling programmes, metallurgical test work, etc. Seven years into its involvement, the company brought me on board to move MK from an exploration play to a producing asset," Van Wouw outlines.

"Ultimately, the company is looking to see a return on its investment and exit from the venture and will do so when we have fully determined the financial viability of the project through a comprehensive mine design and schedule that also takes into account external factors such as logistics. Only then would the project be considered fully de-risked. At this point we could see a buyout from a larger company or alternatively, we may look to list the company on a junior mining centric stock exchange such as the LSE," he continues.

At present, Central Copper Resources is conducting a pre-feasibility study on the MK project which Van Wouw is looking to conclude in October 2020, after which a full-scale feasibility study will commence.

What the CEO can uncover about the project to date is that drilling has

↑ **The MK project** will bring economic upliftment to the region and its communities

confirmed high grade oxide copper, zinc, lead and silver mineralisation and even vanadium, which is open to the west of the maiden JORC (2012) resource statement published in 2017. "Thus the extension of this resource would be logical via step out drilling with an infill programme to upgrade the resource classification leading to an expanded and upgraded JORC (2012) classification."

Summary of JORC (2021) compliant mineral resources for MK deposit (0.5% copper cut-off) as of 2017

Resource category (JORC)	Tonnes (Mt)	Copper (%)	Copper metal
Indicated	4.3	3.52	152 000
Inferred	6.8	3.52	238 000
Total	**11.1**	**3.52**	**390 000**

Test work campaigns to date have identified the use of Dense Medium Separation and flotation in combination, generating two concentrate products: a Direct Shippable Ore (DSO) from the gravity circuit, and a cleaner, higher grade flotation concentrate. "The MK project comprises a complex oxide ore body born of volcanogenic massive sulphide type origin as the source with 17 mineral species within a brecciated zone on the fault structure in the sedimentary rock. However, the above outlined processing methodology will likely allow us to process the material and extract the high grade minerals."

"The unique nature of the ore body is further defined as a shallow mineral continuity in a high-grade horizontal seam, which allows for the use of low cost, bulk mining methods with the advantage of automated operation," Van Wouw highlights.

"As we start to generate copper concentrate successfully, I do expect to see equity interest which will set the pace to fully enter Phase 1 production,"

KEVIN VAN WOUW

The MK vision

A scoping level assessment performed in early 2020 shows the potential to establish a large-scale operation at MK that becomes financially viable when developed in stages, Van Wouw notes.

He outlines the potential five phases:

- Phase A: Trial mining via a single decline and DSO material generation. Cost of $60 million
- Phase 1: 1.2 Mtpa ROM, producing 28-32 000 tpa of copper in concentrate. Cost of $180-200 million
- Phase 2: Doubling ROM, resource extension within 15 km strike
- Phase 3: Doubling ROM to →4 Mtpa (→100 000 tpa of copper metal)
- Phase 4: Establishing a smelter to produce copper metal

Historical data focused on the western, central and eastern portion of the 85 km strike length which has seen Van Wouw inject more of his attention into drilling out the eastern portion. "While Phase 1 will focus on building a project in the easternmost 5 km of the ore body, we are clearly seeing the strike extension to the west and with drilling – even just a few kilometres more – we'll upgrade the definition of the resource necessary to expand our project as indicated," Van Wouw outlines.

But because of its complex nature, he emphasises the necessity for a trial mining phase extending to between 150 and 250 m in depth. This is scheduled to last for approximately two years. "This will ensure we truly understand our ore body. But we are eager to begin this phase and hope to kick off early in 2021 after which we have forecast a six-month period to reach mineralisation – providing us with sufficient time to establish the

A new copper province on the horizon

The scope to develop a large-scale project for MK is significant

Basic infrastructure on site to support local work for the MK project

Core sampling on site

necessary processing infrastructure." The MK project does already have its mining licence approved, making this timeframe feasible.

Fortunately, the trial mining period will be largely self-financed from which Van Wouw hopes to deliver around 8 000 tpa of copper (from a 500 000 tpa ROM rate). "As we start to generate copper concentrate successfully, I do expect to see equity interest which will set the pace to fully enter Phase 1 production – which will require, in addition to expanded mining and processing, an access road, port upgrades, power supply infrastructure, etc."

The consequent expansion phases are at this stage proposed to take place every two to three years, eventually reaching that 4 Mpta ROM mark.

4 MTPA

Central Copper Resources' MK project ROM vision

Talking challenges

Van Wouw speaks openly about the challenges that lie ahead – none of which is unfamiliar in the DRC or any remote region of Africa. The access road construction to site requires aggregate material still to be identified post lockdowns. This will make transporting equipment to site more accessible. "The support network from our service providers will also be limited. Local communities will require extensive training as the region is remote and largely focused on agriculture."

And while the Mining Code is according to Van Wouw "simple and understandable", the challenge lies in the decisions made – which are "by decree". "Nonetheless, with a great payback period and good copper grade and quality, the project is still a financially attractive option."

"The development of our first project on the eastern end of the strike area is the company's priority, initially including the completion of a pre-feasibility and then a final feasibility. We intend our first project to bring more than 1 Mt of copper in reserve, while at the same time the exploration and development of new project targets in the remainder of the 85 km strike length will be considered," Van Wouw concludes. MRA

FAST FACT

The MK project sits on the West Copper Belt, which extends over 1 400 km from Angola, the DRC, Republic of Congo and through to Gabon, with known projects such as Mavoio Telo where 16 Mt at 2.46% copper is remaining after mining the high grade core. Central Copper Resources has contiguous tenements over 85 km.

Arc Minerals

Making strong headway in Zambia

A name change, new leadership and a sole focus on a single commodity have put AIM-**listed Arc Minerals** on a strong footing to progress its copper assets in Zambia. **GERARD PETER** finds out more from the company's director and executive chairman, **NICK VON SCHIRNDING**.

IN SHORT
Arc Minerals has identified more than 12 highly prospective targets at Zamzort

Von Schirnding, who has more than 25 years' experience in mining, joined Ortac (as Arc Minerals was formerly known) in 2017. At the time, the company owned a hodgepodge of interesting assets, including gold in the Democratic Republic of Congo and Slovakia and copper in the north west of Zambia. Von Schirnding, who has formerly held senior positions at De Beers and Anglo American, was brought in to turn the company around. "We changed the management and the board as well as the company name to Arc Minerals. We sold off our other assets and set out to focus primarily on copper in Zambia," he states.

Today, the company is focused on the discovery and development of its large-scale copper at its Zamsort and Zaco licences in the western part of the Zambian Copperbelt. While von Schirnding concurs that it is good to have a diversified portfolio, he believes it is the right strategy for a company like Arc Minerals to focus on a single asset.

"The last two years have all been about restructuring and we now have a very clear strategy in place. The first thing was to straighten out our portfolio. Secondly, we needed to get the exploration assets into better shape so that could attract interest from potential suitors. This strategy has worked well. Proof of this can be seen in the company's strong balance sheet and enough funding to carry it through to 2021," he explains.

Strong signs of promise

In total, the Zamsort and Zaco licence areas cover 872 km² and include the advanced Kalaba copper-cobalt project. To date, Arc Minerals has identified more than 12 highly prospective targets at Zamzort. Because it is such a large area, von Schirnding states, the company is working methodically, based on geochemisty and geophysical information, to conduct advanced exploration.

In June, Arc Minerals started drilling activities at its Fwiji target in the Zaco licence area. The total diamond drilling programme for the year is budgeted for an initial 8 000 m with hole depths to between 100 m and 250 m below surface. The drilling is initially intended to confirm the interpreted anticlinal structure and mineralisation associated with the hinge component to this anticline. This will then be followed to test the mineralisation in the down-plunge hinge component to the anticline.

Arc Minerals' Zamsort and Zaco licence areas cover 872 km²

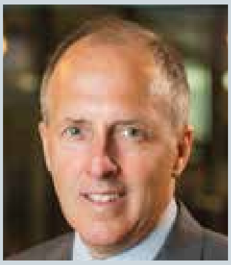
"The exciting part is that every time we have drilled we have hit mineralisation, which is almost unheard of. I believe that we are sitting on super-exciting assets that have got the attention of the majors," adds von Schirnding. No doubt, Arc Mineral's progress has already got the attention of major companies. To that end, the company has entered into a six-month exclusivity agreement with Anglo American.

In essence, this means that no other company can approach Arc Minerals to form any working arrangement while the agreement is in place. According to von Schirnding, if test work shows promising results, Anglo American has a variety of options available to it to increase its interest in Zamsort. "Anglo American has a variety of options available to it to conclude a commercial agreement. I am very excited about the agreement with such a key major player," explains von Schirnding.

"One of Anglo American's key senior geologists is a resident expert on north west Zambia and knows the geology of the area better than anyone. This attracted me to agreeing to work with the company because they previously owned these assets and we now have access to some good expertise."

→ **Washed ore**

> "Every time we have drilled we have hit mineralisation, which is almost unheard of,"
>
> **NICK VON SCHIRNDING**



Now, while Arc Minerals has honed in on developing its copper projects in Zambia, the company could also be sitting on some other in-demand commodities in its licence areas. "I believe that there could be nickel deposits on the eastern side of the project while there have been traces of gold found on the west side. This has resulted in a mini gold rush in that area. Also, we have found traces of uranium which is often linked to gold. So, while our focus is on copper, I will not be surprised if we discover other metals during our exploration," concludes von Schirnding. **MRA**

Riding the storm

Commodities showing resilience during the crisis

Image: 123RF.com

A positive outlook in the electric vehicle market bodes well for battery metals mined in the DRC

While the COVID-19 pandemic has caused unprecedented financial disarray on a global scale, there is a silver lining for some commodities mined in the Democratic Republic of Congo (DRC). This is the consensus of panellists that participated in the *DRC Mining Week (DMW)* digital event held in June. **GERARD PETER** reports.

