THE MINING YEARBOOK

2023

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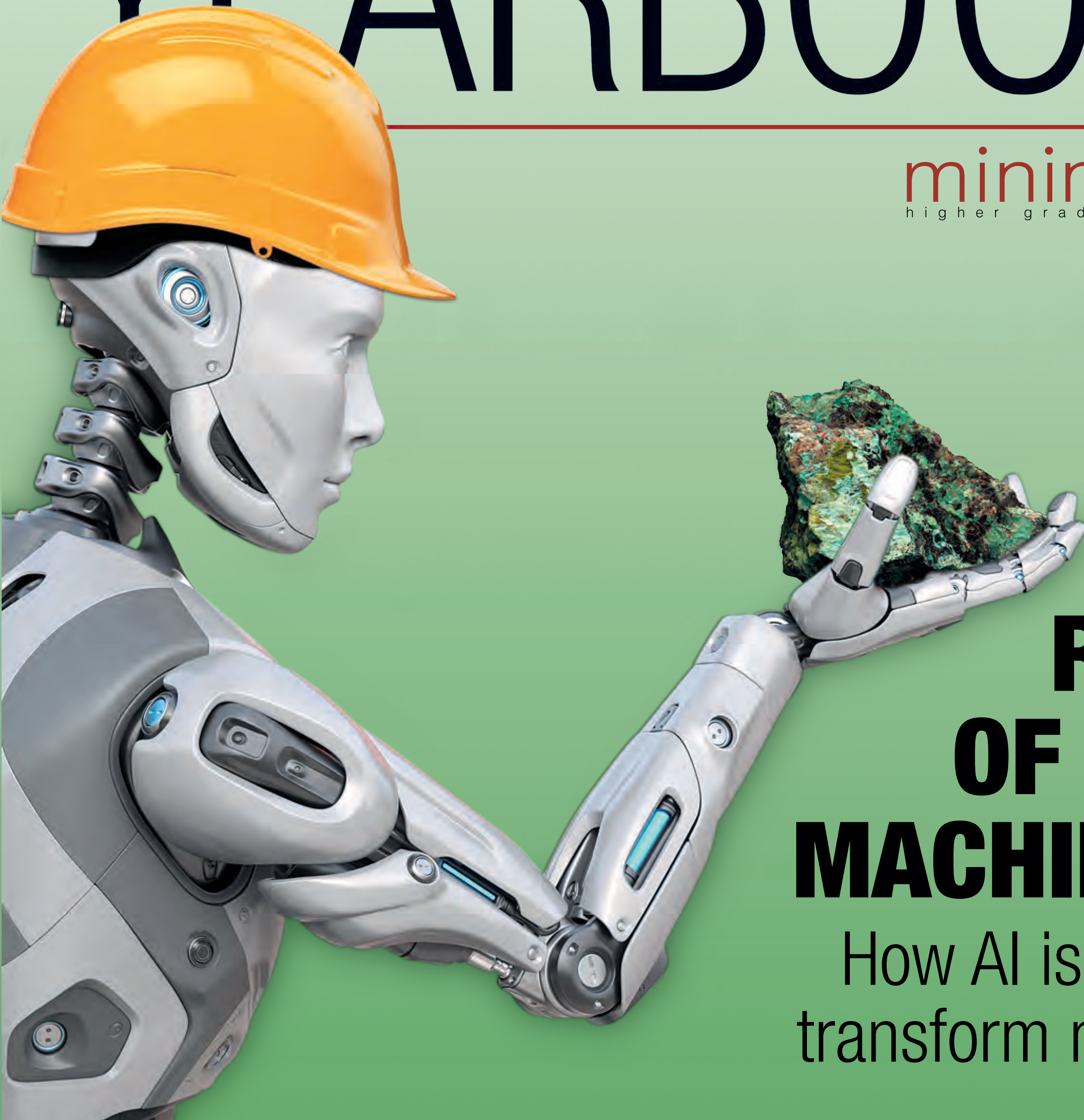

RISE OF THE MACHINES

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How to overhaul the battery metal's bad reputation

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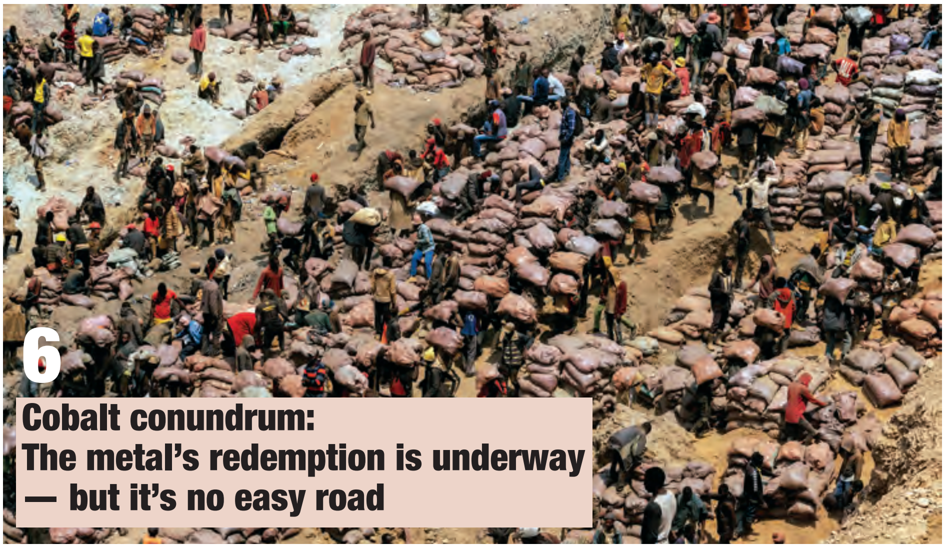

THE MINING 2023 YEARBOOK

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EDITORIAL

Editor:
David McKay

Writers:
Liesl Peyper
Charlotte Mathews
Brendan Ryan
Ed Stoddard
Linda Ensor
Jaco Visser
David McKay

Pictures:
Gallo Images

Design & Layout:
Colleen Wilson

Subediting:
Yvonne Fontyn

Printing:
Typo Colour Printing Specialists

Miningmx (Pty) Ltd
Address
PO Box 3194
Rivonia
2128
South Africa

Email:
david@miningmx.com
info@miningmx.com

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COBALT CONUNDRUM:

THE METAL'S REDEMPTION IS UNDERWAY — BUT IT'S NO EASY ROAD

The rise in demand for key electric vehicle battery component cobalt has triggered a human rights crisis in the Democratic Republic of Congo, the country that controls supply. But there are efforts to ease concerns about provenance, writes **ED STODDARD**

IS the device you are reading this story on tainted by the blood and sweat of Congolese artisans who laboured in appalling conditions to extract the cobalt that powers its batteries?

It's entirely possible that it is, and that poses a dilemma for the mining sector and industries downstream that rely on cobalt to make their gadgets work. From electric vehicles (EVs) to smart phones, cobalt is a crucial metal that is shaping the 21st century global economy.

Cobalt is key to decarbonisation efforts to address climate change linked to fossil fuels as EVs slowly replace internal combustion engines. It is also used in a range of other low-carbon initiatives. As such, the metal plugs into the emerging environmental, social and governance (ESG) zeitgeist.

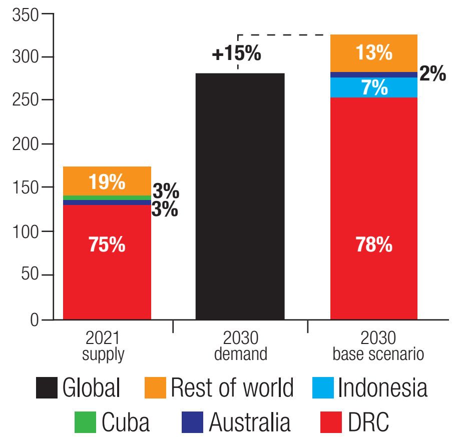
But instead of being an ESG poster child, the metal is tarnished by well-documented links to artisanal and child labour in the Democratic Republic of Congo (DRC), which accounts for about 70% of world cobalt production. Of this, between 10% and 20% is generally estimated to be at the hands of artisanal miners, or ASMs.

As a result of these concerns, mining companies such as diversified metal producer Sibanye-Stillwater – which has added PGMs and green metals to its original South African gold portfolio – are steering clear of cobalt and the DRC. "With cobalt and the social and environmental negativity around it, we are trying to improve our risk profile and we are not going to go into countries which are high risk. And at the moment the DRC is not a region we would prefer to move into," said Sibanye-Stillwater spokesperson James Wellsted.

Cobalt in the DRC certainly seems, according to some accounts, to be a journey into a heart of investment darkness rooted in the long exploitation of the country's natural wealth under colonial and subsequent regimes that has done little for its inhabitants. Rather like the "resource curse" on steroids.

Cobalt market balanced

Cobalt global demand 2030, supply 2021 and 2030 by country (kt)



SOURCE: McKinsey

"The harsh realities of cobalt mining in the Congo are an inconvenience to every stakeholder in the chain," writes Siddarth Kara, a modern slavery activist and Harvard professor, in his recent book *Cobalt Red: How the blood of the Congo powers our lives.* "No company wants to concede that the rechargeable batteries used to power smart phones, laptops and electric vehicles contain cobalt mined by peasants and children in hazardous conditions."

Kara's book includes his first-hand reporting on the cobalt scramble, including the testimony of children – some of whom have infants strapped to their back – who he says dig for cobalt for about a $1 a day while exposing themselves to a chilling array of health hazards.

ASM miners can probe with a precision that industrial mining cannot, often resulting in higher grades.

"This is the primary reason that many industrial copper-cobalt mines in the DRC informally allow artisanal mining to take place on their concessions, and it is also why they tend to supplement industrial pro-

Cobalt miners at work

duction by purchasing high-grade artisanal ore from depots," Kara asserts.

IT'S NOT JUST COBALT

The industry maintains it is aware of the issues raised by Kara and others and is working to improve the working conditions and wages for ASMs, who are not simply going to go away. And other industry experts note that such concerns are hardly restricted to cobalt or the DRC.

The World Bank estimates that as many as 20 million people depend on artisanal mining for a living and as much as 20% of newly-mined gold comes from ASM sources, according to the World Gold Council.

In South Africa, this has well-documented links to violent and global organised crime networks, and any new gold chain you might buy could well be as tainted as the cobalt in one of your electronic devices.

"The level of hypocrisy knows no bounds – the fact remains that without ASM workers the world would not have many of today's minerals including sands, clays, stone, salt, fertilizers, vanilla, to name but a few. Of this, the focus has been disproportionately centred around cobalt," Lara Smith, director of mining consultancy Core Consultants, told Miningmx.

Cobalt by contrast is firmly in the crosshairs, perhaps ironically because of its importance to the ESG agenda. And artisanal mining in the DRC and elsewhere is also being driven in part by the climate issues that this agenda seeks to address.

In short, it's complicated, and the stakes are sky high.

"Because of speculation around EVs and the green transition there was a lot of interest in this commodity," David Sturmes, head of partnerships and innovation at the Fair Cobalt Alliance (FCA), told Miningmx in an interview.

The FCA was launched in 2020 with the stated aim of improving the conditions of cobalt miners and to bring child labour to an end. Its members include EV maker Tesla, whose CEO Elon Musk said in 2018 that cobalt was on its way out in its batteries, as well as cobalt producer Glencore and NGOs such as Save the Children.

"Over the last 10 to 20 years ASM activity has intensified and that is owed to increased commodity prices across the board and also climate change. As farming became less lucrative or predictable many farmers diversified into mining, so there is this development that we have more ASM mining in the world," Sturmes said.

'No company wants to concede that the rechargeable batteries used to power smartphones, laptops and electric vehicles contain cobalt mined by peasants and children in hazardous conditions' — Siddarth Kara

This speaks to the fact that many subsistence or small-scale farmers who rely on rain-fed agriculture – which describes most African farmers – have had to adapt or starve in the face of climate change.

"But cobalt has been of political interest and that's why there is a disproportionate amount of attention on the issues around cobalt mining. We should be accepting of artisanal mining because if we think about sustainability, the social value that artisanal mining can bring in terms of creating livelihoods and the prospect for communities to benefit is significant," Sturmes said.

Pointedly, he added that "in a lot of the media coverage on the sector, cobalt it is singled out as if it was the only commodity where artisanal mining occurs".

IS CHANGE IN THE AIR?

That does not mean that the issues Kara and other activists have drawn attention to are hot air. Where there's smoke there's fire, and there are many embers blazing in the cobalt supply chain.

The FCA is one of several initiatives on the cobalt front. BMW, BASF and Samsung in 2019 launched Cobalt for Development

(C4D), which aims to promote ethical practices in the extraction of cobalt and its supply chain.

And both FCA and C4D to their credit seem transparent about the ASM challenges in the cobalt production and supply pipelines, which is not always the portrait painted by the industry's more withering critics.

"While this labour-intensive form of cobalt mining is a primary source of income for the region, the working conditions are oftentimes extremely precarious, with little to no safety or environmental precautions in place," C4D says on its website.

That does not seem like an attempt to gloss over the matter. And the FCA is also not sweeping such issues under the rug.

"ASM provides a livelihood for thousands in a country where many people have no job at all, yet it is associated with highly hazardous working conditions, systemic child labour, and unfair trading practices taking advantage of local workers selling to traders on the open market," it says on its website.

So, what is being done?

That's a multibillion-dollar question as the sectors that require cobalt rush to find alternatives (see sidebar story) to a metal that provides an income to tens of thousands of former peasants whose communities have long suffered under rapacious Belgian and kleptocratic African rule.

"We need a systemic response," the FCA's Sturmes said. "We need to provide expertise and formalise ASM, giving it a legal right to exist. But most importantly, channelling investment into better infrastructure."

The tunnels used in the ASM sector are dangerous and one of the aims is to make such mines open-pit operations.

In its 2022 annual report, the FCA

Artisanal miner holds cobalt ore

David Sturmes Head of partnerships/innovation, Fair Cobalt Alliance

Lara Smith Director, Core Consultants

highlights a number of initiatives including rental facilities that provided personal protective equipment to almost 300 washers, the vast majority of whom are women. Fourteen savings groups have been formed, comprising 350 miners, and solar power was provided to seven schools in ASM cobalt communities, benefiting almost 5,800 pupils.

To bring transparency to the trade and ensure miners are fairly compensated for their efforts, the FCA says a trading centre is being established in Lualaba province "to control the trade of artisanally produced minerals, offering a regulated trading hub that brings sellers and traders together ... a significant strategic step in the government's plan to ensure artisanal and small-scale mining meets international standards and is accepted in the formal cobalt supply chain".

This is clearly crucial. Critics such as Kara contend that tainted cobalt is laundered into the supply chain through trading networks. "From pit, to pool, to sack of stones – the family had subdivided the steps involved in getting cobalt out of the ground and packed for transport by negociants (traders). The negociants then sold the cobalt into the formal supply chain via nondescript depots along the highway. Laundering minerals from child to battery was that simple," he writes.

Companies such as Glencore, a major producer of cobalt, flatly deny that ASM metal is in its supply chain: "Glencore does not purchase, process or trade cobalt from artisanal and small-scale mining (ASM). We do not tolerate any form of child, forced, or compulsory labour in our supply chain," it says.

Glencore's track record in the DRC includes a $180m settlement with the government that was reached late last year to settle bribery claims, making it an easy target for activists who cast doubt on its claims.

Still, the FCA – whose members as noted above include Glencore – admits that many of the conditions in the ASM cobalt sector are wanting.

The FCA also disputes the allegations of Kara and others that many of the artisanal cobalt miners only make around $1 a day.

"It is our understanding that individuals are earning at least a few hundred dollars a month, which is above the average income in the region," Sturmes said. "I was in Congo in March and I met a woman who as a teacher was earning $100 a month but she quit her job teaching and is now washing cobalt, and now makes between $200 and $300 a month."

Cobalt as of mid-June was down over 40% in the year to date to below $30,000 a ton. This is likely to mean there are fewer artisanal miners digging for the metal – their numbers ebb and flow with the price.

Will the ASM cobalt sector in DRC eventually reach a point where the metal it produces is regarded as fair and untainted? It is certainly being subjected to a level of scrutiny that is not being applied to other ASM minerals. Activists like Kara and industry groups like the FCA may not see eye to eye, but at least there are eyes on the ground.

SCRAMBLE IS ON TO FIND ALTERNATIVES TO COBALT, BUT GLOBAL B12 DEFICIENCY PROVIDES VITAMIN BOOST

CONCERNS about the role of artisanal mining, including child labour, in the extraction of cobalt have triggered a scientific scramble to find alternatives to the battery metal. This is already showing promise, not least because the likes of the US government and Elon Musk's Tesla have been giving it their full attention.

Musk declared in 2018 that EV maker Tesla was aiming to have batteries that would not use cobalt. Last year, the company said half of vehicles produced in the first quarter of 2022 had cobalt-free lithium iron phosphate (LFP) batteries.

Elsewhere, scientists at the US Department of Energy's Argonne National Laboratory have created a lithium-iode cathode – which delivers electricity to a battery – that is heavy in nickel but has no cobalt.

These are just a couple of examples underlying the strides that have been made and manganese is also seen as a cobalt alternative – good news for South Africa, which accounts for 80% of supplies.

"As we have seen in recent years, demand for those commodities linked to battery manufacture is quite susceptible to changes in technology," says Andrew van Zyl, MD of SRK Consulting. "As the prices of certain metals rise, technology research very quickly seeks alternatives – which can in turn recalibrate commodity pricing significantly," he says.

"There was extensive use of cobalt in the initial designs of lithium batteries, for instance, driving prices to nearly $100,000/t in 2018. Very soon, ways were found to reduce this cobalt-intensity, and also to substitute nickel for cobalt – which brought the cobalt price down substantially to below $30,000 within a year or two."

Regarding nickel, Lara Smith, director of mining consultancy Core Consultants, noted how history could repeat itself.

"We saw something similar when nickel started to be used in steel and there was an acute shortage. Within a few years, there was an efficient process and now most of the world's nickel-based stainless steel uses EAF process and nickel scrap. I think the same will happen with the batteries on certain elements such as nickel," she told Miningmx.

But she also warned that it is premature to write cobalt off. China after all is the main end user for cobalt, and ESGs don't figure as prominently in boardrooms there as they do in New York, London and Paris.

"It just seems to be the West complaining about ASM and trying to find alternative sources. So what will be the trend? More materials going East, as a result more manufacturing going East. It's a story that has become like Harry and Meghan – boring and overplayed yet fascinating to watch it play out nonetheless," Smith said.

Indeed, despite the drive for alternatives, cobalt demand is seen surging in tandem with the production of EVs and other stuff that require cobalt.

"China's rush to become the global supplier of rechargeable batteries is expected to drive the cobalt market," Straits Research said in a report late last year. It estimated the cobalt market size in 2030 at $19.5bn from $8.7bn in 2021.

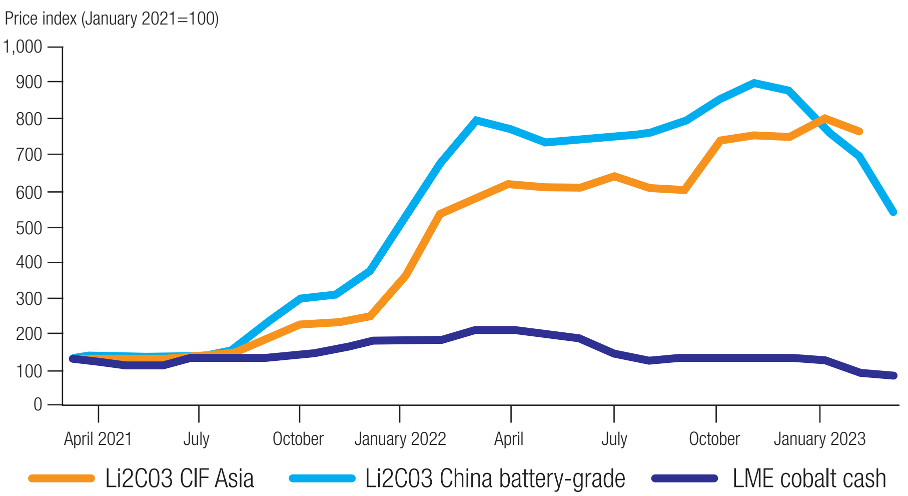
Pointedly, it noted new growth avenues for cobalt where other commodities are unlikely to fill the gap.

"Recent lifestyle changes and irregular dietary patterns are leading to deficiencies and health problems among adults, globally. For instance, B12 deficiency is common among adults, affecting 2-15% of the general population," the report said.

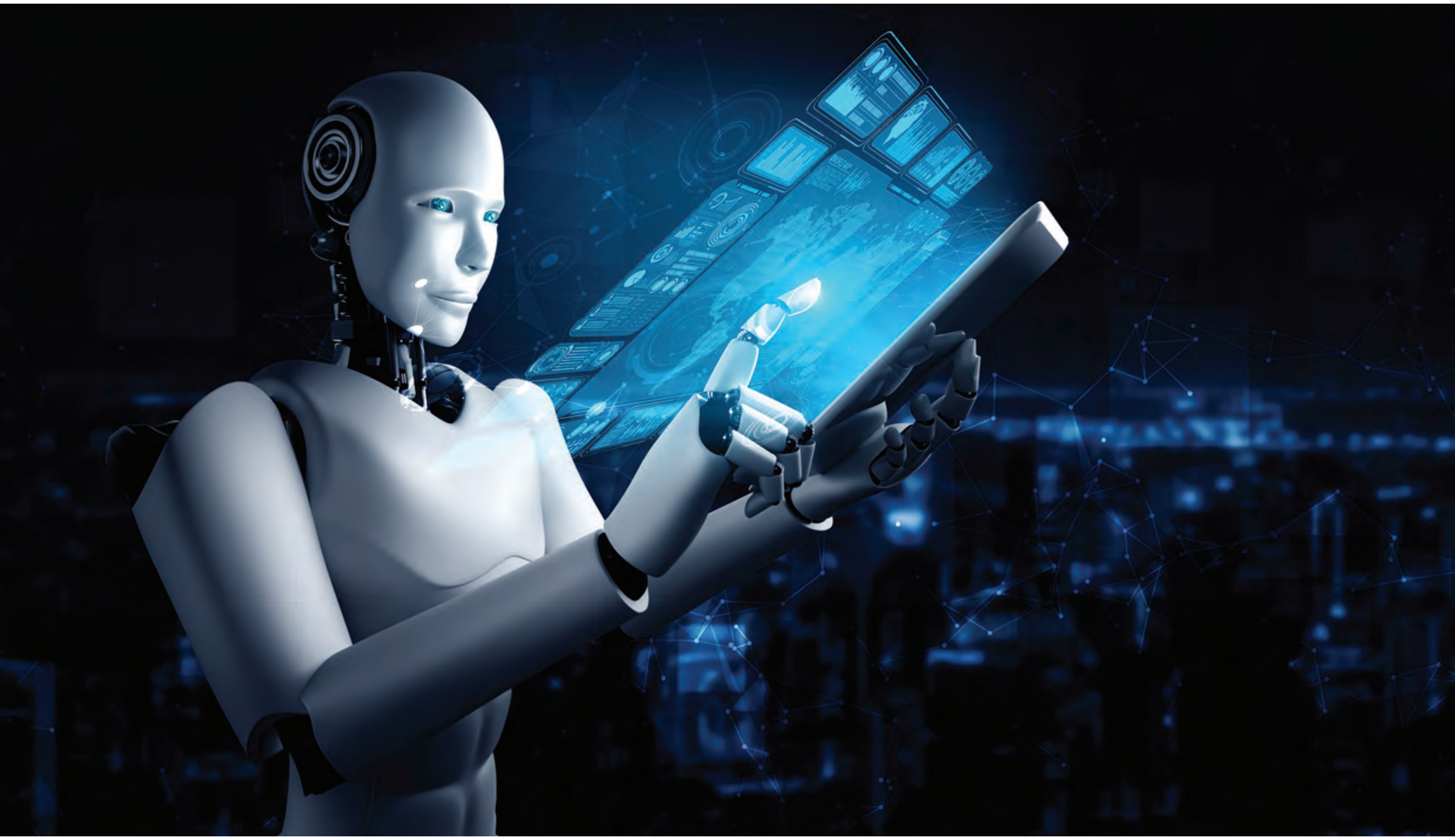
"Cobalt is an essential element for health and vitality in humans and forms a part of Vitamin B12, which is solely present in animal-derived foods, such as milk products, eggs, and meats ... dietary supplements manufacturers are also demanding cobalt for use in their products, which is expected to boost demand for cobalt."

A plausible scenario is that cobalt will be replaced where it's feasible on both the technology and cost fronts. As of June this year, cobalt's price has fallen over 40% in 2023 to close to $29,000 a tonne, which still makes it relatively expensive. A mix of metals will likely power batteries in the years to come – science is never static – but cobalt's obituary has yet to be written.

Lithium prices drop sharply; cobalt price stabilises



SOURCE: S&P Global



FROM COMMUNITY RELATIONS TO DUST CONTROL, AI IS SET TO TRANSFORM MINING

Artificial Intelligence is set to take the mining sector by storm, with huge gains for safety, productivity, and innovation seen on the horizon, writes **ED STODDARD**

The intelligence may be artificial, but the effects will be real. AI is set to take the mining sector by storm, with huge gains for safety, productivity, and innovation seen on the horizon. Jobs will be lost in the process while new ones will emerge, but the mining sector will be leaner, cleaner, healthier and safer.

AI is a big leap beyond mechanisation and even digitisation, and it's relatively early days. Tractors began replacing livestock a century ago, but could not choose which field to plough and when. AI, as the term suggests, can perform tasks associated with human intelligence such as decision-making and problem solving.

"AI is basically when you expose an algorithm to a certain situation and that algorithm goes through that situation and it learns from the situation. The idea is to enhance the intelligence of an operation or a system artificially so that it can enhance human intelligence," Ahsan Mahboob, the head of the Sibanye-Stillwater Digital Mining Laboratory (DigiMine) at the Wits Mining Institute (WMI) told Miningmx in an interview.

The emerging areas where AI is being applied to mining include exploration, dust level and gas detection, tailings dam management and data processing, which even includes the mapping of social "hot spots" to improve relations between the sector and its host communities.

Adopting AI will focus human minds in the C-suite, and boardrooms that don't crack this will fall behind the curve.

"We see AI as a tool to help making miners' jobs easier. Despite the benefits, lots of research needs to continue on the risks of using AI and how we can best address these risks," said Sietse van der Woude, the senior executive for Modernisation and Safety at the Minerals Council SA, the umbrella group for South Africa's mining sector.

A recent Minerals Council survey found that over 50% of its members were piloting AI tools and 25% will do so within the next five years.

