$3.9-trillion: Global GDP contraction in 2020

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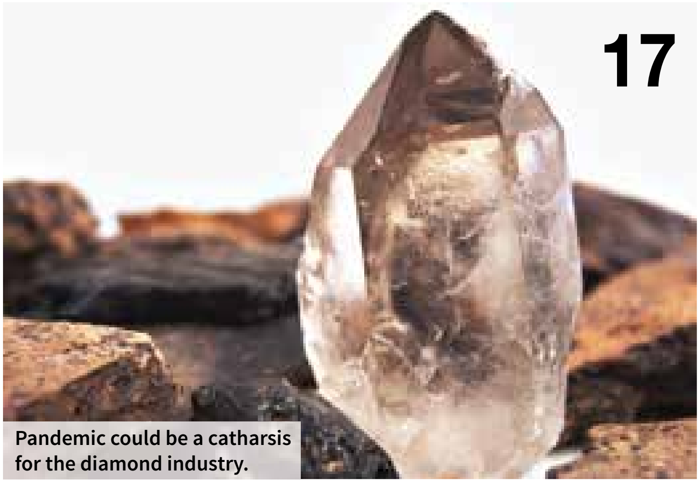

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2021
HOPING IT'S NOT ANOTHER PANDORA'S BOX

Nelendhre Moodley

As the US and UK roll out the COVID-19 vaccine, the question for Africa is: when will this godsend reach our shores and who will be the first in line for the jab? Before the end of 2020, the UK was one of the first countries to roll out the vaccine. The US, with the highest related death rate of over 300 000, was following suit. At the end of 2020, the onset of the second wave of the coronavirus had seen a rise in the death toll to over 1.6 million people globally.

But will the vaccine be the panacea the world has been waiting for as we make our way into 2021?

For sure, 2020 was a shock to the system. It stole away life as we knew it. As we pray for better in 2021, we acknowledge that it will certainly be a long haul to reaching the economic levels of 2019. Yes, 2019 – remember 2019, the year many of us were happy to see the back of, little realising the devastation awaiting just around the corner.

We are wiser now, more muted in our expectation of 2021, and interestingly, able to employ that much disliked phrase used by most CEOs when delivering financial results or referencing an outlook for the future – "cautiously optimistic".

While the rest of the world collectively holds its breath to see how 2021 unfolds, Elon Musk seems to have gained monumentally in the wealth stakes. On the back of Tesla's market cap soaring, his net worth has risen to a cool $194.8-billion, placing him ahead of Jeff Bezos, whose net worth is $9.5bn less than that of Musk.

The UK's proposed ban on new petrol and diesel cars and vans from 2030 will surely see Musk's fortunes given a further boast. Expectations are that as more countries move to adopt cleaner energy solutions, demand for commodities in the battery metals segment will increase, giving related metal prices a much-needed boost.

Financial risk management solutions and insights company Fitch Solutions expects that miners and metal producers will experience a favourable pricing environment in 2021, largely owing to prices that will be supported by global economic recovery as COVID-19 vaccines are made available.

The key driver for the increased appetite for commodities will be China as it progresses its infrastructure project pipeline. This is great news for the commodities sector, which has done reasonably well on the back of the rand-dollar exchange rate.

In this edition *SA Mining* provides in-depth outlooks for most commodities, including those associated with energy, such as battery metals. According to Afriforesight, the rapid adoption of new energy vehicles (NEVs – electric and hybrids) powered by batteries should continue to boost demand for metals used in their manufacture, as NEV sales continue rising in 2021 (pg 16).

Further to this, Prashaen Reddy of Kearney outlines the changing energy landscape in South Africa and gives a view of what it will look like in the next few years (pg 14).

Barring diamonds, which have continued their depressed run, most commodities, especially precious metals, have done exceptionally well in the time of COVID, with gold prices reaching some unprecedented highs. The World Gold Council's John Mulligan provides *SA Mining* readers with insight into the future of the precious metal (pg 10), as does the World Platinum Investment Council's Trevor Raymond on the topic of platinum playing "catch up" to gold and palladium (pg 12).

> "Miners and metal producers will **experience** a **favourable** pricing environment in **2021**, **largely** owing to **prices** that will be **supported** by **global** economic recovery as **COVID-19** vaccines are made **available**."
> – Fitch Solutions

Diamond industry analyst Paul Zimnisky interestingly poses the question of whether the pandemic is a catharsis for the diamond industry (pg 17). Here's hoping that the fortunes of the girl's best friend find favour sooner rather than later.

Also weighing in on commodities performance is our resident columnist Peter Major (pg 37); and for further commentary on the topic, look out for our online publication *Industry Snapshot* for insight by the CRU Group.

With most sectors taking a hit, *SA Mining* caught up with the Minerals Council South Africa's Grant Mitchell to find out just how well junior miners have held up during this trying time (pg 34).

Meanwhile Worley, our cover story, advises that it continues to seek solutions that accelerate its customers' transformation towards sustainability (pg 26). ■

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TANZANIA

AIM-listed gold and nickel exploration and development company Katoro Gold has confirmed mobilisation of a maiden drill programme targeting the discovery of nickel and platinum group metals at the Haneti Nickel Project (Haneti) in Tanzania.

An initial three target areas have been selected for RAB drilling: Milhanza Hill; Mwaka Hill; and Igari Hill.

The planned 2 000m RAB drilling programme will consist of about 50 holes drilled on linear fences across the targets. The programme will seek to verify the existence of near surface nickel sulphide mineralisation at each target while increasing the geological understanding.

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ANGOLA

LSE- and ASX-listed Pensana Rare Earths is making progress in bringing its Longonjo Project online as the first major rare earth mine in over a decade and in establishing a sustainable magnet metal supply chain to meet the burgeoning demand from the electric vehicle and offshore wind industries.

The company has two studies under way – a feasibility study into the production of a mixed rare earth sulphate in Angola and the recently announced Wood Group study into the establishment of a UK-based processing facility to produce separated rare earth oxides.

The Longonjo mine and concentrator study is well advanced with the capital costs in line with the $130-million reported in the 2019 preliminary feasibility study, the company said.

Project manager Paradigm Project Management recently went out with several equipment packages for quotation from suppliers and contractors in preparation for the commencement of construction of the initial infrastructure and bulk site services at the Longonjo Project in the first quarter 2021.

BURKINA FASO

Gold exploration and development company Nexus Gold has mobilised crew and drill equipment to the Dakouli 2 Gold Concession located in Burkina Faso, West Africa.

The maiden Dakouli drill programme will consist of around 3 000m of reverse circulation drilling to test depth extensions of geochemical gold anomalies identified through termite mound sampling, soil gold geochemistry and rock geochemistry. "We have a large area with multiple target zones to drill – this is just the start," said CEO Alex Klenman.

IVORY COAST

ASX-listed Manas Resources has announced that results from ongoing exploration activities at the Mbengué gold project in Côte d'Ivoire, West Africa, have defined further substantial targets.

Results are from 1 300m of a planned 4 400m auger drill programme at the Dielle permit.

Highlights include: the identification of two major new anomalies discovered with dimensions up to 1 500+m x 500m and the commencement of the 4 000m reverse circulation programme to test large-scale targets on the adjoining Mbengué permit.

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CÔTE D'IVOIRE

Australian-based exploration company Mako Gold received positive results from four reverse circulation (RC) holes from its ongoing 10 000m RC and diamond drill (DD) programme on the company's 224km^2 Napié Project in Côte d'Ivoire.

Very high-grade results were returned from one of the stacked mineralised zones within the maiden resource target area on the Tchaga Prospect, the company said.

Mako Gold is focused on advancing its flagship Napié Gold Project in Côte d'Ivoire. According to Mako's MD Peter Ledwidge, the recent modelling indicated multiple highly prospective areas that were undrilled and that the company would be prioritising drilling in the short term to drill along strike and extend the high-grade zone.

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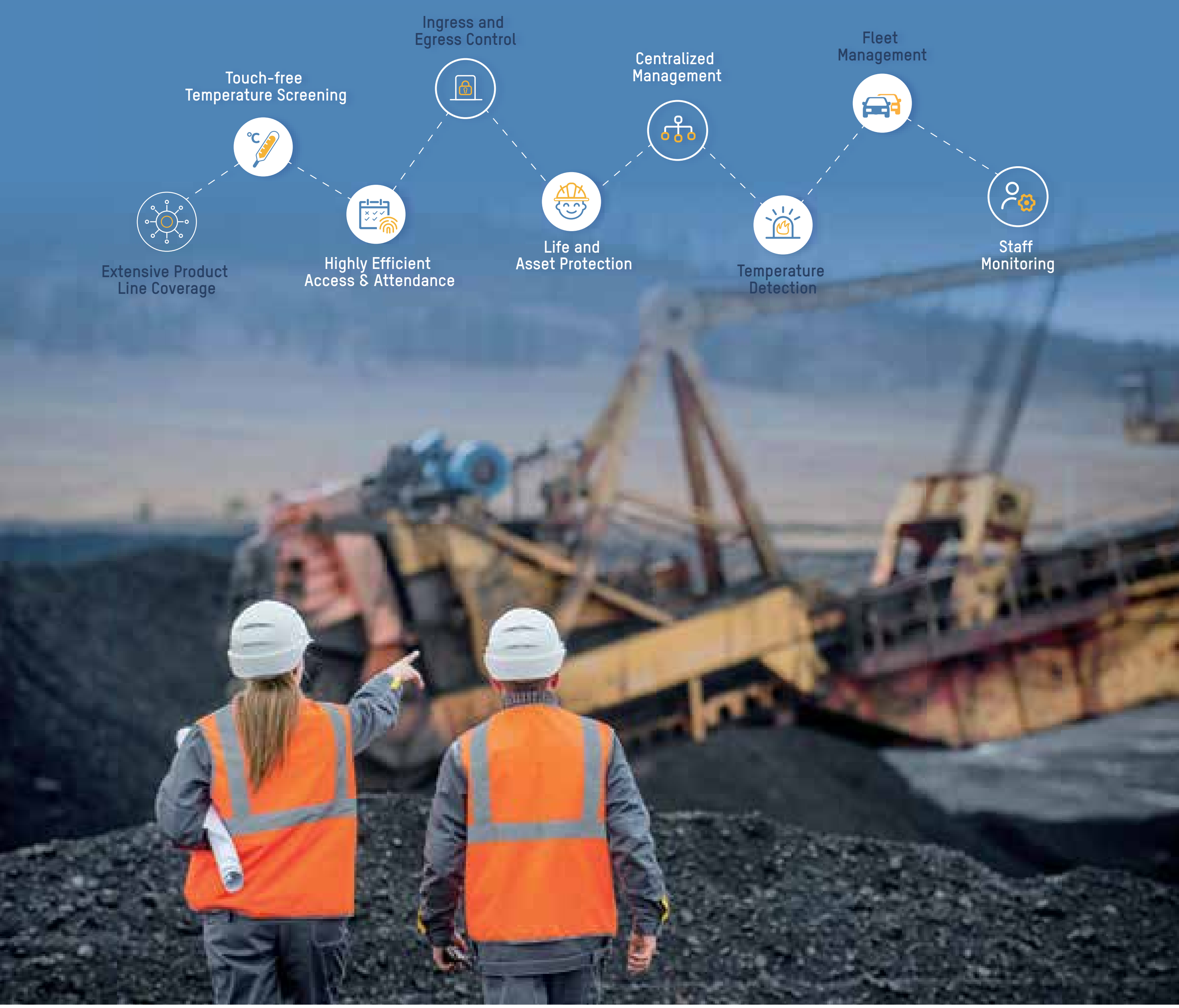

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FIREFINCH CELEBRATES FIRST GOLD POUR

ASX-listed Firefinch recently delivered first gold pour at the Morila Gold Mine in Mali, signalling the company's position as an income-generating gold producer. Firefinch's executive chairman Dr Alistair Cowden commented: "We have been delighted at the smooth transition from Barrick management to Firefinch management at Morila and are especially pleased to be generating cash flow.

"The cash flow is being applied to the drilling of tailings and satellite pits, plant refurbishment, mine plan studies and other technical work to prepare Morila for a return to open-pit mining."