The session featured George Heppel, senior analyst: cobalt, lithium and battery minerals, CRU UK; Olivier Binyingo, director at Herbert Smith Freehills South Africa; Cyrille Mutombo, Country Manager Barrick DRC; and Simon Tuma Waku, deputy MD, Tenke Fungurume Mining in the DRC.

According to Heppel, at the onset of the COVID-19 pandemic, there was a negative sentiment about the electric vehicle (EV) industry, particularly in large markets such as Europe and China. As a result, that would have had an impact on battery metals such as cobalt of which the DRC is a key mining player.

However, Heppel pointed out that the EV market is showing signs of strong resilience. "In April, global automotive sales were at their lowest level since 1998. However, on the upside, the EV market showed positive signs of growth. In Q1 sales in Europe, the world's largest EV market was at the highest it has ever been.

"COVID-19 gave us a lot to be worried about when it came to EV demand but instead we can expect sales to be largely flat year on year. As such, concurrent demand for cobalt, lithium, graphite and copper will not be as bad as originally expected."

Tuma Waku added that demand for copper and cobalt will also be on the rise as China resumes building its economy. "The Chinese have a lot of interest in the DRC and put measures in place in order to continue operations during the State of Emergency in the country," he explained. This gave the market some confidence to stem the fall of commodities as China remains committed to keeping production levels at 2020 levels despite the pandemic. This resulted in a positive upswing for copper and cobalt since March, almost getting back to levels where they were at the end of 2019."

Gold proves its mettle again

Meanwhile, Mutombo weighed in on the reason why gold is reaching record prices in the midst of the pandemic. "This seems to be historical as investors always seem to bank on gold as a form of refuge when there is uncertainty in the market. What we are seeing now is similar to how the market reacted to the global financial crisis of 2008 when the gold price rose soon after it hit."

However, he added that the price will balance itself out as proven in the past. "The crisis is going to ease and as far as gold is concerned, I believe that the demand will still be there. Naturally, there will be some return to normality in the price as we move forward."

In order to take advantage of market conditions, current and future, Binyingo advised that the DRC government needs to put measures in place to make the country more investor-friendly. "The DRC seems to operate by a 'rule by law' rather than 'rule of law'. This means it imposes taxes, fines and penalties to make their point against business and that dissuades investment in the country.". Mutumbo concurred, adding that policy makers need to create incentives to help build infrastructure, particularly in the remote parts of the country, to make new projects viable.

The panellists agreed that once the COVID-19 pandemic passes, there will still be high demand for gold and battery metals. This bodes well for the DRC which is rich in natural resources. However, they urged the government to address its mining regulatory policy in order to boost investment confidence in the country. MRA

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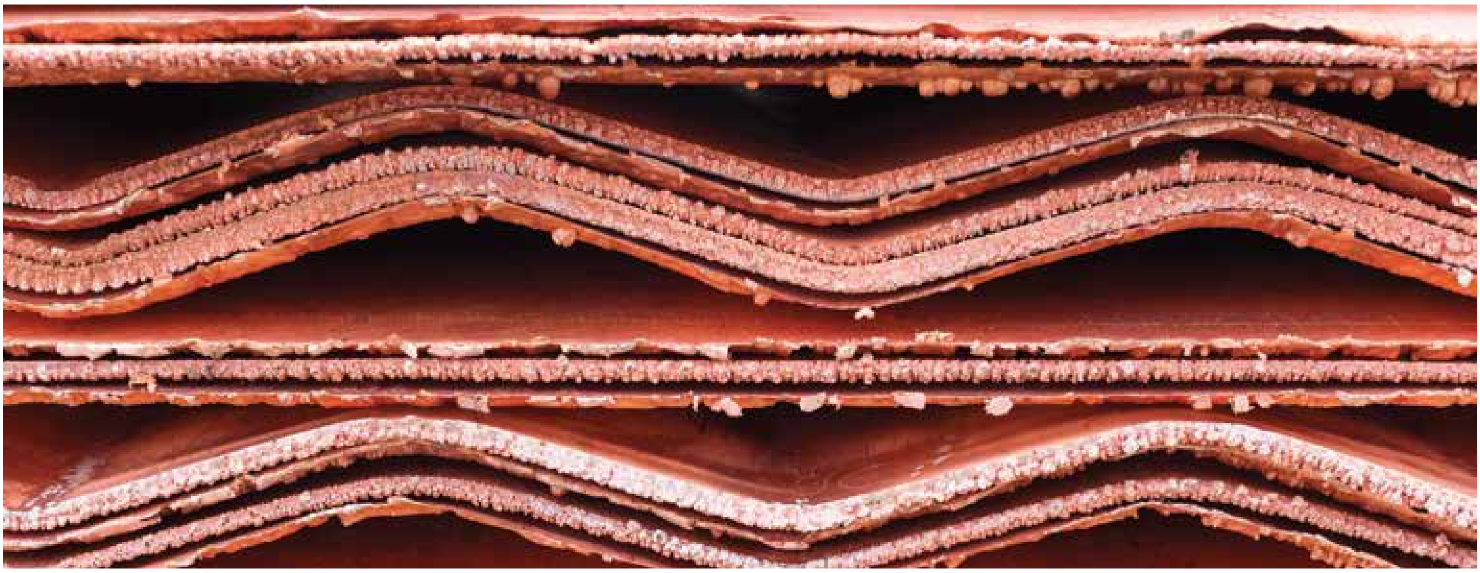

The DRC's copper

Pivotal in the electromobility transition

The Democratic Republic of Congo (DRC) is expected to play a central role in the electromobility transition as a critical supplier of this 'green metal'. Copper production from the central African country, which currently sits at just over 1.2 Mtpa, is forecast to grow to well over 1.6 Mtpa over the next five years on the back of several new projects. This would far surpass Zambia's forecast copper production levels, which are anticipated to remain below 1 Mtpa over the same period. This is the view of commodity research firm **CRU Group** senior base metals analyst **HAMISH SAMPSON**, a panellist on a *DRC Mining Week* webinar session held in July. **CHANTELLE KOTZE** reports.

Despite a slump in copper demand during February and March 2020 as the COVID-19 pandemic spread across China, Sampson notes that China's copper demand has since rebounded more strongly than expected.

While the pandemic dragged Chinese refined copper demand down by 20% year-on-year in Q1, 2020, with prices falling below US$5 000/t, leading to copper production cutbacks on the back of this, Q2, 2020 saw China roaring back at a much faster rate than expected. This has helped propel the copper price back up to around $6 000/t – where it was at the start of the year before the onset of COVID-19, says Sampson.

Electric vehicle fundamentals to sustain long-term copper growth

Forecasts show that copper demand from China – which has been the major contributor to almost all commodity demand over the past few decades – is expected to plateau from the middle of this decade and could even slide quite sharply in the next decade. According to Sampson, the developing world is expected to sustain copper demand over the long-term, driven mainly by copper demand from the electric vehicle (EV) market.

While the transport sector only accounts for about 10% of copper demand, the e-mobility transition is expected to give rise to additional copper demand. By way of example, internal combustion engine vehicles only consumes 20 kg of copper per vehicle, increasing to 30 kg in a hybrid electric vehicle and 80 kg in a full battery electric vehicle.

With EV sales forecast to increase from around the middle of this decade, Sampson notes that EV related copper demand could increase to approximately 4 Mtpa by the end of 2035.

Long-term supply

With increasing demand for copper demand in future, there is a risk that this won't be met with sufficient supply, without a healthy project pipeline. According to Sampson, the DRC is set to make an important contribution to global future copper supply with several possible projects in the pipeline, in particular Ivanhoe Mines' Kamoa-Kakula copper project.

Having said that, Sampson notes the need to address political, legislative and infrastructure risks to ensure that projects can be discovered, developed and successfully brought into production. MRA

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Image: www.123rf.com

Power to the mines

A finger on the pulse of power projects

The Democratic Republic of the Congo (DRC) has enormous potential for the expansion of its current renewable energy sector within the mining industry. How can this potential be realised in a long-term sustainable methodology? **RICHARD JANSEN VAN VUUREN** reports.

This was one of the questions posed to two participants at the recent ***DRC Mining Week*** virtual event hosted by ***Mining Review Africa***. Raphael Khalifa, CEO of Tembo Power, and Serge Nawej Tshitembu, MD of Gea. Solar (DRC), fielded some pertinent questions regarding the country's challenges in terms of generation and transmission of power as well as operational renewable projects and legislation in the country.

The strongest message that emerged from these questions regarding power projects in the DRC was that the country needs a dedicated energy regulator to make it easier to develop generation projects as well as obtain financing. The setting of tariffs is also needed.

Khalifa stated that this in turn hinders security for generation licences and concessions for power projects. Tshitembu maintained that the DRC is on track to establish an energy regulator that would allow transparency and stability to secure more foreign direct investment. While most of the energy generated is renewable – primarily hydropower – a regulated environment will unlock access to European investors who show interest in the sector but are dissuaded by murky legislation.

The DRC has one of the lowest rates of electrification in the world. Based on available data, the DRC's national electrification access rate was just 9%, with 1% in rural areas and 19% in urban areas. The irony is the country is endowed with large mineral resources and has the potential to install up to 100,000 MW of hydropower capacity.

Smaller is better

Any discussion around renewable energy in the DRC would be incomplete without introducing the controversial Inga 3 hydroelectric project.

The project was announced in 2013 to great fanfare with World Bank support, at an estimated cost of $14 billion. It was intended to deliver 4.8 GW of power, primarily for export to South Africa and to power mines in eastern DRC.

However, in 2016 the World Bank cancelled its involvement. This development threw the project into disarray as investors withdrew their interest. To address criticism of the project's flawed economics, the DRC government stated in 2017 that it would redesign the project with ambitions to more than double the generation capacity to over 10 GW.

Both Khalifa and Tshitembu agreed that aspirations to complete this megaproject are not feasible as the access to solar and smaller hydropower projects are dictating the future of the renewable energy landscape in the DRC.