"AI will play a role in mining just because of its sheer capacity to handle data in huge volumes, and machine learning is going to become important because there is just not enough human capacity to look at all the data that can be generated with modern geophysics and geochemistry," Errol Smart, CEO of Orion Minerals, told Miningmx.

"You'll never remove geologists or the need for the skills that goes with it and the experience. But you can teach a machine to do a lot of the menial tasks," he said.

Asked if they were pursuing AI technology at Orion, which is rolling out its Prieska Copper-Zinc project in the Northern Cape, Smart replied: "Not yet, but we are in discussions with people about it."

AI'S POTENTIAL IN EXPLORATION

On the exploration front, AI technology is already being credited with some finds.

"There are several already established applications of AI within the mining industry and its operations. The first is prospecting and exploration," noted a study published in December 2022 by the Technical University of Munich. "AI-enabled applications for these tasks have been seen and used in Goldspot Discoveries Incorporated and IBM Watson to achieve high accuracy in locating mineable prospects."

Goldspot has been a pioneer in the field, using AI combined with old-fashioned geology. In 2021, it announced the finding of a high-grade gold mineralisation at the Beaufor deposit in Quebec.

"GoldSpot's AI-based approach was combined with traditional geological expertise to narrow down potential targets, which reduces financial risk by prioritising the ideal locations for exploration drilling," the company said.

"GoldSpot generated gold targets using a Smart approach of knowledge-expertise and AI data-driven methods. For the latter, the analysis trains machine learning algorithms to predict the presence of gold using all variables."

And exploration is high on the industry radar screen after the disruptions caused by the Covid-19 pandemic amid a scramble for the green metals needed to power the unfolding clean energy transition. Global exploration budgets reached a nine-year high of $13bn in 2022, a 16% increase over 2021, according to S&P Global's World Exploration Trends 2023 report.

Such budgets will increasingly include AI applications on the spreadsheets and that could reduce costs if it does indeed lead to the accurate targeting of mother lodes over sterile deposits.

COMMUNITY RELATIONS

One fascinating area where AI may soon be applied is community relations. This is a major issue in mining jurisdictions such as South Africa, where outbreaks of social unrest often disrupt operations.

One such initiative is the focus of research at the Wits DigiMine, part of the EU-funded MasterMine project.

Sietse van der Woude
Modernisation & Safety, Minerals Council

'Our aim is to build an intelligent chatbot algorithm so that mining companies can do hot-spot mapping. If a number of issues has been reported from a certain location you can clearly identify that that area is a hot spot' — Ahsan Mahboob

"The idea is to provide 24/7 stakeholder engagement, particularly for mining communities because we want to minimise the gap between the mining communities and the mine management," said Wits's Mahboob, who is the lead researcher on the project.

"Our aim is to build an intelligent chatbot algorithm so that mining companies can do hot-spot mapping. If a number of issues has been reported from a certain location you can clearly identify that that area is a hot spot. And by having these hot spots, the mining companies can address those issues in advance as a proactive approach rather than waiting for these mining communities to start a protest," he said.

And it's not just a tool for the industry.

"Mining communities can also use it, so for example they can report that there is a water contamination in their area and if certain complaints have been lodged from a certain area, that area will be highlighted as a hot spot for that issue. And mining companies can address that issue in advance," Mahboob said.

So one of the aims is to make "mining companies accountable for their environmental impacts", he said.

"By incorporating not only large amounts of economic data, but also significant amounts of data on environmental, land use, communities, and governance factors, multi-objective optimization of operations through machine learning processes is potentially useful," notes the report cited above by the Technical University of Munich.

Among other things this points to how AI can complement the work of risk analysts and consultancies, an area which has seen huge growth the past couple of decades. It also means that such analysts might face the prospect of being replaced by AI technology, a risk that would not have been in their modelling a few years ago.

More widely, AI is seen playing a role across the mining value chain.

"AI technologies have the potential to improve decision-making across the mining value chain. By integrating data from different areas such as safety, production, HR, and asset management, AI algorithms can provide insights and recommendations that consider multiple factors simultaneously. This enables better and faster decision-making to balance competing priorities," Van der Woude of the Minerals Council said.

HEALTH AND SAFETY

AI is at the cutting edge of improving health and safety conditions in the mining sector. This is critical as ESGs – environmental, social and governance issues – top the corporate agenda in response to the concerns of investors and public opinion.

"AI cameras can be employed for real-time detection of dust levels in mining operations. By continuously monitoring and analysing the data, AI algorithms can provide early warnings, enabling prompt actions to mitigate health and safety risks associated with high dust levels," Van der Woude said.

The health hazards linked to dust are a major concern for communities that live near mine dumps such as the ones that still ring Johannesburg, many of which are being slowly removed as companies like DRDGold extract leftover riches from them.

The Wits DigiMine is working with European researchers to map the dust particles around Johannesburg using AI algorithms.

"Until now there has not been a single mechanism that can quantify the amount of dust and the direction of that dust from its source. Once you have the data you can develop policies or preventative measures," Mahboob said.

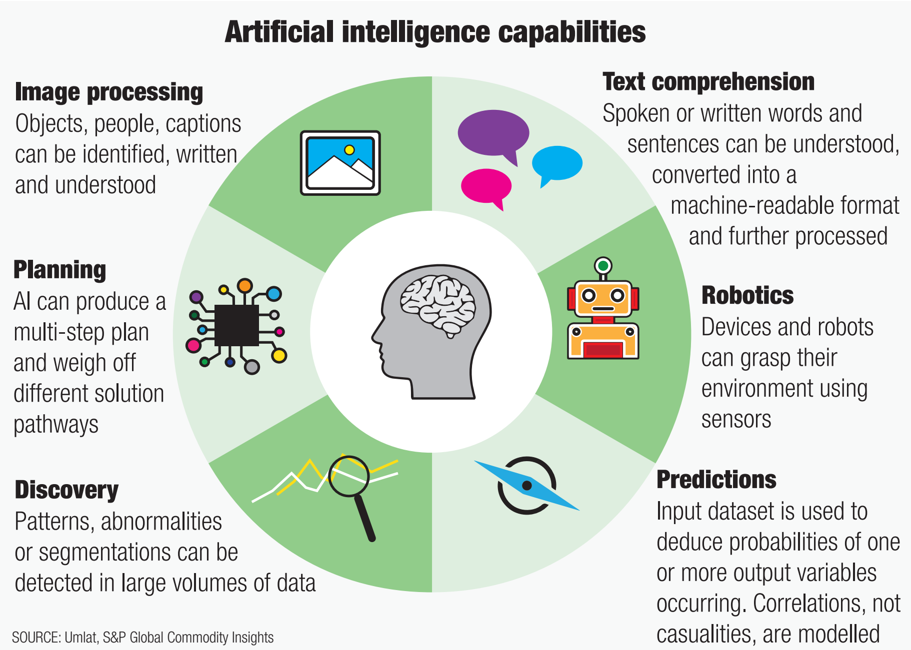
The management of tailings dams is also being supported by AI advances.

"Drones equipped with AI technologies can be utilised for efficient and effective management of tailings dams. They can collect data, such as aerial imagery and topographical information, and AI algorithms can process this data to identify potential risks, assess stability, and optimise maintenance and monitoring activities," Van der Woude said.

Johannesburg-based Fraser Alexander, which provides technical support to the mining industry and helps to manage more than 100 tailings dams on behalf of its clients, is heavily involved in this space.

The company uses drones and wireless IoT technology to gather information and

Errol Smart CEO, Orion Minerals



data around tailing dams to manage the risks around such facilities using AI algorithms.

"We try and get as much information as we can, we process it as quickly as possible, we run certain algorithms to compare that, and we dish up the plate of information as quickly as possible to management," Lourens de Koning, Fraser Alexander's COO, told Miningmx.

"What we find with this is that it is a key component to managing these things a lot better and a lot closer to real time. You can do a lot of data processing through this rather than having a guy in a bakkie [pick-up truck] driving around a tailings facility and trying to measure all of these things."

PREDICTIVE MAINTENANCE

Much of this is about using AI and IoT devices to forecast potential issues, or what is called "predictive maintenance".

"Planned maintenance" has been for decades central to the thinking of the mining industry and other sectors. It's like what a car owner does with their vehicle, taking it in once a year for an oil change and other routine maintenance.

Predictive maintenance moves beyond that to detect a potential fault in advance that will require fixing. Even a regularly serviced car can have an unexpected breakdown.

"The shift from planned to predictive maintenance is an area where AI technologies can excel. By analysing data from various detectors and monitors, AI algorithms can identify patterns and anomalies that indicate potential equipment failures. This allows for proactive maintenance, minimising downtime and optimising asset performance," Van der Woude said.

This has clear gains for productivity and safety.

"AI can analyse data from sensors on mining equipment, such as TMM (Trackless Mobile Machinery), to identify high-risk areas and optimise their use. This includes material handling and safety considerations, where AI algorithms can suggest the best and safest ways to perform tasks, improving operational efficiency and reducing risks," he added.

RISE OF THE MACHINES

The rise of AI is clearly unsettling. ChatGPT is certainly seen as a looming threat to many professions, including the journalists who produce this publication. High school teachers and university lecturers are bracing themselves for a wave of essays written by ChatGPT.

In the mining space, geologists, risk consultants and HR personnel among others are all in the firing line as AI looks set to perform many such functions.

For some, AI raises the disturbing prospect of a dystopian future like the one depicted in the Terminator movies starring Arnold Schwarzenegger. When the machines rise, humanity falls.

And AI does not have the constraints of more conventional mechanisation, which has also boosted productivity, profits, health and safety while replacing human workers in mining operations.

For example, South Africa's challenging geology has been a bottleneck to mechanisation in many platinum mines because of the narrowness of a reef defined by steep gradients that has made it difficult for machines to gain access to the ore body. That is why so much of the work has been done by human rock-drill operators (RDOs), and RDOs are still drilling rock faces with hand-held tools.

AI is not hindered by geology and the algorithms that inform it can address geological challenges, such as in exploration and prospecting as seen above.

In a mineral-rich country like South Africa, with glaring income disparities and an unemployment rate of close to 33%, the implications could be chilling. Having said that, AI is still not generally being applied directly to the production process even as it unlocks productivity.

"The focus is on adopting a people-centric

'AI and digital tools can be seen as enabling rather than threatening by labour unions. Instead of imposing rigid targets, these technologies help employees reach their targets and improve the overall work environment' — Sietse van der Woude

approach to modernisation, where technology serves as an enabler rather than the sole driver. This approach acknowledges the importance of preserving jobs and minimising large-scale retrenchments, especially considering the high unemployment rate in the country," Van der Woude said.

"AI and digital tools can be seen as enabling rather than threatening by labour unions. Instead of imposing rigid targets, these technologies help employees reach their targets and improve the overall work environment. They can contribute to better safety, health, environmental conditions, and social aspects of the mining industry, actively protecting workers."

In that regard, AI can be seen as the latest in a long line of technological advances that have made mining far less dangerous as well as better paid while enabling operations to keep humans on their payroll.

The world as we know it is simply not possible without mining. You would not be able to read this story on an electronic device without mining, and the global energy transition away from the fossil fuels linked to climate change will not be possible without minerals and metals extracted from the earth.

'AI will play a role in mining just because of its sheer capacity to handle data in huge volumes, and machine learning is going to become important because there is just not enough human capacity to look at all the data that can be generated with modern geophysics and geochemistry'
— Errol Smart

Lourens de Koning Fraser Alexander's COO

And AI is going to be at the forefront of these trends and likely in ways that we have still not envisioned.

"I cannot see mining without AI in the future, but AI is not the only future of mining," Wits researcher Mahboob said.

Ultimately, he noted, it's about "being competitive" and the South African mining sector is widely perceived as a laggard in this regard. Despite its vast mineral endowment, which includes most of the planet's known PGM and manganese resources, South Africa is hardly a magnet for mining investment.

South Africa is near the bottom of the Fraser Institute's annual survey of investment attractiveness in mining jurisdictions and accounts for less than 1% of global exploration expenditure, a collapse from over 5% two decades ago.

A lot of that is attributed to a poor policy environment which is driven by politics. That is an all-too-human factor that AI cannot directly address.

But AI technology, applied properly, could have the potential to transform South Africa's mining sector. The race is on worldwide and no one wants to be the farming family left with a horse after their neighbour acquired a tractor.

BEST OF FRENEMIES:
WHAT CAN SA EXPECT OF ITS PGM CORPORATE BRUISERS?

Even by the mining industry standards, the battle for Royal Bafokeng Platinum between Impala Platinum and Northam Platinum was particularly caustic. Now the two companies have to get on with developing the last great jewel of South Africa's platinum group metal industry, writes **DAVID MCKAY**

Paul Dunne
CEO, Northam Platinum

PAUL Dunne keeps public commentary to a minimum at the best of times. In an interview with Miningmx on a pleasantly warm mid-June day, Northam's CEO is especially circumspect. Twelve days previously, the government-owned Public Investment Corporation (PIC) accepted Impala Platinum's (Implats') offer for Royal Bafokeng Platinum (RBPlat), effectively killing Northam's rival bid for the firm.

So ended 18 months of fierce corporate sparring. The battle for control of RBPlat first went public in November 2021, when Northam bought a 34.5% in the firm from its largest shareholder, Royal Bafokeng Holdings. The deal shocked Implats, which had announced two weeks earlier that it was in takeover negotiations with RBPlat. Implats subsequently formalised a takeover offer for RBPlat in January 2022.

Over the next 15 months, Implats acquired a stake in RBPlat but without getting to 50%, raising the prospect of a joint venture with Northam in RBPlat. Then came the PIC's decision in May – no doubt swayed by Northam withdrawing its long-awaited offer for RBPlat in April after formally launching it a month earlier.

Yet Dunne claims to be happy with Northam's position in RBPlat despite saying previously anything less than control would be "a silver medal". "Let's say it in common language," says Dunne when asked if he's putting a brave face on events. "We've got a foothold in the western limb between Rustenburg and Sun City that we otherwise would not have."

A foothold doesn't sound like much for the R17bn and two years in effort it cost Northam – but what a foothold, counters Dunne. RBPlat is the last jewel in the western limb of the Bushveld Complex, where the country's PGMs are mined. With mineral resources of 68 million ounces, RBPlat's resources are vast, but they are also shallow. For Dunne, RBPlat's resources represent the perfect hedge against cost and technical risks.

Compare it to the rest of the sector, he says. South African PGM production is shrinking. Northam forecasts a decline in annual platinum metal output to as little as three million ounces by about 2030 from five million ounces "... not so long ago. I would only describe that as severe depletion," he says.

RBPlat also offers growth. The company operates two mines – Bafokeng Rasimone

Platinum Mine and Styldrift – with production guidance for this year of 470,000 to 490,000 ounces. But there is a second phase project at Styldrift for which Northam motivated in its submissions to the Competition Commission. Dunne says the ore body is "really big and it warrants further development" although – interestingly – he is now guarded when asked about Styldrift II. "There are 50 million ounces in the ground at the resource level. These are very specific technical statements I am making – at the resource level. So it warrants further development."

Nico Muller, Implats CEO, says his firm will launch a review of RBPlat's feasibility study of Styldrift II as "a priority". But as the majority shareholder in RBPlat, Implats is not be rushing to expand. "The only niggle with it [Styldrift] is that it requires probably an excess of R20bn which I would suggest the industry has very low appetite for," he says.

For Implats, RBPlat first and foremost solves the problem of declining margins at the firm's Rustenburg Mines business to which RBPlat is adjacent. Sharing the cost of producing 500,000oz-odd a year in PGMs, with the 490,000oz/year from RBPlat, gives Implats the scope for "a longer tail", as Muller describes it. "That for us was the driving force to pursue this transaction, to provide life extension to our existing assets."

According to Citi analysts, at least three years could be added to some Rustenburg Mines shafts extending operations to 2033, as well as lowering operating cost and capital efficiencies by as much as 10%. "It may also use some infrastructure to early access some part of the reserves", the bank said, implying Styldrift II. Says Muller: "It is highly unlikely that we are going to see development on such a new mining complex on its own unless you have a competitive advantage, which I think we have in the proximity of 20 shaft infrastructure."

IT has been speculated that Northam withdrew its offer for RBPlat because shareholders couldn't stomach the expense. When its bid finally arrived, Northam offered R172 per RBPlat share in cash and shares, which compared to Implats' lower R150/share offer. While Dunne insists Northam's bid was financially sound, it was the sudden crash in PGM prices that made it unviable. So steep was the deterioration in palladium and rhodium prices that Northam deemed a materially adverse condition had been triggered. As if struck by a missile, Dunne hit the ejector seat.

'We respect Impala Platinum; they are good mining people and good metallurgists, and we have every confidence that they will run RBPlat as we would run it'
— Paul Dunne

Northam shares immediately outperformed the market. Two weeks after pulling the offer they were 25% higher – an improvement pretty much forecast by RMB Morgan Stanley analyst Christopher Nicholson who, in a note at the time, said the share portion of Northam's RBPlat offer had created a long-standing share overhang. For Muller, however, Northam's share price response was proof its shareholders didn't like what Dunne was offering for RBPlat. "Shareholders were very happy they were not going to pursue this transaction," he says.

Commenting on the withdrawal of its offer, Dunne says the market continues to misunderstand the extent of the market correction. "Short-term cash flows are very important with these decisions, and the market – let me put a number to it – the rand basket price on average that the sector receives is down over 30%," says Dunne. "The market has changed very significantly, perhaps more than people realise."

By July, the PGM rand basket price was lower still, largely driven by weaker palladium and rhodium prices. After racing up to $26,000/oz in mid-2021, rhodium is about $4,000/oz today, a reflection of its notorious lack of liquidity. "In a market where 80% is held in long-term contracts, there's a lot of pain to be had," says Henk de Hoop, CEO of consultancy SFA Oxford. By the end of April, Northam shares were at a 12-month low.

Despite the market volatiity, Dunne says Northam is in a good place: its Zondereinde and Booysendal mines are due to make production guidance and from a strategic perspective, the company is massively derisked, especially considering its single-asset status when Dunne joined the company 10 years ago.

But it now finds itself a minority shareholder in Implats' listed subsidiary. This makes for some interesting considerations regarding how RBPlat will be managed. In one sense, the two companies didn't have enormously different goals in respect of their RBPlat bids. Despite arguing for Styldrift's expansion, Northam recognised in RBPlat access to cash flow. For Implats,

Nico Muller
CEO, Impala Platinum

it was primarily life extension. Over time, Northam can't be entirely sure where Implats will take the business.

Importantly, RBPlat will almost certainly remain listed. "We have a strong enough commercial position that offers us enough protection at the 34%," says Dunne of Northam's position in RBPlat. One of those is that it can vote down a delisting. It's better to be minority in a public entity where minority protections are transparent. Secondly, Dunne claims to have complete confidence in Implats. "We respect Impala Platinum; they are good mining people and good metallurgists, and we have every confidence that they would run RBPlat as we would run it," says Dunne. "In other words, very competently. And that you can quote me on."

But there's no chance of Northam having any representation on RBPlat's board or any of its committees. "The competing process [for RBPlat] as far as I'm concerned has destroyed any possibility of us having cooperation," says Muller – a reference to objections Northam laid about Implats' offer for RBPlat with various regulatory authorities, such as the Takeover Regulation Panel. "He [Dunne] will never be on the board, neither he nor any Northam representative will ever be on that board," says Muller.

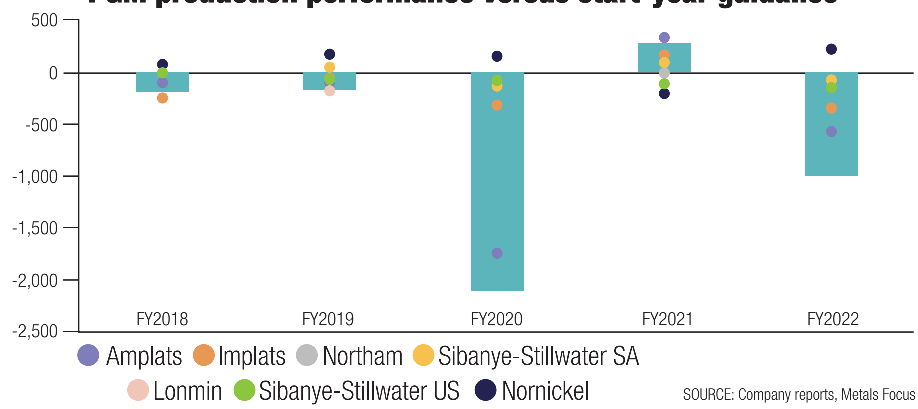
Northam played hard ball for RBPlat. It laid multiple objections with the Takeover Regulation Panel (TRP), which delayed Implats' progress. There were claims of this and that person pulling strings behind the scenes that are typical of hostile merger and acquisition sagas. Northam tended to keep its public pronouncements to a minimum. Muller outspokenly threatened to pull his firm's offer for RBPlat entirely. "You will never know how close we came to it," says Muller. According to a source, Implats' board gave him the authority to walk away from RBPlat a month or two before Northam walked from its offer.

Given the fractious relationship between the two companies, it raises the question as to how RBPlat will be run. According to Implats, Northam will have limited influence in how capital is allocated. In its most extreme form, Implats could decide not to pay dividends from RBPlat. "Sure, but then you're not paying yourself either; then it would become retained earnings," says Dunne.

Asked about whether Implats will pay dividends from RBPlat, Muller says "It will be beneficial to the empowered partners in order to pay down [their] debt. But it's not a legal obligation. It [RBPlat] decides to do that as a board function which is appointed by Implats. Therein lies your answer."

Muller adds: "I am not sitting here and saying out of revenge we are going to make stupid decisions to destroy value by withholding dividend payments from all shareholders, including ourselves. Our ambition is to accrue maximum value for all stakeholders, including the shareholders through this acquisition."

PGM production performance versus start-year guidance



SOURCE: Company reports, Metals Focus

Timeline of events

2021

October 27: Impala Platinum (Implats) announces plans to take over Royal BafokengPlatinum (RBPlat) as firms issue a joint cautionary announcement.

November 9: Northam Platinum announces deal with Royal Bafokeng Nation to buy 34.52% in RBPlat with further options.

December 9: Implats builds 35% stake in RBPlat, setting groundwork for mandatory offer in January 2022. Northam criticises RBPlat for misleading the TRP.

2022

May 27: Northam intervenes in Competition Tribunal proceedings as Implats seeks approval. It's the first of many objections.

August 2: RBPlat CEO Steve Phiri says the battle over the firm "brings instability and consternation among workers". By September, the Competition Appeal Court allows Northam to press on with deal objections.

September 1: Implats tries to smoke out Northam's offer after CEO Nico Muller issues first of several threats to close offers for RBPlat. The firm has "very little appetite" for further extensions, he says.

November 17: Public Investment Corporation (PIC) declines to sell its 9.5% RBPlat stake into Implats offer, effectively keeping its options open and extending the contest.

2023

March 9: Northam Platinum draws up plans to formalise a takeover offer for RBPlat after Implats withdraws its formal complaint with the TRP.

April 5: Northam surprisingly withdraws it soffer for control of RBPlat, citing a deterioration in PGM prices.

May 31: PIC agrees to sell RBPlat shares to Implats, which takes control.

June 30: Johannesburg Stock Exchange allows for listing of Implats shares in terms of its RBPlat offer. With the TRP giving the green light to the takeover, Implats wins the day — 20 months later.

For its part, Northam's minority protections allow it to write letters to the board and make representations regarding decisions; it can also mount resistance to certain of Implats' plans itself, but ultimately the two companies have overlapping shareholders. It's this responsibility to the market that keeps all parties sensible. But over time, as Implats and RBPlat become – operationally speaking – increasingly unified in purpose. Seen in this light, it's fair to ask if Northam's interests may be less served over time.

Muller is not even entirely convinced of Dunne's argument that RBPlat's resources will be mined over generations. He thinks maintaining a long-term bull market view over PGMs doesn't make sense; in fact, he thinks it's "insanity". Said Muller: "Where is the other enterprise in the world, the other market observer, that has that particular view?

"If you wanted to defend insanity by taking a position like that, you might find an audience. I suspect it's a limited audience, as has proven to be the case by [Northam] shareholders who are bidding against the intended course of action [Northam's RBPlat takeover]."

'The competing process [for RBPlat] as far as I'm concerned has destroyed any possibility of us having cooperation'
— Nico Muller

MARKET analysts believe that after several years of soaring prices the PGM industry is now in the mixer.

"We really think this will be a watershed year for PGMs," says Suki Cooper, a precious metals analyst for Standard Chartered Bank. Hydrogen technology could drive 450,000 to 850,000oz in new annual PGM demand by 2030. But the variance in this outlook underpins the level of market uncertainty.

The squeeze is on

OF the barriers to new platinum group metals production in South Africa, one of the most important is building processing facilities. Smelters and refineries are technically challenging, expensive to build and run, and in the current energy deficit, risky.

In previous years, it's been possible for a new PGM miner to toll-treat concentrate with an existing company, such as Implats or Anglo American Platinum. These days, however, capacity is running tight. In March last year, Implats announced capital spend of $521m aimed at boosting its processing in Zimbabwe and South Africa. Some of it was to account for the changing nature of orebodies, which requires more base metals processing capability. Implats is reticent to sign away any new capacity, says Muller.

"Access to processing capacity is becoming a major barrier"" says Muller of new PGM production coming online in South Africa. "We see it with Waterberg, with IvanPlats. The investment required in beneficiating the concentrate to final metal is a big issue."

Implats has a 15% stake in the Waterberg Project, a proposed 420,000oz/year venture controlled by Toronto's Platinum Group Metals (PTM). Implats previously turned down an option to buy control of the project, preferring instead to invest in Canada. IvanPlats, the South African company controlled by another Canadian firm, Ivanhoe Mining, is building the $490m Platreef project, with first production due to come on stream in the first quarter of next year.

Both companies have failed (so far) to conclude concentrate offtake deals with Implats. IvanPlats is consequently building its own processing while PTM is considering the same. Says Muller: "I caution that the economics of developing your own processing capacity is pretty significant. I do think it's healthy that the companies are looking at different ways, it's useful for the industry, but I see tough economic hurdles."

As for the Waterberg Project as a whole, Muller doubts Implats will follow its rights if PTM presses the button right now, partly because it's palladium dominant, a metal in the PGM suite of metals under price pressure. "The area in which the mine is located, the metal mix of the orebody, the escalating power crisis in South Africa, the availability of water ... there's a wide range of strategic considerations which right now represents a pretty significant level for that project to get an overwhelming vote of support from us," he says.

Ask Frank Hallam, CEO of PTM what he's thinking and he has a completely different outlook. He said in June the company was "pounding on doors" looking for a concentrate deal and thinks when decision time comes, there's "no reason why Implats wouldn't" invest in the project, despite its $620m capital price tag, especially given its investment so far.