© ISTOCK – Dawie Nolte Photography

DRDGOLD WINNER IN SUNDAY TIMES AWARDS

JSE-listed DRDGOLD took first place in the Sunday Times Top 100 Companies Awards for 2020. The awards acknowledge JSE-listed companies that have earned the highest returns for their shareholders over the past five years.

Operationally in its 2020 financial year ended 30 June 2020, DRDGOLD increased gold production year on year by 9% despite the COVID-19 national lockdown. Operating profit was 320% higher at R1 562.1-million, reflecting the increase in gold produced. Gold producer Harmony Gold was the runner-up.

LUCARA RECOVERS 998CT DIAMOND FROM KAROWE MINE

Diamond miner Lucara Diamond recently recovered an unbroken 998-carat high white clivage diamond from its 100%-owned Karowe Diamond Mine located in Botswana. This recovery represents the second +500-carat diamond recovered from this circuit in 2020.

Year to date, Karowe has produced 31 diamonds greater than 100 carats including 10 diamonds greater than 200 carats comprising the 549-carat Sethunya, and the recent 998-carat diamond. Lucara is currently in discussions with HB Antwerp to evaluate the next steps in maximising the value of this rare large diamond.

GIYANI RENEWS LOBATSE PROSPECT LICENCE

Junior resource company Giyani Metals recently announced the renewal of a prospecting licence (258/2017) in Botswana. Giyani's wholly owned Botswana subsidiary Menzi Battery Metals was granted the renewed prospecting licence, which relates to the company's Lobatse prospect.

The Lobatse prospect has a similar geology to that of K.Hill, with a near-surface, stratiform manganese mineralisation hosted in a siliceous shale/sandstone. Lobatse is located 45km from K.Hill and is within trucking distance of K.Hill. Robin Birchall, CEO of Giyani Metals, said: "The K.Hill feasibility study is progressing well and this renewal by the Government of Botswana represents a vote of confidence in the company and its ability to continue its exploration and development programme across the licences."

PLATAFRICA 2020 WINNERS

The winners of the 21st annual PlatAfrica jewellery design and manufacturing competition, hosted annually by Anglo American Platinum in partnership with Metal Concentrators and Platinum Guild International (PGI) India, are:

In the professional category:

Lungile Xhwantini from The Platinum Incubator is the overall winner for his exquisite armpiece of platinum.

Rob Burton, Emile Pitout and Abdullah Zayd from Platandia are the runners-up for their innovative ring design.

Jane Merrifield from Tuesday's Child Jewellery Design is in third place with a reversible double-finger ring.

In the student/apprentice category:

Ross Kellerman from the Cape Peninsula University of Technology is the overall winner for his kinetic armpiece of platinum and African blackwood.

Malefa Phoofolo from Tinsel is the runner-up for her brooch of platinum.

Ntsikelelo Shange from Akapo Jewels ranks third for her pendant containing platinum and cubic zirconia.


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ECONOMIC OUTLOOK FOR 2021

A long road to recovery

By Dr Johannes Jordaan, chief economist at Economic Modelling Solutions

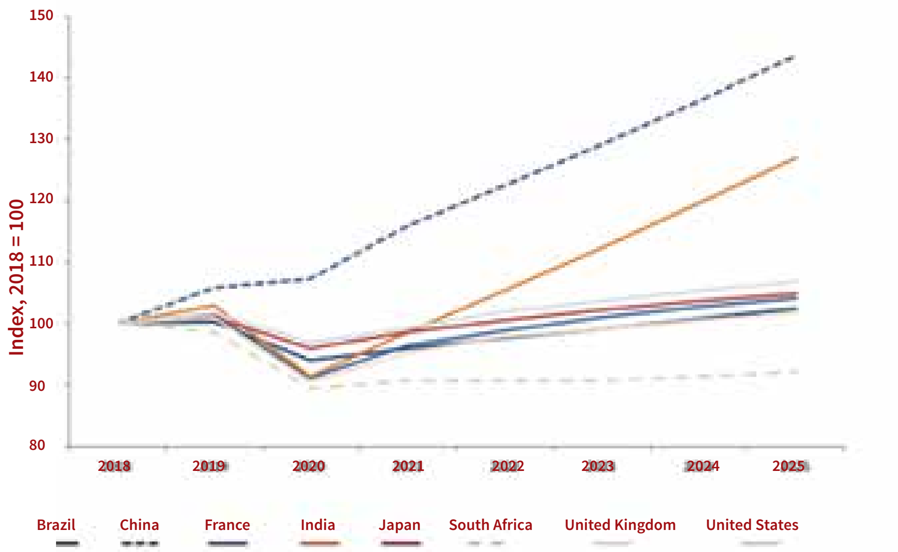
After a disastrous 2020 due to the impact of the lockdowns and disruptions caused by COVID-19, local and global economic growth is expected to increase sharply in 2021.

Global output is expected to increase by 5.2% in 2021 according to the International Monetary Fund (IMF), but this is mainly due to base effects, and the increase will leave the global economy in 2021 at roughly the same size as in 2019.

The IMF in its October World Economic Outlook expects global economic activity to contract by 4.4% in 2020 (previously estimated at -4.9%) and describes it as “a long and difficult ascent” as the post-pandemic recovery remains uncertain. This contraction is significantly larger when compared to the international financial crisis in 2009 when the world economy contracted by 1.7%.

Using World Bank data for the size of the global GDP at current dollar prices implies a contraction in activity in 2020 of $3.9-trillion, or roughly 11 times the size of South Africa’s GDP. The euro area was expected to contract by 8.3% in 2020 and to grow by 5.2% in 2021 while the UK was expected to contract by 9.8% in 2020 and to grow by 5.9% in 2021. The one economy that appears to be the exception is ironically the country where the virus originated – China.

The Chinese GDP was expected to grow by 1.9% in 2020 and 8.2% in 2021 leaving China roughly 10.2% larger in 2021 compared to 2019. This expansion is expected to support the demand for commodities as China moves closer to becoming the world’s largest economy.



The South African GDP was expected to contract by around 8% in 2020, but the recovery path is even more uncertain given the crisis that the economy faced before the COVID-19 crisis. This crisis is as a result of factors such as electricity shortages, corruption, a lack of skills development, failing state-owned enterprises, poor levels of education, emigration of skilled and highly skilled labour and political and policy uncertainty.

As a result, it is expected to take South Africa a number of years to reach the 2019 GDP levels in real terms – and even longer to reach the same levels of GDP in per capita terms (GDP per capital in 2025 is expected to still be almost 10% below the GDP per capita of 2015 according to the IMF, see figure).

Global debt skyrocketed during 2020 as government revenue fell while expenditure and borrowing activity increased in order to support their various economies. It is expected that government debt of advanced nations will reach a record 130% of global GDP. This level will be higher than the debt levels recorded during World War II when it peaked at just over 120%.

Governments will have to cut back expenditure and increase taxes over the medium term to stabilise government finances. This will put economic growth under further pressure over the medium term as governments will have little room to provide large-scale fiscal stimulus while taking more tax revenue out of the economy.

Not only has government debt increased, but also that of companies, financial institutions and households. Global debt increased to a record 331% of GDP according to the Institute for International Finance (or $258-trillion). Given the high debt levels, interest rates are not expected to increase soon.

Central banks of most countries reduced interest rates during the pandemic and interest rates of advanced economies are at historic lows (and in some cases negative). If global interest rates are increased too quickly, it may trigger a financial crisis or sovereign debt crisis, which it could not afford. As a result interest rates are predicted to remain low even under moderate levels of inflation. The US Federal Reserve has already indicated that they will target an average CPI of around 2%, implying that they will tolerate some inflation in the medium term without adjusting interest rates.

Government debt levels in South Africa have also increased dramatically over the past decade, from below 25% of GDP in 2008 to over 80% in 2020. According to the SA Reserve Bank, South Africa has increased its debt over this period by more than any emerging market economy except for Argentina.

Debt levels are expected by National Treasury to increase to close to 100% over the next five years. However it will be difficult to keep the debt ratio below 100% given the sluggish economy and already high levels of taxation. Although the domestic repo rate was lowered by 300 basis points in 2020, the interest rate on long-term government bonds has remained elevated given the increased risk that government will struggle to pay its debt over the medium to long term. The level of government debt is one of the largest risks to the South African economy in the years to come and it will take significant effort from government to reduce the debt-to-GDP ratio to pre-COVID-19 levels. Many analysts are sceptical of government being able to reduce the debt levels and make the necessary policy adjustments required for the economy to grow while also reducing government expenditure. This could result in further downgrades of the country's credit rating deeper into sub-investment grade and is expected to keep the rand under pressure.

Gross domestic product per capita at constant prices for selected countries (indexed at 2018 = 100) (source IMF World Economic Outlook October 2020) ■

Global debt skyrocketed during 2020.

$3.9-trillion

Global GDP contraction in 2020

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A SURGE IN INVESTOR INTEREST

By Nelendhre Moodley

Given that gold outperformed most commodities in 2020, what does the future hold for the precious metal? *SA Mining* recently caught up with John Mulligan, director of the World Gold Council, to chat about what 2021 holds for the shining star.

HOW DID 2020 TREAT THE GOLD INDUSTRY?

The gold market, like all sectors, has been impacted by the COVID-19 pandemic and its social and economic consequences. However, unlike most other sectors, it has proved to be relatively robust in how it has fared and responded.

On the supply side, gold production may be down a little – Q3 mine output was down 3% on the same quarter in 2019 – but there have been no negative structural impacts. The gold mining sector's response to the immediate threats of COVID-19 – for example, in supporting its employees and communities – has, for the most part, been exemplary. And the industry has, generally, been able rebound quite quickly in terms of a return to relatively normal capacity.

Gold consumption at the retail level has, unsurprisingly, been hit very hard by the pandemic lockdowns and the consequent damage done to consumer confidence. Globally, consumer demand for gold is at its lowest levels since 2009, in the wake of the great financial crisis. Gold investment on the other hand has soared, with a great many investors seeking out gold as a store of value and insurance asset.

This surge in investor interest has been reflected in gold's value, and as an asset it outperformed nearly all other asset classes in 2020, although unsurprisingly, correcting slightly after reaching record highs in August. At the time of writing, the ZAR/oz price for gold is currently up around 45% over the year.

WHAT WERE SOME OF THE DEFINING ELEMENTS?

The speed and scale of investment demand, particularly from institutional investors, as reflected primarily in record gold-backed exchange-traded funds (ETF) buying, was the key market dynamic of 2020. The global gold ETF market saw net inflows of well over 1 000 tonnes (or $57-billion) in 2020, taking total gold ETF AUM to a fresh new record high of 3 899t and $235bn. But this came on the back of heightened investor interest in gold that was already building before the pandemic struck, as investors were already expressing some concern over persistent vulnerabilities in the wider macro-economic environment – ultra-low interest rates, few return opportunities, hefty debt burdens.

$235bn

Gold ETF AUM reaches a record high

Some of these risks will likely have been exacerbated by the policy responses and huge emergency stimulus packages seeking to shore up national economies in the wake of COVID-19, and the risks these factors impose on the investment landscape will probably mean investment demand for gold will remain strong for some time.

And after the lockdown hiatus, we have seen private investors return to the market in force, seeking out gold as a safe haven. In Q3 we saw over 220 tonnes of bar and coin demand, up nearly 50% on the same period in 2019.

However, the flipside of this heightened risk environment has been the severely disrupted and depressed consumer markets with both access to products and consumer motivation being severely limited.

In key physical markets, such as India and China, some of the traditional event-driven purchasing of gold – for festivals and weddings – has been very severely disrupted. Although we are starting to see signs of recovery in some jewellery markets (for example in China), they are still very modest and it will take quite some time before consumer sentiment and confidence in discretionary spending power returns to levels that will translate into gold jewellery demand at historically more normal levels.

HOW DID THE EVENTS OF 2020 SET THE PLATFORM FOR THE PERFORMANCE FOR GOLD IN 2021?

There are two very major drivers to consider when looking at gold demand and the price outlook for the year: broader sentiment –

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risk appetite or aversity – in mainstream investment markets and the potential recovery in consumer markets, particularly demand for jewellery, but also for bars and coins by private investors.