Tembo Power has four projects in the DRC – three hydropower and one solar project (Project 1 is 17 MW; Project 2 is 17 MW; Project 3 is 32 MW; and Project 4 is 30 MW) that will operate in conjunction with the hydro elements.

Gea.Solar has solar energy projects across Africa: Burundi, Côte d'Ivoire, DRC, Malawi, Mali, Rwanda and Sierra Leone. MRA

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DRC Mining Week rain check

Unanimous industry support for postponement

The long-running *DRC Mining Week* expo and conference, which was due to take place in Lubumbashi from 7 to 9 October this year has been moved to 15 to 17 June 2021 – a decision supported fully by the industry.

"We have taken the decision to postpone the event following a period of continuous engagement with our stakeholders and customers," says David Ashdown, MD of Clarion Events Africa, the organisers of *DRC Mining Week* for the last 16 years. He admits that it was a tough decision due to the opportunity it presents for the industry to connect and drive vital business revenues, but it is the right decision in terms of health and safety.

Ashdown adds: "We are committed to supporting the DRC in establishing itself as the leading copper and cobalt producer globally and realising its mining wealth through its diversified metals and minerals portfolio. We will continue to engage the industry over digital formats, and the team and I are excited to travel back to the country when the opportunity allows."

Continued engagement with the mining community

Meanwhile, the mining industry in the DRC and the many sector suppliers of technology and services have expressed their support for the postponement of the live event until 2021. The SA Capital Equipment Export Council (SACEEC) regularly attends as many of its members do considerable business in the country.

"*DRC Mining Week* has always been an important market for South African mining suppliers," says Eric Bruggeman, SACEEC MD and CEO. "With all the uncertainty in the world and country at the moment, it would be very risky to host the exhibition this year. However, SACEEC and its members are committed to continuing to support *DRC Mining Week*, and we will be there in full attendance when the exhibition next takes place."

The recent *Digital DRC Mining Week* that took place in June brought together scores of enthusiastic attendees who, during live webinar and matchmaking sessions, agreed on the rich resources the country is blessed with and the enormous business opportunities that are still continuing at many mines and the many more that will take place in the future and benefit the local communities even more. Some thought-provoking quotes heard during the *Digital DRC Mining Week* include:

- "Few other countries produce cobalt and we want to position DRC as a key cobalt producer on the international stage," ***DRC Mining Minister, Prof Willy Kitobo Samsoni***
- "*DRC Mining Week* has shown itself to be every bit as innovative as the DRC mining community it operates within by taking the conference into the virtual world in a very professional manner with a host of knowledgeable people taking part," ***Boris Kamstra, Director Pangea and Executive Director, Alphamin Resources***

Meanwhile, the live webinar series which was launched in May this year in partnership with *Mining Review Africa* will continue throughout the build-up to the next live *DRC Mining Week* in June 2021. MRA

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From left: Louis Watum, MD DRC Operations, Ivanhoe Mines DRC and President of the DRC Chamber of Mines; Prof Willy Kitobo Samsoni, DRC Minister of Mining and Elodie Delagneau, *DRC Mining Week* event director during the keynote address at the *Digital DRC Mining Week*

SPECIAL REPORT

SA OEM SHOWCASE

Building resilience into its local manufacturing capability

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Conveyor belt cleaning equipment designer and manufacturer Brelko Conveyor Products has matured into a turnkey transfer point spillage-control solutions provider throughout its 33 years of buisness. P38

SOUTH AFRICAN OEM SHOWCASE

Brelko's range of niche transfer point spillage control solutions are fully manufactured in-house

Brelko Conveyor Products

Building resilience into its local manufacturing capability

Conveyor belt cleaning equipment designer and manufacturer **Brelko Conveyor Products** has matured into a turnkey transfer point spillage-control solutions provider throughout its 33 years of business. The company has shown remarkable resilience during the COVID-19 pandemic, which MD and co-founder **KENNY PADAYACHEE** attributes to the company's strong history of innovation, characterised by continual technology adoption, digital transformation, product research and development and the maintenance and expansion of its world-class Johannesburg-based head office and manufacturing facility, writes **CHANTELLE KOTZE**.

As a proudly South African company and Level 1 broad-based black economic empowerment contributor, Brelko has fully embraced local manufacturing for the past eight years. Its range of premium, niche transfer point spillage-control solutions is fully manufactured in-house – from majority locally-procured raw material right through to final product. Brelko's range of products is also complemented by technical and aftersales support, completing the company's turnkey service offering.

Often overlooked upon delivery of a final product is the innovation and technology that is applied during the manufacturing process. At Brelko, its manufacturing methodology ensures 'ultimate product performance' using the latest software and machinery that is energy efficient and environment-friendly with little to no waste of raw materials to ensure that it is capable of designing, manufacturing and successfully distributing and maintaining the company's ever-evolving product range.

To this end, Brelko's modern manufacturing facility features cutting-edge technology including CNC machining, automated polyurethane dispensing, robotic welding as well as soon to be installed and commissioned robotic gluing and automated spray-painting systems. "It is this adoption of modern technology and machinery that enables Brelko to improve the efficiency, accuracy and productivity that its customers have come to enjoy," says Padayachee.

While the notion of automation is associated with a reduction in labour, Padayachee says that Brelko has not retrenched personnel. Brelko

↑ **Brelko has fully embraced local manufacturing for the past eight years** is instead expanding its in-house manufacturing capability. "This will enable us to handle some of the manufacturing tasks that we currently outsource to local suppliers and service providers, such as powder-coating," he notes.

The company has used the time afforded to it during the COVID-19 pandemic and the resultant economic and industrial slowdown to build additional resilience into its business and to future-proof its business for when the economy and mining market pick up. "We have proactively used this time to focus on building capacity for the future, by expanding our manufacturing facility," says Padayachee.

In doing so, Brelko is in the final stages of completing the construction of its 'Erf 1' property located at 65 Beaumont Street, which adjoins its current head office and manufacturing facility. This new facility will have 6 000 m^2 of under-roof workable floor space. The current despatch and warehousing facility will be relocated to Erf 1, which will also be home to the relocated palletising facility as well as provide additional office and storage space. Erf 1 also features garage space, which will house the company's delivery vehicle fleet.

The existing despatch, warehousing and palletising facility will become the future polyurethane plant, Padayachee explains, noting that the existing manufacturing facility layout will also be redesigned to ensure improved work flow within the production line.

Four major contracts under way

Despite the impact of the COVID-19 pandemic on Africa's mining sector, which had led to the temporary shutdown of some operations, Brelko has been awarded and is in the process of fulfilling contracts at major African mining and industrial projects.

In South Africa, Brelko has been awarded a four-year maintenance contract at JSE-listed diversified miner Exxaro's Grootegeluk coal mine near Lephalale in the Limpopo Province. The maintenance contract covers 240 conveyor belts and includes a turnkey product supply and maintenance contract. The fitment of Brelko's conveyor belt poly rollers enabled the operation to increase the amount of coal that it moved from 800 tpd to 3 000 tpd.

Meanwhile, at state-owned power utility Eskom's Kendal power station in Mpumalanga, Brelko has been awarded a contract to specify its complete range of products, which includes primary and secondary belt scrapers, V-Ploughs, Keyskirt, Hi-Impact systems and troughing and return Belt Tracking systems for use on approximately 22 ash conveyor belts at the Kendal ash plant. Manufacture of the products began in March and the equipment was delivered to site in mid-July.

The company also received an order from minerals sands producer and beneficiation company Richards Bay Minerals for the supply of conveyor belt cleaning equipment for 100 of its titanium dioxide handling conveyor belts.

Moreover, across the border in central Africa, Brelko has been awarded a contract for Ivanhoe Mine's giant Kamoa-Kukula copper project in the Democratic Republic of Congo, where it will be supplying conveyor belt scrapers and its Keyskirt products to the mine, which is currently under development. The delivery, which was delayed due to border closure, is scheduled for August.

Brelko plans to maintain and further grow its already impressive foothold in the SADC region. The company has over time made inroads into the DRC, Egypt and Zambia.

"As African countries develop, we will continue to expand and grow as new opportunities arise," says Padayachee, "while cultivating and sustaining our already strong business in South Africa and the SADC region." MRA

↑ **Brelko is capable of designing, manufacturing and successfully distributing and maintaining the** company's ever-evolving product range

NEW PRODUCT UNDER DEVELOPMENT

Brelko has committed considerable resources to research and development towards refining its product offering with the sole purpose of producing products that require little to no maintenance and are not reliant on large windows of scheduled maintenance.

The latest product under development – a self-adjusting belt scraper – that self-adjusts according to the amount of wear on the primary and secondary scraper blades, has already undergone three years of research and development and is currently at prototype stage. Once field-tested, the self-adjusting belt scraper will be ready for commercial production.

This will ensure improved efficiency and productivity as the conveyor belt scraper will be able to operate 24 hours a day, seven days a week. The efficiency and productivity gains as a result of this new product could be substantial, particularly for companies operating in remote areas or at operations requiring continuous and uninterrupted production.

Resurrecting South Africa's industrialisation

A boon for mining equipment manufacturers

While South Africa's local manufacturing sector has suffered at the hands of imported goods, **Mining Equipment Manufacturers of South Africa** (MEMSA) CEO **OSSIE CARSTENS** believes that Mining Charter 3 has created a supportive environment for the reindustrialisation of South Africa through the growth and transformation of the local mining supply chain, writes **CHANTELLE KOTZE**.

Image: 123RF.com

Contrary to the mining industry's concerns surrounding the Mining Charter's local procurement requirements, which the industry believes is too onerous, Carstens views these requirements in relation to how they tie into the country's development and transformation objectives. The aim of these provisions was to strengthen the linkages between mining and local manufacturing, with the intent of encouraging entrepreneurs to participate in the mining industry's value chain.