"The first thing we need to do is get an updated feasibility study first, then we can get an agreement on concentrate," says Hallam. The company is working on a streaming deal for gold that's produced as a metal by-product which will help finance Waterberg. Hallam takes a highly strategic view: Waterberg is a bulk miner, which implies a low operating cost, in a metal that structurally is in production decline. There's also a lot to be said for the long-term support of PTM's Japanese shareholders Hanwa Company and JOGMEC, which hold 9.76% and 12.19% in Waterberg respectively. "Bulk mining, it always wins in the end," says Hallam.

Frank Hallam CEO, PTM

It's owing to uncertainty over the future direction of the PGM market that Muller continues to harbour an interest in transforming Implats into a diversified miner. Having frequently alluded to this ambition in Implats presentations over the past two years, he says now "we are looking at it as a two-year horizon" in terms of rolling out its plans. In the shorter term, the focus is on embedding R50bn in investment projects, which includes R9.82bn ($521m) in downstream processing expansions (see box) as well as the RBPlat transaction.

In fact, the RBPlat deal could be Implats' last major investment in South Africa's PGM sector. "Our platinum PGM journey would then be settled," he says, alluding to the fact that PGMs also yield base metals, such as nickel and copper, as by-products. In the background to the RBPlat deal, Muller says that intellectual property has been developed in other metals. "Then the question would be what is the next step and you will probably find a great amount of energy and effort will go to assess the feasibility of other commodities."

For Northam, Dunne says the company remains aspirational. "That's a joke, but you can write it," he says. RMB Morgan Stanley also thinks other corporate action could be in the offing. Intriguingly, Northam has an option in RBPlat. In terms of its November 2021 purchase of shares from Royal Bafokeng Holding, it has options on shares which would push its stake in RBPlat to about 38%. This comes with a major caveat, however. If exercised, Northam would then trigger a mandatory takeover of RBPlat –

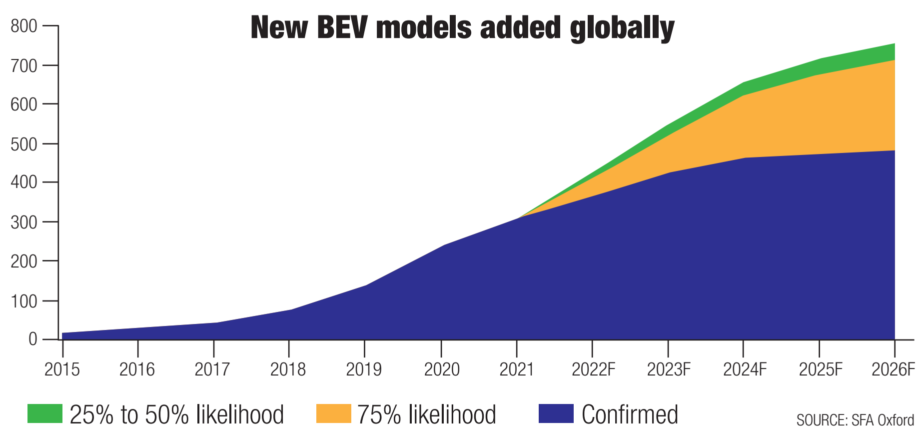
'Then the question would be what is the next step and you will probably find a great amount of energy and effort will go to assess the feasibility of other commodities'
— Nico Muller

and the prospect of that seems distant at present. Says Dunne, stone-faced as usual: "We will maintain our optionality and we will consider each option as and when it arises."

What is certain is that there's no prospect of Northam moving into other metals, nor – in fact – into other jurisdictions. "We are a South African company, all our mining assets are South African, and we see ourselves as a South African PGM miner," says Dunne.

Sometimes CEOs resign after failing to achieve potentially company-changing corporate transactions such as Northam contemplated in its bid for RBPlat. But there's no sign Dunne is considering that. Asked about his future, he says simply, the company has achieved a lot during his 10 years in charge. "We're now a lot more resilient and a lot more diversified," he says. As he said above: "We've got a foothold."

"A decade of deciders," says SFA Oxford's De Hoop of the future market. Metal prices have normalised but inflation is on the rise, supply-side risks abound in both South Africa and Russia, demand is uncertain because no-one truly knows the extent of electric battery vehicle adoption. Certainly, the automotive market is pushing EV consumerism, as evidenced by the increasing number of new models (see graph). Dunne, however, thinks constraints to EV takeover-related to metals availability and infrastructure limitations means the internal combustion engine, which requires PGMs in autocatalysts, will remain stronger than some market analysts assume.



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DEAL-SHY BRISTOW TO BREAK FORM AS BARRICK EYES COPPER M&A

Barrick boss Mark Bristow loves to lay into the gold industry for paying too much for competitor assets. But the former Randgold Resources CEO seems to have a different attitude to copper, a metal that may yet see Barrick deal in blockbuster M&A, writes **DAVID MCKAY**

Mark Bristow CEO, Barrick Gold

BARRICK Gold CEO Mark Bristow has been grumbling about other people's deals for nearly three decades. Yet nearly every year the gold sector finds new ways to merge and acquire. This year, Newmont broke all records, buying Australia's Newcrest Mining for $19.5bn. The deal takes Newmont's gold production to nine million ounces a year. PwC, the auditor, forecast a "mega-deal" in gold every few years, with at least one substantial deal every year.

"No-one spends any money on their own future through exploration," says Bristow. His long-standing contention is that the market will reward Barrick for replacing production for the next decade at a cost cheaper than can be achieved in M&A. This approach at Randgold Resources, Bristow's former company, earned it a premium rating and led to its merger with Barrick in 2019.

Lately, however, there seems to have been a slight switch in Bristow's thinking. In 2020, he offered to buy Grasberg, a copper mine in Indonesia, from Canadian firm Freeport-McMoRan. This year, Bristow was linked with the takeover of First Quantum Minerals. The two targets have one thing in common: they produce copper, which

Copper plates

Bristow thinks has strategic relevance that makes deals in the metal different to gold.

Newmont would agree. Its swoop on Newcrest takes its copper output to 350 million pounds annually, rivalling Barrick, which has forecast production of up to 470 million pounds of the red metal this year. "I think with the big copper deals there's a lot of upside in the price," says Bristow. "We have a view about copper and gold: when we announced the Barrick deal, I was very clear this is a copper and gold company. The logic is it comes together."

Gold's fortunes are intrinsically linked to global economic conditions. In high inflationary environments, such as the current one, the metal is popular. Political shocks also boost its price. In more sanguine economic times, gold underwhelms. Over time, the metal is a proven portfolio hedge. It's different for copper, however. Government-sanctioned efforts to lower greenhouse gas emissions are forecast to underpin its price for years to come given copper's heavy usage in renewable energy and electric mobility. "We forecast copper demand in renewable energy to increase from 997,000 tons in 2020 to 1.9 million tons in 2030," said Jefferies, a bank.

Bristow also says gold miners have no choice but to accept copper into their portfolios because new gold discoveries are predominantly porphyries which are copper containing. He also thinks the structure of ownership in copper output needs to be changed to achieve the best investment outcomes – something investment banks have yet to get their heads around. "The rest of the mining industry has to reallocate its assets or rearrange it because a copper mine in BHP or a copper mine in Rio, you lose it."

For now, though, Barrick has drawn a blank in the M&A market. Instead, Bristow has focused on improving the operational performance of Barrick's existing copper mines, such as Lumwana in Zambia, which at 267,000 pounds last year accounted for roughly half of Barrick's copper output.

Asked about Grasberg, Bristow says the deal no longer holds any interest for him. Freeport rebuffed Barrick when it was valued at $10bn. Freeport is worth $55bn today, which has removed the cut-price attractiveness of the deal. In any event, improvements at assets such as Lumwana and another mine – Barrick's 50% stake in Jabal Sayid in Saudi Arabia – means the company has "outgrown" it, says Bristow.

As for the recent speculation linking Barrick with First Quantum, Bristow says he's "aggressively no" about responding to any speculation. "Since the day I arrived in Canada, people will take up trading positions, saying we're interested in this or that company." So he won't comment either way. Nonetheless, there's a value argument for Barrick tilting at First Quantum in the same way it looked at Freeport. First Quantum has underperformed its copper-producing peer group, gaining only 27% in 12 months. This compares to a 38% gain for Freeport over the same period, a 49% gain for Canadian firm Teck Resources (which is under bid by Glencore), and a 38% gain for Southern Copper.

'We have a view about copper and gold: when we announced the Barrick deal, I was very clear this is a copper and gold company. The logic is it comes together' — Mark Bristow

BRISTOW is these days rarely a visitor to South Africa, the country of his birth. His family relocated, and only a brother, John – a prominent diamond industry entrepreneur – remains. But he was in Johannesburg at the time of writing, ahead of a five-week tour of Barrick's operations. It started in Africa before he headed for Saudi Arabia, Pakistan, Papua New Guinea and finally the Dominican Republic for the quarterly overview of the Americas leg. It's a trip he does, apparently tirelessly, every quarter, every year. It was the same at Randgold. A geologist by training, Bristow is obsessed with the mines.

Asked about South Africa, he is unstintingly critical. "The cost of living and doing business is still very low compared to the rest of Africa. The people are very competent; in fact, exceptional. But doing business, anything to do with the business side of things – it's a huge disappointment," he says. That's because the business environment isn't conducive – a criticism that abounds about South African mining both within the country and internationally.

"Cyril [Ramaphosa, South African president] is very disappointing. Gwede Mantashe [mines and energy minister] is a clown," says Bristow.

Despite this, he thinks it was a mistake for AngloGold Ashanti to have moved its primary listing from Johannesburg to New York, a transaction that cost about $500m. "There's no way they should have left," he says. Better to be a big fish in the relatively small emerging market investment pool, seems to be his attitude. "For me, when you do that move, you get out of the emerging market indices." He's also noticed the difference having taken Randgold out of emerging market indices post the Barrick merger: "So we've got work to do."

Alberto Calderon, CEO of AngloGold Ashanti, has defended his firm's move, saying it will line up for cheaper capital and enable the company to trade at a better rating. Bristow, however, doesn't think the South African discount is real: "I still strongly believe that the missed opportunity was the merger between Gold Fields and AngloGold," he says.

"We tried to help do that transaction because we were interested in Kibali, and we could fund it in a transaction," he says. In terms of this arrangement, Sibanye-Stillwater was to buy AngloGold and Gold Fields and recoup cash by selling AngloGold's 50% stake in the Congo mine it shares with Barrick.

The deal never happened, ending the notion of a South African mining champion that Sibanye CEO Neal Froneman was keen to create.

What's happened instead is a retreat from South Africa's gold mining sector from nearly all its major participants. Even Harmony, a stalwart of the local industry, bought a copper project in Australia last year. Harmony also has an option on another copper project – Wafi-Golpu, in Papua New Guinea. The balance of the project was formerly owned by Newcrest, now Newmont, following their merger. Asked if he'd be interested in buying Harmony, hiving off its South African mines and becoming a joint venture partner with Newmont in Wafi-Golpu, Bristow gives a firm "no thanks".

'I still strongly believe that the missed opportunity was the merger between Gold Fields and AngloGold' — Mark Bristow

"I'm not interested in Wafi-Golpu," he says. "We looked hard at Newcrest. I was very clear, I think it was like 40 minutes after the announcement [of Newmont bidding for Newcrest] that we're not interested."

FOUR years into running Barrick, the company seems to be operating pretty much as Bristow wants; which is to say, like Randgold. Only in Toronto is Bristow's office not a hot desk. The Bay Street headquarters now house a few hundred people compared to 1,200 several years ago. Power is decentralised to the mines, which run by CEOs rather than mine managers.

At 64 years, the obvious question is whether Bristow has given consideration to retirement. While not directly answering the question, he doesn't seem minded right now. A "very serious" debate about succession happens with the board every year, but it's a conversation about succession throughout the group rather than just his seat. Bristow wants to avoid sheltering 'pets' or cells of friendship and preference in a business section.

Gold bar

"My philosophy in management is when you employ somebody and they bring five people with them, don't deploy them because you create a liability. If they leave, the other four go with them. It's like Mark Cutifani and that technical guy that he dragged around his whole career," says Bristow of the former Anglo American CEO and Tony O'Neill, its former technical director.

To say Bristow is forthright is something of an understatement. But with this track record running Randgold and now Barrick, it's hard to make an objection. Randgold grew from a (nearly broke) single-asset producer in the 1990s to a one-million-ounce-a-year racing car of a gold company the London market is yet to fully replace. It was the only gold company not to impair an asset following the market correction after 2010 (and all of them were taking heavy write-downs from BHP, to Rio, to Barrick itself at its Pascua-Lama mine in Chile). It earned Bristow a place in the top 25 of CEOs globally in the Harvard Business Review of 2016.

Even after the merger with Barrick, Bristow says the African assets that made up Randgold proved the most resilient. While he was restructuring Barrick, Loulo-Gounkoto in Mali and Kibali in the Democratic Republic of Congo barely missed a beat. It enabled Bristow to focus on Barrick's troublesome assets in South America and elsewhere. He revived its copper portfolio and restarted Reko Diq, a project in Pakistan that had been mired in dispute for years. Another dispute-hit asset was Barrick's Tanzanian mines.

Labouring under an export ban during the presidency of the late John Magufuli amid claims of malfeasance, Bristow stopped the litigation and paid the government $300m in reparations. He also divided the assets in half, giving the government a 50% stake in a newly formed joint venture. North Mara, one of the Tanzanian mines, is now being developed into one of Barrick's top mines.

One irony of his 30 years in mining, however, is that Bristow has become part of the establishment. As founder of Randgold Resources he played the role of enfant terrible. He famously laid into Barrick itself for its corporate excesses, labelling it part of the "old school tie" that dominated in the gold sector. But as CEO of that company itself, the iconoclast has become the icon. "A big, larger-than-life, alpha-male personality," is how Investec analyst Hunter Hillcoat described Bristow to Bloomberg News in 2018.

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Implats – Impala Rustenburg operations

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HOW GOLD FIELDS LOST TWO LEADERS BUT KEPT ITS HEAD

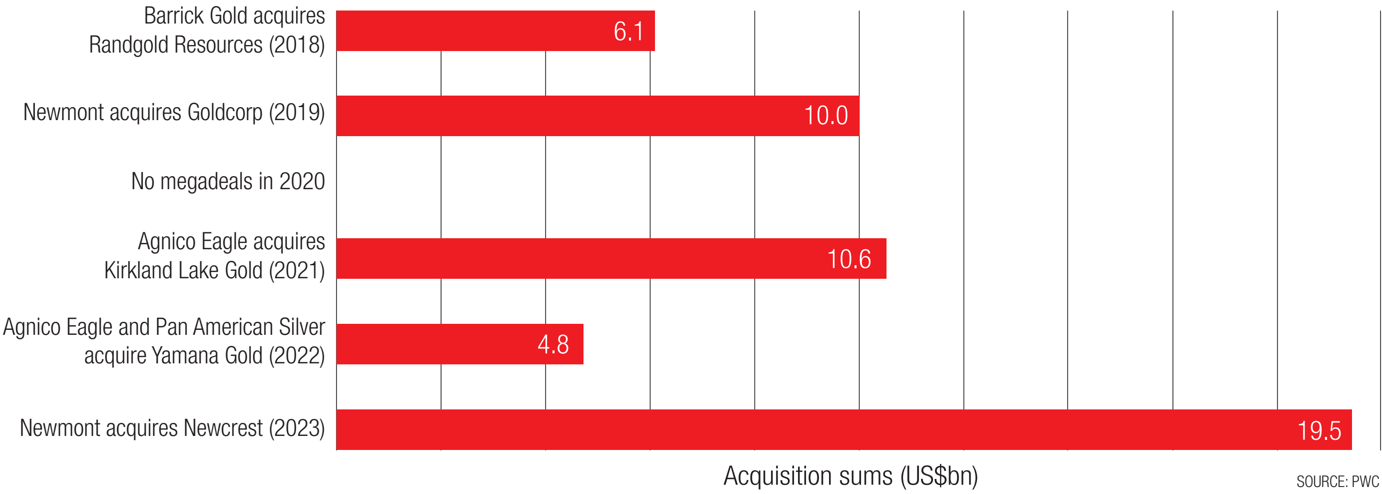
BY DAVID MCKAY

EXECUTIVES at Barrick Gold shook hands in public and sniggered in private. That was the story behind the $1.2bn cash sale in 2006 of the Canadian firm's 50% stake in South Deep, a gold mine west of Johannesburg. As the tale goes, Barrick couldn't believe the buyer, Gold Fields, coughed up. Notwithstanding the mine's 70 years of mineable gold, South Deep was nothing but a headache for Barrick, the unwanted legacy asset of its Placer Dome takeover. The mine had trouble meeting production targets and four months prior to its sale, headgear and 6.7 kilometres of steel rope plummeted 1.6km down the main shaft. The accident meant a 40% cut to South Deep's production that year.

Martin Preece Interim CEO, Gold Fields at South Deep

M&A in the gold sector continues

Top 40 mining companies: Largest gold megadeals by year



SOURCE: PWC

'I am very different to Chris; I'm very different to Nick, and if the board was trying to get carbon copies to just keep on replacing with the same, you're never going to grow your business' — Martin Preece

Ian Cockerill was Gold Fields' CEO at the time of the South Deep acquisition, but fixing the mine fell to his No 2, Gold Fields CFO Nick Holland. Appointed in 2008, Holland spent 10 years searching for a plan that would work for South Deep. That plan was devised by Martin Preece, hired by Holland in 2017 from De Beers. Preece recalls meeting Holland six weeks into the job, which had been predicated on fixing South Deep's technical problems. "I've got good news and bad news," Preece told Holland during a 5pm meeting at Gold Fields' head office in Sandton. "You don't have a technical problem at South Deep; you've got a people problem."

Today, South Deep is a much leaner operation than when Barrick ran it. Production this year is forecast to be 380,000 ounces. Yet it is profitable, no doubt aided by the buoyant gold price. Ultimately, South Deep required finesse rather than a sledgehammer, says Preece. "We started employing based on capabilities, attitude and not how hard you can hit. Hitting it harder was never going to make it go faster."

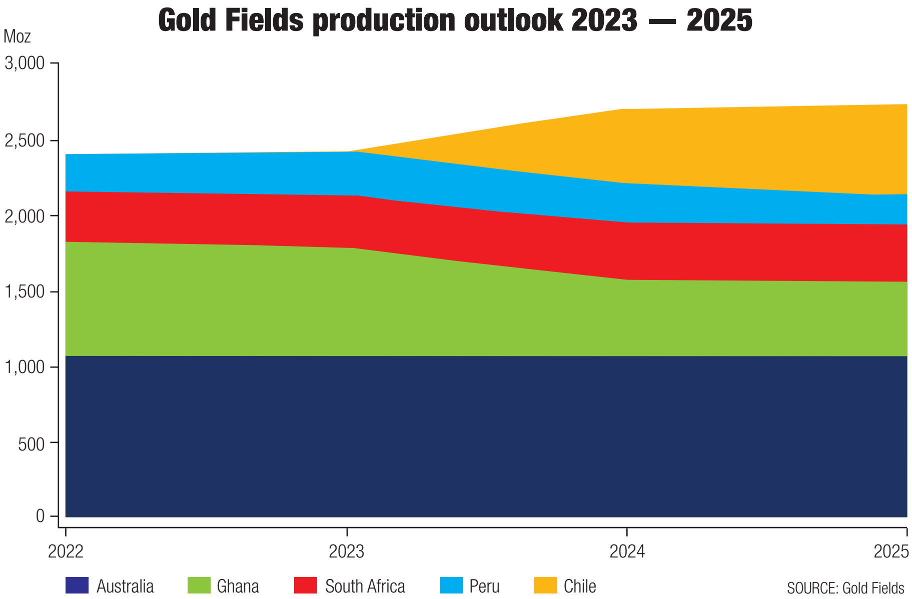
That said, Gold Fields' 'people problem' came back with a vengeance last year after key executive committee members quit amid the firm's proposed $6bn takeover of Yamana Gold. The deal was the clarion call of Chris Griffith, who took over at Gold Fields in 2021 after Holland retired. The market was taken by surprise and sold down Gold Fields' shares aggressively. Griffith, who had landed Gold Fields' growth strategy only a year post appointment, was offering too high a premium, analysts concluded. A year after that, Griffith fell on his sword, or so the company spins the story. Preece is now interim boss.

He wants the job on a full-time basis and says the departure of Griffith in November hasn't unduly harmed Gold Fields. Shares in Gold Fields went on a tear in the first five months of the year, partially assisted by corporate momentum since January that Preece drove. In March, he signed a deal with AngloGold Ashanti to pool their Ghana mines, a dropping of farm boundaries that had been on the backburner for years. In terms of dealmaking in a heady market, the joint venture was the lowest of low-hanging fruit, and additionally allowed the partners the spectacular headline of creating 'Africa's largest gold mine'. Less than two months later, Gold Fields agreed a C$600m joint venture with Toronto's Osisko Mining to develop the Windfall project in Quebec. The partners will spend a further $1.1bn exploring the prospects on Windfall's 2,400km² property.

The market response to Gold Fields was positive, in the main. BMO Capital Markets analyst Raj Ray said it was "less transformational" than the earlier tilt for Yamana, but Osisko added "optionality". It also partially addressed Gold Fields' declining production profile, which had worried Griffith. "On balance, we see this deal as positive," said Arnold van Graan, an analyst for Nedbank Securities.

Preece thinks the market lost sight of Gold Fields' production profile, which will be between 2.2 and 2.4 million ounces a year on average until 2030. "I think that is one of the things that got lost in the Yamana transaction that, you know, the [production] cliff is looming. We are fairly comfortable until 2030."

From 2024 to 2026, gold output will peak at 2.7 million oz a year owing to high grades at Gold Fields' newly commissioned Chile mine, Salares Norte, which will see it produce 500,000oz/year until it tapers



off. Windfall will add at least 125,000oz in attributable output annually, while the JV with AngloGold in Ghana will add 125,000 oz a year.

Provided South Deep keeps on track, Preece says he has no concerns regarding Gold Fields' 'heft' in the market and feels no pressure to do deals. "We're watching what's happening in the market now; we're going into a period of consolidation. There's some shake out, but right now there are core areas we want to focus on in the short term." Preece fears embarking on a "never-ending buying spree where you never get anything done properly. We've got a very clear message: we don't want a premium and we don't want dilution."

According to a market source, Chris Griffith had a file on his desk titled 'Deals' from the very beginning. That sounds like standard apocryphy. Certainly, though, Griffith wanted to imprint his own ambitions on Gold Fields after nine years of relative conservatism under Nick Holland. Yamana was among Gold Fields' previously identified targets but Griffith quickly drove it to the board, where it received full approval.

Preece says Holland and Griffith struck very different notes while at the company. Holland had an unstinting work ethic: "He had no end," he says. Holland had a photographic memory, which meant he "forgot nothing". Griffith was "a lot more inspirational", with "big ideas", says Preece.

One idea was that investors are drawn to companies with growing production; he viewed Gold Fields' reduction in output from 2027 a mistake. "To have created value of 2.7 million oz ... to let that slip off the other side doesn't feel like the right long-term solution," he said in an interview with Miningmx in August, 2021. In fairness to Griffith, however, he also said that quality of asset, jurisdiction and management were as important to investors. "There is some correlation to size as long as you've got those other things in place."

Clearly, Griffith is a big personality. That's why Gold Fields' statement that he resigned in November 2022 in order to protect the company's reputation doesn't feel right. Jumped or was pushed? After years

'To have created value of 2.7 million oz ... to let that slip off the other side doesn't feel like the right long-term solution'
— Chris Griffith

Chris Griffith Former CEO, Gold Fields working for an Anglo American subsidiary, Gold Fields was the opportunity of a lifetime for Griffith. In any event, he quit, leaving Preece in the hot seat.

Says Preece: "We need to move away from running businesses around personalities. It should be around the personality of the organisation." Of the executive team that quit, most have been replaced, including a new head of legal affairs and a new business executive.

Interestingly, Preece's position as chief operating officer of the South African division – South Deep – has also been filled as part of the new executive team. At the time of writing, this puts Preece's Gold Fields future in jeopardy if the board doesn't appoint him as the full-time CEO. Preece says he'd not be devastated if he's not the anointed. "I have enough confidence in my abilities that I'm not going to take a razor blade out ... South Deep has been the toughest job I've had in my career, but the most rewarding.

"I am very different to Chris; I'm very different to Nick, and if the board was trying to get carbon copies to just keep on replacing with the same, you're never going to grow your business."

Although the board has not instructed Preece to "sit on his hands", as he describes it, one transaction that is beyond the group is a primary offshore listing. AngloGold Ashanti CEO Alberto Calderon is convinced his company will achieve a better rating after announcing in March that the firm would move its primary listing to New York from Johannesburg and take up a UK domicile. Its $500m cost in taxes is worth it, he says.

Preece spoke to Calderon about his company's plans in an effort to "get to the bottom of it". In the end, it will be more costly for Gold Fields than AngloGold: "Our situation is a little bit different to AngloGold structurally; we are coming in at a different cost, a higher cost." That's because Gold Fields used South African assets to grow the business and it will therefore incur upfront capital gains tax. AngloGold, however, can argue with the South African Revenue Service that it was created through the merger with Ashanti Goldfields in 2003.

"Is it the address where your office is or is it the address of where your underlying assets are?" asks Preece. "Certainly, we don't see too much of a discount because we're domiciled in South Africa."

South Africa though is a concern for international shareholders. Preece acknowledges it but points to the quality of people in the organisation. "Fiscal governance is good here. We musn't overcapitalise on it but South Africa is resilient.

"I worry about coalition governments but if you look at what's going on in the United States, it's so polarised. There must be stuff in the middle we can agree on."

One thing the market can certainly agree on is that the gold sector will continue to consolidate. "As gold miners navigate a complex, changing market, M&A still offers a means of building scale, optimising portfolios and unlocking synergies," said auditor PwC in its Mine report in June. "We expect to see continued M&A activity in the gold sector, including mid-tier consolidation and a megadeal every few years."

A month earlier, Newmont Corporation sealed a $19.2bn deal for Australia's Newcrest Mining, consolidating its position as the world's biggest bullion producer. Splinter deals are likely as Newmont sells off extraneous mines. "There's a long list of gold companies that would look at all assets that become available," Daniel Morgan, an analyst with Sydney-based investment bank Barrenjoey told Bloomberg News in May.

For its part, Gold Fields might be a seller of mines long before it buys new ones. "We've got to look at some of the earlier assets in our portfolio and say where's the optimal time to find value for those assets?" says Preece. "So that would most probably be stuff that's shorter-term where we can ... look at our existing portfolio."