Capital market risk attitudes will very likely respond to the ongoing debate around the US election and that sentiment may carry into the new year, but investors, both institutional and private, will also remain aware of the deeply challenging economic landscape in the wake of the pandemic, and this should ensure that demand for gold investment product remains elevated, albeit perhaps not quite at the levels seen earlier this year.

Assuming that the course of the pandemic is kept under some degree of control, we would expect consumer markets to slowly return to some degree of normality, and demand levels may also be boosted by pent-up demand, for example, from jewellery purchases for weddings that were postponed from this year.

This form of demand – consumer purchases – does not immediately translate into the gold price, but allows a more stable trend in demand growth and that should, over the next year or so, allow the gold market to stabilise and rebalance.

WHAT IS THE OUTLOOK FOR GOLD IN 2021 IN TERMS OF DEMAND AND SUPPLY?

Consumer demand will probably be stronger, with a gradual recovery in jewellery, particularly in India and China. If lockdown restrictions are fully removed in these markets we may also see strong seasonal demand and event-driven buying – some of which may have been deferred from this year.

Given the rebound in production we have seen over the past few months, mine supply is expected to return to more normal levels quite soon, to around levels we have witnessed in recent years, although its longer-term growth trend is likely to have plateaued.

© ISTOCK – KevMaw

HOW HAVE GOLD MINERS FARED AND WHAT IS THE EXPECTED TOTAL GOLD PRODUCTION STATUS FOR 2020?

Global mine production for H1 2020 was down 6% on H1 2019, but Q3 2020 was only down 3% on Q3 2019. This is a firm indication that gold mining has recovered quite quickly from the COVID-19 lockdowns and reflects the rapid and robust response from the sector when faced with the initial consequences of the pandemic. Many gold mining companies are very familiar with operating in challenging conditions and have, in recent decades, prioritised health and safety, so were probably far better equipped than other sectors when the virus started to spread. The logistical disruptions elsewhere in the supply chain, such as transportation, were also resolved quite quickly.

In the context of the challenges imposed by the pandemic lockdowns, it can be argued that this was quite a strong performance. We would expect annual gold production to be slightly down, but only in single-digit percentage figures, and probably close to 3 300 to 3 400 tonnes.

WHAT WILL BE FACTORS INFLUENCING GOLD PRODUCTION IN 2021?

Other factors permitting, we expect a return to normality and a fairly strong performance in a relatively benevolent price environment.

More widely, I think we will see a resumption of the factors that are likely to transform gold mining over the next few years: continued awareness of the need to demonstrate responsible and sustainable business practices and operations; and increased use of advanced technologies, electrification, and automation. There will be a continued emphasis on the need to look beyond current assets and rebuild reserves.

But, as things stand, the longer-term challenges of replacing depleted reserves and translating exploration into discovery still suggest that, beyond the next few years, we may then start to see a gradual decline in global production levels. ■

OUTLOOK FOR PLATINUM IN 2021

Nikola's FCEV heavy-duty trucks are due to roll off production lines in 2023.

Platinum playing 'catch up' to gold and palladium?

By Trevor Raymond, Director of Research at the World Platinum Investment Council (WPIC)

As the COVID-19 pandemic unfolded over the course of 2020, the impact on platinum supply and demand became clearer, as did the likely trends shaping 2021. The large 1.2 million-ounce deficit in 2020 and the forecast deficit of over 200 000 ounces in 2021 both result from weak platinum supply and strong investment demand – the trends that underpin the positive outlook for platinum over the next year.

The heightened pandemic-related global risk drove investors to increase their ownership of precious metals, including platinum. This set the trend in 2020 for massive growth in retail and institutional investment demand, which is expected to continue in 2021.

Platinum bars and coins sold out in most markets in 2020, particularly in North America. In 2020, we expected to see bar and coin demand of 629koz – or 8% of total demand – with 485koz expected in 2021. Similarly, the strong 530koz exchange-traded funds demand in 2020 sees at least 250koz in 2021.

However, during the early months of the pandemic, the strong demand for platinum bars was constrained by a lack of available stock. Retail investors trying to buy platinum bars and coins had to wait well into the year for refiners and mints to start replenishing platinum stock and gradually meet pent-up demand.

COVID meant that it simply was not possible for Swiss refiners, shut down early due to their proximity to Northern Italy, to continue manufacturing or indeed to transport stock to Japan and North America.

Another consequence of transport restrictions meant that market-making banks that held platinum in London or Zurich against NYMEX futures positions faced additional risk. This led to a major disconnect between the price of platinum futures and the spot price of platinum until these banks could manufacture and transport platinum to NYMEX-approved vaults in the US. This was largely resolved by September.

1.2 million-ounce

deficit in platinum supply in 2020

Trevor Raymond.

Despite sustained strong demand for precious metals, and platinum's deep discount to gold and palladium, the platinum price remained muted during most of 2020 – in part due to the NYMEX hiatus.

While platinum investment demand has benefited strongly from the uncertain economic environment caused by the pandemic, it is not the only factor driving demand, and sustaining the deficit. Supply was affected on an unprecedented scale in 2020, but for two reasons, not one.

Yes, COVID forced the world's mines into lockdown as efforts to reduce COVID-19

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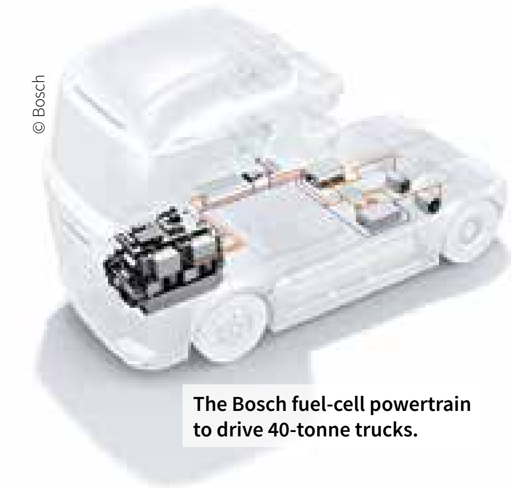
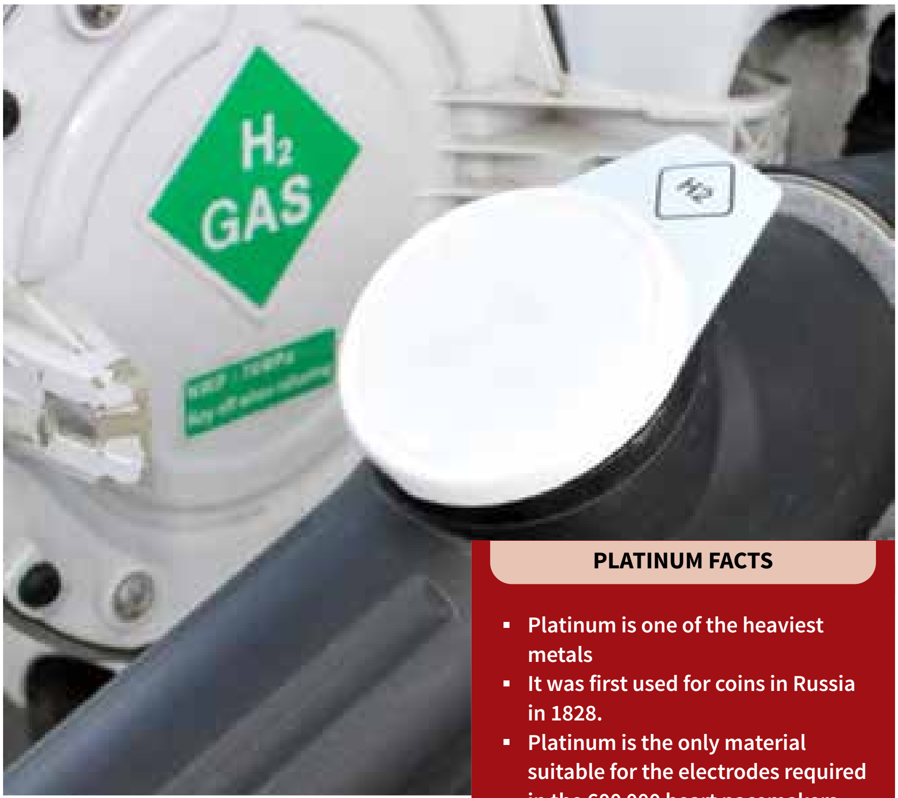


The Bosch fuel-cell powertrain to drive 40-tonne trucks.

The Royal Mint's 2021 Lion of Mortimer 1oz platinum bullion coin.



transmission were taken. The effects on supply were particularly severe in South Africa in the second quarter of 2020, and although mine production recovered well in the third quarter, the COVID-related losses are still forecast at c.-400 koz for the year.

But, completely unrelated to the COVID-19 pandemic, South African refined platinum production suffered heavy losses as a major processing outage (a converter plant completely offline) in March and April, and then also in November and December, reduced mine supply by a massive additional c.-900 koz of platinum in 2020. While the converter plant is expected to commence operation in January 2021, elevated in-process inventory built up will take into 2022 to be fully processed.

We anticipate that the continued high global risk should keep precious metals demand high, with investor demand for platinum helped by its deep discount to gold. However, many investors have started to notice platinum's key (modest) near-term but (significant) long-term roles in the production of green hydrogen and in fuel cells for electric vehicles.

The huge cost of the pandemic is prompting governments around the world to reconsider their plans in their bids to combat climate change, which remains a fundamental priority. Seventy countries, plus the EU and China, are recognising green hydrogen as the best route to decarbonisation, with strategies and policies being implemented to ensure the hydrogen economy.

Platinum's material demand growth from this will be realised in the next five- to 10-year period, and this has piqued the interest of many investors – some of whom had not previously considered platinum – looking for a strategic underpin to the long-term demand for this unique metal.

In addition to this, there remains huge potential for platinum demand to increase as the price of palladium remains over $1 000 per ounce above platinum, maintaining a high incentive for platinum substitution for palladium (at a 1:1 ratio) in gasoline autocatalysts and diesel after-treatment systems.

This is particularly the case as automaker profits suffer from lower sales. So too could the demand rise from diesel car sales, as the focus on low carbon emissions and the reduction of heavy CO2-related fines in the EU prompt automaker promotion of the benefits of their newest mild-hybrid diesels in comparison to petrol equivalents and conventional gasoline engines.

So, in terms of platinum catching up with gold and palladium, the basic ingredients are very much there for this to happen. The discounts to gold and palladium remain significant, with very strong platinum-driven reasons for these discounts to narrow in the months and years ahead.

We believe it's a question of when, not if, and in ordinary times we would have expected platinum to have caught up months ago. 2020, however, was anything but ordinary. ■

PLATINUM FACTS

- Platinum is one of the heaviest metals
- It was first used for coins in Russia in 1828.
- Platinum is the only material suitable for the electrodes required in the 600 000 heart pacemakers which are implanted each year.
- The world's largest deposit of platinum is in the Merensky Reef in the Bushveld Complex, South Africa.

Australia's ABC Bullion has recently launched a new range of platinum bullion bars.

There remains a strong demand for precious metals.

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SOUTH AFRICA'S ENERGY OUTLOOK FOR 2021

By Prashaen Reddy
Principal at global management consultancy Kearney

As we sit poised at a juncture of history in which there is a global shift towards cleaner energy, South Africa's mineral and energy complex must carefully balance the country's traditional reliance on coal-based energy on the one hand with the bold commitments towards renewables as outlined in the 2019 Integrated Resource Plan (IRP) on the other.

The plan, which drives policy around energy, envisions some drastic shifts in the energy space in the next 10 years. Coal, which currently accounts for 85% of SA's electricity generation, will account for just 59% by 2030. Solar energy will constitute 18% and wind-harnessed power 8%, bringing the total for renewables' contribution close to 25%.

COAL

For the foreseeable future however, coal will remain the most crucial resource in the energy mix for a variety of strategic reasons. Not only does coal currently provide employment for almost 100 000 South Africans, but geologically South Africa is an immensely coal-rich country, and the reality is that it is still the cheapest and most abundant form of energy to leverage for economic development. It must therefore be fully exploited to ensure a stable supply of energy overall.