The Charter stipulates that mines should work towards a targeted 70% of goods procured to be 'South African manufactured' with at least 60% local content by companies with transformed ownership structures; while a targeted 80% of services procured should be from black-owned, women or youth-owned and BEE compliant companies. These levels are to be reached in progressive stages over a five-year period, and weighted points for each category would contribute to a mine's compliance level. To be considered, the level of local content must be verified by the SABS. The threshold to achieve compliance to the Mining Charter is low and achievable as the weighted procurement requirement can start from 0% if mines achieve their human resources and employment equity targets.

Despite the mining industry's push back to date, Carstens believes that these local procurement targets become much easier to achieve when local Tier 1 – 3 suppliers become involved in the mining supply chain, meaning that local OEMs are less reliant on importing international parts, components and/or systems to manufacture their final products.

"Herein lies a whole host of new advantages in identifying companies to develop components locally that are fit-for-function," says Carstens, noting that an unintended consequence of manufacturing locally is that the Intellectual Property is also held within the country and protects goods from being manufactured elsewhere – opening up export opportunities for local suppliers.

Because South Africa's mining market is a shrinking market, MEMSA, together with the Department of Trade and Industry, is looking further afield to the neighbouring Southern African Development Community (SADC) market for local content synergies with a similar regional approach to local content provisions as set out in the Mining Charter. This will also allow local manufacturers in the SADC market in developing their export capabilities within the region.

Regional resource-based industrialisation needed

The majority of African countries have mineral-dependent economies, with an average 60% dependence on mineral exports.

Because mineral resources are finite, Dr Paul Jourdan, an independent consultant on resource-based and spatial development strategies, points out the need to ensure equitable and optimal extraction of mineral resources. Even more important is the establishment of mineral linkages while there are still mineral resources in existence to ensure broad-based sustainable growth and socio-economic development, while avoiding the formation of mining ghost-towns.

Jourdan's sentiments echo the African Union's African Mining Vision (AMV), which was adopted by Africa's Heads of State Africa 10 years ago, with the aim of ensuring transparent, equitable and optimal exploitation of mineral resources to underpin broad-based sustainable growth and socio-economic development on the continent.

He explains that mining operations – because they themselves cannot be sustainable – need to be made indirectly sustainable by ensuring that the communities in which they operate are made sustainable, through the creation of mineral linkages.

In order to achieve the vision of the AMV, the deepening of all mineral linkages through the sustainable development of the resource input and output industries is critical, says Jourdan. These linkages include:

- Downstream or backward linkages into mineral beneficiation and manufacturing;
- Upstream or forward linkages into mining capital goods, consumables & services industries;
- Side-stream linkages into infrastructure (power, logistics; communications, water) and skills and technology development (human resource development and R&D);
- Mutually beneficial partnerships between the state, the private sector, civil society, local communities and other stakeholders; and
- A comprehensive knowledge of the mining operation's mineral endowment.

The pot of gold at the end of the tunnel contains the lateral linkages that are achieved mainly through the backward linkages, explains Jourdan.

"Because capital goods manufacturing is highly reliant on knowledge-intensive research and development, these companies are often able to reapply these skills in resource independent areas with the manufacture of other similar capital goods; for example, the evolution of mining equipment manufacturing into earth moving or construction equipment manufacturing.

"This leads to the creation of lateral linkages over time and manufacturers are ultimately able to become independent of resource industries," explains Jourdan.

Following the publication of the AMV, the Country Mining Vision was developed as a tool to facilitate the domestication of the AMV at country level. At this point it was recognised that very few countries in Africa have a big enough domestic market to realise these linkages.

Jourdan notes that because economies of scale work against African countries, the SADC Regional Mining Vision (RMV) was born to support regional trade and industrialisation so that these linkages could more easily be realised.

From a local content perspective, the RMV would provide a framework of mutual recognition of local content among SADC countries, as it strongly supports localisation and regionalisation of mineral value chains, including mining supply chains.

As things currently stand, the SADC mining supply-chain is dominated by the importing of mining capital goods to the value of between US$3 and $6 billion a year – about $2 billion in South Africa alone, says Jourdan, noting that this leaves room for a massive import displacement opportunity that can be filled with local SADC content.

For this to work, Jourdan stresses the need to prevent industrial polarisation from taking place, in which the strongest economy dominates and limits the development of the weakest economy. To combat this, Jourdan suggests the implementation of infant industry protection through the implementation of a financing mechanism that is biased in favour of the poorest nation. To do this, Jourdan suggests the creation of a venture capital fund for local content industries (capital goods and consumer services) that is available to countries at the inverse of their GDP per capita for both their equity and debt.

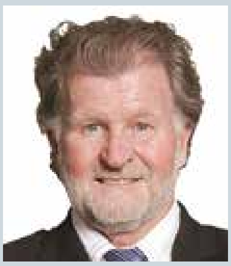
Although the RMV was adopted in August 2019, it is yet to be implemented as it awaits approval from the Heads of State. Its implementation would ensure that equipment manufactured in SADC would be given partial credit and recognition as local content in other SADC countries, and vice versa – with credit dependent on a country's GDP per capita. MRA

> "An unintended consequence of manufacturing locally is that the Intellectual Property is also held within the country and protects goods from being manufactured elsewhere – opening up export opportunities for local suppliers,"

OSSIE CARSTENS

> "The deepening of all mineral linkages through the sustainable development of the resource input and output industries is critical,"

DR PAUL JOURDAN



Despite the pandemic the organisation still has a key role for South African exporters

Image: 123RF.com

Crossing borders

SACEEC still has a vital role to play

Since its inception in 2000, The SA Capital Equipment Export Council (SACEEC) has played a key role in helping local manufacturers gain access to key international markets including mining markets. Now, in the wake of the COVID-19 pandemic, SACEEC members are facing unprecedented challenges. CEO ERIC BRUGGEMAN explains to GERARD PETER why the organisation still has a vital role to play in boosting South Africa's export market amid new market conditions.

SACEEC is a public-private partnership between the South African Department of Trade & Industry and the capital equipment and related services industries. One of its main functions is to open doors for South African companies looking to export their products and services. Much of this is done by hosting national pavilions at events, trade missions and arranging individual exhibitions, all of which put its members directly in front of potential clients.

However, the onset of the coronavirus has curtailed international travel and most African and international mining shows have been postponed. In addition, the COVID-19 lockdown in the country has put significant pressure on its members' revenue streams. As a case in point: In March, South Africa exported R9 billion worth of goods to Zambia. As of July, this figure was down to R4 billion.

"The equipment that our companies sell can't be found on online shopping platforms like Takealot where you can pay with a credit card and it will be delivered to you within two weeks," states Bruggeman. "Rather, the products our members supply are usually specifically designed for the end-user and the lockdown period and postponement of shows has made it difficult for our members to conduct business."

Bruggeman foresees suppliers continuing to operate in survival mode for the next few months. "When we went into a hard lockdown at the end of March, many of our members still had work in the pipeline. So when the regulations were eased in May and June, they were still able to generate some income. However, I believe that the knock-on effect is going to start impacting SACEEC members in the months to come," he explains.

According to Bruggeman, the negative impact is largely because the local manufacturing supply chain has been severely hampered because of access to material. Also, tougher border restrictions are making export into other African countries a logistical nightmare. "Recently, there was a backlog of delivery trucks on the DRC/Zambian border that stretched for 52 km," he explains. "We are talking to governments all the time about easing of border controls but this is not always easy because you are

> "While we are battling the coronavirus, the 'people' aspect of doing business hasn't gone away,"
>
> **ERIC BRUGGEMAN**

dealing with various departments and more importantly, you want to ensure that drivers are properly screened for COVID-19 before entering a country."

Opportunities still exist

Despite not being able to put its members physically in front of potential customers, SACEEC is still promoting engagement through electronic means. To this end, the organisation is in the process of updating its website to include a business directory which will link members directly with potential clients. As such, Bruggeman is urging SACEEC members to ensure that their details are up to date on its website.

In addition, SACEEC has already arranged virtual meetings between its members and key mining players in the DRC, China, Zambia and Ghana with more such meetings planned in the coming months.

Now, while local manufacturers take a knock, Bruggeman encourages companies to keep speaking to customers, both past and current as well as potential new ones. "While we are battling the coronavirus, the 'people' aspect of doing business hasn't gone away. Always remember, people buy from people – that's why meeting with them, even in a digital format, is so important."

To illustrate his point, Bruggeman cites the example of buying a new car. "Before you buy a car, you chat to the salesperson about the warranty, service plan, etc. You build a relationship with the person before you start spending money. And this is particularly important for those companies exporting to mines. It must be remembered that the local mining industry is facing a downturn; therefore it is imperative for South African companies to continue to seek export opportunities."

While COVID-19 has severely impacted SACEEC members, one silver lining for the organisation is that 80% of its members are BEE compliant, which speaks volumes for the great strides that SACEEC has made in promoting transformation and creating export opportunities for local companies. MRA

Image: 123RF.com

Common ground

Partnership to boost local procurement

Growing demands for mines to procure goods and services in-country – further emphasised by supply chain disruptions caused by the COVID-19 pandemic – have brought a recent strategic partnership to foster local procurement formed by SRK Consulting into sharp focus.

According to Lisl Fair, principal consultant: sustainability at SRK Consulting, the collaboration with Canada-based initiative Mining Shared Value will further enhance the company's expertise and tools to support companies to increase local procurement levels.

"Working with mines to maximise their positive socio-economic impacts in host countries and host communities has been a growing part of our work," says Fair. "While the Mining Charter emphasises local procurement practices in South Africa, there are more and more African countries who also want to see greater local economic benefit from mine procurement."

An initiative of Engineers Without Borders Canada, Mining Shared Value has been working internationally on local procurement issues since 2012. Aiming to improve the social and economic benefits of mining by increasing local procurement, it launched the Mining Local Procurement Reporting Mechanism (LPRM) in 2017 with the support of the German development agency GIZ.

"There is huge scope for mining companies to reduce both their procurement costs and their social licence risk by sourcing more goods and services locally," notes Jeff Geipel, MD of Mining Shared Value. "It's a complex issue, though, so the LPRM provides a helpful structure and benchmarking for mining companies to map and chart their progress."