Former Gold Fields CEOs Nick Holland and Ian Cockerill

' We expect to see continued M&A activity in the gold sector, including mid-tier consolidation and a megadeal every few years'
— PwC, Mine 2023

ANGLOGOLD BOSS IS CUTTING THE COMPANY'S TIES TO SA IN MORE THAN ONE WAY

Did AngloGold Ashanti truly break from its 1980s overlord, Anglo American? The gold firm's CEO, Alberto Calderon, doubts it, writes **DAVID MCKAY**

IT'S not often CEOs acknowledge the advances of a rival company but Alberto Calderon has no such qualms. In adopting a swingeing review of AngloGold Ashanti's mines, he declares a debt to former Newmont Mining CEO Gary Goldberg: "A lot of what I'm doing is what he did at Newmont," says Calderon, CEO of AngloGold Ashanti since September, 2021. "I actually spoke with him [Goldberg] and he was very helpful in the beginning. I've copied a lot of what he did."

Speaking to Bloomberg News after his appointment in 2013, Goldberg admitted to frequently saying 'no' to requests in an effort to "send out a message" on costs. But crucially, he also gave mine management an opportunity to "set things straight" before considering selling non-performing mines. That sounds similar to Calderon's asset mine review, unveiled in February last year, the aim of which is to have mines dictate their own future.

At the time, AngloGold's average cash costs were $260 per ounce above its peer group. More than a year into the mine-by-mine review, that number has been reduced to $150/oz. Calderon thinks another $50/oz can be knocked out but possibly no more owing to the preponderance of deeper mining at AngloGold than at mines owned by other companies such as Barrick and, indeed, Newmont itself.

There are other similarities between Calderon and Goldberg. Prior to joining Newmont as chief operating officer in 2011, Goldberg worked at Rio Tinto. Calderon ran several BHP businesses including aluminium, nickel and corporate development. As creatures of the conglomerate, both would recognise the trappings of corporate excess.

In this regard, Calderon makes a connection between AngloGold Ashanti and Anglo American, perhaps the monster of all diversified creations. "I think it goes to the roots

'We don't need to grow. At three million ounces a year we can keep replacing ounces.'
— Alberto Calderon

Gary Goldberg Former CEO, Newmont Mining

of the separation from Anglo, which was never properly thought out," he says of Anglo, which demerged its gold and uranium division in 2005. Certain structural issues were allowed to "fester", and this explains why today AngloGold's latest restructuring required "much more surgery, much deeper than I thought".

It took Anglo American years to unwind the structure of its former life as an apartheid-era company. During the 1980s and 90s, Anglo was omniscient; there were few mining, industrial, property and even media businesses in which it didn't either directly or indirectly have influence. Its gold and uranium division in particular was a substantial business. It was as big as Newmont today, with quarterly production of 1.9 million oz, mined by separately incorporated entities such as Southvaal Holdings Ltd, which held shares in Anglo's listed subsidiary, Vaal Reefs.

One legacy of this was AngloGold's sheer human capital, which subsequent CEOs built on rather than cut back. Says Calderon: "You keep your big IT department, you keep your big HR departments." The company closed or sold mines that no longer made sense to its business case. However, without consciously aiming to do so, the numbers at head office swelled. "You just do the things you were doing," Calderon says. In one sense, AngloGold never caught up with the vision of its creation. "I think that got exasperating as they were ... killing too many birds with one stone."

Today there are about 280 people in the Johannesburg office, which will remain even though the company has set in motion plans to switch its domicile to London and take a primary listing in New York. But in addition to costs, Calderon is running a parallel, related process, of bringing in new skills. Twenty-five new senior appointments have been made in human capital, procurement and the firm's information technology units.

The board and executive committee have also been refreshed with a strong Newmont influence, especially at exco level. The company's CFO is a former Rio Tinto executive while across both structures, some new appointments are women. "Right people, right place with the right accountabilities; being more efficient, find the bottlenecks," says Calderon.

"Then we get this domicile."

ALTHOUGH not a surprise, the announcement in May that AngloGold was moving its domicile to London, as well as the primary listing in New York, still came as a shock. But for Calderon, the time was right: "For everything there is a season," he says, citing Ecclesiastes, or the rock band The Byrds.

Either way, the message seems to have been accepted by shareholders – a $500m tax cost notwithstanding. For that AngloGold gets access to cheaper money. A rerating from the New York listing will also compensate shareholders. Even after a 77% improvement in share price as of mid-June, Calderon thinks AngloGold trades at a discount. "The historic discount is simply enormous," he says, as much as 60%.

"Is this the best use of $500m?" asked Bank of America. "We think very possibly, yes." In addition to narrowing the historical value gap against international peers, he says a rerating large enough to offset the transaction costs is "very achievable", adding – interestingly – that it could also catalyse "potential participation in ongoing gold-sector consolidation".

Calderon is not a fan of M&A. A joint venture with Gold Fields in Ghana in March and the $370m purchase of Corvus Gold last year were similar types of transactions in that AngloGold bought adjacent mines and properties or cooperated with them, but neither carried hefty premia or invited the noise typical of big-ticket dealmaking. "We don't need to grow," he told Miningmx in May. "At three million ounces a year we can keep replacing ounces." If anything, a primary New York listing could potentially make AngloGold the subject of merger and acquisition activity – which Calderon acknowledges is a risk.

Imponderables aside, the success of the listing will be most strongly dictated by operational performance. "We believe valuation multiples/ratings are driven by large asset quality, consistent operational performance and delivering consistent free cash flow over time," says Arnold van Graan, an analyst for Nedbank Securities, of AngloGold's New York listing.

'We believe valuation multiples/ratings are driven by large asset quality, consistent operational performance and delivering consistent free cash flow over time' — Arnold van Graan

INFLATION

Calderon's appointment at AngloGold was propitious. Since mid-2021, gold has gained 7%. Over that time, however, gold shares have behaved differently: shares in Newmont are down roughly a fifth, Barrick is flat, while AngloGold has doubled in value. Calderon, a former International Monetary Fund economist, believes inflation will remain elevated, supporting gold. The driver is increasing wages. "You have on one side politicians saying, don't put up interest rates and on the other hand, wages are being increased 5% or 6%. And we are seeing this around the world.

"How do you have a 2% inflation when the wages have now been indexed for a second and then a third year at 5% or 6%?" Calderon says. "Where I see the world is that we will be stuck in the developed world at 5% or 4% inflation for a long time, and then the developing world at 10% or 12%. It's very good for gold, so I don't complain."

JSE LISTINGS ARE GREAT NEWS, BUT IT COULD BE SO MUCH BETTER

Delegates at a junior mining conference in Johannesburg took on some recurring South African themes including poor public sector governance and lacklustre investment appetite. Will the sector ever truly revive, asks **BRENDAN RYAN**

IT looks like there is some life returning to the junior mining sector in Southern Africa but not much of it is coming the way of South Africa, although the listing of two mining juniors on the JSE over the past year made for some good news.

Those were Southern Palladium and Copper360, and there could be another two listings bound for the JSE in the next year or so. Those might be Blyvoor Gold and Marula Mining.

Marula is already listed on London's AIM market, but CEO Jason Brewer told the Junior Indaba conference in June that he was keen to strengthen his company's base in Africa and was looking at listings in Nairobi and on the JSE.

Blyvoor Gold is the 'swansong' project developed by serial mining entrepreneur Peter Skeat, who died in late March just as underground operations at the restructured mine formerly known as Blyvooruitzicht were getting back into full swing.

Skeat told Miningmx that when he bought the mine out of liquidation in 2016, he knew this would be his last project and he intended to make sure he developed it "right" – which meant he had no intention of bringing in partners as he had done with past developments.

Skeat's career was one of innovation in spotting and grabbing overlooked opportunities but time and again these developments were marred by subsequent infighting with his partners.

The classic example is Ergo, over which Skeat fell out with his Australian partner Brian Frost and listed Australian junior Mintails. The project ended up wholly owned by DRDGold, which has made a stunning success of it, turning Ergo into its flagship operation.

This year's Junior Indaba threw up a number of differing opinions on where to go mining in Africa as companies talked up their projects.

Copper360 CEO Jan Nelson waxed lyrical about the benefits of developing his copper company near Springbok in the Northern Cape despite the issues with Eskom, while Andrada Mining (formerly Afritin) CEO Anthony Viljoen did the same for Namibia.

That was despite the Namibian government's recent comments that it wanted to take a stake in all mining operations in the country. That caused a plunge in Namibian-based mining company stock prices, in particular uranium miner Paladin, which wants to restart its mothballed mine in the county. But the Namibian government subsequently clarified its stance to say it wanted

Jan Nelson CEO, Copper360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a stake only in new mining operations; existing ones would not be affected.

According to Viljoen, the Namibian government had a habit of "saying the wrong things but subsequently doing the right things", to which conference host Bernard Swanepoel replied that he had heard various South African government officials "saying the right things" but the government then did "incredibly stupid things".

Also singing Namibia's praises was Ubique Minerals CEO Vilhjalmur Thor Vilhjalmsson, who described the country as being "like Africa for sissies. We are very happy there."

Then there's diamond explorer Botswana Diamonds (BOD), which operates in both Botswana and South Africa but will not go into Zimbabwe despite the assessment from CEO James Campbell that the country is highly prospective. He said BOD would love to get into Zimbabwe but it was not going to do so under the restrictions imposed on diamond producers by the current Zimbabwean government.

For South African investors the bottom line remains depressingly familiar. South Africa is a very difficult country for junior miners to operate in, with an ongoing litany of problems concerning the regulatory framework that remain unresolved while most of the few juniors actually operating in the country are not listed on the JSE.

The most glaring regulatory deficiency of them all – a new cadastral system that is a fundamental requirement for a working national exploration programme – has still not been provided some four years after South African mines minister Gwede Mantashe admitted the existing Samrad (South African Mineral Resources Administration System) was useless and had to be replaced as a priority.

A recent development was that director general of the Department of Mineral Resources and Energy (DMRE) Jacob Mbele told the conference that a service provider to install a mining licence cadastre would be appointed in July. There was still no indication of when the system would actually come into operation.

Regarding the longstanding backlog of licence and permit applications, Mbele said: "What I can indicate is that we are moving at speed. We are now focusing on cutting

Anthony Viljoen CEO, Andrada Mining

the backlog in Mpumalanga and the Northern Cape. At the end of the financial year [March 2024] we hope to reduce the backlog entirely."

Assuming that target is actually achieved it has come too late for some mining entrepreneurs, who have simply given up because of the delays and the amount of red tape involved in getting an exploration licence.

One of them is Andrada's Viljoen, who told the conference he had handed back promising-looking prospecting rights around the former Zaaiplaats tin mine and moved to Namibia because of the delays in South Africa.

For those investors interested in junior miners, the reality is that if you want shares in companies like BOD or Rainbow Rare Earths, which is developing a rare earth project at Phalaborwa, then you have to buy them on the London Stock Exchange.

Asked by Swanepoel why BOD was listed in London and on the Botswana Stock Exchange but not on the JSE, Campbell replied it was because the company had found that raising money on the JSE was extremely difficult.

'What I can indicate is that we are moving at speed. We are now focusing on cutting the backlog in Mpumalanga and the Northern Cape' – Jacob Mbele

He said BOD got most of its financial backing from investors in London who were prepared to accept a greater degree of risk than South African investors.

The longstanding reason for that is held to be the historical structure of the South African mining industry, which has been dominated by major mining groups for more than a century. South African investors are simply not comfortable putting money into juniors with uncertain futures.

Where it gets interesting is that it is clear BOD has not given up on its aim of getting hold of the mothballed Ghaghoo diamond mine, owned by Gem Diamonds, in Botswana's central Kalahari Desert.

BOD tried and failed to buy Ghaghoo two years ago in a joint venture with Vast Resources that collapsed when Vast pulled out. Ghaghoo is widely described by diamond analysts as a "total dog" but it seems BOD may now have a private investor interested in getting involved.

Campbell remained tight-lipped on this at the conference, pointing out only that "diamond expert" conventional wisdom on the AK6 pipe developed by himself and partner John Teeling was also that it was a marginal proposition. AK6 is now the highly successful Karowe mine owned by Lucara Diamonds.

But it is worth keeping in mind Teeling's famous assessment that "high risk, high reward" means investors will most likely lose their money.

For an example of that, look no further than Orion Minerals – the JSE and ASX junior looking to reopen the former Prieska Copper mine in the Northern Cape. That share price has dropped 84% on the JSE from around 160c in late 2018 to 25c currently. BOD is in the same boat, having dropped 85% from 6.75p in 2011 to 1p currently.

The clear message is that junior mining is not for sissies, even if the DMRE eventually gets its act together, installs a working cadastre system, deals with corruption in its regional offices and chops back on the red tape that entrepreneurs say is stifling prospecting and new mining development.

PAN AFRICAN'S DANGER ZONES

BY DAVID MCKAY

COBUS Loots is keeping upbeat despite a foray into Sudan's gold sector taking an unexpected turn. On April 15, four days announcing the granting of several exploration licences in the north African country, hostilities broke out between government army forces and a rebel paramilitary. Less than a month later, Pan African evacuated staff.

Exploration in Sudan represented a major step-out in strategy for Pan African, which exclusively mines in South Africa. In retrospect, however, it's not a totally inconsistent choice of destination. After all, the firm's biggest project is Mintails, west of Johannesburg, where illegal miners (zama zamas) fight over abandoned gold mines — a conflict zone of sorts.

But why Sudan, exactly?

"Well, because there's a crap load of gold," says Loots in an interview. "It's completely underexplored." He also says his company looked at opportunities in West Africa, but couldn't make an investment case. "Where can we go where there's literally 'elephant country'?"

While Loots is "convinced" of Sudan's geological merits he has to wait until meandering peace talks make it safe to return. Meanwhile, back in South Africa, the company is about to press the button on the R2.5bn Mintails. The property, consisting of low-grade remnant gold near Krugersdorp, is in desperate need of effective policing. Panyazi Lesufi, premier of Gauteng province, has promised Loots that government will come to the company's aid.

Cobus Loots CEO, Pan African Resources

Pan African says there's a tacit rather than negotiated understanding with the *zama zamas*. So far, boundaries have been honoured, says Hethen Hira, head of Pan African's investor relations. "They're up there on that hill and they've got their own targets. Initially there were a couple of gunshots fired," he says. Currently, the situation is calm.

Loots says the company is prepared for contingencies at Mintails although he won't go into the extent of the security detail: "It's not only security; it's about creating an environment." The mine creates thousands of new jobs, and given the social fall-out in the region, appears to have government support.

"There is a lot of negativity around it but there's nowhere else in the world you can buy two million ounces on surface for $3m. Where else can you do that?" says Loots.

It's critical Mintails works for Pan African because it's on a push to attract more US shareholders. Once up and running, Mintails will mean half of Pan African's 200,000 oz in annual gold production is from low-cost surface resources. 'Growing down the cost curve', as it's called in the mining industry, is what investors want to hear. Since making shares available in New York, Pan African has increased US investors to 6% from 1.5% of its share register, but it wants more.

What hasn't helped its cause is an undershoot of production targets at mines in Mpumalanga province. This spooked investors and resulted in the firm missing a large part of the higher rand gold price. But Loots is hoping to catch up provided he can address a lack of liquidity in the stock, a feature of Pan African that has been a barrier in the past.

"Our dividend yield is right up there versus any of the international companies in terms of portfolio growth; we have an asset that's coming on in the next 18 months that's going to add 25% to our production," says Loots.

"That's where being a bit smaller is a bit of a differentiation. You can still grow."

RBM NEEDS MORE TRANSPARENCY

BY ED STODDARD

RICHARDS Bay Minerals (RBM) still has a long slog ahead to resolve the thorny issue around its community trusts. These have been a flashpoint of unrest around its operations in KwaZulu-Natal province (KZN), and have put a $463m expansion plan on hold for the past five years and counting.

RBM, a unit of global mining giant Rio Tinto, is asking the KZN High Court to change the trust deeds to make them more transparent and to dilute the control of traditional leaders – an issue that has been a sticking point with other mining companies that have seen such transactions come unstuck.

The trusts were formed in 2009 as part of RBM's black economic empowerment (BEE) requirements.

“Current indications are that we won't get a court date before April next year. Which is not great,” Werner Duvenhage, MD of RBM, said in an interview with Miningmx.

Not great indeed as 2024 is an election year in South Africa and KZN is a hot spot for political violence and gangsterism.

RBM has been in the crosshairs of criminal gangs linked to the community unrest around its operations, which mine mineral-rich sands that yield zircon, rutile, iron and slag, materials used in a range of products including toothpaste and sunscreen.

GM Nico Swarts was murdered in May 2021 on his way to work. In the face of escalating violence, RBM declared a force majeure on RMB's customer contracts that lasted for almost nine months.

But Duvenhage is cautiously optimistic, noting that the criminality that has bedevilled RBM has been significantly reduced in large part because of a police task force that has been working with the company.

“Our crime is not getting worse, in fact I would say that we are making some positive progress. The police have provided us with very good support over the last 12 to 24 months,” he said.

Werner Duvenhage MD of RBM

This is part of a wider trend that has seen increased stability around other mining operations, including on the turbulent eastern limb of the platinum belt, where police and producers have also joined forces to contain unrest and criminality.

On the issue of the trusts, Duvenhage said it was not RBM's intention to replace them.

“We don't want to create new trusts, that's not the intention. We don't want to take control of the trusts. We want to have a bit more insight so that we know if they're functioning or not. What we really wanted to see was better governance with more independent trustees running the trusts, and where there is more transparency and the community participates better in the decisions and in getting regular feedback.”

One problem that has emerged is the control wielded by traditional leadership, which is also a direct beneficiary – a state of affairs that Duvenhage described as a “conflict of interest”.

“According to how the trust deeds are currently formulated the Inkhosi, the chief, appoints all trustees. He's also a direct beneficiary currently in which he receives 10% of the money that comes from dividends from RBM. So there's a conflict of interest there,” he said.

This mirrors other flare-ups around community trusts linked to tribal authorities, who have considerable power in the former homelands where most black South

Richards Bay Minerals dredging

Africans were forced to reside under apartheid. Anglo American Platinum and Impala Platinum have both had to contend in the past with the fallout from trusts that were seen to benefit rural royalty instead of the wider community.

"We just want to see certain provisions in the trusts amended so that we can see good governance and a lot of independence and real benefits coming through to the grassroots community," Duvenhage said.

The stakes are very high. Resolving the issue and dousing the embers of community grievances would help pave the way for the development of Zulti South, a long-delayed expansion project last estimated to cost $463m.

'Five years have passed and a lot of things have changed, but essentially we still want to fully develop the Zulti South project. It might be significantly different' — Werner Duvenhage

"Five years have passed and a lot of things have changed, but essentially we still want to fully develop the project. It might be significantly different," Duvenhage said, without elaborating, when asked if the passage of time may have altered the project's blueprint.

"All of our efforts on stabilising the environment around RBM have been focused on how do we create a stable environment for new investment?"

AS ESKOM SEEKS A WAY OF SCALING RENEWABLE POWER, VIETNAM COULD LIGHT ITS WAY

South Africa's mining houses are in various stages of building renewable energy projects that will add 7,5GW to the country's generation capacity. But the battle is only half won, as frameworks and arrangements for wheeling and feed-in tariffs are still wanting and capacity on the electricity grid is limited, writes **LIESL PEYPER**

Eskom transmission

Benighted city

SOUTH Africa has had energy shortfalls for the past 16 years, but to date there have been totally inadequate measures to add new capacity to the grid. The crisis has escalated significantly over the past year, and currently a shortfall of 6,000MW is the norm, estimates the Solidarity Research Institute (SRI).

Ratings agency Moody's said in its latest in-depth report, issued in June, that the progress in new build programmes will take time and require significant investment in network infrastructure.

South Africa's energy mix is dominated by coal-fired power, and the decline in the energy availability factor (EAF) of these power stations has plunged the country into the worst energy crisis in decades. The EAF of South Africa's coal fleet has tumbled from 82% in 2012 to the current lows of 52,3%.

In 2022, 11,8 terawatt hours of power were shed, amounting to 5% of electricity demand. In 2023, this ratio increased to 15% in the first five months of the year.

The Integrated Resource Plan (IRP), the country's blueprint for future energy generation, was last updated in 2019 and is now hopelessly outdated, according to the SRI. The IRP doesn't consider that renewable energy provides the least-costly option and instead focuses on expanding generation through coal, gas and nuclear power. Recent modelling by two academics from the University of the Witwatersrand, David Rodda and Adam Balusik, shows that upping renewable power to 85% by 2050 would provide a "least-cost energy mix" for the country. This challenges the assertions of proponents of coal and nuclear power. The research done by Rodda and Balusik shows that nuclear-dominated energy generation would make electricity prices 60% higher than an energy mix dominated by renewables.

MINING-SIDE RESPONSE

In 2022, President Cyril Ramaphosa announced the removal of the licensing threshold for private electricity generation, and the country's mining sector lost no time in embarking on ambitious building programmes to enable renewable energy generation capacity. Some of the most notable projects are Gold Fields, with its 50MW, and Pan African Resources, with 10MW solar PV plants. African Rainbow Minerals, Tronox Mineral Sands and Harmony Gold followed suit, and are building renewable energy plants that will total 330MW, according to the Minerals Council South Africa's latest Integrated Annual Review. The projects undertaken by mining companies are expected to exceed R150bn.

SRI head Connie Mulder says that, insofar as mining companies intend to use their renewable energy generation projects for their own use, it's pretty much "plug and play". But with investments of this scale, one would ideally want to sell electricity back to the grid – and that's where the hurdles remain.

'Nersa is totally out of its depth when it comes to feed-in tariffs. They haven't done this in 10 years ... there are doubts if there is still sufficient institutional knowledge at Nersa to do this correctly'
— Connie Mulder

Connie Mulder Head, Solidarity Research Institute

Moody's reports that the additions of private power generation will depend on the availability of connections to the grid, which is limited.

The Minerals Council says wheeling arrangements – the process of moving privately generated power to customers across Eskom-owned power grids – are still a challenge for municipalities and there needs to be a wheeling framework at municipal level. The National Energy Regulator of South Africa (Nersa) also needs to undertake cost-of-supply studies to approve municipal wheeling. But most municipalities have been either unwilling or unable to establish wheeling frameworks, says Mulder.

"The private sector is adding almost 1,000MW of generation capacity per month;

however, in order to dispatch this energy, a proper wheeling tariff scheme needs to be in place. At the moment the wheeling-tariff scheme is woefully inadequate, with wildly varying tariffs – or in some municipalities, none at all," says Mulder.

He points out that Eskom charges a R6,24kwH wheeling tariff for less than 300km in peak-times, which is discouraging private generation and distribution.

"Given the fact that several high-voltage lines in traditional renewable energy areas are at capacity, a discount on wheeling from more connected areas could incentivise quicker private generation and get the capacity online quicker."

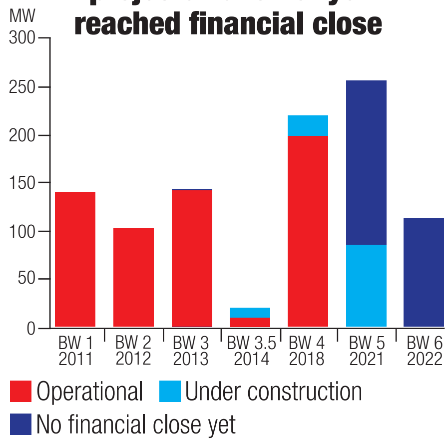
He uses the following example: granting a 20% discount on wheeling tariffs in Mpumalanga for five years would significantly increase the uptake of solar and wind generation there. Mpumalanga already has extensive high-voltage capacity that can be well utilised.

Nersa and Eskom should therefore urgently publish wheeling tariffs that will incentivise private generation and transmission, and favour areas that are more easily connected to the grid.

Jan Fourie, general manager at Scatec, a renewable energy provider, says wheeling was successfully used in the Darling Wind

Kgosientsho Ramokgopa
Minister of Electricity, South Africa

Large number of awarded projects have not yet reached financial close



* BW – bid window SOURCE: IPP office, Moody's Investors Service

Farm project in the Western Cape, as well as the Bio2Watt biomass plant in Bronkhorstspruit. The latter has supplied renewable electricity to BMW'S Rosslyn plant in Pretoria since 2015.

LESSONS FROM VIETNAM

In a submission to electricity minister Kgosientsho Ramokgopa titled 'Fixing South Africa's electricity crisis', the SRI used Vietnam as a case study for how South Africa could get out of its energy crisis. Having had a state-owned monopoly similar to Eskom, Vietnam also limited private sector participation in electricity generation until the country started experiencing severe power shortages in 2007, with 14 blackouts per day.

In 2017, Vietnam embarked on a radical policy shift, implementing a feed-in tariff scheme for solar power installations. "Commercial solar plants could sell electricity at a fixed rate, while rooftop solar from individuals would get reimbursed annually if the electricity generated was more than the electricity consumed. This created certainty for commercial investors regarding the return on investment a solar power plant would deliver. In 2017, Vietnam had negligible solar capacity, which exploded to 16,660MW of solar-generating capacity in 2020," says SRI's submission.

Mulder is of the view that the Vietnam experience shows that the quickest route to getting new electricity generation capacity online would be to incentivise rooftop solar through a feed-in tariff. However, there is no official feed-in tariff currently in South Africa, although several municipalities offer credit back for distributing excess solar energy into the network. The amounts differ vastly between municipalities. The City of Tshwane offers 12c/kwH and Mogale City offers R3,62/kwH.

A feed-in tariff guideline for residential and commercial rooftop solar is urgently required, but Mulder fears there's very little expertise at Nersa to do this with urgency. "Nersa is totally out of its depth when it comes to feed-in tariffs. They haven't done this in 10 years, as it was scrapped in 2013 in favour of the bid windows. Now they need to move back to feed-in tariffs and there are doubts if there is still sufficient institutional knowledge at Nersa to do this correctly."

Fourie says that, as in the early days of the Renewable Energy Independent Power Producers Programme (REIPPP), the new tariff structures will be part of a learning curve, and project developers, banks, advisers and government need to acquaint themselves with the new processes.

"All of this will require user systems and electricity supply agreements that need to be adapted. Unfortunately, we don't have a professional public service any longer. The know-how just isn't there anymore."

GRID CAPACITY CRUNCH

Eskom's limited capacity on the national grid throws an additional spanner in the works that could potentially hinder new generation capacity from coming online. Eskom is unable to accommodate half of the generation capacity the country hopes to build. There need to be changes in the way government buys power from private suppliers to ensure a better geographic distribution of projects to provinces where connections to the grid are still available.

The national power utility says no further connections are available in the Northern and Western Cape, and the Eastern Cape's connection capacity has almost reached its limit. For this reason, no wind power projects could be awarded during the most recent round of the REIPPP (see graph). There is still room to connect on the grid in Gauteng, Mpumalanga and KwaZulu-Natal.