The precarious balancing act that policymakers must now navigate should therefore not threaten the economically crucial coal sector with competition from gas and renewables, but rather see it as a critical tool in the energy mix as we shift towards a more sustainable economy. The shift towards cleaner coal, however, will take centre stage. Compliance to more stringent international standards and protocols means that it's much more difficult to get approval for new coal mining operations than in the past. As such, many existing operations are being retrofitted for decarbonisation, to reduce their scope-1 emissions.

From an ownership point of view, as the demand for coal reduces, the integrated diversified mining houses will shift away from coal and give way to localised, smaller, more focused players in the market.

100 000

Number of people employed by the coal sector

NATURAL GAS

Another important emerging trend to look out for in 2021 is the proliferation of liquefied natural gas (LNG). The current abundant supply of this resource globally could contribute to a significant injection of vitality into this industry in SA this year.

Natural gas is cleaner and less environmentally hazardous than coal, and cheaper at this point than renewables. It exists abundantly in various forms, as yet untapped, beneath the various geological formations of Southern Africa, which is thought to have some of the largest natural reserves of shale gas in the world. However the exploitation of this gas is a lengthy and expensive process.

Natural gas makes up a significant portion of the energy mix in Africa overall, and it currently accounts for about 7% of SA's energy supply. Furthermore new discoveries of onshore (and offshore) gas deposits have been more frequent over the past 10 years. An example of the rapid development of infrastructure to facilitate the trade in LNG is the Mozambique-to-SA pipeline. Mozambique is home to some of the biggest reserves yet discovered and significant investments have been made in order to unlock and harness this resource.

The efficiency of gas to power is very good, and just as in other nations, we believe that LNG and potential pipeline developments will play a comparatively larger role in domestic and industrial power generation in SA going forward. Heating in particular can be achieved more cost-effectively with gas than via electricity. The reliability of LNG supply locally means it is a vital ingredient to stabilising the energy sector, which will have far-reaching knock-on benefits.

RENEWABLES

Renewables are the third major player in this "holy trinity" of SA's energy mix. Set to account for around a quarter of SA's overall energy supply in the next 20 years, renewable

"Natural gas is cleaner and less environmentally hazardous than coal and cheaper than renewables." – Reddy

There is global demand for cleaner energy.

Infrastructure development will catalyse rejuvenation of the energy space.

energy sources are backed by widespread public approval and are capturing a deep share of the investment wallet. Solar in particular is especially attractive as production costs are now lower than ever before.

The biggest obstacles to widespread uptake of renewables currently are the challenges around power storage and transference to the national grid. Investments into novel battery technologies could potentially facilitate a solution to the storage conundrum that could radically alter this landscape.

SA is currently in the fifth round of bidding and research in which independent renewable energy producers vie to provide profitable power for the state's energy matrix.

In the mining sphere we're seeing more players – including coal mines – opting for renewables to power their own operations in-house, which also guards against the loss of productivity incurred during load shedding which has hitherto threatened the sustainability of many an operation.

TRANSPORT

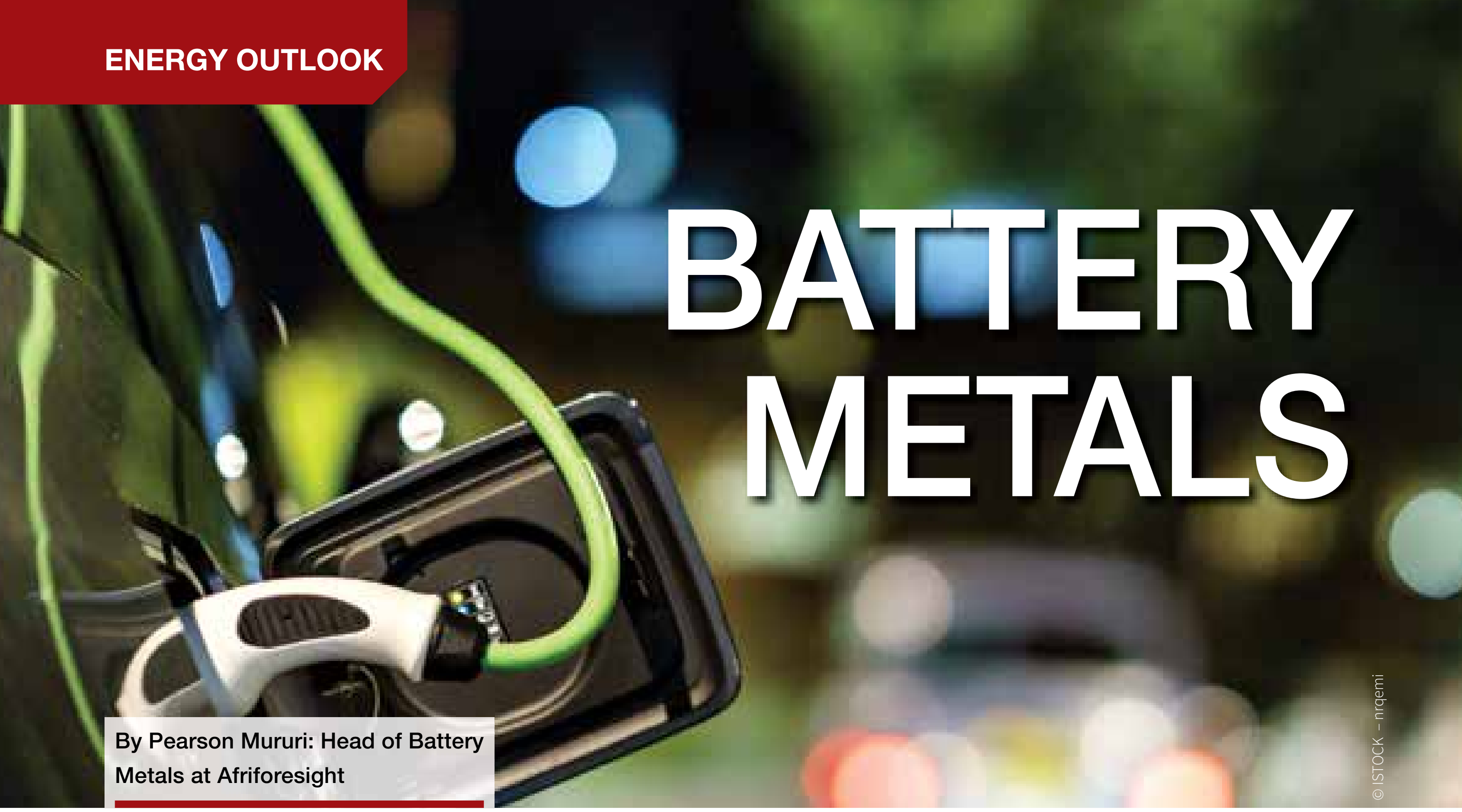
The global demand for cleaner energy will continue to drive research and development into gas- and electric-powered vehicles, including long-haul trucks. However this technology has not matured sufficiently to allow for non-traditional fuels for the airline industry.

South Africa's primary car export market being Europe, it is imperative that these manufacturers move away from the traditional internal combustion engines to ensure sustainability of the industry.

Globally there is a strong move towards electric vehicles and their capacity to provide public transport solutions and movement of goods, but in SA for the short term the penetration of such technologies will be minimal, as widespread uptake would need to be enabled by an all-new infrastructure which would have to include charging stations and the like.

The economic recession has led to more money being diverted to infrastructure development, which will in turn catalyse rejuvenation and a reimagining of the energy space. SA should seek self-reliance within all aspects of the energy supply chain and aim to be an exporter of technologies like storage capacity and power-engineering solutions.

But for the next year, as an emerging market our focus must be on holistically managing the energy transition goals with the economic and social obligations to the people of SA who are still heavily reliant on traditional coal-based energy. Our investments into gas and renewables must be a synchronised collaboration with the coal sector, and not pit one against the other. ■



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BATTERY METALS

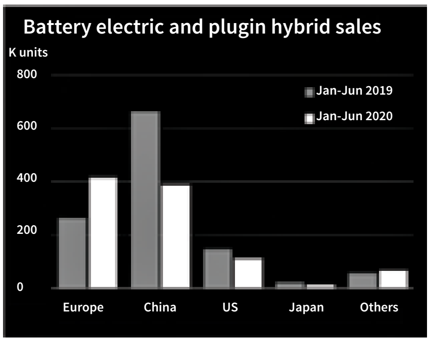
By Pearson Mururi: Head of Battery Metals at Afriforesight

The rapid adoption of new energy vehicles (NEVs – electric and hybrids) powered by batteries should continue to boost demand for metals used in their manufacture, as NEV sales continue rising into 2021. Battery electric vehicles and plugin hybrid sales increased 11% year on year for January to September 2020 driven by sharp increases in Europe, which were boosted by higher government subsidies, availability of more NEV models and stricter carbon dioxide emission targets.

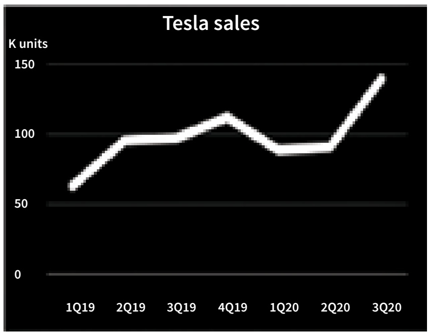
However, global increases were capped by lower sales in China over the first half of 2020 after government subsidies halved from July 2019 and COVID-19 curbed consumer spending.

We expect European Union (EU) sales to continue driving NEV sales with the support of generous subsidies. Germany and France increased subsidies by 15% to 50% early last year and other countries like the UK are expected to follow suit.

The EU is encouraging member countries to include funding for cleaner technologies in their post-COVID stimulus plans to access funds from the EU Commission. EU regulations requiring automakers to reduce carbon dioxide emissions by 40% in 2021 from 2007 levels and by a further 37.5% by 2030 as well as the fines associated with failing to meet the limits are leading producers to incorporate NEVs as part of their offerings.



Source: EV volumes



Source: Tesla company filings

China's new energy vehicle sales recovered firmly from mid-2020 albeit from a lower base and should continue to rise on the back of slower phasing out of subsidies, gradual implementation of more stringent emission standards and continued government support. The government is targeting 20% of new vehicle sales to be NEVs by 2025.

Expanding global NEV manufacturing capacity and increasing available options should also support sales growth over the near term. Volkswagen successfully started sales of its ID range with the ID3 sales registering strong growth in the second half of 2020, and the company plans to continue rollout of new models. Tesla on the other hand has been expanding capacity, with its Shanghai plant in China now expected to reach a 550 000 vehicles per year production rate in 2021 after starting up in January 2020.

> "Tesla's **Shanghai plant** in China is **expected** to reach production of **550 000** vehicles **per year** in 2021."

Construction of the Giga Berlin plant in Germany is also progressing rapidly with first production expected in 2021. The start of production in China allowed Tesla to cut prices and increase sales and the start of production in Germany is expected to have a similar impact.

Growth in NEV sales should benefit the materials used in batteries such as lithium, nickel, cobalt, graphite, manganese and aluminium, as well as copper, which will benefit from the need for increased wiring in electric vehicles.

However, nickel and cobalt use should be constrained to some extent by various factors. Nickel is expected to benefit the most in the long run as demand for long-range vehicles increases; but demand growth should be capped by resurgence of nickel- and cobalt-free lithium-iron-phosphate batteries in China.

Cobalt demand growth should also be held back by efforts to eliminate its use in batteries due to human rights abuses associated with the mining of the metal. ■

PANDEMIC

could be a catharsis for the diamond industry

By Paul Zimnisky, Diamond industry analyst and consultant

While the pandemic brought about an unprecedented shock to the whole diamond value chain in 2020, in a way it may also have acted as a catharsis of sorts for an industry that has been struggling to regain its footing in recent years, in part due to a misalignment of supply and demand.

End-consumer diamond demand has been somewhat volatile in recent years, but for the most part it has been relatively resilient. However, on the supply side, a trend of increasing output has been apparent since rough prices hit an all-time high in 2011.

Excess diamond supply held by both the miners and the mid-stream, i.e. the manufacturers, has in part limited diamond price appreciation for most of the decade and thus has limited profitability for many industry players. For instance, a global basket of publicly traded diamond miners weighed by modified market cap in US dollars is down in excess of 60% over the past five years.