Fair highlights the vital importance of environmental, social and governance (ESG) issues in mine feasibility and sustainability. Building capacity in the local economy and resilience in host communities is now imperative for mines wanting to secure and maintain their social licence to operate. A valuable focus for this work is the power of the mine's procurement value chain.

She adds that using a reporting mechanism like the LPRM would help mines build this priority into their strategic planning and monitoring. For new projects, local procurement strategies should be developed right from the pre-feasibility stage.

"The supply chain disruption that we have witnessed during the Covid-19 pandemic has also been a wake-up call for procurement in the mining sector," she says. "The lockdowns have created real mine-level risks that need to be addressed, and local sourcing of goods and services will be part of the answer."

There has for decades been a call for more local beneficiation in the minerals sector around Africa, explains Fair. The focus on beneficiating the minerals themselves, however, has blurred the potential for the in-country production of upstream products – often a more realistic option with plenty of immediate multiplier effects.

"An essential socio-economic focus for mines today is to facilitate social transitioning in the host communities for the day when they must inevitably close," she says. "The more diversified a local economy can become, the less reliant it will be on the mine – and the better it will transition to a post-mining phase of economic life.

"A far-sighted local procurement strategy will serve mines' operational needs while helping to diversify the local economy and to create resilience in the event of closure. MRA

Local manufacture

The true essence of Zest WEG

South African motors, energy and electrical engineering firm **Zest WEG** has embraced the true meaning of operating as a fully local business – working with local suppliers, using local content and developing local skills. And the benefits this offers the company, and the South African economy, extend far beyond the obvious, CEO **JULIANO VARGAS** tells **LAURA CORNISH**.

It was exactly 10 years ago that Brazilian electrical equipment and component manufacturer WEG bought into the Zest Electric Group (as it was known then). That acquisition, which gave WEG immediate and direct access to the South African and African markets, has since then delivered a multitude of benefits to the now Zest WEG, which today incorporates five manufacturing entities across the country.

Understanding the true meaning of being local

WEG was established back in 1961, thousands of kilometres from the capital city in the southern region of Brazil, which at the time was a remote territory with no operating industries.

"This required a strategy that saw the business inject the necessary skills sets into functioning as an independent, fully local business – because we had no alternative," starts Vargas, who started his career in Brazil with WEG 22 years ago. "This has ultimately been a very successful strategy for the business and has become the foundation upon which we build and develop all the companies we own."

And it is local process, local efficiency and local innovation – the principles Vargas describes as WEG's core DNA – that has since been applied to and injected into the Zest WEG group of companies, whose product and solutions offering today includes energy generation, substations and electrical infrastructure, automation, panels and E-houses, distribution and power transformers, mini-subs and generator sets. "Having successfully done so in other territories, including the United States and China, WEG was confident it could bring its local mindset to the African market," Vargas highlights.

"With a +50 year locally driven business track record in Brazil and other countries, I could see our newly acquired South African businesses needed to be brought up to speed however. This entailed training and investment into not only what needed to be done, but also helping our employees understand why," he continues.

From 2015 to 2019 WEG injected more than 25 000 hours of time into investing heavily in training, skills development and technology transfer, bringing people from its global factories to South Africa and sending Zest personnel overseas as well. All over and above the installation of state-of-the-art equipment and software.

In essence, with the necessary skills and training completed, Zest WEG now operates as a truly local business, applying WEG's global manufacturing productivity logic – with optimised and increased production volumes and flow thanks to consistency and standardisation of parts and processes. "These benefits extend to our clients, often beyond their own knowledge,

FARING WELL

Zest WEG is faring well with the COVID-19 lockdown restrictions. Of its 700 full time employees, 230 of them are set up and operating fully from home offices.

Two engines at the Zest WEG generator set assembly plant in Cape Town

EXPANDING LOCAL MANUFACTURING CAPABILITIES ON THE HORIZON

Large-scale transformers and medium voltage motors are on the local manufacturing horizon for Zest WEG. The company is also investing in new assembly lines in Gauteng and will soon include wind generators to the mix – a strong capability of WEG in Brazil.

which of course includes significant cost savings," Vargas highlights.

The process and principles are not without challenges though, the CEO notes. Scale and quantity remain the biggest difficulty when achieving sustainable local manufacturing capabilities. Overcoming communication and education levels is another hurdle that requires constant attention. Understanding cultural differences should also not be underestimated. Yet in spite of this, Vargas believes Zest WEG has overcome these challenges and today its manufacturing productivity is equivalent to and in some cases higher than WEG's. "And thanks to improved working relationships with our unions and recognition through incentives, our employees understand the value they offer our business and this too is part of achieving the superior productivity levels we now realise."

A black economically empowered business

Fulfilling a transformation/compliancy quota is naturally another aspect of WEG and Zest WEG's local business strategy. "Both in Brazil and South Africa, the business has embraced the South African government's black economic empowerment and transformation logic which we started many years ago and fully committed to in 2017," Vargas shares.

Because WEG is a member of the BRICS Business Council (representing Brazil), discussions with the Department of Trade and Industry (dti) were easily facilitated and consequently the company has been able to engage with and understand the requirements associated with the local content in South Africa. "The conversations we've had has helped us to understand the dti's objectives, how its calculated and enforced, and we've embraced it fully."

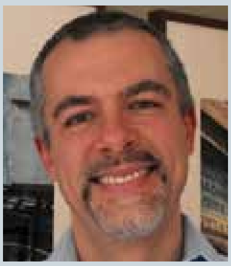
And while achieving this has been a multiple year process, today Zest WEG has almost a 90% local content capability for its transformers and more than 70% local content capability for other products such as E-houses and panels. "With minimal exposure to long lead times for parts from Europe, China or the US, and no exposure to exchange rates and consumption bubbles, the cost saving benefits are significant, while giving us full predictability and control of our own supply chain," Vargas points out

This could only be achieved through the skills training and development of local suppliers – again reinforced and supported by parent company WEG. Enterprise development is not just a box-ticking exercise, but one the company believes can add true value to the business to make it more competitive and more independent. Accepting this ideology was a turning point for Zest WEG's BEE strategy and simply demonstrates further the company's commitment to positioning itself as a local business.

In support of this statement, Vargas confirms Zest WEG invests much more than the 6% of its payroll demanded by B-BBEE in local training. As a result, the company will soon employ its third electrical engineer coming from a fully sponsored bursary programme implemented a few years ago

And not only is the company a South African viable business – it is gaining momentum across international territories beyond Africa, including Europe, the Middle East and Australia – "with our 100% South African technology and 100% South African labour and component," Vargas concludes. MRA

> "Both in Brazil and South Africa, the business has embraced the South African government's black economic empowerment and transformation logic which we fully committed to in 2017,"
>
> **JULIANO VARGAS**



The Zest WEG large transformer facility in Heidelberg

Transformer windings in process at the Zest WEG Wadeville facility

Rham Equipment designs and manufactures tailor-made equipment that addresses the mining industry's specific needs and challenges

First-mover advantage

Innovation aimed at driving South Africa's underground mining industry forward

Local OEM **Rham Equipment** has been responsible for helping the country's mining industry regain its competitive advantage thanks to the development of mining equipment tailored to address the industry's changing needs. **CHANTELLE KOTZE** speaks to MD **KEVIN REYNDERS** about the company's latest innovations.

The proudly South African, level 3 broad-based black economic empowerment compliant OEM was founded 40 years ago to produce specialised roofbolting equipment for the underground coal mining industry in South Africa. In 1994 the company extended its range to include materials handling equipment as well as hard rock mining equipment including load haul dumpers (LHD), face drilling rigs, long hole drill rigs, dump trucks, roofbolters, extra low profile equipment and utility vehicles.

With four factories and a combined under-roof manufacturing area of 10 500 m^2, the company manufactures between 10 and 12 machines each month – all of which support local content – and limits imported components to the bare minimum, in line with the requirements of Mining Charter 3, says Reynders.

The company owes its success to its ability to design and manufacture tailor-made equipment that addresses the mining industry's specific needs and challenges. It is this knack and passion for problem solving that has enabled the company to continue pushing the design envelope past the industry's current needs – allowing it to tackle some of the industry's future problems head-on.

At the forefront of new innovation

An example of this ingenuity was the successful manufacture of the first South African-manufactured battery-powered LHD, which Rham Equipment launched in 2019. The battery-powered LHD, which features an on-board charging system, is also fitted with a battery regeneration system, which effectively extends the lifespan of the battery.

Rham Equipment is currently in discussion with a local mining company looking to replace its existing diesel-powered LHD fleet with a battery-powered LHD fleet. It is the company's aim to have a fully battery-powered range of underground equipment in future. Following the first phase battery-powered LHD, the company plans to follow this with battery-powered face drilling rig and roofbolter – which together would provide a full mining cycle suite of battery-powered mining equipment.

In the same vein as its battery-powered equipment, Rham Equipment is also working on the development of a

FAST FACT
Rham Equipment's products are manufactured using between 60% and 70% local content

hydrogen fuel cell-powered LHD, which offers an alternative to replace diesel engines with a zero-emission solution that helps improve the environment and worker safety.

As the company continues to expand its equipment offering, it has made a significant inroad into the development of surface mining equipment – namely a blast hole drill rig, which is currently 90% designed and 30% built. The company signed an agreement in February 2020 with Russia-based industrial machinery manufacturer Chetra with the aim of locally manufacturing a modified version of the bulldozer in South Africa that is suitable for the African mining market.

Rham Equipment will soon take receipt of a bulldozer that will be subject to rigorous testing and, based on the findings, be designed, modified and manufactured according to the needs and standards required for the African mining market, Reynders explains.

What sets the company apart from off-the-shelf equipment manufacturers is that Rham Equipment's range of equipment is customisable depending on a customer's specific needs or requirements. As a local manufacturer with a turnkey in-house manufacturing capability, Reynders explains that the company is able to retrofit customer-specific components to the equipment to help client's streamline their stockholding.