- Generating wealth by 'taking out the waste'
- Mostly grey water in closed circuit used for reprocessing
- No new mine-waste created
- 60MW PV plant in the pipeline to significantly shrink carbon-footprint
- Land rehabilitated and environment restored
- Social capital focused through poverty alleviation, youth education and improved quality of life

According to Eskom's generation capacity assessment, infrastructure upgrades, such as the erection of transmission lines and substations, will amount to R180bn. This includes 2,600km of transmission lines by the 2026 financial year, and 5,800km of transmission infrastructure by the 2031 financial year.

Errol Smart, CEO of Orion Minerals, believes big users of electricity will eventually have to build longer transmission lines for themselves to be able to connect to Eskom. "We need large generation facilities, and this will require building new transmission lines, but more importantly, maintaining existing lines. The existing infrastructure hasn't been maintained and it's starting to fail. Unless there's an urgent move to start doing maintenance on the trunk grids, we will have problems with transmission."

As more generation capacity from private power players is added, Eskom's role as the national power regulator will diminish, according to Moody's. This will eventually give rise to an independent electricity trading market, which could happen as soon the end of the year – a view Mulder shares.

Calib Cassim Acting as group CEO, Eskom

Rudderless and leaderless

IT'S been three months since former Eskom CEO André de Ruyter's unceremonious departure from Eskom following an explosive TV interview, and there has been no replacement appointed yet.

De Ruyter, who tendered his resignation in December 2022, was supposed to serve his term until the end of March 2023, but the Eskom board summarily terminated his contract after the TV broadcast in which he had made allegations about ANC members' involvement in corruption at the power utility.

Chief financial officer Calib Cassim has been acting as group CEO since De Ruyter's departure. According to media reports, Eskom might appoint its first woman to head the organisation. Insiders told Sunday newspaper City Press that Ayanda Noah, chairperson of the Central Energy Fund who previously headed Eskom's client services and distribution divisions, is on the shortlist. So too are Dan Marokane (a former Eskom manager) and Vally Padayachee (a former Eskom and Johannesburg City Power employee).

Meanwhile, South Africa now boasts an electricity minister who was appointed in March this year for the sole purpose of addressing the country's energy crisis. Kgosientsho Ramokgopa is a qualified civil engineer, the former mayor of Tshwane, and was, until recently, at the helm of the president's investment and infrastructure team.

The move to appoint an electricity minister was widely criticised, especially since there has been a tug of war between Pravin Gordhan, minister of Public Enterprises under whose auspices Eskom falls, and Gwede Mantashe, minister of Mineral Resources and Energy, who has been responsible for the procurement of generation capacity. There were questions about how the addition of an energy minister would solve the electricity crisis when two ministers have been unable to do so in the past four years.

Ramaphosa recently clarified Ramokgopa's role by giving him the exclusive powers to procure electricity. The function therefore no longer falls in the ambit of Mantashe, who has not added any new generation capacity to the grid, and who has been a staunch supporter of coal, regardless of South Africa's emission reduction targets.

Whether this will lead to action remains to be seen, said Connie Mulder, head of the Solidarity Research Unit. "Yes, Ramokgopa can now decide how much and which type of electricity is required and there seems to be more urgency. However, the problem children are still there and will probably try to stall Ramokgopa's plans."

— Liesl Peyper

THE PERILS AHEAD FOR SA AS A CRUCIAL NATIONAL ELECTION LOOMS

BY LINDA ENSOR

Sibanye-Stillwater strike

BUSINESS in general, including the mining industry, faces a period of uncertainty ahead of the 2024 national and provincial elections, which could usher in a transformation of the political leadership of the country for the first time since 1994.

There is also the very real threat of social unrest in the period preceding the elections.

Political analysts have proposed various scenarios depending on their view of the ANC's level of support, which though declining could be sufficient, some say, to give it another term in office as the ruling party. The ANC itself believes it can retain power but other political analysts and several opinion polls suggest that the party will lose its majority and be forced into a coalition with one of the smaller parties.

Whether it stays in power by a thin margin or loses it, there is little doubt among political analysts that the ANC will continue the trend of electoral decline from the 57,5% of the vote it won in the 2019 national election. Opposition parties are hoping for the ANC to lose its majority, and some are participating in a Democratic Alliance plan to build a pact in a bid to oust it.

Although there have been many forecasts about the outcome of the 2024 elections, political analyst and director of research at the Mapungubwe Institute for Strategic Reflection (Mistra) Susan Booysen believes the election result is "up in the air" and very unpredictable.

The ANC could win a majority but Booysen says this will be a small and not very satisfying one. Otherwise, it will be forced into coalition with a smaller party. All indications so far suggest that this will be the Economic Freedom Fighters (EFF) and if this materialises, Booysen believes it will push the ANC into being more radical on matters such as land distribution and public benefits. However, she cautions that the EFF's blustering statements will not necessarily translate into action and implementation.

Critics say the EFF has no clear policies, is anti-business and is only interested in power and position. It supports the expropriation of mines and the nationalisation of the Reserve Bank, among other policies that are antithetical to a market-orientated economy. Such a tie-up would, in the words of political commentator Ebrahim Fakir, result in "the most unprincipled, unpredictable and recidivist coalition" SA could witness. A leading businessperson said such a coalition would take SA over the cliff, not merely to its edge.

Any coalition arrangement, whether with the EFF or another smaller party, is likely to result in vacillation and policy delays. Coalition governments at local level have been racked by instability, seriously affecting service delivery.

The elections will be taking place in a context of low growth, high levels of unemployment, loadshedding and corruption, which has deepened disillusionment with government. This could, Booysen says, fuel public protests, as normally happens at election time as communities strive to capture the attention of political contestants.

"I really see a rough run until the next election," she says.

CEO of political and economic risk consultancy Eunomix Claude de Baissac agrees there is no clarity about what the elections will deliver but notes that the country is entering a period of great uncertainty. He does not anticipate any major change in approach if the ANC returns to government with a majority after the election as the party would not want to upset the very fragile balance within the organisation. The same people would remain in place "with the same lack of imagination, the same lack of reform".

And even if the ANC did have to form a coalition with smaller parties – the worst-case scenario De Baissac agrees would be a coalition with the EFF, with the latter

'A huge, huge risk I think is that an ANC in which mediocrity and corruption are really engrained is returned to power. That is a lethal combination' — Susan Booysen

Susan Booysen
Director of research, Mapungubwe Institute for Strategic Reflection

making demands for economic transformation which the ANC might be forced to concede to – he does not think this will galvanise the ANC to change, though it may introduce a lot of instability.

He does not see any prospect of change in what he says is the ANC's poor governance and incompetence, whether it wins by a small majority in the elections or is forced into a coalition with smaller parties. This poor governance and incompetence, he adds, is the key risk facing business in general and the mining industry in particular. This is evident, he notes, in the fact that constraints on electricity supply and the loadshedding to which it gives rise have been a feature of South African life for many years without any action being taken to fix it.

"If loadshedding is a manifestation of the electricity crisis, the electricity crisis is a manifestation of rising political risk in SA caused by poor governance," De Baissac notes.

Another feature of ANC rule, he adds, has been political infighting and a lack of consensus on policy, government capacity to implement strategies, coherent policy and fiscal capacity.

According to De Baissac, SA has not been an attractive investment proposition

Sipho Nkosi Working in the Presidency

for a very long time. He is deeply pessimistic about the country's future, predicting that there is a great probability that it will technically rank as a failed state by 2030 and has already entered a period of systemic collapse.

FOR the mining industry, then, according to these analysts, the continuation of ANC rule will basically mean more of the same paralysis and inertia in policymaking and the government's snails-pace implementation of the long-promised economic structural reforms.

President Cyril Ramaphosa has shown himself to lack the leadership SA needs to take it out of its economic crisis of low growth, and apart from his announcement to lift the ceiling of embedded generation, hasn't done much to stimulate growth.

"In terms of new policies, new initiatives, there really has not been anything. There have been big, big ideas but when it comes to follow-through, not much is happening," says Booysen, who believes that the first instinct for the ANC if elected to power again will be to continue on its "easy road". However, an escalation of local protest could act as a wake-up call and propel it into more action.

"A huge, huge risk I think when an ANC in which mediocrity and corruption are really engrained is returned to power. That is a lethal combination."

Former Harmony CEO, board member of several mining companies and chairperson of the Joburg mining indaba Bernard Swanepoel mentions the lack of skilled people in areas such as finance, engineering, metallurgy, chemistry and mining as a critical challenge facing the industry, made worse by the lack of trained people coming through the education system. What is more, SA's mining skills are much sought after worldwide and immigration laws make it difficult to import them.

The country's police force, overburdened with the high level of crime, will battle to make significant inroads into the crime plaguing the industry and the pervasive illegal mining, which is spurred on by the high level of unemployment. As with other challenges, mining companies have had to take matters into their own hands by investing in their security, which adds to the cost of doing business.

Swanepoel notes that South African mining companies always trade at a deep discount compared to other jurisdictions, which indicates the negative foreign perceptions of the country.

While agreeing with the sentiments about the dysfunctionality, lack of direction and policy confusion of the ANC government and about the improbability of a post-election government – either the ANC on its own or in an ANC-led coalition – bringing about any dramatic change in this regard, Swanepoel does not have the same doom and gloom view as De Baissac. SA, he says, has lived through much worse political crises; he does not see the current huge challenges as being insurmountable. He is also optimistic about the future of the mining industry, which he says does make money, is profitable and does find ways to get its products to the ports. It has world-class executive leadership and phenomenal mineral reserves, he adds.

'Generally, investors tend to be sceptical and tend to take a longish view in their analysis. They may say there is an election next year and will want to wait to see who is coming in. Then they say that ANC does not make 50%, who are they going to go into coalition with? It creates a lot of uncertainty' – Sipho Nkosi

Sibanye Stillwater CEO Neal Froneman says the ANC state has been "emasculated" and this has allowed an investor-unfriendly environment to evolve as a result of the party's outdated ideological policies. It is a party that lacks competence, lacks capacity, lacks direction and is living in the past. "The net result is that we have seen rising unemployment, increasing social unrest, poor energy availability and uncompetitive power costs, ineffective transport logistics and rampant crime and corruption. That is the net result of an emasculated state."

Froneman did not want to speculate on the outcome of the election, which he says will be pivotal for SA's future as there is the potential for significant change in political leadership.

"There is a very strong possibility that the ANC will not hold on to an outright majority and will have to resort to coalition partners to ensure that it can succeed in driving its own agenda. Coalitions are a real possibility. A coalition with left-wing parties will just accelerate the decline that we are seeing.

"There will be further deterring of foreign investment into the country and I can assure you that under those conditions, business will not invest. Left-wing coalitions will probably drive the nationalising of banks and the mining industry.

"If the ANC is returned with a clear majority, it will be more of the same. I think they will stumble on because their agenda and political will will not have changed. They would have bought more time and the country will continue to deteriorate, at a slower pace than a left-wing coalition. But

if there was a coalition of other parties or a coalition with right-wing parties, I think you will see significant volatility but you will start seeing things move in a better direction.

"Therefore, it is my hope that we are reaching a turning point because we can't go much lower than where we are."

Froneman agrees with Booysen that social unrest is one of the biggest risks facing SA ahead of the elections, with political parties possibly abusing the real hardship people are suffering from for their political ends.

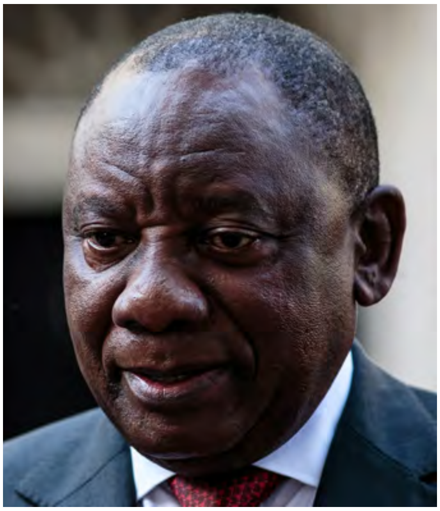
Nevertheless, he is optimistic about the mining industry's future. "There are two things going for us. The one is that government has realised the seriousness of the situation and is involving business, with a view to trying to fix up energy, transport and crime and corruption. That is a positive step.

"I also think that South African voters in general are sensible. If we can get more people to vote, I think the outcome will move us in the right direction because they have seen the negative impact of the current party, the negative impact of these policies. I think we are reaching a turning point and that is why I am optimistic."

Froneman shares the concern about the lack of investment in exploration, which is crucial for the future sustainability of the industry. Government has not addressed this issue effectively.

DESPITE some successes with regard to mine safety and in dealing with the Covid-19 pandemic in collaboration with business, the Department of Mineral Resources and Energy (DMRE) has failed, he says, to support the growth of the mining industry and develop the junior mining sector. "We have gone backwards very significantly." The cadastral system is another example of a DMRE failure, Froneman, says as well as its management of illegal mining, which started with bad policy and frameworks that tried to create the perception that illegal mining is artisanal mining.

"Crime is out of control. We have previously asked publicly for military intervention because of the illegal mining problem and the attacks on our operations. Military intervention was introduced at Eskom and it is time to introduce that into the rest



Cyril Ramaphosa SA President

of SA because of the problem with police capacity."

Misguided government policies have also made it difficult to recruit skills.

Former president of the Minerals Council and leading businessman Sipho Nkosi, who has been seconded to head a team in the Presidency dedicated to eliminating red tape, is optimistic about SA's prospects in the very long term but believes the downward spiral will continue before the situation turns around.

SA is not an investor-friendly country, he says: apart from loadshedding and rail problems, crime is a big factor, as well as the difficulty in recruiting top executives internationally and acquiring skills locally. There are also fears among investors about expropriation of land without compensation, especially if, after the 2024 election, the ANC collaborates with the EFF.

"Generally, investors tend to be sceptical and tend to take a longish view in their analysis. They may say there is an election

'It is my hope that we are reaching a turning point because we can't go much lower than where we are' – Neal Froneman

next year and will want to wait to see who is coming in. Then they say that ANC does not make 50%, who are they going to go into coalition with? It creates a lot of uncertainty," Nkosi says.

SA's regime for exploration is onerous, with corruption by departmental officials adding to the problem. "We are trying to find a system modelled on systems in Australia and Canada and even Botswana," Nkosi says

The DMRE is looking at ways to make exploration easier, including the possibility of government funding it as financial institutions have been loath to fund it. "There is a big discussion we are having with Treasury about that," he said.

All in all, the ANC winning power will mean a continuation of SA's economic decline and the loss of both foreign and local investment despite the opportunities that exist. This lack of direct foreign investment can be seen in the low level of exploration, which poses a threat to the future of the industry as it means that new mines are not being created.

According to these analysts and business people's views, whatever the political outcome of the elections, the skills and capacity challenges of the state will persist. So too will the mining industry's frustration at the slow turnaround times by DMRE in processing applications for mining and prospecting rights and requests for mineral rights transfers that it has had to live with for the past decade.

Loadshedding, which has slowed down mining production, is likely to see some improvement in the medium term as generation from renewables comes on stream, but will continue to be a constraint on production while continued logistical challenges in the railways and ports will hamper exports.

A future ANC government will stick with its broad-based black economic empowerment policy, while the recently promulgated Employment Equity Act and the strict conditions placed on the importation of technically skilled personnel will add to the mining industry's challenges in recruitment.

On the plus side, progress should be made in the year ahead in replacing the outdated manual cadastral system, which has caused immense frustration and hindered investment in mining exploration.

A NEW MINING CADASTRE IS JUST THE BEGINNING OF SA'S MINERALS PROSPECTING OVERHAUL

If all goes according to plan, South Africa's mining industry will have a new online cadastral system in place before the end of 2023. But experts caution it's not a magic wand that will immediately solve licencing problems that were years in the making, writes **LIESL PEYPER**

"BETTER late than never" was the sentiment from mining executives when the Department of Mineral Resources and Energy (DMRE) finally committed to July to select a technology provider for the long-waited mining cadastral system.

The process to get a new cadastre in place has taken more than two years during which time South Africa has missed out on exploration by junior miners and investors who tried to obtain crucial information about mineral deposits.

The Minerals Council of South Africa recommended from the outset that the DMRE should opt for an off-the-shelf mining cadastre – a plug-and-play system that many other African countries are using. The DMRE initially insisted on its own custom-built system, but after a bungled tender process, it announced late in 2022 that it would consider similar "off-the-shelf" systems to what the country's neighbours are using.

An open online electronic system for registering and managing prospecting and mining licences and other permits is important to regain investor confidence, said mining law firm Herbert Smith Freehills in a company note.

Around 60% of countries in Africa currently make use of cadastral systems to grant mineral rights and manage their mining sector, including Namibia, Ghana, Zambia, Uganda, Togo, Tanzania, South Sudan, Malawi, Mauritania, Liberia, Kenya, Guinea, Ethiopia, the Democratic Republic of Congo (DRC), Côte d'Ivoire, Cameroon and Mozambique.

"As these systems reduce human inputs by incorporating automated processes, they significantly enhance the reliability as well as the transparency of the mineral regulatory system itself," said Herbert Smith Freehills.

Samrad's (South African Mineral Resources Administration) deficiencies may have led to duplicate rights being issued on the same properties. For this reason,

Northern Cape zinc mine

'I'm not saying our government is perfect, but we have it good in South Africa. Every mining jurisdiction in the world has its problems: in Canada there's a plethora of environmental hurdles, in Australia the cost of mining is high' — Jan Nelson

mining experts are concerned about possible legal challenges once the new system has been implemented.

Says Errol Smart, CEO of junior miner Orion and chairperson of the Junior and Emerging Miners Leadership Forum: "It's all fine and well to have a cadastre, but you'll have to make sure that you have trained staff and that there are desktops and laptops and servers and reliable operators."

If the DMRE opts for "the right system", Smart says, a cadastral operator can be trained in a matter of months, if not weeks. "And depending on the system, a large mining company would be able to download their spatial data and pre-populate most of the information that a cadastral system would require. That will probably take care of the 80/20-rule. For 80% of the active prospecting rights there is spatial data that can be downloaded, but the information then needs to be audited. The remaining 20% is the problem – the thousands of outstanding applications."

Smart is of the view that so many mining right and prospecting applications are outstanding because there are conflicts, such as historical approvals. "Rights that shouldn't have been granted, applications that have been accepted which shouldn't have been, because they're impeding on someone else's rights."

A cadastral system is in essence a binary system, says Smart. "It's a 'yes' or a 'no' [with regard to applications] and there's no room for grey areas. But this is precisely what's happened over the last 20 years or so – grey areas that will have to be resolved."

Smart notes that once the new cadastre is in place the DMRE will most likely need to establish a tribunal to rule on duplicated and contested mining and prospecting rights. "There'll have to be an independent judge who will have to apply the wisdom of Solomon. Our courts will probably be overloaded and some of these babies will have to be cut in half."

Data mapping SA

FLAWS IN THE ACT

Smart says the DMRE has also allowed so-called over-pegging through the years: "Existing mining companies find out that somebody's been granted a right on their property to mine something like sand or another obscure mineral and it's creating huge problems."

Jonathan Veeran, partner and head of mining at Webber Wentzel, says there is a weakness in the Minerals and Petroleum Resources Development Act (MPRDA), which allows for more than one operator on a single site. "There's a table of minerals attached to the MPRDA, and you need to be very specific about the minerals you're going to drill for.

"The problem comes in when you haven't covered all the minerals [in your application] that you intend to extract in one process. It has happened that a politically connected third party says: 'You missed out on a mineral, but I know you're extracting' and then applies for a prospecting or mining right for those additional minerals [that were not on the original application]," says Veeran.

In his view, this dilemma needs to be "cured legally". "The MPRDA should say any mineral mined in association with other minerals [for which an application was granted] belongs to the extractor. Because you can't have two operators on the same site."

Smart agrees: "It's physically impossible and it creates safety and health and environmental problems if there are two people on the same property at the same time. The DMRE will have to stand up and take a resolution on how they're going to deal with this. Because the one day you're mining and suddenly another company turns up on the property with machines."

He hopes the MPRDA will be amended so that exploration and mining rights are automatically granted for all available minerals on a particular site. "This will help rights holders to get maximum impact on their exploration opportunity."

One mining executive who isn't too fazed about the existence of a mining cadastre – in whichever form – is Jan Nelson, CEO of

'There'll have to be an independent judge who will have to apply the wisdom of Solomon. Our courts will probably be overloaded and some of these babies will have to be cut in half' — Errol Smart

junior miner Copper360.

"I am a miner, not an explorer. I get that it's important for explorers to know where they need to look for minerals. But I have my permit. I'm not looking for copper. I know where to mine."

Nelson's experience in the mining sector spans a period of 20 years, but one of his career highlights is undoubtedly the listing of Copper360 on the Johannesburg Stock Exchange's Alt-X Board in April this year. The company raised R152m through a private placing at 400c a share. "We got our licence in October last year without any hassles."

Nelson has little sympathy for South Africa's mining executives "who are quick to complain but slow with coming up with solutions".

"I'm not saying our government is perfect, but we have it good in South Africa. Every mining jurisdiction in the world has its problems: in Canada there's a plethora of environmental hurdles, in Australia the cost of mining is high. In the DRC you need to pay people to do the most basic stuff for you. Here in South Africa, we have a sound legal and banking system and existing infrastructure."

According to Nelson, the industry is too focused on looking for ore bodies. "The explorers complain about everything. South Africa has been thoroughly explored. Maybe we should stop looking. We know where the mines are. Just start mining."

Jonathan Veeran Head of mining, Webber Wentzel

THE MANY BROKEN PROMISES OF GWEDE MANTASHE

BY LIESL PEYPER

Gwede Mantashe Minister, mineral resources and energy

WHEN Gwede Mantashe was appointed minister of Mineral Resources in 2018, the mining sector rejoiced. Here was a mining trade unionist and seasoned politician with industry knowledge and negotiation skills.

To his credit, Mantashe did abandon an appeal against a High Court judgement which had set aside onerous empowerment requirements and procurement targets in the Mining Charter in 2021. This calmed investors and brought a degree of investor certainty regarding black economic empowerment targets.

Mantashe was also lauded for sitting around the negotiation table with the Minerals Council once again after a brutal breakdown in relations with his predecessor, Mosebenzi Zwane.

But unfortunately, talking hasn't resulted in doing, and the department has not delivered on its most crucial functions.

"The promises that have been realised are not of much value," says Jonathan Veeran, partner and head of mining at the law firm Webber Wentzel. "What the department fails to realise is that they need to attract investment, not regulate the industry to death."

The most poignant areas of over-promising and under-delivering pertain to the granting of licences, a working and transparent mining cadastral system, and a sound and realistic exploration plan that will lure prospective exploration companies and investors to South Africa.

In its 2019 annual performance plan, the Department of Mineral Resources and Energy (DMRE) promised to strengthen internal capabilities and address weaknesses to better serve the mining sector and improve its response time. Four years down the line, and the backlog for granting mineral rights is again topping 5,000. The reasons for the outstanding decisions on new and existing mineral rights, exploration and prospecting licences are partly because of the dysfunctional South African Mineral Resources Administration (Samrad) cadastral system, but even more so due to incompetence and corruption, especially at regional offices, where dysfunction is at its worst.

Veeran says that the DMRE's poor administration issues haven't been solved under a Mantashe ministry. "They need to weed out the corrupt elements. And sometimes it's not even that nefarious things happen at regional level. It's also that people are slow or there's a lack of skills. This hasn't been solved."

Back in 2019, the DMRE was hell-bent on "enhancing" Samrad despite warnings from the mining industry and geologists that it was hopelessly ineffective. By 2021 it became apparent that the current system was beyond fixing. The DMRE was insistent that it would not settle for an "off-the-shelf" cadastre, despite the fact that its neighbouring mining jurisdictions had implemented this with great success. Rather, the DMRE was committed to building its own custom-made one. But this was never realised. The DMRE "outsourced" this task to the State IT Agency, which for reasons unknown could not issue a successful tender. The DMRE eventually relented and announced late last year it would settle for an online cadastral system similar to those used by countries such as Namibia. The implementation date was set for end-February this year, but the goal posts have been moved yet again – this time to July, when a service provider for the new cadastral system is to be announced.

Some four years ago, the DMRE also undertook to develop a so-called Mineral Investment Promotion Framework – a diplomacy programme to attract investment. This would entail an exploration strategy to realise Mantashe's ambitious target of attracting 5% of world exploration. By 2021, an exploration strategy was still wanting, despite promises that a document would be forthcoming. When the department did eventually gazette such a plan, it was vastly different from the one that was supposed to reflect the points on which the DMRE and the Minerals Council agreed.

Roger Baxter, the Minerals Council's outgoing CEO, said at a conference in June this year that the 2021 document was "an acceptable draft document", but the one in 2022 did not fully reflect the draft. "We do not support the Exploration Strategy for the Mining Industry of South Africa, which was compiled without any engagement with the Minerals Council, nor does it reflect the constructive engagement on an Exploration Implementation Plan."

Veeran says if South Africa had a good exploration plan years ago, as was promised, the country would have known by now where all the critical mineral reserves were. "But we're always playing catchup in South Africa. We can't continue like this. The DMRE's perpetual delays in delivery on what they've promised deter would-be investors and amounts to an inability to capitalise on returns."

Among the most critical of Mantashe's promises was to introduce a special police unit similar to the crack diamonds and precious metals division of years past. That was in August last year. Speaking as part of the business-government initiative against crime and corruption in June, Sibanye-Stillwater CEO Neal Froneman said the private sector isn't waiting on government to deliver solutions for crime prevention, especially a strategy to stymie syndicates.

"We know who they are and we will disrupt them, we will chop them off at their knees," said Froneman of organised crime. Business would achieve 80% of its goals even without Mantashe's specialised police unit proving that when it comes to promises, the well of belief eventually runs dry.

LIKE ITS TRAINS, PROGRESS AT TRANSNET IS SLOW TO ARRIVE

The Minerals Council took drastic steps last year to address operational dysfunction at Transnet by asking for its CEO to resign. In the end, the mining sector agreed to work with government in addressing the country's deteriorating logistics chain. Never mind bulk minerals, progress is proving Transnet's heaviest haul writes **CHARLOTTE MATHEWS**

"WHERE we used to get a number of trains a week, we get some sporadically every other week. It is not getting better as we sit here so there needs to be some intervention," Phoevos Pouroulis, CEO of platinum group metals and chrome producer Tharisa said in May.

The sheer weight of numbers documenting the underperformance of Transnet, the government-owned port and rail utility, can become dizzying. But it's worth regurgitating a few to illustrate Pouroulis's concern.

Transnet's underperformance last year cost South Africa an estimated 6% of gross domestic product, according to Jan Havenga, professor of logistics at Stellenbosch University. "The direct impact was a loss of over R100bn in export revenue, and probably R40bn to R50bn in tax revenue from the mining companies," he said.