That said, challenging economics for the diamond mining industry has noticeably reduced exploration activity and new mine development over this time, which will undoubtedly limit new supply in the years ahead.

Similarly, diamond and jewellery manufacturers, many of which have experienced apathetic business economics in recent years, have transitioned to less levered and more efficient business models or exited the industry altogether.

This shift in trend of lower mine output and more conservative business practices by the mid-stream has been accelerated by the pandemic. Multiple mines in the world's most prominent diamond mining jurisdictions suspended production in 2020 due to government-mandated lockdowns and also due to the subsequent market impact on business conditions.

For context, six large-scale commercial mines globally have yet to recommence production following operation suspensions in March, April and May related to the pandemic. Consequently, global natural diamond production volume is forecasted to decrease by a significant 20% year over year to what is estimated to be the lowest output since the 1990s (see graph 1).

Supply has also been affected in the mid-stream segment of the industry as many manufacturers have been limited by international travel restrictions inhibiting their ability to buy rough at primary trade hubs such as Antwerp, Dubai and South Africa.

In addition, following the onset of the pandemic, Indian diamond manufacturing trade organisations called for a voluntary import ban on rough diamonds in an effort to sustain manageable levels of inventory held by the industry, aimed at supporting polished diamond prices and maintaining the creditworthiness of the industry.

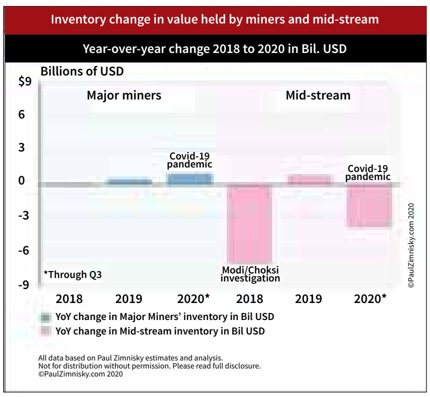
All in all, inventory held by the mid-stream segment of the industry has declined by an estimated 10% year over year in US dollars (see above image) with stocks now estimated to be at the lowest level since the 2011-12 Indian fiscal year.

Despite the lower output by the mining industry, inventories held by leading miners have consequently accumulated due to the limited buying by the manufacturing segment. It is estimated that inventories held by the major miners increased 25% to 30% in volume terms last year (see graph 2). This said, leading producer ALROSA has said that it is "highly likely" that it will sell up to an estimated 30% to 40% of its inventory value to Russia's precious stone and metal reserve, the Gokhran, in order to allow the company to offload excess stocks while keeping the supply off of the global market for an extended period of time. ALROSA also recently cut 2021 production guidance which should further provide the company with an opportunity to sell off excess inventory in the coming year.

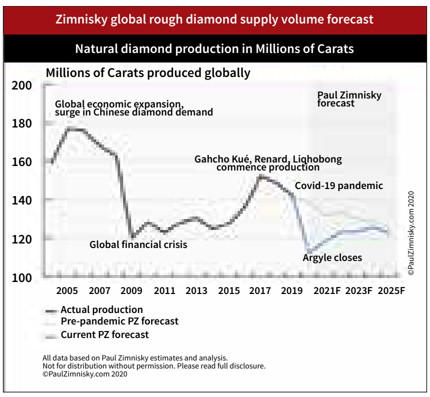
Over the longer term, end-consumer demand probably remains the most important fundamental factor leading to a prosperous diamond industry – as strong demand ultimately pulls excess supply though the supply chain.

That said, in the short and even medium term, an oversupplied market can greatly limit the ultimate health of industry – which we have seen in recent years. While the pandemic has undoubtedly shaken an already fragile diamond industry vying for a recovery, it also seems to have accelerated a much-needed supply shedding that will help position the industry for a more sustained recovery and a return to a much healthier state in the years to come. ■

graph 1



graph 2



TIN TALK

By James Willoughby, Market analyst

Like most markets, the tin industry has been hammered by the COVID-19 pandemic, but unlike most industries, it has been able to count some positives. *SA Mining* recently caught up with International Tin Association's market analyst James Willoughby to chat about how the tin market performed in 2020, and the outlook for 2021.

CAN YOU SHARE A VIEW OF THE TIN MARKET PERFORMANCE IN 2020?

The tin market was beginning to take off at the beginning of the year before the coronavirus pandemic hit, thanks to the signing of the US-China Phase 1 deal. When the virus began taking off in March, the tin price dropped considerably. The price reached $13 000/tonne, which was a five-year low. However, the price has recovered since, and is now up year-to-date.

WHAT WERE THE KEY DRIVING FACTORS ACROSS THE VALUE CHAIN?

The driver behind this recovery in price has primarily been China. Demand there has returned to near-normal levels much faster than anticipated due to the strong coronavirus response. On the other side of the market equation, supply has been relatively constrained due to ongoing issues in Myanmar, the country's major supplier of ore and concentrates.

Outside of China, some major smelters and mines were closed in the second and third quarters due to national lockdowns in response to the virus. They have been slowly returning, however, and are now catching up with lost production. But demand has been slow to return. Second waves in major economies (EU and US) have seen many consumers hold off purchasing metal. The situation does seem to be improving, however, with many tin users confident of a positive 2021.

HAVE THERE BEEN ANY POSITIVES TO COME OUT OF THE COVID-19 PANDEMIC FOR THE TIN INDUSTRY?

Several tin-using sectors appear to have benefited from the pandemic, yes.

Tinplate is primarily used in tin cans. In periods of uncertainty, these become more popular as consumers look to stockpile food in case of severe disruptions. The COVID-19 pandemic proved no different.

Lockdowns, including working from home, have boosted sales of electronics for personal and educational computing, data centres, communications, home entertainment, and home appliances. They have also triggered an exodus to the countryside benefiting tin chemicals used in residential construction.

Tin use in lead-acid batteries has also benefited from coronavirus control measures. With some countries beginning to return to work in offices, people are returning to cars to find that the batteries no longer work after not having been used for several months, boosting the replacement battery market. Furthermore, now that people are returning to work, many are avoiding using public transport due to virus concerns.

> "China produces around half of all refined tin and nearly a quarter of all tin concentrate." – Willoughby

FROM A PRODUCTION POINT OF VIEW HOW DID THE INDUSTRY FARE COMPARED TO PREVIOUS YEARS?

Tin production was actually impacted quite significantly by the initial wave of the coronavirus, although generally not due to issues at mines or smelters. In fact, national lockdowns kept workers are home, forcing many smelters to be put into temporary care and maintenance. Four major smelters were directly impacted by this. However, most of these have now returned to production, with aims to catch up on lost output.

However, weak demand has meant that at least one other smelter has cut its production target for the year. In March, PT Timah announced that it would reduce exports by around 30% and would also reduce production. The combination of these two factors has meant that refined tin production in 2020 is estimated to fall by around 6% compared to 2019.

WHICH ARE THE LARGEST AREAS FOR TIN PRODUCTION?

The tin market is split roughly in two: China and the rest of the world. China produces around half of all refined tin, and nearly a quarter of all tin concentrate. In the rest of the world, the biggest tin producer is Indonesia, both in terms of mining and smelting/refining. Myanmar is also notable for its large mining industry – currently the world's third largest. This concentrate is shipped to China for smelting.

HOW DO YOU FORESEE THE FACTORS OF 2020 IMPACTING THE TIN INDUSTRY IN 2021?

We believe that 2021 will be a recovery year for the tin market. Without the threat of a second wave, we would have expected tin use to recover back to pre-COVID levels in early 2021. However, the coronavirus appears likely to continue to impact the world in 2021, with countries going into temporary lockdowns through 2021 to deal with more localised outbreaks. The impact to demand will likely be less than the original outbreak but will still constrain some demand and cause it to be patchy.

With the added effect of rising geopolitical tensions, companies are likely to accelerate geographical supply chain restructuring to mitigate risks, redistributing tin use globally, especially within Asia. The production side of the market is back to normal and so we do not envisage continued issues in 2021.

FROM A TIN MARKET OUTLOOK POINT OF VIEW, WHAT DO YOU ANTICIPATE FOR 2021?

We are forecasting a balanced tin market for 2021. Although we believe demand will recover to pre-COVID levels, the market was balanced this year due to unplanned smelter closures and planned production cuts. In 2021, production will likely return to full capacity, meeting this demand for metal. ■

NAVIGATING PROJECT FINANCING
IN THE NEW NORMAL

By Ogi Williams – Associate Director, In On Africa

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The past year has been anything but uneventful for the global economy in the context of the "new normal" that we have all gradually adjusted to since last March. Like all other major drivers of economic growth and development, the African mining sector has had its fair share of dealing with the pandemic, though it has shown remarkable resilience even in these unprecedented times.

Performance among some of the majors was buoyed by stronger commodity prices, particularly in the platinum and gold sectors where investors flocked to mitigate the negative impacts of the pandemic.

This boded well for various African commodity markets including Cameroon, Ghana, South Africa and Zimbabwe in propping up struggling economies. However though positive in the short term, the overall sentiment held by investors regarding financing new project initiatives in the longer term has been one of muteness and caution.

Depending on how the pandemic progresses into 2021, various considerations will be taken into account by prospective investors looking at mining opportunities in Africa. Among others will be the possibility of new operations being shut down if the incidence of COVID-19 infections rises, which in turn will affect construction and production targets and the ability to meet financial obligations and covenants.

Additionally, it will strain the ability to visit project sites should there be travel restrictions imposed, which will have a further knock-on negative impact on the broader mining sector value chain, from logistics and transportation through to materials availability and equipment supply. In crafting viable financing strategies going forward it will be important to develop the right foundation for rebuilding lost growth.

EXPLORING IFI FUNDING AVENUES

The historical view of the African mining space has been one of exploitation of local labour and environmental degradation to the benefit of international companies and foreign investors.

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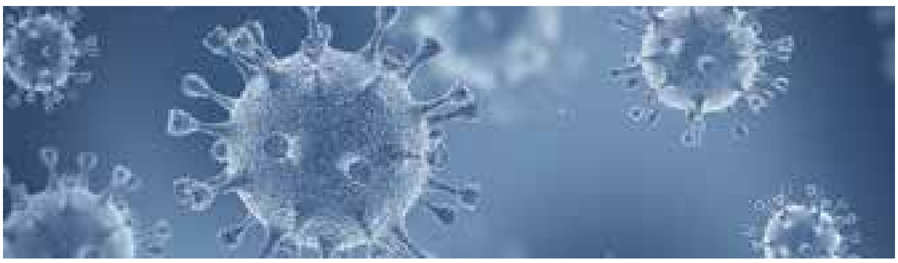
> "Looking for **asset financing** will prove more **cost-effective** than **leasing**, for operators with **long-term projects** in the pipeline." – Williams



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In recent years, however, a lot more emphasis has been placed on the way major mining companies are contributing in meaningful ways to development initiatives, and in particular their environmental, social and governance initiatives (ESG).

Though many have stepped up to fight, the current challenges posed by COVID-19 with donations of personal protective equipment, the longer-term strategies that a number have put in place concerning community development, and resilience, are being brought to the forefront.

Given the precarious investment climate yet pressing need to bring back economic >

There is a growing emphasis on ESG issues in mining.

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activity to pre-COVID levels, there is scope for international finance institutions (IFIs) to get involved in supporting mining initiatives that would have a stronger emphasis on local beneficiation.

Getting buy-in from major organisations like the African Development Bank (AfDB) and the International Finance Corporation, and even other bilateral agencies such as Germany's KfW and GIZ, and Finland's FinnFund, will aid mining companies to raise sufficient capital and increase the financial viability of more risky projects.

The AfDB for one has been a supporter of the African extractives sector for some time through its African Natural Resources Centre and African Legal Support Facility (ALSF) which both look to facilitate the ability for African countries to secure beneficial mining deals. This strategy can be expanded on through more targeted roundtable discussions between the private sector, government and IFI stakeholders.

OFFLOADING NON-CRITICAL ASSETS AND CONSOLIDATING OPERATIONS

Bringing on board IFIs will in part address the need for liquidity in the sector given tight forecasted expenditures on new projects. Looking for additional financiers to provide for possible repayment moratoriums on interest and capital while also negotiating favourable lending rates are viable options to consider.