By way of example, Rham Equipment will be supplying a number of diesel-powered machines to a local mining company with the intention of replacing the diesel engines with batteries in the next three years as the mine prepares to become battery-ready. The equipment has been designed in such a way as to make the change-over from diesel to battery as seamless as possible, explains Reynders.

As local manufacturing in South Africa increases, on the back of the local content requirements in Mining Charter 3, so too will local mining equipment manufacturers benefit from increased local and regional demand, believes Reynders, noting that this will provide the much needed boost to reindustrialise South Africa's economy. MRA

INNOVATION KNOWS NO BOUNDARIES

Despite being a mining equipment manufacturer, Rham Equipment identified a need in the country's agriculture sector. The company's passion for problem-solving led to the research and development of a tractor prototype that could travel in more than one direction. The prototype, which is 90% complete, has a swivel cab and improved tyre design that allows it to travel in different directions and enables it to travel faster on road.


Kwatani screens on site in a diamond application in the Yakutsk region of Russia

Kwatani

An export beacon for local quality

Initially leveraging its positive references from South Africa-based mining majors, vibrating screen specialist **Kwatani** has built an export footprint of 40 countries in just the past eight years.

With a solid presence around Africa, the company now has representation in north and south America, and has recently shipped its first machine into the Canadian market.

"Internationalising our markets is high on our agenda," says Kwatani CEO Kim Schoepflin. "Our success to date is based on our world class design, engineering and manufacturing standards. These ensure that we compete cost effectively with the best technology the industry can offer."

Schoepflin acknowledges that the South African cost base is an important contributor to the company's global competitiveness. Almost all the inputs to its customised products – from skills to materials – are sourced within a few kilometres of its Gauteng headquarters, to the benefit of the local economy. However, she emphasises that efficient machine performance, continuous production tonnage and reliability is what grows a sustainable customer network.

"There can be no compromise in quality when building exports on local content, and this requires years of investment and innovation," she says. In addition to its B-BBEE Level 1 status, Kwatani's high local content assists South African mines in meeting the Mining Charter's requirement for local procurement. This includes the skills and expertise behind its quality manufacturing process. It is also one of only a few local manufacturers with ISO certification.

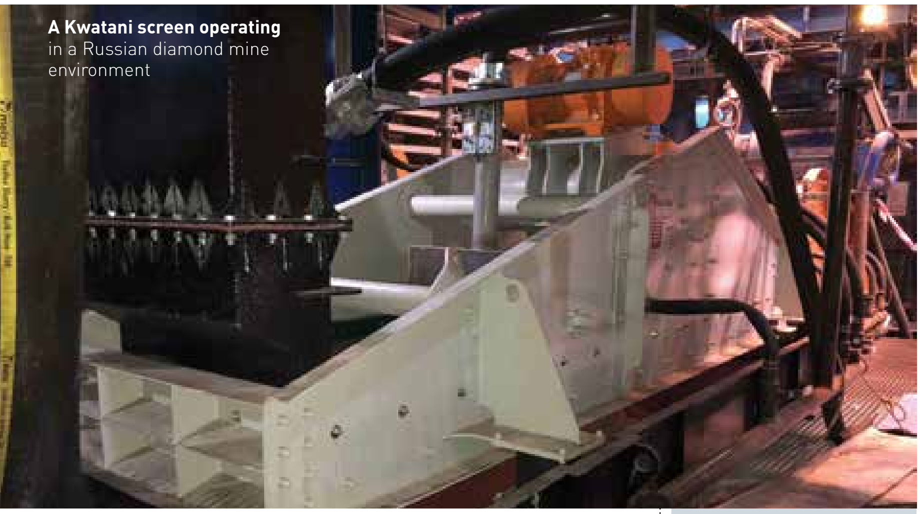
"This is what has allowed us to grow our network of customers and partners abroad," says Schoepflin. "Our technology and intellectual property are also local, supported by our in-house R&D department and laboratory and our metallurgical and mechanical research collaboration with various universities."

This gives Kwatani the cutting edge knowledge to develop and share its engineering knowledge, which it does through industry and scientific forums involving the professional community.

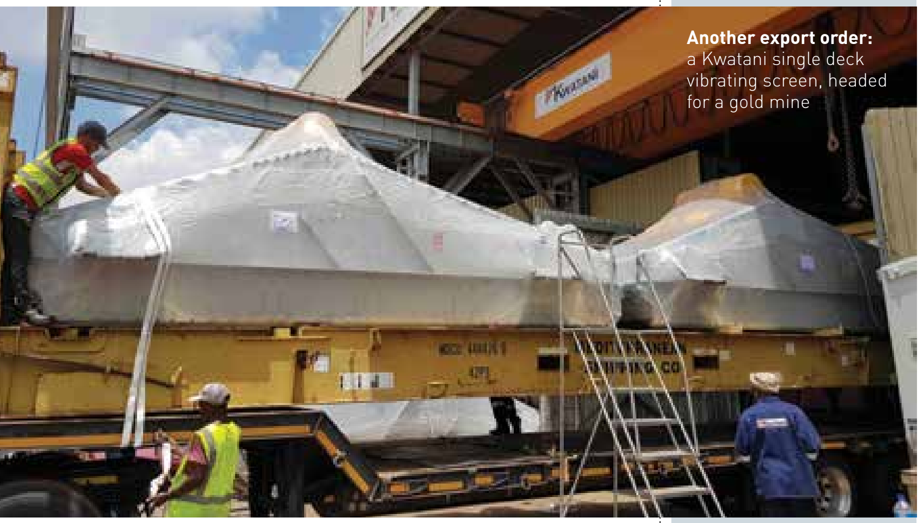
"Our experience with online platforms over the years means that the COVID-19 pandemic will not slow down our international efforts," she says. "Online platforms give us new ways of sharing our knowledge, such as using webinars to publicise our research."

Recognised last year by the SA Capital Equipment Export Council for its export achievements, Kwatani works both with mines directly and through project houses. With these customers often based in other countries, there has been regular use of remote communication platforms – even before the outbreak of the COVID-19 pandemic.

"Many of our customers – especially the project houses – are global in their



A Kwatani screen operating in a Russian diamond mine environment



Another export order: a Kwatani single deck vibrating screen, headed for a gold mine

reach, so we frequently work across borders," Schoepflin says. "We might deal with a customer in Canada who is working on a project in West Africa, or a company based in South Africa developing a project in the Americas."

Despite the distance from export projects, the same detailed attention has to be paid upfront to understanding the metallurgical side of the customer's application. Kwatani custom-engineers its solutions based on site-specific flowcharts from the operation.

Once the screening parameters are defined, the company's mechanical engineers design the customised unit to deliver the required efficiencies, tonnages and other specifications.

Schoepflin notes that exporting is not just about placing a machine in another country, highlighting the wide range of demands placed on the export supply chain.

"Exporting successfully is a demanding test of any company's quality systems and its attention to detail," she says. "For a start, manufacturing schedules must be closely observed, to meet the fixed departure dates for shipping.

> There can be no compromise in quality when building exports on local content, and this requires years of investment and innovation,
>
> **KIM SCHOEPFLIN**

After manufacture, all components must be systematically packaged and flawlessly labelled. You really only have one chance to get everything right."

This is especially important when mine sites are remote, as these locations add considerable time and cost to any redelivery. Mistakes can also have impacts on customers' production deadlines. Kwatani's capability to meet expectations has been well demonstrated, she says, and was recently proven again with the successful delivery of six vibrating screens to West Africa.

In terms of supporting its products in countries it exports to, Kwatani priorities its service and technical representation in those areas.

"We prefer to have partners representing us in the regions we serve," she says. "They need the right level of technical capacity, and where necessary the facilities to deal with spares and machine refurbishments," she says. They also have an important role in dealing with on-the-ground interactions with Kwatani customers.

"For instance, a retro-fit project will begin with a desk-top analysis but at some point an expert will be required to visit the site to measure up the existing infrastructure," she says. "Our partners in a region can assist us with these duties."

Schoepflin says Kwatani's growing global network is positioning the company well for export growth, and that she is excited by a number of big projects in the pipeline. **MRA**

A Kwatani vibrating grizzly screen for a gold application

Digital solutions can help prevent tailings dams disasters

Digital water monitoring solutions

Digital technologies undoubtedly have tremendous potential to move mining to greater heights and deliver exceptional customer and environmental value and this is no different for water monitoring technologies.

Environmental monitoring and control for mines is even a bigger issue now than it has ever been. Governments are increasing regulatory restrictions on new developments, and the social licence to operate mine sites is leaving operators with no choice but to ensure they have zero environmental breaches. It is in the industry's best interests, from a public image as well as from a cost and efficiency point of view, to deploy the latest, most efficient technology for water monitoring.

There are two main sources of water monitoring information on a mine site – tailings or wastewater data and water body data. A small amount of contaminants or a process that has gone wrong for a few hours can negatively influence the quality of waste or bodies of water on mine sites. As a result, accurate real-time monitoring of sensitive instrumentation data is integral to the elimination and prevention of any environmental breaches.

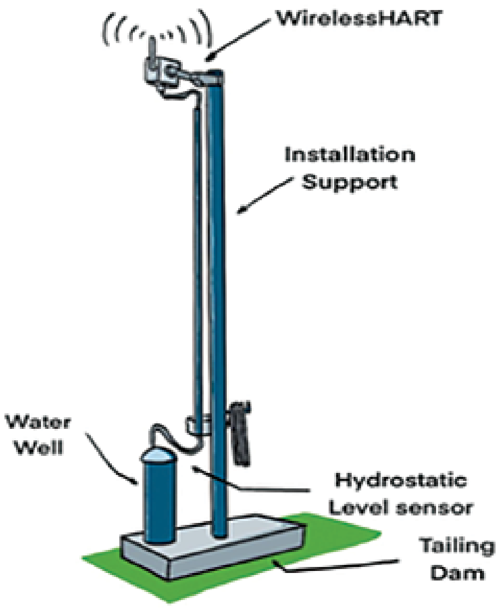
Automation ensures better data acquisition

To this day, it is still common practice to manually monitor the water and moisture levels in the dam wall. This presents two common issues. The first being sporadic monitoring due to the time it takes to check all points required and the second being the inconsistency in manual measurements and reading of values performed by the operator. With the possibility of each operator using a different methodology and procedure to conduct the reading, recording, interpreting and transferring of results onto digital storage, the quality and integrity of information can be greatly impacted. There are plenty opportunities for errors in this manual procedure. In addition, if measurement is not done frequently enough, the water or moisture level data then becomes unreliable.