"Last year the iron ore line delivered its lowest volumes since 2010; the coal line, its lowest volumes since 1993; and the general freight network, its lowest volumes since World War Two."

Henk Langenhoven, chief economist of the Minerals Council SA, said in 2022 Transnet delivered R50bn less than it had contracted, but the design capacity of the various rail corridors was actually R150bn more than it delivered. That means the mining industry could have made 10% more than its actual turnover of R1.3 trillion in 2022, if Transnet Freight Rail (TFR) – Transnet's largest business unit – had been performing properly.

In April, in a meeting with leading exporters in the mining industry, which led to the formation of a Logistics Crisis Committee, President Cyril Ramaphosa reportedly described the logistics crisis as of "catastrophic proportions".

Thankfully, for mining companies with billions in sunk capital in South Africa, there are several viable options to fix the situation.

One is for bulk export miners to truck commodities instead of railing them, although the viability of this turns on price. "This worked for coal last year when prices rose to $400/t from $100/t," said Havenga. "But there is a limit on how much can be transported by truck. We've already seen the congestion of manganese trucks in the Northern Cape and the damage to the roads from coal trucks in the north east of the country. This option is not a 'normal' bulk mining option anyway."

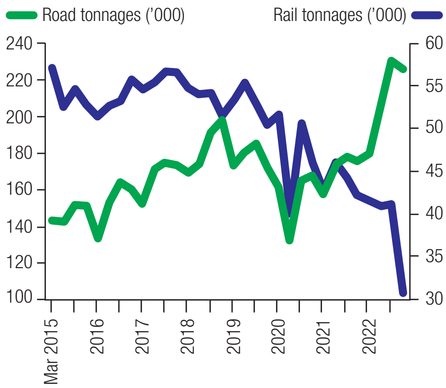
"With much lower coal prices at present, it is not possible to truck so much coal, so even more money is lost."

Thungela Resources trucks a limited amount of coal between operations to manage stockpiles and optimise the transfer of coal to rail, said its CEO, July Ndlovu. "Given our focus on exports, if we sent more material by truck it would worsen the road infrastructure. The board and executive have decided that working with TFR is the solution," he said.

"Other responses are to curtail production and to upgrade the coal that is being exported so that the highest-margin coal reaches Richards Bay Coal Terminal (RBCT)," Ndlovu said. "We are also selling some coal domestically that can be trucked to custom-

'The problem is that Transnet has been very reluctant to co-operate. War rooms were set up under the auspices of the Minerals Council, and they meet regularly to solve issues, but they lack teeth' — Jan Havenga

Road vs rail



SOURCE: Land Transport Survey, Statistics SA

ers, to maximise our cash flows."

Havenga said the second option available to miners is to work with Transnet to fix the problems. For instance, this could be by contributing to security, or helping to fix the line speedily after an incident. Or mining companies can assist Transnet with its operational difficulties.

"The problem is that Transnet has been very reluctant to co-operate. War rooms were set up under the auspices of the Minerals Council, and they meet regularly to solve issues, but they lack teeth," Havenga said. This has not had universal agreement, with the Minerals Council's Langenhoven saying there were areas of improvement.

The third option is presidential intervention.

"Earlier this year, the president 'invited' Transnet, its board and its minister to a meeting where he asked questions and explained the harm that Transnet's underperformance was causing to the economy, and instructed them to co-operate more," Havenga said.

"The president promised in his annual State of the Nation Address to provide a logistics roadmap to fix Transnet. He then invited the major exporters to a meeting, including the mining houses and the South African Freight Forwarders Association, where it was agreed that a Logistics Crisis Council would be formed, with teeth (unlike the war rooms) to co-ordinate solutions."

"This committee will have interministerial oversight and both public and private sector participation. This crisis committee is in the process of being established. The president has also spoken to other business leaders about the issues," said Havenga.

PRODUCTION CUTS

In the meantime the much feared 'worst-scenario' – the contraction of the mining industry – is happening. While mining companies try to do what they can to fix Transnet, some of the majors are cutting back production forecasts.

In March, Thungela slashed its 2023 production forecast to between 10.5 million tons (Mt) and 12.5Mt, which compares to an export capacity output of 15Mt/year. It lost about 3Mt of saleable export production in 2022.

Kumba Iron Ore railed only 35.9Mt of iron ore to Saldanha in 2022, considerably less than its capacity of 44Mt, because of Transnet's steadily declining performance. Chairperson Terence Goodlace attributed Transnet's underperformance to poor maintenance and operating practices, compounded by a strike in October 2022, as well as shutdowns for port refurbishment. He said these issues needed to be fixed quickly. "Time is not on our side," he added.

At the end of the financial year, Kumba's stockpiles were at maximum capacity, limiting its ability to build up production. "Over the next three years, we have reset our

Phoevos Pouroulis CEO, Tharisa

production outlook to reflect an expected lower Transnet rail performance, given the challenges faced this year," CEO Mpumi Zikalala said.

"This gives us confidence in our production guidance of between 35Mt and 37Mt, as we continue to draw down on the high stock build-up at the mines to supplement sales in line with our guidance of 37Mt to 39Mt."

Although it appears after another disruption on the RBCT line in May that TFR may not even achieve 50Mt of coal exports this year, Ndlovu is positive about the progress being made by the joint Minerals Council and TFR joint working group in coal.

"The facts are that when we started these channel optimisation forums the coal corridor was averaging about 14 trains a day. Just before the recent derailment incidents, we were up to 18 trains a day."

He said that improvement stemmed from addressing speed restrictions on a section of the railway. To lift them, maintenance was needed on that section.

"The turnaround time of trains from Mpumalanga to RBCT and back exceeded 100 hours. It is taking time to fix that section of line, but we have managed to remove some of those speed restrictions. As a result, the current train turnaround time now averages about 87 hours.

"So we are making progress, though we are not where we want or need to be. Of course, we want to see more progress.

"On crime, we were averaging 30 to 40 trains lost every week. When we started collaborating that came down to two to five trains a week. Crime is a broader issue, it doesn't only affect TFR. We see it all around our operations. We need to collaborate to address security and in the longer term it needs technology solutions. We also need a security cluster that works, so when criminals are arrested they are prosecuted and sentenced."

'Given our focus on exports, if we sent more material by truck it would worsen the road infrastructure. The board and executive have decided that working with TFR is the solution'
— July Ndlovu

July Ndlovu CEO, Thungela Resources

South32, the Australia-headquartered mining group with manganese mines in the Northern Cape, is reticent to open up on its logistics challenges in South Africa. It said it was part of the manganese industry forum "which seeks to support Transnet in its port expansion, at both development and construction phases of projects. We continue to monitor the ports' performance and work closely with Transnet leadership."

Although South32 admitted that "we continue to face ongoing logistics challenges in the rail system, and constraints at ports", it said only that "we are looking at innovative logistic solutions to mitigate any impacts on sales volumes". It would not elaborate further.

The reality for miners is that no matter the quality of their mineral deposits or their mines, if they can't sell it, they can't mine it. While diversified mining companies with global reach can reallocate capital elsewhere, firms with South African dependence are faced with either closing their doors or working in new jurisdictions. Tharisa, for instance, has been developing PGM interests in Zimbabwe. South African coal producers like Exxaro Resources and Seriti Resources have been developing renewable energy investments. Thungela recently announced the acquisition of a majority stake in the Ensham coal mine in Australia for A$340m.

"International diversification is and is not a response to the TFR issue," Ndlovu said. "Diversification out of a single commodity, a single geography and a single infrastructure makes business sense. Even if TFR did not have problems, we would do this because it makes sense from a business perspective."

SEEDS OF HOPE

Havenga said the establishment of the crisis committee had given him some reason for optimism.

"The rail policy implementation, Operation Vulindlela and the Logistics Crisis committee ... is a hopeful suite of solutions. But it is all hands on deck and hard work right now. Otherwise the consequences will be beyond tragic," he said.

"My recent observation of the problem is that possibly, there is a change of approach at Transnet to be more inclusive. I hope I'm correct. If not this might be a very hard and difficult road, with no time to really complete it before disaster strikes."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Manganese ore

SA MANGANESE MINERS UNSURE HOW ELECTRIC VEHICLE DEMAND WILL WORK OUT FOR THEM

BY DAVID MCKAY

ASK any mining executive involved in the manganese industry about the metal's prospects in electric vehicle batteries (BEVs) and you'll likely get some hemming and hawing. The way Brad Rogers, MD of Australia's Jupiter Mines describes it, building an investment case for manganese in BEVs involves "making one hypothetical assumption upon another hypothetical assumption ... We are looking for a market that doesn't exist and changes all the time."

Chemistry has long found a role for manganese in a number of different lithium-ion battery technologies for electric vehicles, but the difficulty is anticipating and responding to the technology that automakers will eventually choose.

Then there are some fundamental aspects of the manganese market that miners also consider. In order to supply the BEV market, manganese ore needs to be transformed into a beneficiated product called high-purity manganese sulphate. However, production of this grade of manganese is controlled by China. It is just one of the critical metals in which the Communist Party has a stolen a march on the West.

China accounts for roughly 96% of all manganese sulphate production, says Mark Beveridge, principal consultant for Benchmark Mineral Intelligence, a company that tracks the critical metals market. Western markets also lack a baseline technology with which to start production, unlike China.

In addition, high-purity manganese sulphate is not a major piece of the production pie for BEVs, comprising only 1% of the BEV production cost. "This is why manganese isn't spoken about in quite the same way as the market talks about cobalt, nickel and lithium," says Beveridge.

While automakers are thought to be watchful of long-term lithium supply, there isn't quite the same level of anxiety in sourcing tomorrow's manganese. That's partly because it's so abundant as an ore. The Tshipi manganese mine in South Africa's Northern Cape contains about 100 years of mine life at current production levels. Undeveloped mines in its vicinity are similarly long life. Given these twin factors – of resource abundance and the dominance of the Chinese in the downstream market – success will turn on sizing up market conditions correctly.

"Our technical work and our hypothesis is that the winners will not be those with the coolest flowsheet," says Rogers, whose Jupiter Mines is a 49.9% shareholder in Tshipi mine. "We will be looking for price signals, scale and scaling. These are important from a commercial and production perspective if you think there will be a premium to Chinese prices."

There may well be a premium. The US Inflation Reduction Act demands that for a BEV to be tax-credit eligible, about 80% of the market value of critical metals in its battery have to be produced either in the US or from "US free-trade partners". That means there's opportunity in securing some market share from China.

From a demand perspective, what is expected of the high-purity manganese sulphate market is that it will be fast growing, as one would expect from such a low (and concentrated) base of production. Even the most conservative estimates suggest current Chinese supply will be insufficient, says

Producing manganese mines in South Africa

Mine	Production 2022 (Mt)	Ownership
UMK	3.4	Renova, Chancellor House
Tshipi Borwa	3.3	Jupiter, Ntsimbintle, OMH
Nchwaning	3.1	Assmang
Mamatwan	2.8	South32, Anglo American
Kudumane	1.8	Asia Minerals, Nippon Steel
Kalagadi	1.3	Kgalagadi Alloys, Kalahari Resources, IDC
Mokala	1.1	Ntsimbintle, Glencore
Wessels	0.8	South32, Anglo American
Gloria	0.7	Assmang

SOURCE: Jupiter Mines, CRU, RMB Morgan Stanley

Beveridge.

Completing this somewhat complex picture is the caveat that despite this potential for growth, manganese sulphate demand may only comprise 6% to 10% of the total demand. Says Rogers: "From an investment perspective, we have to be convinced on a number of things that are short on facts right now. We have to do long-term planning for a supply deficit that will be there in the late 2020s, but which will still be quite small for a single plant, let alone a number of plants."

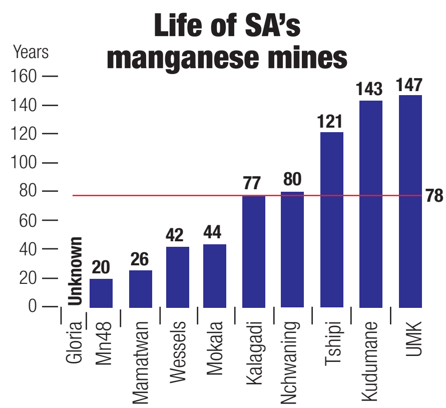
AT present, ferroalloys production is pretty much all there is to total manganese demand where it is used as a hardening agent. It's about 91% of the total market. Therefore, manganese producers have to find other ways of exploiting the market. This is where the scale aspect of Rogers' comments is important because one company that has scalability is African Rainbow Minerals (ARM). The Johannesburg-listed diversified mining group operates the Nchwaning, Gloria and Cato Ridge mines, from which it produces 3.6 million tons annually of manganese ore and has capacity for 400,000 tons a year of ferromanganese.

"We are actually very bullish on the manganese price, which is why, six or seven years ago, a team of propellor-heads worked on a plan so we could recapitalise the mines and benefit from growth," says the CEO of ARM's ferrous division, André Joubert. New technology, due to be announced in the new year, will enable the company to sell low-value 'fines' manganese that is currently put into tailings stockpiles. (Miners attract a better price for so-called 'lumpy' manganese).

Joubert says by using low-energy processing, a by-product slag can also be beneficiated into a battery-grade sulphate, leaving behind a gypsum 'waste' that can be sold to the construction industry. The new processes will see the company producing four to five million tons of manganese annually, depending on total demand, and making full use of the value chain.

Joubert is something of an electric mobility optimist: he told the London Indaba conference in June he'd been an early adopter of electric mobility and had been driving an EV since 2016, which he charges from his home using solar energy. Another logistical deficit in South Africa is the lack of rail capacity growth; in fact, available capacity has been shrinking in the country's manganese sector owing to Transnet's new black economic empowerment rules and a decline in its efficiencies. According to Rogers, this is partly because there's been a fourteenfold increase in manganese production as a result of successful 'use it or lose it' legislation in South Africa's minerals ownership dispensation.

There are nine manganese producers in

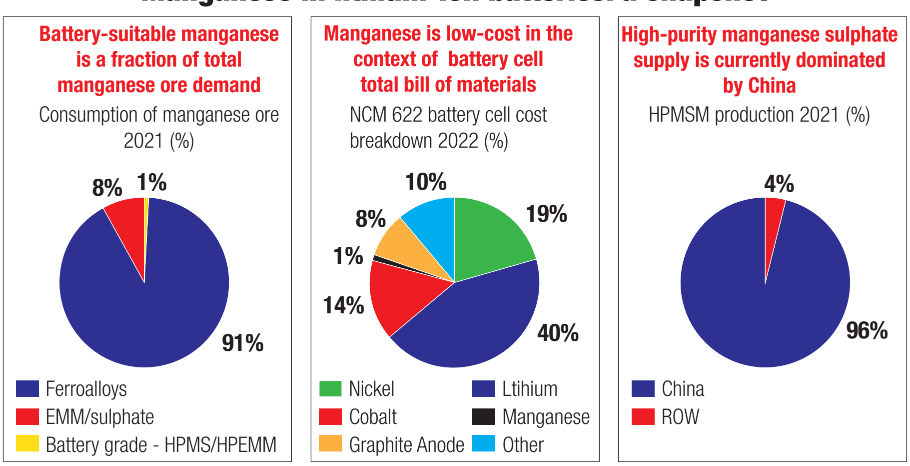


SOURCE: CRU (2022)

South Africa backed by 14 major companies. Tshipi, at about 3.3Mt in annual production, is the second largest and is owned in joint venture with Sakkie Macozoma's Safika via its investment in Ntsimbintle Mining. There has been speculation the two companies could trigger consolidation in the sector. Consolidation would provide a more rational use of rail network, which comprises about 35% of Tshipi's production, says Rogers. Mining comprises 5% of total production costs.

But he is reticent to comment on how these consolidation plans might roll out, saying only: "Our shareholders want us to continue paying a dividend (13% dividend yield last year), but we think we can do better. We want to sensibly grow production. We have more installed capacity at Tshipi than we're using."

Manganese in lithium-ion batteries: a snapshot



SOURCE: SARB, Benchmark Mineral Intelligence 2022

COAL MINER SERITI SETS AMBITIOUS THREE-YEAR RENEWABLE OUTPUT TARGET

BY CHARLOTTE MATHEWS

IMAGINE the absurdity of a business that begs its customers not to use its product. That's Eskom. Where there is a need, there is a business opportunity. South Africa's biggest power consumers do not only need stable and affordable supply, they need it to be green.

Apart from all the other reasons for moving to renewable power, on 1 October this year, the European Union's Carbon Border Adjustment Mechanism comes into force. This will initially apply to a specified range of imported commodities, including cement, aluminium and fertiliser. At first, these imports will only need to report on the amount of greenhouse gases embedded in them. By 2026, these imports will have to pay financial penalties. South African products dependent on Eskom's largely coal-fired power will incur heavy penalties.

One of the companies eager to plug the supply/demand gap is Seriti Resources Holdings, the 91% black-owned coal supplier to Eskom which, in just a few years, has built up a portfolio of seven producing mines and one in development. It also exports coal through Richards Bay Coal Terminal.

Seriti's move into green energy generation is motivated by the business opportunity, the need to diversify its investments and its power sources, and its commitment to reducing its carbon emissions. It has formed a subsidiary, Seriti Green, which is 54.1% held by Seriti, 15% by Peter Venn (who is CEO of Seriti Green), 15.4% by RMB and 15.4% by Standard Bank. Seriti Green recently bought Windlab Africa, with projects in South Africa and East Africa.

"Coal producers face three options," said Seriti Group CEO Mike Teke. "You can sell your coal assets, dilute your assets to reduce your coal exposure, or do what Seriti is doing – remain a coal miner, but diversify.

"Our first priority was to find great assets in green energy and we were fortunate to secure Windlab Africa, whose CEO has got skin in the game. That will enable us as a group to simultaneously mine coal and supply power stations, export coal, and diversify into renewables. Windlab has a portfolio of wind projects and we will be looking for further opportunities in solar generation."

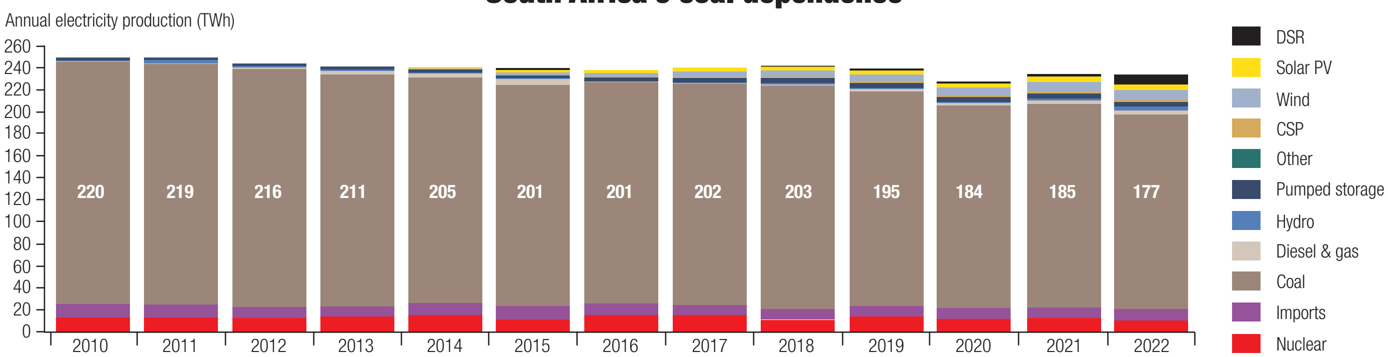
Seriti Green has 23 projects in development. The first projects will come on line in 2025, including a R4.5bn, 155MW wind farm in Mpumalanga, which will supply Seriti Coal. Venn said the plan is to construct 3GW of wind and solar generation in South Africa over the next 10 years, in parallel with 1GW in East Africa.

Seriti Coal uses 750 gigawatt hours (GWh) of electricity to mine. It has pledged to halve its carbon emissions, representing a 350,000 tons/year reduction, by using renewable energy. Venn said the wind farm in Mpumalanga would generate about 500GWh/year of green power for Seriti Coal and the other 250GWh of the target will be met by using solar power and batteries on mine land.

"We are comfortable we can achieve 80% of this target over the next three years," he said. "Seriti Coal is growing as it develops New Largo, so this goal is dynamic."

Given that South Africa's annual power consumption, according to the CSIR, was 5.2 terrawatt hours (TWh) in 2021 and 2022, this single project will not make a difference to Eskom's other customers. But Seriti Green will eventually have surplus

South Africa's coal dependence



SOURCE: CSIR

power to sell.

"Our total energy production will be about 5,000GWh by 2030, so obviously we are talking to numerous large consumers in South Africa to place it through private power purchase agreements," Venn said. "When the IPP office tries to procure wind energy for Eskom in future they will find it harder because it is mostly being sold privately." It was unlikely that Seriti Green's surplus power would be sold to the National Transmission Company of SA, the central buying and selling agency for power that is being spun out of Eskom, he said.

The reason is that to recover the capital cost of building these generation plants, Seriti Green requires 15-year offtake agreements with creditworthy customers – basically, South Africa's biggest industrial users.

Venn said installing more renewable energy generation is the only viable option to solve South Africa's power crisis over the next 36 months. The fastest of those solutions is rooftop solar, since building a large wind or solar farm takes a minimum of 24 months, even after all permits are in place.

"Quite simply, the necessary power is not being constructed," Venn said. "There's probably only 600-800MW of wind and solar under construction. It needs to be 3,000-5,000 MW," he added.

Mike Teke CEO, Seriti Resources

FOR A METAL WITH A BRUSHED-UP REPUTATION WHY HASN'T URANIUM DONE BETTER?

BY JACO VISSER

WHILE there's been a correction in metals over the past 12 months, one that's kept its value is uranium. That's because the metal is gaining acceptance in the drive towards decarbonisation. But its long-held strategic relevance is also coming into play amid a deterioration in geopolitical stability. Finally, there's also a developing mismatch between supply and demand in the uranium oxide market.

Such is the diplomatic stress between the US and Russia and its allies that legislation to ban the importation of uranium is now grinding its way through the US Congress. What's worrying is the sheer size of US reliance on Russian and Kazakh uranium to produce power.

"Around 20% of US electricity is generated by nuclear power stations," says Scott Melbye, CEO of Uranium Royalty Corporation, based in Vancouver. "About 50% of the uranium fuelling US homes comes from Russia and Kazakhstan. We have a huge overreliance problem on Russian uranium."

That's no wonder. According to the World Nuclear Association's (WNA's) latest data, Kazakhstan produced 21,227 tons of uranium last year, constituting 43% of global output. Russia mined 2,508t of the metal.

But as the US's stance on Russia hardens, and China remains ambivalent in its diplomatic dealings with Russia, the world's largest economy will soon need to wean itself off both Russian and Kazakh uranium.

"Kazakhstan shares two big borders with Russia and China," says Melbye. "In a worst-case scenario, if Kazakhstan had to choose between the West and Russia/China, it will likely fall into the latter's sphere of influence."

That will leave the US relying on other geographies for its uranium needs, including Canada (at 7,351t of production last year, the second-largest producer), Australia (4,087t) and possibly Namibia (5,613t).

It is, however, ambivalent how Namibia will turn as its 2,255t/year Rössing uranium mine belongs to the Chinese CNNC and its 3,358t/year Husab uranium mine belongs to China's CNG.

Paladin Energy, based in Australia, is restarting the Langer Heinrich uranium mine in Namibia with an estimated output of six million pounds of the yellow metal at peak production. By June 26, the company told investors, the $118m restart project of Langer Heinrich is more than 50% complete with production expected to start in the first three months of 2024.

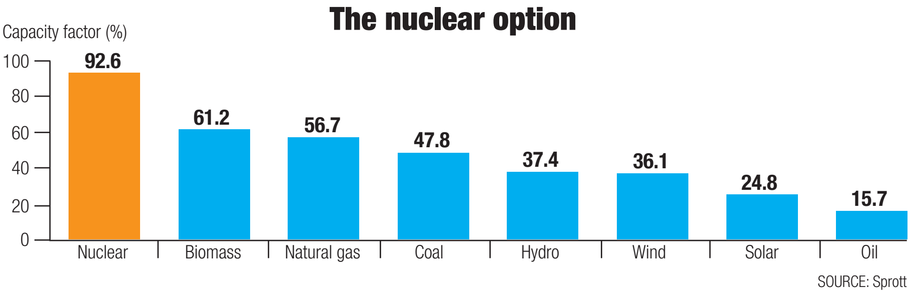
In addition to Langer Heinrich, Paladin is exploring for uranium in Canada due to its "strategic location for US utilities", among other reasons.

Paladin isn't the only miner looking to Canada's untapped uranium resources. NexGen Energy is busy developing the rich Rook I deposit in Saskatchewan. Interestingly, the company said in May that it received "non-binding expressions of interest totalling over $1bn in available debt" for the project. Clearly, the market is hungry to fund uranium projects.

"Nuclear energy is one of the few issues that has bipartisan support in the US," Melbye says. "Public opinion and acceptance of nuclear energy is changing due to the green debate."

OVERHANG

For decades the political left in the West has been opposed to expanding nuclear power generation. A change came about when the



European Union included nuclear power in its taxonomy for sustainable activities last year.

Such was the change in attitude towards nuclear power – after a long-enduring hostile overhang following Japan's earthquake-induced Fukushima nuclear accident in 2011 – that there are currently two new reactors being constructed in EU member states with a further six planned, according to WNA data.

In the US, which has 93 reactors with an installed capacity of more than 95,000MW of electricity, one reactor is being built, three are planned and 18 are proposed for construction. China, the world's second-largest economy, has 55 reactors with an installed capacity of more than 53,000MW and has a further 23 reactors being constructed, 45 planned and 154 proposed.

This supports uranium demand. Melbye estimates demand for yellowcake will grow by around 3% annually. "Currently, mine production trails demand by between 50 million and 70 million pounds a year. I don't know of any other commodity with this gap between supply and demand," he says.

Then why hasn't the price of uranium moved over the past year? It still has to do with the unwinding of the huge supply overhang from the years leading up to 2016.

"In 2016, prices crashed to around $17 a pound," Melbye says. "Then ensued a production cutback across the world to fix the situation."

Such was the production cutbacks that Canada's uranium production in 2022 was still at around 52% of the 14,039t produced in 2016, according to WNA data. In Australia, 2022 production of 4,087t was equal to 65% of 2016's output. Total world production last year, of 48,888t, was equal to 77% of 2016's output.

In addition to cutbacks, large miners such as Canada's Cameco bought physical uranium (in the drums) while it mothballed some of its operations. Deliberate attempts at unwinding futures contracts for the metal and forcing buyers onto the spot market supported the price of yellowcake, which more than tripled between 2016 and last year.

Another contributor to the price hike was the creation of the world's first exchange-traded fund that holds physical uranium. This is similar to ETFs holding physical gold, palladium, rhodium or platinum.