For their own part, mining companies need to also relook their balance sheets in optimising existing costs in freeing up working capital to capture on potential opportunities as they emerge over the course of the year. Non-core assets could be sold, with asset financing sought in opening up available cash flow to sustain operations.

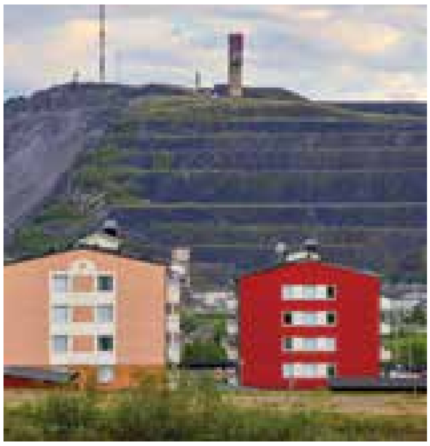
> "Should **IFI funding** avenues be sought without **clear ESG targets** in place, **future project** efforts are likely to run into various **hurdles**." – Williams

Considering the volatility of markets at the present time, looking for asset financing will prove more cost-effective than leasing, particularly for operators that have long-term projects in the pipeline.

In a parallel vein mining companies should also look to consolidate on existing operations in minimising their operating expenses, and redirecting resources towards more productive operations. Doing so will free up additional liquid capital for project investments, while also providing assurance to shareholders that risk exposure is being reduced.

CONNECTING THE DOTS

Though the new normal has had a considerably negative impact on the global economy, it also presents an opportunity to start anew in many respects. Constrained demand for minerals amid weak economic growth and a growing emphasis on ESG issues in the mining space are placing mining companies in a precarious position and requires careful consideration in managing all stakeholder expectations.



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Even if mining companies are able to minimise costs in leaning out their expenses, they will still require financial support in getting new projects off the ground.

Should IFI funding avenues be sought without clear ESG targets in place, future project efforts are likely to run into various hurdles, both specific to host markets looking to eek as much local beneficiation as possible as well as global imperatives.

What is certain is that two other facets not discussed herein, namely mine automation/digitalisation and the global energy transition, will exert their own influence as 2021 unfolds, thereby necessitating fast and decisive action on the part of all stakeholders. ■

CASH ON BOOKS
CRUCIAL AS COVID CUTS INTO CAPITAL MARKETS

By Vuslat Bayoglu, MD Menar

Access to capital at competitive rates will be one of the key factors that will determine the expansion of existing mining operations and development of new ones. South Africa desperately needs to expand mining capacity in both ways if we are to stand a chance of taking full advantage of the commodity super-cycle that seems to have begun during COVID-19.

Yet cheap capital is scarce, more so than it was before the pandemic hit us and threatened the sustainability of some mining operations. COVID-19 added to the constraints faced even by the typical conservative lenders. Credit extension to commercial enterprises was drastically curtailed as banks suffered from the surge in the number of non-performing commercial loans, making them recoil from expansive granting of credit.

Many of the banks adjusted their lending criteria so that they are more stringent. The banks also provided relief to their distressed corporate clients who needed it. Repayment holidays granted to businesses amounted to the tune of R14-billion by the second half of 2020, according to the Banking Association of South Africa.

The South African Reserve Bank underwrote a loan guarantee scheme administered by commercial banks and it was expected it would disburse R44-billion in commercial loans by the end of January 2021. Although it is not clear how much of the total loans went to mining enterprises, there is no doubt that distressed mining companies, like other enterprises, would have required access to working capital to stay afloat.

East Manganese will replicate Menar's low-cost operating model.

Menar has invested over R250-million in its East Manganese project.

Access to capital will have an impact on whether or not South African mining companies take full advantage of the next commodity boom that is likely to take place post-pandemic. Commodity prices are expected to surge due to government-backed economic stimulus packages that focus on the Keynesian approach to economic recovery: aggregate demand through, among other initiatives, infrastructure development. Companies that produce minerals that are critical for infrastructure development such as manganese, iron ore and chrome will probably benefit from the expected demand.

And companies that produce minerals that feed into the manufacture of batteries for electric cars and storage of energy will likely enjoy high demand and high prices in 2021. Producers in the platinum group metals sector who stand to benefit from a high-price cycle are those who have had access to capital to expand operations and improve production.

The scarcity of capital in the face of a commodity boom might drive some miners to capital-raising initiatives such as public listings or selling stakes or merge with operators that have the necessary technical abilities and financial wherewithal to add value. It might lead to some consolidation in the mining sector.

The need for capital might also drive miners and their strategic equipment suppliers to find innovative ways to work together to find solutions to developing new mines or expanding existing operations. Those miners and equipment suppliers that had built these innovative relationships during hard times are better placed to maximise the benefits when upscaling becomes critical amid constraints to capital availability.

Development finance institutions such as the Industrial Development Corporation could consider assisting struggling operators by combining financial support with operational support, drawing from existing industry operators that have proven to be resilient in the wake of COVID-19.

Coal mining, the sector that many people are increasingly happy not to talk about despite the clear need for coal in the foreseeable future due to it being a source of cheap and reliable electricity, will continue to suffer the most in terms of lack of funding. This is because banks and fund managers have adopted resolutions to divest from coal due to climate change concerns.

This will leave room for agile coal mining operators to invest using self-generated capital. Coal mining operations under our group have been operating through this self-financing model, making it easy to take decisions and also ensuring that costs are kept as low as possible in both good and tough times.

As we diversify the group to other minerals, we hope to replicate as far as possible this tried-and-tested model. It has helped us survive the hardest times of COVID-19. We are certain it will help us well into the future – uncertain or not. ■

MINERALS COUNCIL SUPPORTS #PAYIN30 INITIATIVE

The Minerals Council South Africa recently added its voice to those of Business for South Africa (B4SA), the SA SME Fund, and Business Leadership South Africa (BLSA) with the call for the payment of small and medium enterprise (SME) suppliers in 30 days. The Minerals Council committed to doing so and urged members to follow suit.

Minerals Council South Africa CEO Roger Baxter noted that South Africa's economic crisis, worsened by the COVID-19 pandemic, had been taking a high toll on SME enterprises.

"While we recognise that all sectors of the economy have been affected, the fact is that SMEs are likely to be less resilient in the face of cash-flow constraints. Just as our industry has worked so hard to develop a thriving network of SME suppliers around its businesses, so too we are sure that they will do all they can to support and grow this network during these trying times.

"Growth in SMEs is a fundamental cornerstone of a thriving economy and can be a significant driver of inclusive economic activity and job creation. A number of Minerals Council members have already committed to this initiative, and I am certain that more will follow in the coming days."

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RESOLVING MINING-ROYALTIES DISAGREEMENTS

Surface mining industry association ASPASA says that critical consultations are under way to deal with the sensitive matter of the payment of royalties as well as the application for non-precious materials that are mined and processed as building materials or other low-value commodities.

ASPASA represents this end of the mining industry where the determination of the value of minerals removed from the earth is fraught with complexities and disagreement. Most recently the association took on the South African Revenue Services (SARS) over its interpretation of where value should be determined.

ASPASA director Nico Pienaar explains: "We had been involved in the issue of the calculation of the Royalty Act for many years and even developed a guideline document which was used by our members to calculate the value of minerals at 'muckpile' level. SARS then changed their mind and wanted to add steps in the process.

"Then while the same argument ensued a legal battle to determine where value should be calculated began between SARS and United Manganese of Kalahari (UMK) and SARS lost the case. Now the question is, should SARS not want to agree to allow the industry to continue with the muckpile method, do we as an industry through ASPASA defend the stance?

"Companies need to indicate their objections to this, alternatively it will be assumed that everyone is satisfied with SARS' interpretation. If we do decide to defend our muckpile stance, then legal costs may be incurred and we may need assistance from the industry."

Engineering and project management services to the mining industry

- Innovative solutions
- Efficient digital asset management from design through construction to operations
- Concept-to-completion
- Design expertise
- Project capabilities for all minerals
- Mining centre of excellence

Worley
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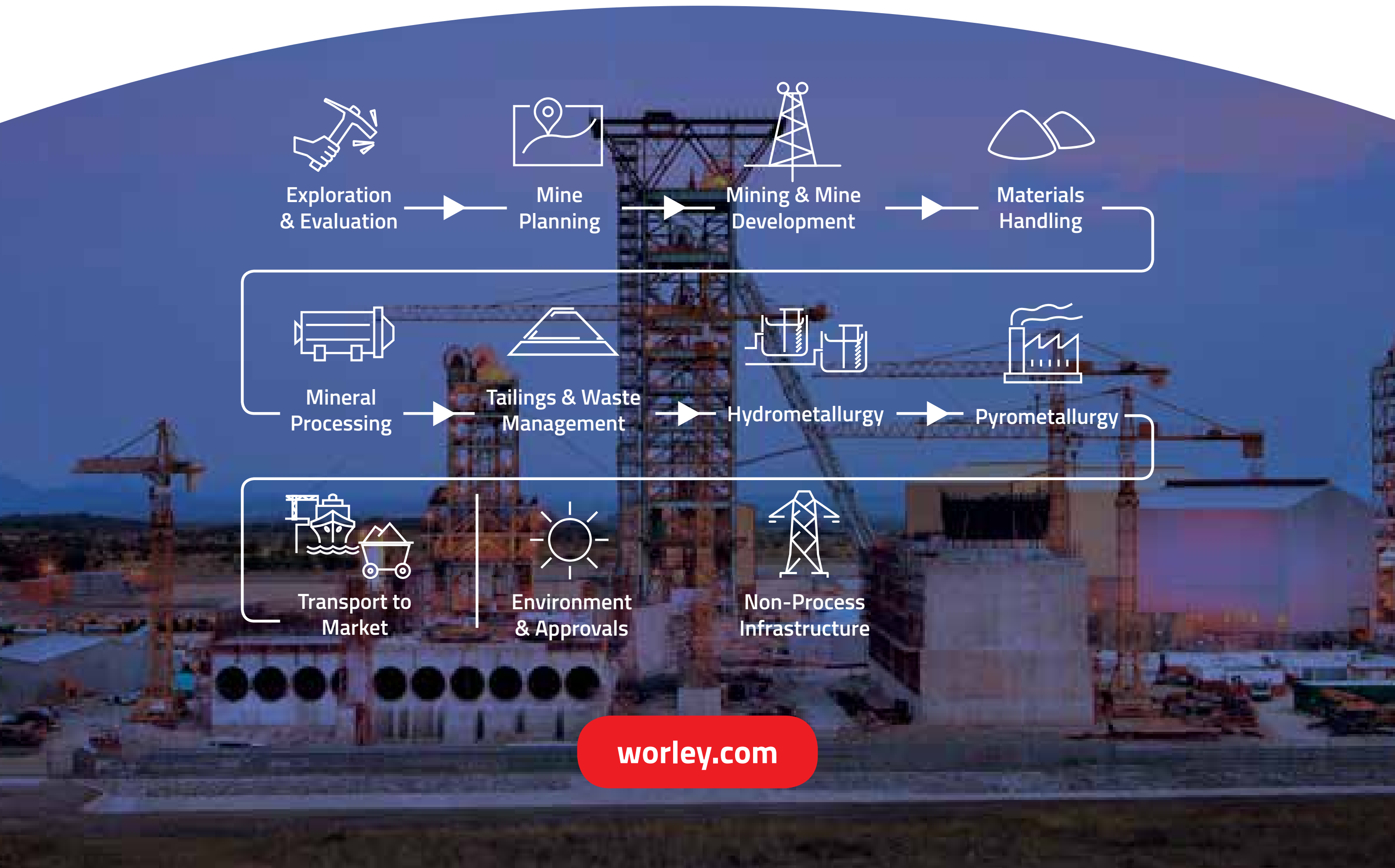


worley.com

OPTIMISING OPERATIONS TOWARDS SUSTAINABILITY

Worley continues to seek solutions that accelerate their customers' transformation towards sustainability. As we head into a digitalised future, business sector manager for Mining, Metals & Minerals (MM&M) Gladwin Mfolo explains how Worley is helping customers optimise their operations in a more sustainable, technologically focused world.