In this scenario, introduction of automation technology is key to ensure data is collected more frequently and that far more accurate measurements are achieved due to the standardisation of automated systems. This in turn improves safety and reduces costs in the plant.

There is a much greater opportunity for automation in a tailings dam, where a variety of measurement solutions concerning flow, level, displacement and strain are needed.

Smart solutions can provide online data to the control system, eliminating human errors involved with reading and noting data values. Look at the example of ground water level measurement using WirelessHART solutions (page 58).



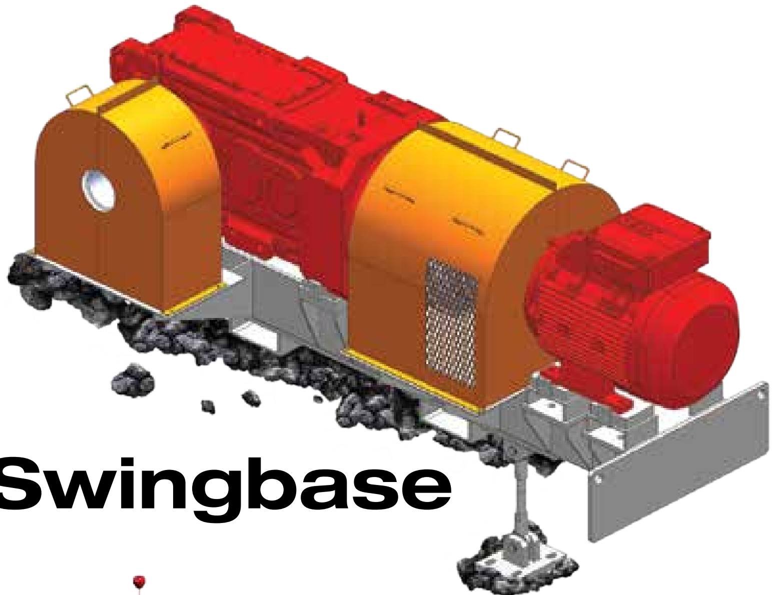
In this application, a hydrostatic level sensor that is equipped with a WirelessHART adaptor is installed in a PVC or any other type of tube within the water well. The adapter provides power to the level sensor which can be programmed to measure in shorter intervals, providing constant data feed. An ultrasonic level transmitter can be used to measure the level of the tailing dam, again sending the information with a WirelessHART adapter. This solution helps to decrease the cost of investment in automation without the need for major changes to existing infrastructure. A gateway may be used to collect the data and send it to the control system as well as the cloud.

Endress+Hauser provides a wireless solution that enables simple setup of the wireless networks and ensures that all the information can easily be integrated into any control system through open protocols, such as OPC or Modbus. The wireless solution not only provides all the measurement values, but it also provides device diagnostic information.

In addition, Netilion Health empowers plant personnel to be ready and effective in case of unexpected events in the plant. With Netilion Health, essential information on the operational health of devices can be viewed via the app on your smartphone, tablet or laptop. If anything happens with a measuring point, an immediate alert is sent. Custom visualisation formats can also be created and information can be integrated into other platforms to receive immediate notifications in case of failures.

There are now out-of-the-box solutions that can be used to monitor water quality in the field. These include all hardware, software and cloud support subscriptions, making it extremely easy to integrate and cost effective to operate.

The flexibility and simplicity of the IIoT, coupled with advances in edge devices and sensor technology, have greatly improved the ability of operators of tailings and waste facilities to cost effectively monitor their processes – while reducing risk and improving their environmental reputation. MRA



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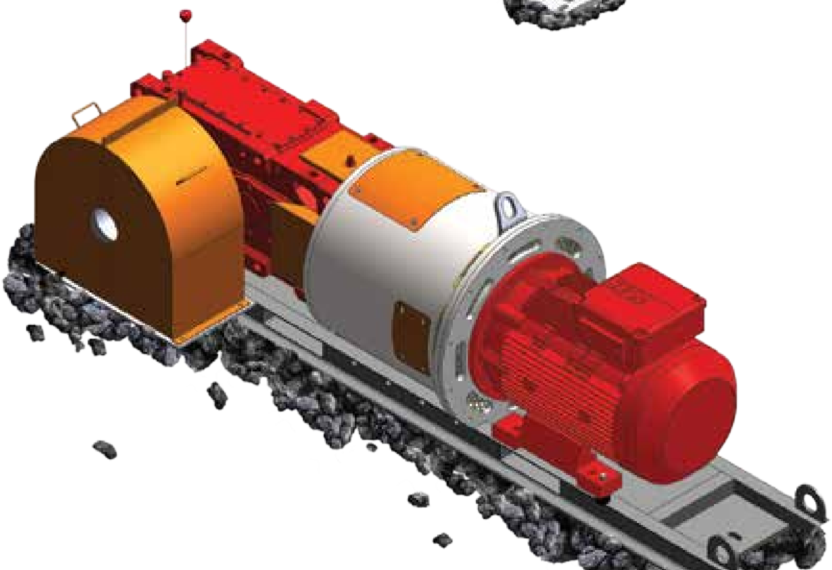

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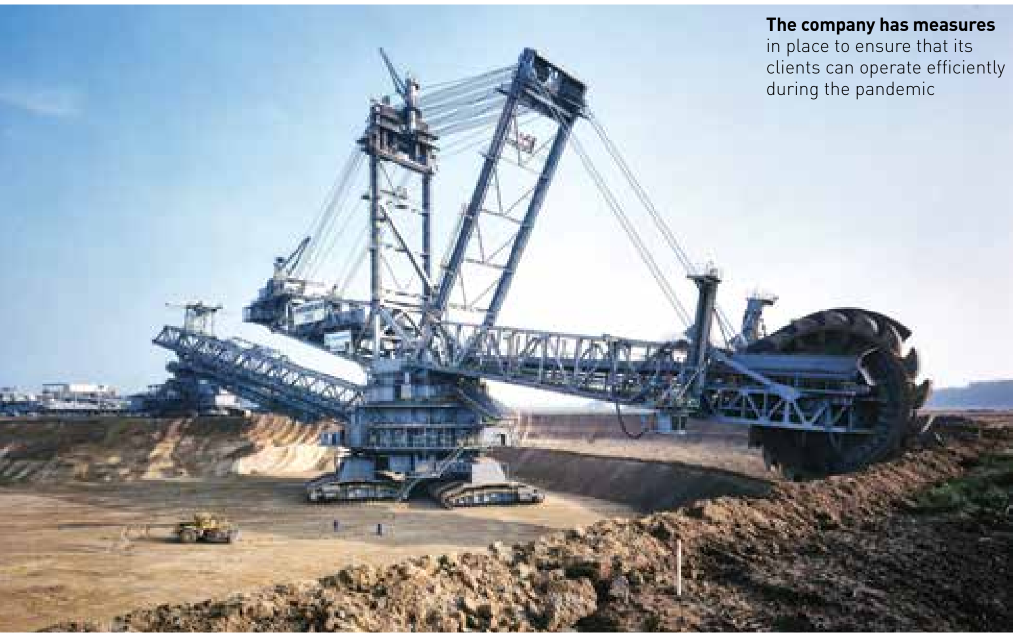
Rising to the challenge

A multi-disciplined approach to COVID-19



The company has measures in place to ensure that its clients can operate efficiently during the pandemic

As the COVID-19 pandemic tightens its grip, thyssenkrupp Industrial Solutions is assisting customers to maintain operational efficiencies through sustainable service delivery and innovative technologies.

"The global economic crisis, as a consequence of the COVID-19 pandemic, has put the drive for efficiency into top gear," states Philipp Nellessen, CEO of thyssenkrupp Industrial Solutions Sub Sahara Africa. "Fundamental to this drive is technology. Through our ongoing investment in people and R&D and our over 200 years of expertise, we are able to develop advanced technologies to assist mining and other industries in achieving maximum operational efficiencies."

Although the South African mining industry was not operational during national lockdown Level 5, critical repairs were still permitted. As an essential service provider, thyssenkrupp has been delivering maintenance and repairs as well as rebuilding work to local mines.

The company assisted a platinum mine in Limpopo Province with a roll change on one of their flagship products, a High Pressure Grinding Roll (HPGR). "The scope of work required a rebuild on the HPGR set as well as the installation of the hardware on the mine site, making this our largest project in the national lockdown period," says Nico Erasmus, thyssenkrupp Industrial Solutions Sub Sahara Africa head of service operations. "We are very pleased that even in a complete lockdown situation, we were able to complete the project in a healthy and safe manner, in excellent co-operation with our customer," says Erasmus.

In order to remain operational and continue seamless service delivery to customers, thyssenkrupp has implemented all necessary policies in line with Government COVID-19 regulations. These include possession of all essential services permits and strict entry control protocols for employees, visitors and suppliers at all premises. Employees are required to attend mandatory training sessions, wear all necessary Personal Protective Equipment (PPE), sanitise regularly and maintain social distancing.