The Sprott Physical Uranium Trust, listed on the Toronto Stock Exchange, held 61.6 million pounds of uranium at end-May with a net asset value of $3.15bn. That's more uranium than the current supply-deficit in the world.


Uranium metal

"There was a realisation that I could buy uranium in the drum for less than the production cost at the mine," says Melbye. But this situation seems to be in the later stages of unwinding. "Now, we've moved from an oversupply-driven situation to a production-driven one."

PRICE DRIVEN

Going forward, Melbye says that the supply-demand deficit will only be balanced if more uranium mines are commissioned. For that to happen, the metal's price needs to increase drastically. "Most new development projects need higher uranium prices," he says, adding that even if the price of uranium doubles from its current level, the price of electricity derived from nuclear reactors won't really affect power prices.

And huge strides are being made in nuclear reactor designs – especially after the EU's designation of the technology as sustainable.

For one, Westinghouse is developing its AP-300 reactor with an installed capacity of 300MW. What make these reactors more alluring than your typical 900MW types is their ability to be constructed in a modular fashion. This will cut down on construction time and comes at a significantly lower cost of an estimated $2bn each. Compare that price tag to a $960m solar farm with an installed capacity of 150MW being built outside Kenhardt in the Northern Cape.

Apart from Westinghouse's AP-300 prototype, "there are other ideas out there with new revolutionary designs" and "the market will determine which companies will prevail", Melbye says.

Some of these designs include US-based NuScale Power's VOYGR-12 small modular reactor plant with an installed capacity of 924MW, and Canadian-based Terrestrial Energy's integral molten salt reactors, which combine molten salt and fission to generate power at high temperatures.

As many of the so-called fourth-generation nuclear reactor designs are modular in nature, Melbye sees their applicability for South Africa's mining industry: "The big mines in South Africa are ideally placed to use smaller modular nuclear reactors," he says.

WHY THE MINERALS COUNCIL GOT IT WRONG WITH TRANSNET

BY BRENDAN RYAN

MENAR CEO Vuslat Bayoğlu remains optimistic about the future of the South African mining industry but there's a certain caution compared with his attitude of some five years back, when he was totally "gung ho" on the country.

That's not surprising given the events of the past few years but Bayoğlu says his group's plans to invest up to R7bn in new coal mining capacity remain in place and he's sizing up a potential new underground manganese mine that could add another R3bn on top of that.

That would follow on from his initial diversification into manganese through subsidiary Sitatunga Resources, which started operations at the opencast East Manganese mine near Hotazel in the Northern Cape in September 2021.

But developments here rest on a technical reassessment of the underground mine to get the operating costs down because, according to Bayoğlu, the grade of the orebody is not as high as the "gem" quality grade underground mines operated by South32 and Samancor.

"The manganese price is generally flat so it is critical that you keep your costs low," says Bayoğlu, who adds he does not believe consolidation of the numerous juniors in the manganese sector is necessary and Menar has no plans to get involved in such action.

Currently Menar is producing 30,000 tons a month of manganese ore but the new project – if it goes ahead – would add 150,000t/month to this.

Until then Menar's fortunes will remain with coal – specifically the export market to which the group supplies 4.5 million tons annually – because the group does not sell to Eskom.

"We offered coal to Eskom back in the days of the Zuma era. We have yet to hear back from them," Bayoğlu comments, noting that right now Eskom does not need new coal supply.

That makes him particularly focused on the issues at Transnet Freight Rail (TFR) and he is not happy with the way the mining industry – as represented by the Minerals Council of which Menar is not a member – has approached Transnet so far.

He says Menar is pushing to develop a major new colliery in the Springs area which would increase the group's total coal production from 8Mt run-of-mine (ROM) annually to 20Mt annually.

In particular, he is annoyed by the Mineral Council's action in calling for the removal of Transnet CEO Portia Derby and TFR CEO Sizakela Mzimela. "We have to work with Portia Derby. What did they achieve by calling for her removal? The Minerals Council was wrong on this one.

"The Transnet situation has to be fixed. We do not have an option here. It's not like Eskom where if there's no power you have alternative sources of supply if you have the money. It will cost you but you can do it.

"But with Transnet you cannot afford the alternatives. Trucking is unsustainable. It messes the roads up and it kills people. You can afford to truck maybe 5mt of coal annually but not the 26Mt of coal involved where Transnet dropped from railing 75mt of coal to 49mt annually. Whoever was mining that 26mt of coal – those people have lost their jobs."

Bayoğlu adds: "The biggest problem at Transnet is not cable theft but the availability of locomotives. This happened before they [Derby and Mzimela] came into power and they inherited this problem. The chairman of Transnet cancelled the contract and their hands are tied."

What Bayoğlu does hold Derby accountable for is the severance packages she offered to senior staff to make the Transnet management structure leaner. "They lost

'We have to work with Portia Derby. What did they achieve by calling for her removal? The Minerals Council was wrong on this one' — Vuslat Bayoğlu

critical skills by doing that. Now they do not have enough skilled [executives] to run these lines properly. She should bring those people back."

Bayoğlu reckons the big differences between Transnet and Eskom are that Transnet is communicating, it understands the problem and it is happy to work with the industry to find a solution.

He adds there is a tremendous amount of attention being paid to the issue of how private businesses can be involved in rail. "Transnet is serious about this but I understand why they are hesitant. It's a strategic business and they do not want to lose control.

"The Richards Bay line is Transnet's bread and butter. 52% of Transnet's revenue comes from coal, so TFR is generating most of Transnet's revenues. Given that situation, would you like to privatise that?"

He says privatisation of Transnet is not the way to go. "We need a different approach. We don't need Transnet to be privatised but what we want is access to the rail tracks maybe through paying toll fees like you do on the state-owned highways.

"They are working on something like that at present – a rail access arrangement where Transnet retains ownership of the infrastructure, rather than a concession."

CRITICAL COAL

While Bayoğlu does not supply coal to Eskom he is adamant that coal-fired power stations are the way to go and South Africa should build more of them. His attitude is that renewable energy is important but it is just complementary because it cannot provide base-load demand.

He believes former Eskom CEO André de Ruyter focused too much on alternative energy during his tenure. "De Ruyter pushed a green agenda but he did not do a good job in terms of delivering power. He did not deliver what he was supposed to deliver.

"He was proud of closing the Komati power station but he replaced it with a 100MW solar plant which will give you power eight hours a day so that's 33MW replacing 1,000MW. That's nothing you should be proud of."

He also rejects international green pressure on South Africa to cut coal consumption and questions the motives of "foreign-funded non-governmental organisations (NGOs)" interfering with coal operations – including Menar's ZAC colliery – in KwaZulu-Natal. "India and China are investing in coal-fired capacity, 14,700MW in the case of India. Are people going to tell India and China to stop using coal-fired energy? No!

"Why should we in South Africa look at bringing in three floating Karpowerships to give us emergency power? That's rubbish. We have coal. They should build more coal-fired power stations using proper contractors on an EPCM (engineering, procurement and construction management) basis, which will deliver a station in five years. Government should not build its own power stations."

Bayoğlu believes coal still has a future in South Africa because it is "indispensable". He is happy to invest in new collieries because he can see a situation developing where coal will be in short supply as existing collieries get older and more expensive to operate and there is a crunch on new coal mine construction because funds for this have dried up.

'[André de Ruyter] was proud of closing the Komati power station but he replaced it with a 100MW solar plant which will give you power eight hours a day so that's 33MW replacing 1,000MW. That's nothing you should be proud of' — Vuslat Bayoğlu

Vuslat Bayoğlu CEO, Menar

"We have to deal with our CO^2 emissions but what we are lacking is a clear government stance. I do not think the government is anti-coal mining but it cannot make a decision. Government needs to say we need to have cheap power to create jobs."

Turning to NGOs, he says: "In KwaZulu-Natal they want to stop anthracite and coal mining. They managed to stop Tendele. That's 2,000 jobs on the line but why? Who are you to do this? Who is supporting you?"

He adds that 95% of the community agreed with Tendele that they wanted the mine. "Who are these other 5%? Can we afford to carry on making more people jobless after what happened with the looting in KZN two years ago, which was largely carried out by unemployed people?

"This has to stop. The government has to do something about this. We did not allow Shell to drill for gas offshore. Why? In Mozambique and Tanzania they are producing gas from the same belt."

WEST URGED TO HELP STEM WAGNER GROUP INFLUENCE IN AFRICA'S GOLD BELT

BY LIESL PEYPER & DAVID MCKAY

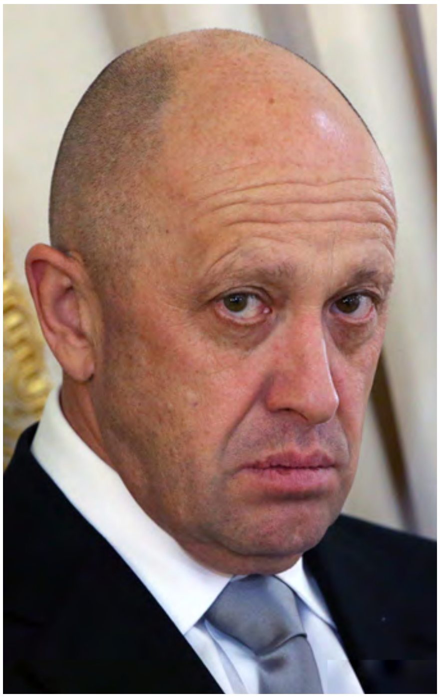
SOON after Yevgeny Prigozhin's Wagner Group's aborted 1,100km road trip from Rostov-on-Don to Moscow, questions were being asked as to its implications for the paramilitary's future in Africa. The answer, at least for now, is not much.

Private military firm the Wagner Group generates revenue for Russia and helps it dodge Western sanctions imposed since the invasion of Ukraine in February, 2022. If anything, its progress might be paused while the internal politics of the aborted coup in Russia (or whatever it was) is being understood. This might present the West with some valuable time.

"Wagner will likely maintain its African activities and even expand them," Julia Stanyard, a senior analyst with the Global Initiative Against Transnational Organized Crime was quoted as saying. "It is difficult to say how much of the money generated by the extraction of massive quantities of gold, diamonds and other minerals from African countries went into the pockets of Prigozhin and how much to the Russian government's coffers.

"It is only in Russia's interest to keep the African operations going as it was generally considered to enhance that country's influence in Africa on one hand while also generating financial gains."

Consequent destabilisation in Africa "... is doubtful considering that Wagner's operatives were already involved in large-scale human rights abuses targeting civilians as



Yevgeny Prigozhin Leader, the Wagner Group

it is. In most of its [host] countries, these incidents were higher than even those committed by the countries' own forces," said Stanyard in the article.

According to Mark Bristow, CEO of Barrick Gold, Western economies now need to step up to the plate. He thinks the US in particular has been too timid to act on the Wagner Group's growing African influence despite the wave of sanctioning imposed by the US treasury, and by the EU, especially in the past 12 months.

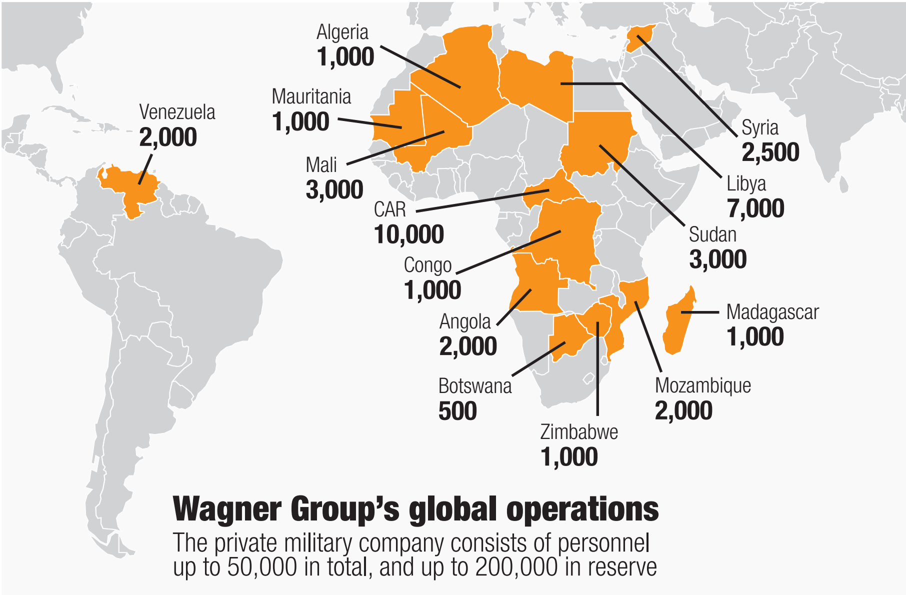
In February, the European Council imposed sanctions on a list of Wagner Group members perpetrating violence in Mali and the Central African Republic as well as affiliate companies such as Meroe Gold, a mining firm, operating in Sudan. A month earlier, the US designated Wagner Group a "transnational criminal organisation", an unusual step that signals "a new approach in defining and levying sanctions on Wagner and its enablers", according to a report by Stanyard's organisation. More mining firms were targeted in June by the US treasury as well as companies in the United Arab Emirates.

According to Bristow, Prigozhin and the Wagner Group have been allowed to fill a vacuum created by the West itself. It is foolish for Western governments to abandon places like Mali, where Barrick operates its highly rated Loulo-Gounkoto gold mining complex. "The whole of West Africa is at risk and it needs real attention," says Bristow. "The West needs to be piling in there and making this part of the world more investible."

So far state departments have sought to work through networks created by companies such as Barrick rather than directly. Bristow finds it confounding. "The first thing they do is call us when they want to sanction people, instead of [contacting] the government. You can't ask me to solve your problems for you."

There's a lot at stake in West Africa considering the scale of investment there, primarily by the gold mining sector. More gold has been discovered in West Africa in the past 10 years than anywhere else on earth, according to a report by the World Gold Council. Another study, by ratings agency S&P Global, estimated there had been $6bn in mining investment in the last decade – just in gold. West Africa is also rich in bauxite and iron ore; there's also a growing awareness it could provide minerals for global energy transition.

A significant investor in gold exploration is Endeavour Mining, a Toronto- and London-listed gold miner. It, however recently announced the sale of two mines in Burkina Faso, ostensibly sold because they aren't competitive enough. Reducing its Burkina



Faso exposure should come as a relief to Endeavour Mining's shareholders. "The potential sale of these two assets could provide Endeavour with a multiple uplift through reduced Burkina Faso exposure," said Raj Ray, an analyst for BMO Capital Markets.

Endeavour previously drew comfort from the presence of French security forces in Burkina Faso, especially following the 2022 coup. But in January, Burkinabe Prime Minister Apollinaire Kyélem de Tambèla demanded France withdraw its troops. Russia, he said, was "a reasonable choice" of ally. A subsequent government demand that miners sell gold to it has been interpreted as Burkina Faso finding cash to secure upfront Wagner Group help in containing jihadist attacks, especially in the country's east.

That is the modus operandi of the Wagner Group, which, Bristow is quick to remind, initially established a foothold in Mali as part of Russia's peacekeeping force following its coup. "They made a difference to the wins and the losses in Mali and so the Malians celebrate that," he says. Since then, Russia has mobilised the Wagner Group as if "reaching into their old Soviet Union 'colonies'. In the Cold War, Mali "was Russian", with many of its top-ranking officials studying in Moscow. There is a kind of institutional memory about the place, says Bristow.

Were the West to respond to Mali's economic need it would reduce the country's reliance on dodgy alternatives. "There's a schizophrenia in Mali because it wants to engage with the IMF; it needs the money," he says. A mining industry audit launched by Mali was "definitely designed to garner more money and that's going to kill the goose", says Bristow. Investment by Barrick and another Canadian gold miner, B2Gold, comprises the majority of Mali's GDP, he calculates.

For now, Wagner Group has not played in anything other than "the military side of things", Bristow says. "Maybe it's coming, I don't know. But again, we have to engage, be in that discussion."

ORIGIN OF WAGNER GROUP

When the Cold War ended and the Soviet Union was dismantled in 1991, Russia withdrew from Africa – a continent where it wielded significant influence as an external actor. The country appeared to have little interest in the continent during the 1990s and 2000s, but this changed in 2014 after the Crimea conflict, when Russia slowly started rebuilding relations with Africa. In 2019, Russia signed military cooperation deals with some 20 African states.

The overtures to Africa intensified after Russia's invasion of the Ukraine, when the country was on a mission to forge even stronger ties with Africa. The majority of African countries have also been reluctant to condemn Russia for the invasion. According to Ovigwe Eguegu, a policy analyst at Development Reimagined, an advisory consultancy, African countries' votes on the resolutions should not be regarded as a "moral opinion", but rather a geopolitical calculation.

There have been six United Nations General Assembly (UNGA) resolutions since Russia's invasion of Ukraine. African countries in particular were split on these votes. With the first UNGA resolution, 51% of African countries voted in favour of declaring Russia the aggressor, while 31% abstained and a further 15% did not vote at all. Among the countries that abstained or refrained from voting are those with a strong Russian presence, such as the Central African Republic (CAR), Sudan, Mali, Guinea and Burkina Faso. With the second UNGA resolution on the suspension of Russia in the Human Rights Council, 44% African countries abstained, 20% did not vote and only 18% voted in favour. The CAR was among the 16% of African countries that voted against Russia's suspension.

Russia's renewed interest in Africa is more about immediate and short-term gains, such as securing "easy commercial contracts with partner countries", writes political analyst Vuk Vuksanović from the London School of Economics. Political analyst Florian Vidal is of the view that Africa is also an "avenue for evading sanctions". Russia's involvement in Africa's

Protester in Mali holds up a sign

Sébastien de Montessus CEO, Endeavour Mining

mineral resources is a means of bypassing the sanctions regime imposed by the West following its invasion of Ukraine. "Used as alternatives to the traditional financial circuit, precious commodities, such as gold and diamonds, are useful for escaping banking sanctions because they can be sold and traded without oversight or restrictions."

Sudan, the world's third-largest gold producer, appears to be a strategic partner to Russia's strategy of accumulating gold reserves, estimated to be valued at $130bn worth of gold reserves. And in Burkina Faso, the government awarded an exploration permit to Russian gold miner Nordgold for a new mine in December 2022.

Russia has also relied on traditional friends. It has, for instance, been able to land a greater proportion of goods in China. According to a report by RMB Morgan Stanley, China's palladium imports from Russia reached a record in the first quarter. "There's more metal flowing to China from Russia today than there was pre-conflict," says Paul Dunne, CEO of Northam Platinum. "I would say trade routes are clearly realigning [in PGMs] and we are still in that process. It is causing uncertainty."

Similarly, diamonds mined by the state-owned Alrosa continue to find outlets. "We know that they are selling into China and into India and to demand there," said former De Beers CEO Bruce Cleaver in an interview last year. Whether these goods are replacing sales normally sold to the US is as yet an unanswered question.

MY ENEMY'S ENEMY IS MY FRIEND

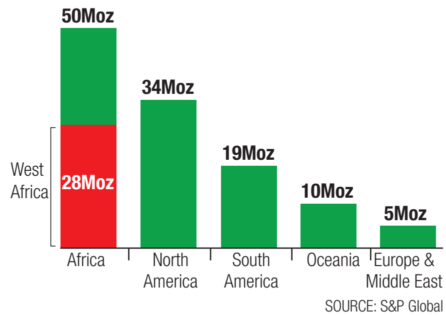
RUSSIA'S mining operations in Africa include diamond extraction in Angola and the CAR, diamonds and bauxite in Guinea, gold in Sudan, and more recently, gold mining in Burkina Faso. Political analysts are also of the view that Russia's foreign policy has a new component – namely, involvement in security issues in Africa, notably in Mali, Burkina Faso and Sudan. Russia's diplomatic return to Africa is therefore a combination of the growing involvement of the Wagner Group and business diplomacy in the natural resources sector.

"If you follow the notion of 'My enemy's enemy is my friend' you can see Russia's strategic footprint on the continent," says Tara O'Connor, a political analyst at Africa Risk Consulting. She points out that there has been growing anti-French sentiment in Francophone Africa, which makes it easy for Russian propagandists to gain a foothold.

The CAR for example has become the "new fiefdom" of Russian influence, where the Wagner Group is pre-eminent. Prigozhin is a former ally of President Vladimir Putin, and the Wagner Group provides security in the CAR, but Prigozhin has also managed to secure mining interests. There is reportedly a link between the Russian miner M Finans and Lobaye Invest in the CAR – and both are controlled by Prigozhin.

'Used as alternatives to the traditional financial circuit, precious commodities, such as gold and diamonds, are useful for escaping banking sanctions because they can be sold and traded without oversight or restrictions' – Vuk Vuksanović

West Africa gold pipeline



The Wagner Group has allegedly also been operating behind the scenes in Sudan since 2017, when it landed significant mining concessions for gold and diamond deposits in the country. After the coups in Mali in 2020 and 2021, and Burkina Faso in 2022, Russia has become these two countries' preferred security provider. In contrast, France has in the past year withdrawn troops from Mali, Burkina Faso and the CAR, where there has been increased local hostility towards French involvement.

O'Connor points out that Russia may be a vast country, but it has a "tiny economy" and the funding for mining activity is still by and large the domain of the West. "Canada is the heart of financing junior mining, and the fact that the west still holds the financial reins helps to limit the impact [of Russia] in Africa."

Eguegu adds that Russia has a limited economic footprint in Africa, with foreign direct investment comprising less than 1% of inflows into Africa. To distract from this, Russia resorts to rekindling anti-colonial and Cold War sentiments.

In January 2023, European Commissioner Thierry Breton encouraged European financiers to fund the so-called critical minerals, which could mean increased exploration and mining investment in Africa. However, African countries that align themselves too closely with Russia could miss out on this investment. "Wherever there's Russian involvement, financing might be prevented by sanctions," says O'Connor.

AFRICA'S POLITICAL RISK ISN'T EVERYTHING IT'S CRACKED UP TO BE

BY DAVID MCKAY

Mali unrest

AFRICA struggles to attract major investment from Toronto's stock exchange, which can count its investors as among the world's most optimistic. Its venture market had 47 new mining-related listings last year. According to South Africa's Minerals Council, 48% of mineral exploration projects operated by Toronto-listed companies are outside Canada, but only 6% of these are in Africa. Why is this?

Part of the answer is reputational. The Fraser Institute survey on policy attractiveness saw six Africa countries languishing in the 10 most lowly ranked. Admittedly, the news-flow hasn't been great from Africa lately. Since 2020, there have been two coup d'états in each of Burkina Faso and Mali, and another in Guinea. Throughout the continent, concerns rage about the extent of Russian influence via the Wagner Group, even though the paramilitary organisation also has a presence in Venezuela.

And yet South America has had its fair share of unpleasant surprises. In May, for instance, Chile's congress signed off tax proposals that will raise the top tax rate to almost 47% for companies that produce more than 80,000 tons of copper a year. In Peru, copper production fell in 2022 following a widespread social foment. Mine disruptions and roadblocks reflected upheaval in the top rungs of the government ladder as the country's leftist president Pedro Castillo was ousted.

Peru forms one point of the so-called lithium triangle – said to contain nearly half of world lithium reserves – with Bolivia and Argentina the other vertices. Argentina's economy is reeling; a currency crisis means it's hard for investors to extract their profits.

One company affected in Argentina is Johannesburg-listed AngloGold Ashanti, which also has African exposure. It is led by Colombian CEO Alberto Calderon, who says: "I think Africa gets a much harsher treatment versus America. You would think I would be biased but I'm not.

"If you look at the risks of operating in Peru; you look at what's happening in Chile. There is so much instability there. The other thing is Africa is not Africa: Africa is every country, which is entirely different," he says

Calderon's opposite number at Gold Fields, Martin Preece, says it doesn't make sense to draw blanket conclusions about regional risk, especially when it comes to Africa. As with AngloGold, Gold Fields operates mines in both continents. "We are worried about Chile, but we're also worried about Peru, Ghana and South Africa."

Resource nationalism has emerged in both continents. While fiscal regimes are being overhauled in Chile, a different type of resource nationalism has emerged in Africa. Instead of increasing tax, Zimbabwe and Namibia have imposed new bans on the export of lithium. This is "playing with fire", according to Peter Leon, a partner with Herbert Smith Freehills attorneys.

While Leon believes the West will have no choice but to accept Africa risk given the continent's growing importance in the supply of critical minerals, he thinks banning exports falls foul of the fundamental rules of global trade as set down by the World Trade Organization (WTO).

The WTO is opposed to quantity restrictions as a basic precept of its formation, says Leon. Since raw mineral export bans are often coupled with other laws promoting in-country processing, so-called beneficiation, places like Zimbabwe will end up "breaking every law in the WTO's book", he says.

But again, this tactic is by no means restricted to Africa alone. In 2020, Indonesia placed a ban on nickel exports, arguing it had domestic shortages. The WTO didn't accept this ruling: it sided with the European Union, which had launched an objection. Says Leon: "Zimbabwe and Namibia are playing with fire with the fundamental principle of international trade law."

Ultimately, derisking Africa is largely down to mining companies meeting expectations. Ludivine Wouters, managing partner of Latitude Five, a UK-based investment advisory, says Western company investment plans for Africa are minute compared to the level of host country expectation. It leads to disappointment.

FOR NINE YEARS GOVERNMENT DIDN'T LISTEN TO INDUSTRY, NOW IT DOESN'T HAVE A CHOICE

BY DAVID MCKAY

LIFE is full of ironies. For Roger Baxter, one is that he bids adieu to his beloved Minerals Council just as government bows to energy diversity. As a fresh-faced 32-year-old economist, he was part of the Nedlac team negotiating the 1998 Energy White Paper which had, among its goals, 'security supply through diversity'. "It's only taken 25 years," he says.

In an interview with Miningmx a few weeks before leaving the Minerals Council for good, Baxter repeatedly referenced the self-inflicted loss in public sector capacity. "If I could just be blunt, these days the simple fact is government doesn't have the capacity to run these assets like they could 20 years ago. It's as simple as that." It's for this reason the private sector is now participating more directly in state-owned companies, starting with Eskom and, more recently, Transnet.

In South Africa, this process is a painful one. Globally, however, command economies – such as those desired by the ANC – are the exception. "If you want South Africa to be a modern, industrialised economy you have to adopt the models adopted everywhere else in the world, among all our major competitors – which is greater levels of private participation. We don't call it privatisation. This is about private concessioning."

'If I could just be blunt, these days the simple fact is government doesn't have the capacity to run these assets like they could 20 years ago. It's as simple as that' — Roger Baxter

And so it is that the unbundling of Eskom's transmission division will see it concession its infrastructure to the growing body of independent power producers (IPPs).