By placing sustainability at the fore, Worley is supporting customers through innovation and digital solutions to improve their assets and unlock future business potential. The company has played a major role in delivering complex projects in the energy, chemicals and resources sectors across the world, helping customers rise to challenges, and creating solutions where none existed.

> "Energy transition is fundamental to Worley's growth strategy."
> – CEO of Worley, Chris Ashton

Recognised globally for its achievements in the hydrocarbons industry, Worley's Southern African focus has largely been on the mining, metals and minerals and refining and chemicals sectors, with engineering services ranging from conceptual design right through to construction and project management.

More recently, renewable energy has come into the spotlight as businesses look to reduce their carbon impact on the environment and advance towards sustainability goals.

TOOLS TRANSITIONING US TO RENEWABLES

Mfolo says that Worley is well equipped to tackle the transition towards renewable energy using the latest technology and digital tools. "We need to become more in sync with nature by producing energy from sun, wind and water that's sustainable, smart and has minimal environmental impact. We're here to help our customers start the transformation journey and see it through to its completion."

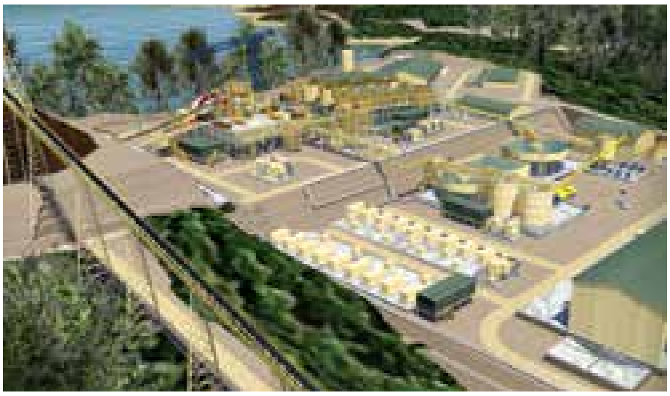
This journey begins with Worley's Technology & Expert Solutions (TES) and Advisian teams. Combining management consulting and technical consulting expertise with real-world experience, these teams help customers answer questions such as how the latest available technology can optimise operations, particularly with regards to customers' energy usage, and when a return on investment can be expected.

Optimal energy solutions, especially for mines, play an important role in this process, with the aim of developing low carbon-producing infrastructure and ultimately using sustainable, zero-carbon energy.

South Africa's mining industry is under increasing pressure to switch to alternative energy sources in order to reduce its dependence on fossil fuels, keep miners safe, and meet production targets. This is where Worley's distributed energy systems solutions can add immense value, by providing easy, cost-effective optimisation for complicated, multi-streamed energy systems.

Once optimal solutions have been identified, Worley provides technical design, concept and feasibility, engineering and project delivery – all underpinned by the goal of building sustainable operations.

"Technology is at the core of what we do and we want to incorporate this into any



"Worley is **supporting** customers through **innovation** and **digital** solutions to **improve** their **assets** and **unlock** future business potential."
– Mfolo

project we're involved in," says Mfolo. By harnessing the digital tools from artificial intelligence, predictive analytics, building information modelling (BIM) and robotics to solve industry challenges and break down barriers to progress, Worley helps its customers keep pace with change and use of technology in the various industries it services.

With BIM for example, Worley brings concepts to life, creating digital replicas that begin in 3D and can advance to 7D. Mfolo explains that a "digital replica" is essentially an operational data-enhanced virtual or augmented reality model of the designed facility. The information builds in value as the project stages progress until the complete data set is handed over to the customer at the conclusion of a project, ready for operation.

He adds that the aim of Worley's digital value chain is to get customers to the point of using technology automatically, bringing solutions to the table that wouldn't have been there before.

SPEEDING UP DIGITALISATION

Mfolo believes the COVID-19 pandemic has emphasised the importance of digitalisation as a key driver in development, and that South African businesses are increasingly ready to accept the transition. The company is seeing a greater interest in sustainable energy solutions, and he says Worley has already undertaken projects in this regard.

"More and more of Worley's customers are expressing interest in gaining a better understanding of the energy transition process as we move from fossil fuel power to solar, hydro and other renewable options. We want to help our customers reach their sustainability goals and have deep global expertise in this regard," says Mfolo.

As a global business, Worley has the capacity to be localised while leveraging world-wide expertise, drawing on local knowledge from South Africa, and global experience from its technical experts. This allows the business to streamline ideas, grow and implement a concept, and execute services – all under one global roof.

Gladwin Mfolo.

"We can offer customers optimal asset growth as well as sustainability. Each solution is customer-specific – there's no one-size-fits-all approach," says Mfolo.

And what about the effects of the pandemic? "Yes, COVID-19 has changed the way Worley provides and delivers services, but how we execute projects remains the same. We're a global business, so we had already streamlined remote collaboration from different locations. This has been one of Worley's major strengths in overcoming the restrictions that COVID-19 has placed on the world," says Mfolo.

During a recent interview, CEO of Worley Chris Ashton summed up Worley's future goals by saying the business is committed to developing a more sustainable world for future generations. He believes this can be achieved by putting Worley's passion, skills and beliefs at the centre of some of the biggest challenges on the planet.

Mfolo echoes this optimistic outlook towards a future world where digital and sustainable energy solutions go hand in hand. "Energy transition is fundamental to Worley's growth strategy. We're working towards a sustainable world, not only for our partners and shareholders but also for our environment and communities. It's a gradual process, but taking the first step is the most important part," he concludes. ■

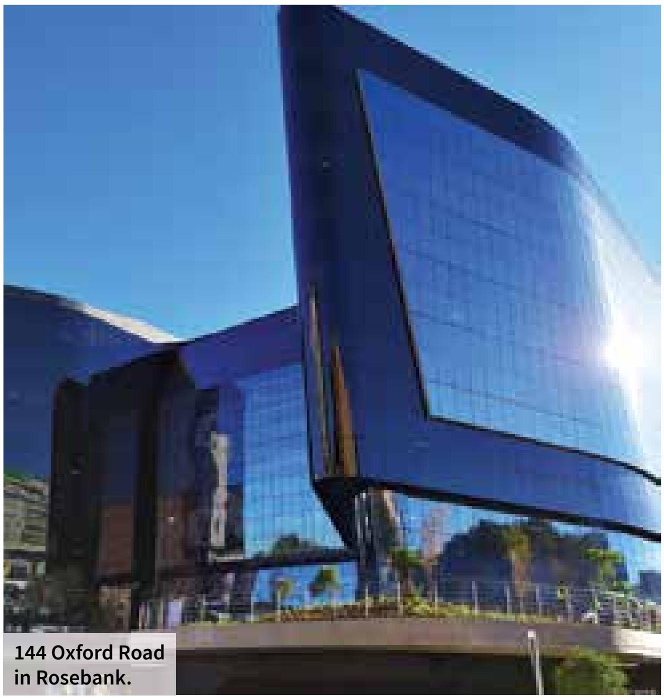
ZUTARI WINS AT CESA AON ENGINEERING EXCELLENCE AWARDS 2020

At the CESA Aon Engineering Excellence Awards 2020, engineering consultant Zutari won in the category of projects with a value between R250-million and R1-billion for the upgrade and extension of the Stellenbosch Wastewater Treatment Plant.

The project saw the introduction of a full biological nutrient removal process capable of handling up to 35 million litres a day average dry weather flow and ensuring compliance with the National Water Act.

The fully automated plant included innovative features such as a sophisticated control system, odour eradication and energy-efficient technologies, all in the context of sustainable design. It is currently the largest membrane bioreactor plant in South Africa. The incorporation of membrane technology has significantly improved the condition of the Eerste River and the quality of water available for users.

Kashimbila multipurpose dam and substation in Nigeria.



144 Oxford Road in Rosebank.

Zutari also received a commendation in the same category for 144 Oxford Road in Rosebank, Johannesburg, for client Growthpoint Properties. At the SAICE Awards 2020, Zutari won in the Technical Excellence Category for the raising of the Garden Route Dam Wall by 2.5m. This not only adds much-needed drought resilience to the water-supply system in the area – it also minimises any environmental impact, the company says. In the Community-Based Project category, Zutari won for its work at the Emergency Shared Basic Services project as part of the Upgrading of Informal Settlement Programme process in Mossel Bay. The project benefited more than 6 000 households in 28 identified informal settlements.

STM-SCREEN FOR HIGH-VOLUME SCREENING NEEDS

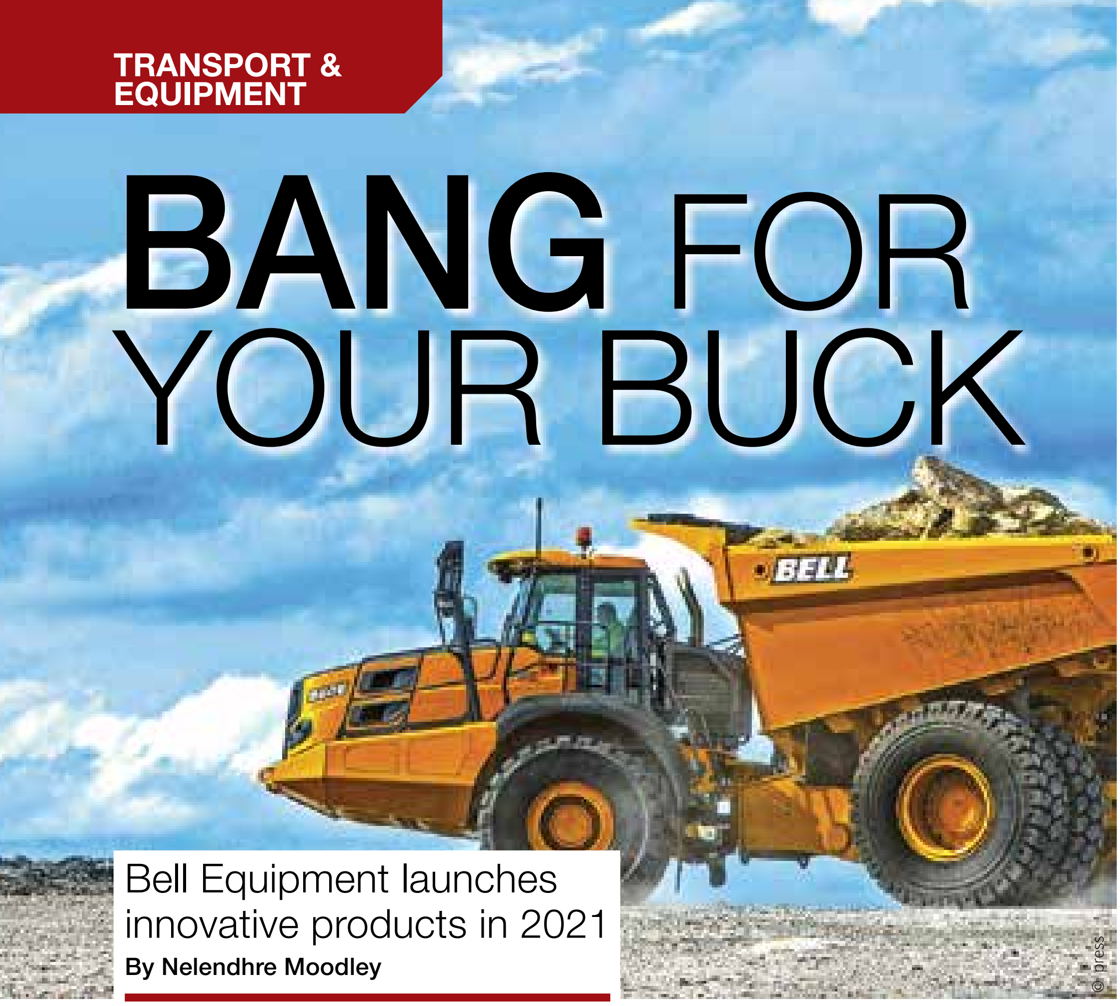
As mine sizes and the subsequent tonnages handled have grown exponentially in recent years, so has the size of screens to address the increasing comminution circuit capacities.