Organisation key to operations

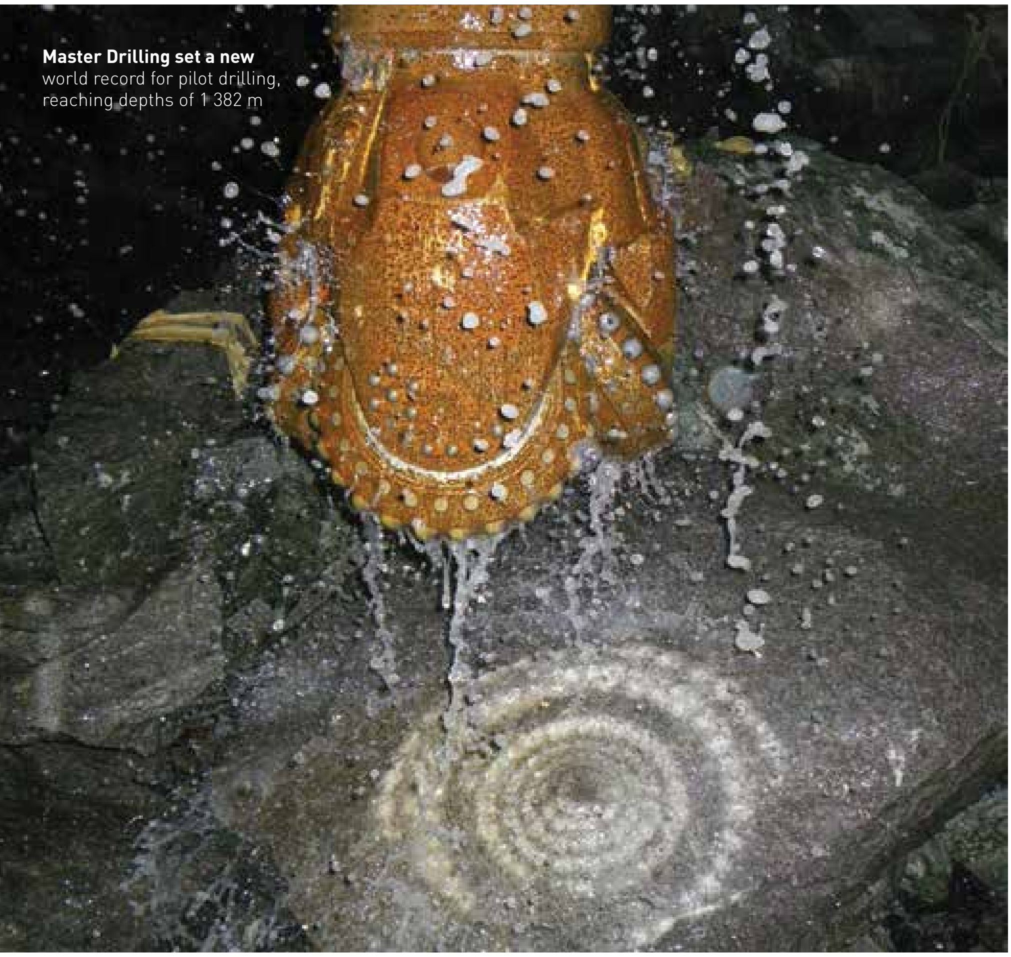
A dedicated COVID-19 committee has been set up to assess changing regulations and risks associated with office and site working environments. "With the majority of employees working from home, we have faced our fair share of challenges but the process was very well organised with IT managing it all incredibly well, ensuring that everybody was equipped in time," notes Erasmus. "We only had one day of downtime at our essential service workshop site. The pandemic has significantly changed the working landscape but thanks to our flexibility, employees will be able to carry on doing the majority of their work from home as we continue to offer the same high levels of service our customers have come to expect," adds Erasmus.

Meanwhile, an optimistic Nellessen says that he is in no doubt that mining in the southern African region will recover. "The people here are incredibly brave and innovative and companies will find their way out of the crisis. As industry partners, we are here to offer our support. Despite tough times ahead for some industries, the mining sector continues to show growth and here I foresee a restart and a good recovery," he concludes. MRA

Breaking ground

New pilot hole world record set

Master Drilling has added another record to its name, with the successful completion of the pilot hole for raise-boring at Northam Platinum's Zondereinde PGM mine.



Master Drilling set a new world record for pilot drilling, reaching depths of 1 382 m

Drilling of the pilot hole at number 3 shaft, a new vertical shaft at the western extension section of Zondereinde, commenced on 25 September last year and the receiving chamber underground was reached on 18 July 2020, completing the 1 382 m hole, and setting a new world record. The previous record was that of a shaft measuring 1 070 m, that was drilled in 2012 at Lonmin's K4 mine.

The process comprises two key phases: the drilling of a pilot hole, followed by reaming of this hole to its ultimate diameter. Critical to the success of raise-boring is the accuracy of pilot drilling and this becomes increasingly challenging the longer the shaft is.

Master Drilling used ground-breaking oil well directional drilling and combined it with its own designed and manufactured, modern, high technology RD8 machine as well as skilled operators, to achieve the level of accuracy required by directional drilling in order to create a shaft that can be equipped for both man and material hoisting. The RD8 machine monitors a number of operational metrics and takes corrective actions automatically, providing the accuracy required.

The water management regime is a fundamental part of this process, as it ensures that quality readings are obtained from the directional tool.

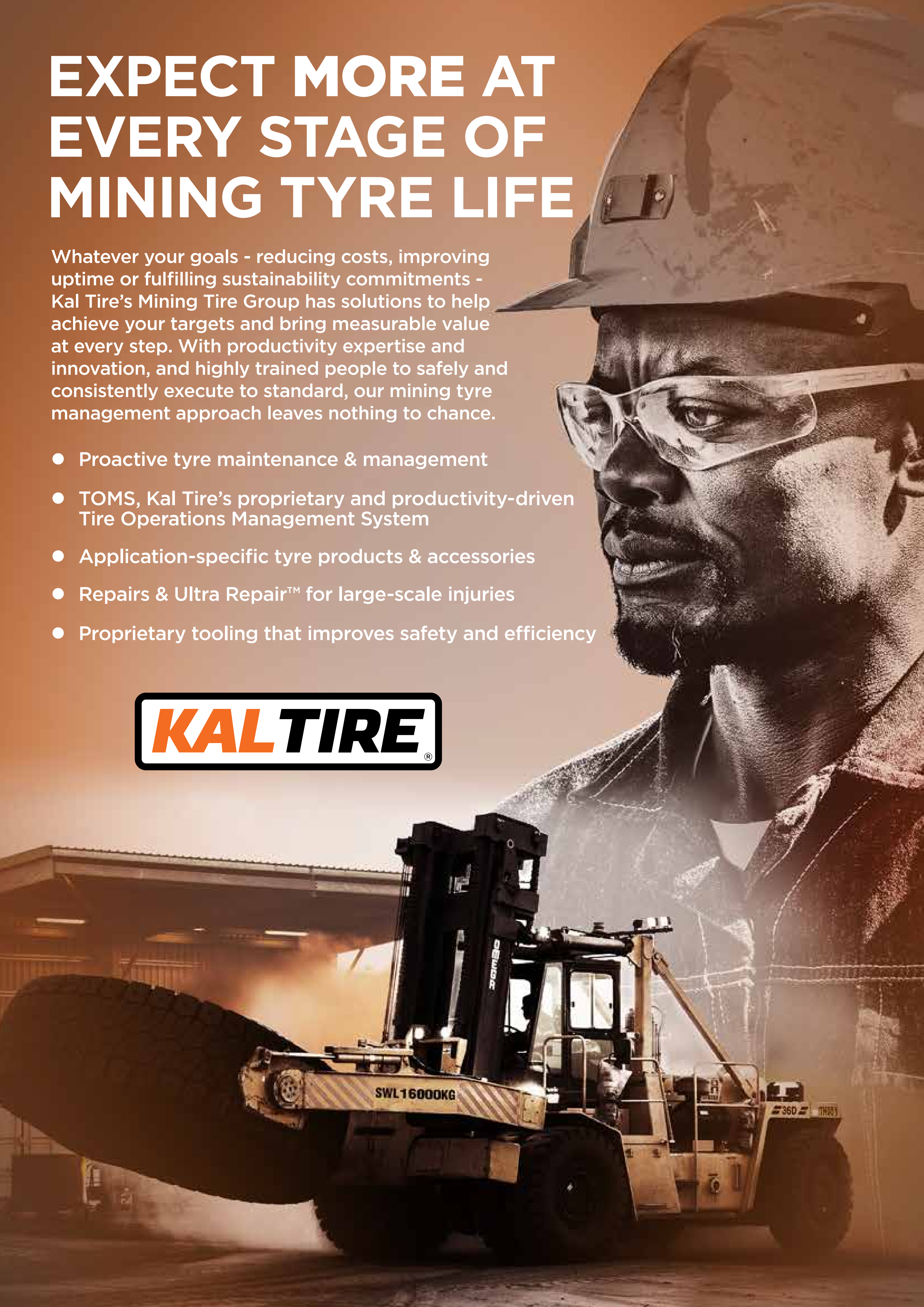
Commenting on the company's record achievement, Danie Pretorius, CEO of Master Drilling, comments: "What is impressive about this record is that it was achieved using a tool that has never before been utilised for such an application, coupled with one of our high technology machines. It clearly highlights the superiority that adaptation and technology bring to drilling solutions, which is something that Master Drilling has been working relentlessly at over the years. As a result, we are able to provide cost effective, safer and accurate drilling solutions for our clients."

Optimised operations

The new shaft system will provide additional access from surface to the underground workings for hoisting of men, material, services and ore.

Northam acquired the western extension in December 2017 from the neighbouring Amandelbult mine, owned by Anglo American Platinum. It comprises a 3.6 km wide mining block containing a PGM resource of over 21 Moz hosted within high-quality Merensky and UG2 ore bodies.

Northam CEO Paul Dunne adds: "This milestone has put us a significant step closer to realising the potential of the western extension, a high quality block of ground that has already breathed new life into Zondereinde. Our strong culture of technological innovation and rapid implementation is helping to create a mine that will benefit all stakeholders for many years to come. Congratulations to the Zondereinde management team and Master Drilling on this record-breaking achievement." MRA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