Similarly, plans are afoot for Transnet to sell its bulk mineral rail routes on a pay-per-use basis. But the environment is polarised ideologically. To Baxter's point on privatisation specifically, the South African Transport and Allied Workers Union interpreted Transnet's collaboration with the Minerals Council as a coup d'etat.

This was after Transnet agreed to work with the Minerals Council on improving bulk mineral efficiencies. The trigger for this was a controversial council letter in December calling for the resignation of Transnet CEO Portia Derby and her CEO at Transnet Freight Rail, Sizakele Mzimela. Baxter described it as "a bit of a blow-up" and acknowledged it initially hindered progress: "Yes, there were some clashes at a leadership level at the end of last year and early 2023. We've kind of buried the hatchet on the different issues."

Securing pragmatic cooperative agreements with government is just part of the challenge. Once agreed, and assuming there is genuine buy-in from all parties, technical challenges abound. Eskom's transmission is capacitised for Gauteng to Northern Cape, not the reverse, as now required by the predominantly solar-powered IPPs operating in the Northern Cape. Similarly, there's been a 20-million-ton deterioration in capacity on the Mpumalanga to Richards Bay coal line.

Says Baxter: "We've got the balance sheets, we've got the capability, we can significantly increase the amount of traffic that's on the rail networks through private concessioning of some of the major lines. It again comes back to public policy choice. If the ANC-led government wants to remain in control of those assets, that's their call, but it will result in consequences."

So, what of 2024?

Baxter thinks South Africans ought to reconcile themselves to coalition politics, which will present difficulties quite unlike today's politics. Despite this, he thinks government capability has deteriorated so profoundly that regardless of the future administration, it will have no choice but to embrace private-sector money and technical and intellectual capacity. "Where South Africa is at the moment requires an all-hands-on-deck, partnership approach," he says.

Roger Baxter Former CEO, Minerals Council

TWO YEARS OF HICHILEMA'S PRESIDENCY HAS BROUGHT A WAVE OF OPTIMISM BACK TO ZAMBIAN MINING

Zambian President Hakainde Hichilema came into office two years ago on a wave of international optimism and goodwill. His promises for economic growth have been held back by legacy issues, but the tide could finally turn, writes **LIESL PEYPER**

ANALYSTS anticipate that mining investors will flock to Zambia, still one of the biggest copper producers globally, especially since President Hakainde Hichilema came into office in August 2021 and announced a range of incentives, such as a sliding royalty rate for mines, to lure back investors.

Hichilema, or 'HH' as the investor community call him, has announced that he wants Zambia's mining sector to be the country's foremost revenue generator. He subsequently set a target to increase its copper production from 800,000 tons a year to three million tons a year in the next three years – a bold aim, especially since the Konkola and Mopani copper mines haven't resumed production yet.

Hakainde Hichilema President of Zambia

But overall, Zambia's mining sector appears to be on track for renewed activity from international mining companies. In 2022, First Quantum Minerals announced $1.35bn worth of new projects in the country, while Anglo American announced a return to full-scale copper exploration after it signed a provisional joint-venture agreement with Aim-listed mining and exploration company Arc Minerals. In addition, KoBold Metals, a Californian-based metals explorer, is busy raising $200m to develop the copper reserves it recently acquired in Zambia, the *Wall Street Journal* reports.

The projects announced by both these miners are a sure vote of confidence in the Hichilema administration.

Exploration is an equally important aspect of Hichilema's investment drive into Zambia's minerals sector and the government is currently doing geological mapping for the remaining 45% of the country, while the existing 55% will be updated.

Unfortunately, Hichilema has also had to deal with numerous problems since he took over the reins from the Lungu presidency, an era in which mining companies faced insecurity of tenure, high royalty rates, and the withholding of VAT refunds.

Delivering on promises has been harder and slower than anticipated, says Marcus Courage, CEO of Africa Practice. It has involved drawn-out negotiations with creditors for debt restructuring, cleaning up the country's cadastral system after widespread licensing corruption, restructuring Mopani, settling the Konkola disputes, and addressing the power crisis. "These things are all taking much longer than anticipated," says Courage.

The administration is doing its best to clean up various practices and set the country on a new course, says Nick von Schirnding, director and executive chairperson of Arc Minerals. "But changing a supertanker takes time."

Investor perception also takes time to change, and the dubious way in which mining and exploration licences were acquired under the Lungu presidency could still deter investors. Also, under previous presidencies, mining rights were at times taken away. "This can put investors off. Once bitten,

'The mining cadastre was subject to a detailed audit over eight months. They went through every single major licence with a fine toothcomb and threw out those that hadn't been properly awarded'
— Nick von Schirnding

Peter Leon Africa chairperson at Herbert Smith Freehills

twice shy," said one mining executive who asked to remain anonymous.

The best thing Zambia can do for its investor community is secure a stable policy environment, even though its taxes are some of the highest in the world.

Peter Leon, partner and Africa chairperson at Herbert Smith Freehills, said the country's debt issues have not been a significant deterrent for would-be investors, but rather its ever-changing royalty rates, which needs to be fixed.

Leon's view is that Zambia's mineral legislation is sound, the government is committed to good governance and the rule of law, while the country has a lot more policy certainty than South Africa.

Time is of the essence though. There is a question mark over how realistic a three million tons a year copper production target is, says Leon. He also notes that Hichilema has two years left in office and if the economy hasn't grown as he has promised he might not be re-elected, although Zambia's recent debt deal is just what is needed.

A ROSY FUTURE?

The good news is that, after lengthy negotiations that lasted close to three years, Zambia finally secured a deal on 22 June to restructure its more than $6 billion debt. In terms of the restructuring agreement, Zambia's debt will be rearranged over more than 20 years with a three-year grace period during which only payments on interest are due, Reuters reports. The agreement with its official creditors means the country will receive a $188 million loan from the International Monetary Fund as part of a $1.3 billion package that was approved in August 2022.

There are also indications that the long-standing issues with Konkola and Mopani respectively will be resolved by the end of 2023. An insider close to the process said an agreement between Vedanta and Zambia Consolidated Copper Mines, which is 77%-government-owned, is imminent on Konkola. "In government we're saying: 'You can't mine in the courts.' You have to be pragmatic. The negotiations have been difficult, but the intention is to reach an agreement by the end of the year."

Konkola currently produces less than 100,000 tons of copper a year, because of a lack of investment. But once a deal has been concluded, the Konkola Deep Mining Project, which has a nameplate capacity of 300,000 tons a year, can be initiated.

With Mopani the process is less complicated, and the Zambian government is currently in possession of bids from four shortlisted potential buyers: China's Zijin Mining and Norinco Group, Sibanye- Stillwater, and an investment vehicle owned by former Glencore employees. A final bid will take place in mid-July and a deal is expected to be in place in October this year. Mopani's production is currently around 80,000 tons a year – a far cry from its potential 225,000 tons.

Both Konkola and Mopani are in the fortunate position that they're not resource-constrained and with more investment, production could be ramped up.

With the clean-up of Zambia's mining cadastral portal completed, the country is well-positioned to attract new investment, says Courage. "The queues outside the cadastre office stretched around the block."

"We have seen similar moves in Botswana and Namibia towards transparency through a public mining cadastre — and even some movement in South Africa in this direction," says SRK Consulting partner Desmond Mossop. "So Zambia's success in rolling out this facility certainly seems to be having a positive effect across the region."

Von Schirnding says he is thoroughly impressed with the speed with which the Zambian government is turning things around. "The mining cadastre was subject to a detailed audit over eight months. They went through every single major licence with a fine toothcomb and threw out those that hadn't been properly awarded. They replaced almost the entire staff complement of that office. It's real proof that there's a desire to change."

Zambia and the DRC's plans for collaboration on electric vehicle battery production are also gaining momentum, with the US and Afreximbank "waiting in the wings" to provide concessional funding. Feasibility studies are being conducted to establish two special economic zones for battery manufacturing purposes, Courage adds.

"Many of the world's largest mining companies like what they hear from Hichilema.

Nick von Schirnding
Executive chairperson, Arc Minerals

They see a government that understands the needs of investors. The president recognises the opportunity to capitalise on the surging demand for copper," says Courage. Hichilema is a breath of fresh air, says Von Schirnding. "The government is being very sensible and proactive. When you operate in any jurisdiction you need an established mining framework which governs the awarding of licences and mining regulations. The second thing is you need the rule of law that will enforce those regulations. Those are the key building blocks when entering into any country."

DARE CALEDONIA TURN UP THE DIAL ON GROWTH?

BY DAVID MCKAY

HAVING operated relatively comfortably for years, Zimbabwean gold miner Caledonia Mining Corporation is facing a potentially company-defining decision about how to finance its second gold mine. The first, Blanket, was a brownfields shaft extension. It cost $150m and was financed with cash flow over seven years. The Bilboes project, acquired for $53m in shares in July last year, will cost double that amount but lift production to 250,000 ounces a year from 90,000 oz/year currently. That would give Caledonia an entirely new blush; more so if it can be developed quickly.

Mark Learmonth, who was appointed Caledonia's CEO as the Bilboes transaction was being inked, says the board is not yet decided on the development time frame for the project, but he acknowledges the benefits of rapid development; in fact, during an interview with Miningmx, he sounded partial to it. The all-important question though is whether a company like Caledonia can pull off a transaction quite like this.

During Blanket's development, Caledonia was able to increase the dividend multiple times, which gave it a reputation for good yields and conservatism. The opportunity in the market now, however, is to convert Caledonia to a growth stock at a time when global inflation is giving support to the gold price. Gold companies everywhere are seeking to lock in growth either through expansion or mergers and acquisitions.

"Why waste your time talking to me. Why don't you pick up the phone to our bloody brokers and ask them how they're going to transition from one to the other?" says Learmonth when asked if Caledonia can adopt this new approach. The key, he says, is funding the preproduction capital of at least $250m, bearing in mind the debt component might be only half that number. "The market may not be there for us, in which case there's no point in trying to pursue a dream that's not available," he adds.

Caledonia's New York listing has served it well. Previously the company had success raising finance by making shares available on demand for the development of a solar plant at Blanket. In Europe, the company recently attracted new Swiss investment and closer to home it raised $8m by listing shares on Zimbabwe's Victoria Falls exchange. Allan Gray, the South African asset management firm, is also supportive of the firm's growth strategy, which could see growth eventually top 500,000 oz/year if the rest of the firm's project pipeline is developed.

An alternative approach is to slowly develop Bilboes as it did with Blanket. "We could replicate that but then it means we're not going to be an explosive growth company; at least we won't be asking anyone for money," he says. Learmonth, who appears expansive by nature, says the board veers towards conservatism, if only because that has served it well in the past.

Part of the reason for that is Zimbabwean political risk, which runs deep with investors. Certainly there isn't a queue of Western commercial banks wanting to provide Caledonia with debt, although one development finance institution has $1bn for investment in Zimbabwe, far more than Caledonia needs. Discussions with the DFI (development finance institution) are underway, says Learmonth.

One of Caledonia's main advantages is the deftness with which it's managed Zimbabwe's challenges. On the ground Zimbabwe is, in fact, relatively easy to operate in, says Learmonth. Unlike South Africa, which he regards as openly hostile to investors, the Zimbabwean government is accommodating. In addition, Caledonia has minimised power shortages at Blanket by building renewable power and installing back-up diesel-run generators. Zimbabwe's labour is also productive.

Meanwhile, Caledonia is keeping its options open with Blanket. Learmonth says the company restarted deep-level exploration of the Blanket deposit in January. It couldn't be done before given the commitment towards extending Blanket's main shaft but the pressure is off the balance sheet, at least for now. "The results are very positive; better than I expected."

"The mine will go deeper," he says. Whether Caledonia will go faster is less certain, however.

Mark Learmonth CEO, Caledonia Mining Corporation

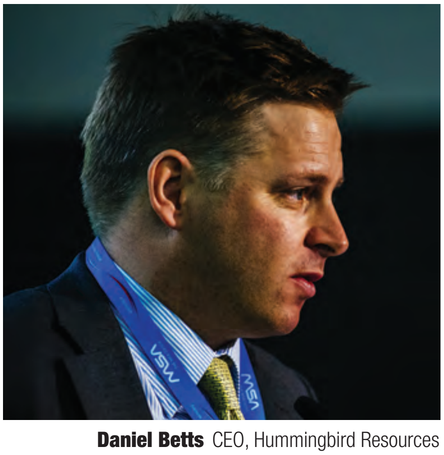
ONE CHASTENING YEAR LATER, BETTS TARGETS PROSPERITY

BY DAVID MCKAY

HUMMINGBIRD Resources is on course for an impressive recovery this year. The West African gold producer was "priced to fail" in February, according to CEO Dan Betts. By June, it had clawed back its losses over the previous 18 months.

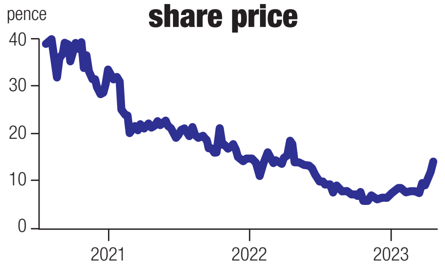
"It's been the most intense, stressful period I've ever been through in my career," said Betts. "You put out your guidance and if you miss it, it's a s**t show." That's what happened at Yanfolila, an 80,000 to 90,000 ounce-a-year mine in Mali. Between the fourth quarter of Hummingbird's 2021 financial year and the third quarter of last year, it failed to hit 20,000oz per quarter for all but one. It sent all-in sustaining costs (AISC) sailing over $2,000/oz. As the only mine in the portfolio, Hummingbird was in trouble.

Betts responded by changing Yanfolila mine management and drafting in external support. A $35m finance package was also finalised, which helped keep Hummingbird in business while it completed the development of its $120m Kouroussa mine in Guinea. But the impact on the company was felt: "It will take time to earn back trust. Hummingbird was priced to go bust. The market was saying you are not going to get the mine [Kouroussa] online because Yanfolila was such a mess," he said.



Daniel Betts CEO, Hummingbird Resources

Hummingbird Resources share price



SOURCE: Google

"A more experienced mining company might have foreseen the issues at Yanfolila. I'm not asking for forgiveness, I'm just asking that we learn as a mining company."

Betts was speaking in March. By the middle of May, the company had commissioned Kouroussa, ahead of schedule and without a hitch. Commenting a week after first gold from the mine, Betts said he hoped a rerating of the share continued, although it's critical Kouroussa builds up to nameplate capacity.

At full tilt, Kouroussa is expected to reach a run-rate of 120,000 to 140,000 oz with AISC at around $1,000/oz. There's also exploration potential that could one day result in higher output.

Tim Huff, an analyst for Canaccord Genuity says in commissioning Kouroussa, Hummingbird has probably ensured its survival but other boxes have to be ticked this year. One is at Yanfolila, which moves to underground mining this year. This leaves Hummingbird's balance sheet vulnerable while Kouroussa is still in ramp-up. Huff estimates probable cash of just $4m at year-end, excluding $5m/$6m of gold in inventory.

But if the balance sheet and the Yanfolila transition can be managed "the cash flow from Kouourssa alone in 2024 could be substantial enough to drive a deleveraging for a strong rerating", he adds.

It's all very close to the bone for Betts. "It is personal," he says. "It's a life's work building this company. But Kouroussa is transformational. With a second mine you have got places to weather the storm and balance your guidance. Eventually you build more mines and rotate out of the worst assets and build a world-class mining company.

"That's the aim."

An important next step in achieving that might be in the Dugbe gold prospect in Liberia, which Hummingbird owns in joint venture with Pasofino Gold, a business listed on Toronto's venture exchange. Pasofino farmed into Dugbe but the agreement gives Betts the option of swapping his firm's 49% asset level stake for 51% control of Pasofino.

That means Hummingbird retains control over Dugbe and yet it's a big bite of a project. Estimated in a 2022 feasibility study to produce up to 200,000oz/year, the mine could require pre-production capital of nearly $400m. Betts says he's "open-minded" on selling the mine given that the company has pressure on the balance sheet.

A process with RBC, the Canadian bank, is underway to see if anyone is interested in paying "a reasonable price, or partner with it", says Betts. "I'm pretty ambivalent if I'm honest," he says of Dugbe. "If there's no buyer and Pasofino doesn't want to build it I will look for another partner."

'You put out your guidance and if you miss it, it's a st show' — Dan Betts**

SA IS LETTING MINING'S NEXT BIGGEST THING SLIP FROM ITS GRASP

Two executives with long and storied histories in South Africa think the country could do more to attract investors looking for critical metals, writes **CHARLOTTE MATHEWS**

IF the world really puts its back into meeting the Paris Agreement goals of net zero carbon emissions by 2050, it will consume six times more critical minerals than today in electric vehicles and power generation, according to the International Energy Agency. These critical minerals include copper, zinc, lithium, graphite, manganese, cobalt, chromium and rare earths.

This should present a great opportunity for countries like South Africa that possess several of these minerals – including a dominant position in global manganese resources.

According to a Trade & Industrial Policy Strategies (TIPS) study dated March 2021 into South Africa's potential to participate in the lithium-ion battery chain, the country in 2016 was one of the top miners of cobalt (2 300t, as a by-product of platinum group metal (PGM) mining); the world's largest producer of manganese, with 34% of global production; and the ninth-largest producer of nickel (49 000t, largely a byproduct of PGMs). It also has 2% of global phosphate reserves and 5% of titanium reserves.

Unfortunately, the same investor-unfriendly environment that caused South Africa to miss the China-led commodities boom of the early 2000s is not only still in place, but the country has become even less inviting, given the intervening collapse of infrastructure.

According to the Minerals Council of South Africa's latest Facts & Figures booklet, early indications are that fixed investment in mining stagnated in 2022.

Mick Davis CEO, Vision Blue Resources

Although it may rise in 2023 from self-generation projects, this is "stay in business" investment, not capacity expansion. Exploration spending in South Africa in 2022 was only 9% of its 1990 and 2006 peaks. This spending was mainly on brownfields, not greenfields exploration, the Council said.

Two veterans of South Africa's mining industry, now heading global investor groups seeking critical minerals opportunities, are Sir Mick Davis and Brian Menell. They take a slightly different view of the country's attractiveness.

Brian Menell and his brother Rick sold their family share in Anglovaal Group, which was established by their grandfather, to Anglo American plc in 2001. In 2017, Brian Menell established TechMet. TechMet invests in both upstream (extraction and processing) and downstream (manufacturing and recycling) of critical minerals.

TechMet is targeting lithium, cobalt, nickel, vanadium, rare earth metals, tin and tungsten. Its major shareholders include Mercuria and the US International Development Finance Corporation. Its investments are located in areas that are aligned with the US and its allies.

In South Africa, TechMet holds an interest in Rainbow Rare Earths, which plans to extract rare earth minerals from historic tailings in Phalaborwa. Also in Africa, it owns Trinity Metals in Rwanda, which has six tin and tungsten mines. Trinity Metals employs 5,500 people, making it the country's biggest miner and biggest private sector employer.

"Rwanda has successfully created quite a disciplined, safe and non-corrupt environment. It isn't always an easy country to operate in, there is a lot of troubled history, but there is government and organisational discipline, which helps a lot," Menell said. As for South Africa, his enthusiasm is qualified.

The country isn't rich in some of the poster minerals of decarbonisation such as copper and cobalt, although it does have major resources of manganese, which when converted into high-purity manganese sulphate, is a key mineral in lithium-ion battery manufacture.

South Africa also has resources of vanadium, which will become relevant in energy storage as the technology evolves. Its

Brian Menell CEO, TechMet

dominance in PGMs is well known.

But in order to capitalise on these natural advantages the country needs to attract investment – an obvious, often-heard complaint about South Africa. The regulatory environment needs to be comparable with peer group nations. To its credit, infrastructure and expertise are available but more could be done. “South Africa presents challenges in all these areas, but it is not unique in that respect,” says Menell.

“There is a tendency to say: ‘power generation and labour and security and government regulation are all terrible so South Africa is a high-risk problematic environment’. That doesn’t reflect a fair comparison of the absolute risks and challenges in South Africa against other jurisdictions,” he adds.

“Certainly, these are issues, but you can deal with most of them. I am not negative about South Africa. For the right projects, with the right partners, you can still create value in South Africa.”

Menell said doing business in any country – whether it is South Africa, Brazil, Australia, Canada or Indonesia – is a matter of familiarity, knowledge, networks and being able to assess and manage risk to realise value from investments.

“We are open to the possibility of making other investments in South Africa. We do not do pure exploration, but will invest in projects from those that have a defined, discovered resource and at least a prefeasibility study, through to assets in production with expansion potential.”

HURDLES TO INVESTMENT

Davis is much more critical of where South Africa has landed after offering enormous promise post its first democratic elections in 1994. He was CFO of Eskom in 1993 before becoming CFO of Billiton and then founding CEO of Xstrata, which he built into a $60bn juggernaut until its takeover by Glencore. Vision Blue Resources was founded in 2020 with the intention of capitalising on critical minerals demand. Investments include Kazakhstan’s Ferro-Alloy Resources Group, and NextSource Minerals, a graphite mine in Madagascar. He once considered building a battery anode factory in South Africa but opted for Mauritius.

“We have an interest in investing in appropriate projects that produce minerals for battery storage and there are such potential projects in South Africa,” says Davis.

“South Africa has significant minerals, and it has some competitive advantages in terms of the range of minerals it has. As an investor, you will go where you can find a good project, to tap into a low-cost, appropriate-scale resource. But an environment conducive for investment in South Africa does not exist right now.”

For example, Davis says the proportion of ownership that has to be facilitated for historically disadvantaged groups is a moving target. When ownership changes, the empowerment structure has to be created again. “You can do it once, but if you have to do it again, you cannot work out your investment return and cost of capital.”

South Africa’s workforce is unstable and the infrastructure – power, water, road and rail – is in distress. Government departments are inefficient and unable to deliver regulatory approvals timeously or efficiently.

All this makes it tough to justify investments in hard assets in South Africa, although it may be easier to invest in sectors other than mining, where risks can be managed differently, he says. “If you do not have consistent power at the right rate you cannot build and operate a mine or do any energy-intensive processing.

“If you cannot get the product from mine to port, you cannot stay in business because you cannot sell it. If transport or energy is not available, you have to build your own, which adds to the collateral capital and reduces your returns.

“Having attractive minerals is a necessary but not a sufficient condition for investment,” he says.

As a fixed investment, a mine requires stability first and foremost. This condition applies in every direction, from the regulatory environment to the relationship with

‘If you do not have consistent power at the right rate you cannot build and operate a mine or do any energy-intensive processing. If you cannot get the product from mine to port, you cannot stay in business because you cannot sell it’ — Mick Davis

the mine's labour as well as the surrounding community. The list goes on.

"To start with, you want to be sure that you hold valid title and that you will retain that title. You want to make sure that there is a defined agreement on what you will earn on that resource against what government and local authorities earn – in other words, you need certainty on your share of the rent.

"You want to know that the regulations to support communities and other empowerment initiatives are predictable and won't change. You also want to know you have access to a workforce that is qualified and competent; that you can form a relationship with them, they will turn up for work and that your business will not become collateral damage as they express their dissatisfaction with external issues.

Andrew Trahar Co-founder, VisionBlue Resources

George Cheveley Portfolio manager, Ninety One

QUIET BEFORE THE STORM

Speaking in broad market terms, Menell is enormously optimistic about TechMet's opportunities, largely as a result of the supply deficit. "If Tesla is to reach 20 million electric vehicles a year by 2030 that will require two times the current lithium annually mined supply," he said in June at the Mining Indaba conference. "That is before GM, Ford and VW [EV production] and before the Chinese, which already produced two-thirds of the world's EV batteries."

Menell believes that in this context there is no shortage of attractively priced assets in which to invest. "There is a lull in the artificially depressed market at the moment before a 10-year bull run," he says.

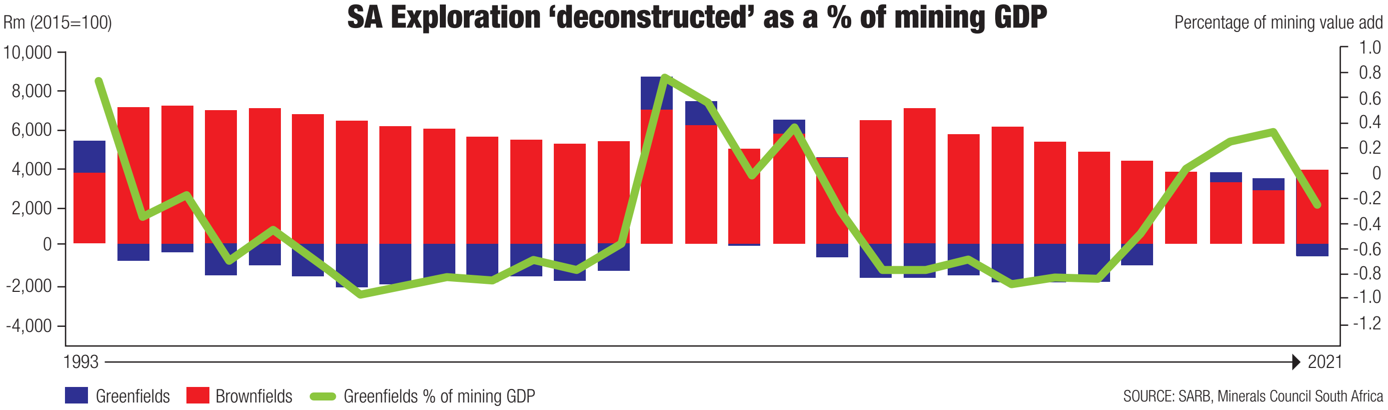
Bank of America said in a report in May that metal inventories were depleted across trading exchanges and in the supply chain notwithstanding weak underlying demand. "Consumers are wary of being caught short," the bank says. "Copper inventories look critically low and our forecast supply surplus for 2023 has all but disappeared."

VisionBlue co-founder Andrew Trahar says there is "genuine panic" among automakers but he adds a nuance that it's not for all metals. In fact, he thinks the projected world copper shortage should not be the proxy of metal supply into the energy transition business. He told the London Indaba that having 'chaperoned' the company's graphite investment in meetings with automakers there was enormous interest in having those meetings. "It was genuine panic for graphite, some cobalt and genuine panic for nickel."

Not all buy into this notion. George Cheveley, the London-based portfolio manager for asset manager Ninety One, says miners and their backers should guard against "calling that the sky is going to fall in" on the supply and demand. The divide between copper supply and demand was been fairly consistent over the past 20 years, he says.

Alarmism will give pause on the demand side to take appropriate action. "Automakers will say, I read everywhere I should be using 90kg of copper for a car; right engineers, how do I use 50kg or 60kg?" Mining companies "spent big" in 2010, only for the iron ore market to crash. "It's scary for investors because they remember that; people lost their jobs."

SA Exploration 'deconstructed' as a % of mining GDP



SOURCE: SARB, Minerals Council South Africa