In line with the increasing tonnages, material handling/processing equipment has also increased in size, resulting in 400-tonne haul trucks, 2 000kW crushers, 12m SAG/AG mills, 8.5m ball mills, 3 000m^3 flotation cells, and 12.5MW high-pressure grinding rolls (HPGR) becoming the new norm at mines globally.

According to Etienne Swanepoel, national sales manager at IMS Engineering, screening is one of the most important steps in the production cycle, and has to ensure high-quality screening curves of end products in accordance with standards. It is therefore imperative that the process be executed in the most efficient manner.

To meet these growing demands IMS Engineering offers a General Kinematics' STM-SCREEN designed to handle higher tonnages at circuit design efficiencies. The STM-SCREEN Two-Mass vibratory screens use General Kinematics' proven Two-Mass, natural frequency drive design. This design is load-responsive and capable of longer material retention times to work the material more.

"This means you can get more screening accomplished in the same footprint as your old brute force screens. Dual in-board vibratory motors eliminate expensive belts, shafts and bearings. The patented modular design uses a centre spline to significantly increase structural integrity and allows for easy assembly and disassembly for quick transport and installation."



BANG FOR YOUR BUCK

Bell Equipment launches innovative products in 2021

By Nelendhre Moodley

COVID-19 has been associated with many negatives. However some positives have also emerged from the pandemic, including an increased focus on innovation and technology. *SA Mining* recently spoke to Bell Equipment South Africa's CEO Leon Goosen about some of the latest innovative developments under way at the company.

WHAT HAS BEEN THE IMPACT OF COVID-19 ON THE EQUIPMENT MARKET AND BELL EQUIPMENT IN PARTICULAR?

COVID-19 has created a unique operating environment for everyone, not just the equipment market. We've had to change the way we operate to ensure that we meet government regulations and our own protocols in terms of the virus.

While Bell has not been immune to the impact of COVID-19 on the business and our people, we are grateful for the low rate of infection among our employees. We largely attribute this to the timely and stringent protection measures that were implemented across all operations and adherence by our employees and stakeholders.

As a supplier of essential services to agriculture and mining, particularly coal mines supplying Eskom, our business was able to continue with a higher degree of normality than many other industries.

We were also fortunate that a large portion of our workforce was able to work remotely during the initial lockdown, which helped to lessen the impact on the business.

> "The forced integration of technology has taken us forward in leaps and bounds and helped to streamline processes." – Goosen


Leon Goosen.

There were inevitably some supplier and supply chain disruptions, but these have mostly been addressed and we continue to monitor our supply chains from Europe and the US where there are signs of an increasing infection rate.

HAVE THERE BEEN ANY POSITIVES TO COME OUT OF THE PANDEMIC FOR EQUIPMENT MANUFACTURERS?

For Bell Equipment, one of the greatest positives has been the way in which our employees have pulled together to make the most of the difficult trading conditions and the challenge of the virus to ensure that our customers continue to receive a quality service during this trying period.

From a customer perspective there is still nothing better than face-to-face contact, but the forced integration of technology has taken us forward in leaps and bounds and helped to streamline processes. Previously we would fly to Johannesburg for meetings, but the pandemic has proven to us that remote working and cooperation is feasible and effective by using the available technology to our advantage.

Although not a result of the pandemic, there has been a gathering of momentum for autonomous developments and it has shown us how close to the market we are in this regard. We thought that autonomous development was still in the early adopter stage, but during COVID-19 we've seen an increase in market awareness and real enquiries.

WHAT IS BELL EQUIPMENT'S OUTLOOK FOR THE EQUIPMENT MARKET IN 2021? WHAT WILL BE THE DRIVING FACTORS?

During 2021 we will be looking for growth from a relatively low base and we're not expecting any fireworks. We are cautiously optimistic that governments will be spending

The B60E, teamed here with a Kobeco SK850 Excavator, provides a cost-effective and efficient haulage solution.

The Bell range of ADTs is complemented by a full range of solutions.

© press

"We are **optimistic** that **governments** will be **spending** money on **economic** recovery."
–Goosen

money on economic recovery after the pandemic and infrastructure development is a catalyst for economic development. After several dire years for the construction industry in South Africa we are hoping to see some real growth in this sector and an increased demand for equipment.

WHAT NEW DEVELOPMENTS, INCLUDING PRODUCT LAUNCHES, DOES BELL EQUIPMENT HAVE SCHEDULED FOR 2021?

We're currently in the testing phase of our new-generation low-profile articulated dump trucks for underground mining, which we are excited about. There are two models, the Bell B30L and the B35L, and both feature a new left-side mount cab and include all our standard features for safety, productivity and machine protection.

This includes keyless start, hill assist, speed control, bin tip prevention, auto park application (APA) and turbo spin protection to protect the engine. Onboard weighing is now standard on these trucks and Bell Equipment's proprietary fleet management software, Fleetm@tic®, enables machine owners access to daily production figures.

In addition to delivering on our lowest cost per tonne philosophy, these trucks also have an "autonomous ready" platform that is easily configurable for remote operation either by a handheld remote control or a more sophisticated autonomous control centre.

In March 2020, before the hard lockdown, we were able to showcase our new Bell Tracked Carrier at ConExpo in Las Vegas, US, which is a niche solution for soft underfoot conditions. The machine will be manufactured in our Richards Bay facility and is available as either a seven-tonne or 11-tonne truck and can be fitted with either a dump body or a flat deck.

We are excited about putting units on the ground in the United States next year and seeing where this development leads in terms of other potential new markets.

FROM AN INNOVATION AND TECHNOLOGY POINT OF VIEW, HOW ARE CUSTOMER REQUIREMENTS SHAPING THE INDUSTRY?

Our strength in the past has been listening to our customers, which has got us to where we are today. No one knows the application, the developments and innovations that are happening in the industries where our machines are operating better than our customers. Listening to them to understand the industry requirements is the best way to stay on top of what innovation and technology is needed.

When customers consider an original equipment manufacturer (OEM), there are two main elements: the cost per tonne that they get from a machine and the relationship they have with the OEM. The relationship element is becoming more and more challenging due to factors like institutional buying, so we need to constantly push the boundaries to make sure the cost per tonne element is there.

To provide lowest cost per tonne solutions throughout a machine's lifecycle, Bell is always looking at ways to optimise the cost of a machine and the maintenance thereof, while at the same time building on quality, reliability and durability to deliver residual value.

HOW IS BELL EQUIPMENT ALIGNED WITH TECHNOLOGY AND INNOVATIVE DEVELOPMENTS?

Our philosophy of listening to our customers has seen us pioneering various technologies and innovative developments. We were first to market with a telematic fleet management solution on our articulated dump trucks, known as Fleetm@tic®.

We were the first manufacturer to offer an onboard weighing solution, which is standard on our trucks and works with the Fleetm@tic® technology. To improve the accuracy of our onboard weighing, we fitted inclinometers and saw an opportunity to use this technology to also increase the truck's safety functions with i-Tip that automates the speed of the tip and Tip Safe that prevents tipping at unsafe angles. In this way we've stayed at the forefront of ADT technology.

In terms of speed controls, speed limits, slope control and geofencing, we can now limit the speed in specific areas of a site based on the incline of a slope. If an area is steeper than a certain percentage downhill then the truck will automatically brake through the retarder and reduce the speed so that the truck travels at a safe speed on that slope, which has massive benefits in terms of safety.

>

> "We're currently testing **new-generation** low-profile **articulated** dump trucks for **underground** mining." – Goosen

This is set within the central display unit in the cab and can be set up according to whether the truck is laden or unladen, giving almost endless control of the machine.

To comply with PDS (Pedestrian Detection System) regulations we needed electronic control of certain functions, for example brakes, to create electronic control within the truck. Once we had achieved that, it was easier to expand the electronic control to steering and accelerating.

This then led to creating an interface for external companies to test how their software controls affect our machine so that they can calibrate their controls to get the correct response from our truck. Using open-source technology allows customers to choose any service provider so that they can have full integration on their site.

The latest generation Bell Low-Profile Articulated Dump Truck.

We have trucks working on an autonomous test site in a quarry in Europe where they are performing well and our new low-profile trucks for underground mining also have an "autonomous ready" platform. ■

ANGLO AMERICAN ADDS LOW-EMISSIONS FLEET TO OPERATIONS

Mining major Anglo American recently introduced liquefied natural gas (LNG) into its chartered fleet when it awarded a 10-year charter contract for four LNG-fuelled capesize+ vessels. The new-build LNG vessels offer significant environmental benefits, including a c.35% cut in CO2 emissions compared to standard marine fuel, the company said.

"Anglo American is committed to reducing emissions from its ocean freight operations and to playing a leading role in shaping a more sustainable future for the maritime industry. The agreement is aligned with Anglo American's goal to be carbon-neutral across our operations by 2040," said Peter Whitcutt, CEO of Anglo American's marketing business.

"LNG is a readily available, commercially viable, lower-emission solution which, combined with innovative technology designed to eliminate unburnt methane, will allow these new builds to provide a much improved environmental and more efficient performance."

VOLVO TRUCKS STARTS LOCAL LNG TESTING

Volvo Trucks Southern Africa recently brought in two liquefied natural gas (LNG) trucks for local testing. The gas-powered trucks were specifically developed for heavy regional and long-haul operations, the company said.

"Many of our customers already work hard to reduce their environmental footprint. We therefore see a clear potential for LNG units as a vital part of the solution," said Marcus Hörberg, VP of Volvo Group Southern Africa. "Our vision is that trucks from Volvo will eventually have zero emissions, although the way of achieving that is not by one single solution but rather through several solutions in parallel."

Natural gas has promising potential as a substitute for diesel in trucks, with a good supply globally, and increasing availability locally. "The new gas-powered Volvo FH LNG drives and performs just like the Volvo FH you know," added Eric Parry, product manager of Volvo Trucks Southern Africa.

"By using LNG rather than compressed natural gas, it is possible to carry larger quantities of fuel and thus ensure the necessary operating range for long-haul assignments."

JUNIOR MINING IN SOUTH AFRICA

Making the right moves

By Nelendhre Moodley

The junior mining sector is vital to the overall health of the South African mining industry, especially in keeping it alive and growing. To unpack some of the latest developments under way in the junior mining sector, *SA Mining* recently caught up with Grant Mitchell: head of the Junior and Emerging Miners' Desk at the Minerals Council South Africa.

HOW IMPORTANT IS JUNIOR MINING IN SOUTH AFRICA?

Junior miners comprise of explorers, developers and smaller producers.

Exploration companies are essential to the long-term survival of the South African mining sector. Without finding new deposits a mining economy cannot survive in the longer term. Unfortunately this part of the mining value chain has been neglected in South Africa. Currently South Africa's exploration budget decreased from $404-million in 2007 to considerably less than $100m in 2018 and South Africa's share of global exploration budgets has decreased to about 1% in 2018.

The state needs to support a high-risk activity such as exploration, which largely relies on venture capital markets, by providing incentives for investment.

The second group under the junior mining category in South Africa are developers who take a known deposit and build the mine with a view to moving on into production. Interestingly, the research done at the Minerals Council on the junior mining sector shows that most junior mining companies in South Africa who are explorers and developers wish to become established as miners in the long term. This is unlike the junior mining sector in Australia and Canada for example, where exploration companies specialise in exploration alone and if they find a deposit, they sell it on to a mining company which then develops the mine.

The third category of junior miners in South Africa consists of smaller and mid-tier producers who typically buy a small operation with the intention of mining. The Minerals Council defines these producers as having an annual turnover of below R500m per annum. They are found in most mineral commodities – coal, gold, platinum, manganese, chrome and diamonds as examples. The biggest concentration is in coal with many being wholly owned and managed BEE companies.

HOW HAS 2020 TREATED JUNIOR MINERS AND HOW HAVE THEY MANAGED THE PANDEMIC?

2020 has been a difficult year for the junior mining sector. The lockdown earlier on in the year presented junior mining companies with many challenges. A Mentimeter snap online survey conducted under level 3 lockdown with a sample of junior Minerals Council member companies showed that initially testing and screening was a challenge; however this improved as the lockdown continued as more test kits became available. Most of the companies surveyed felt the regulations around COVID-19 were manageable and achievable, however once mining production resumed many had to scale back production due to lack of demand in the markets as well as the inability to raise funding to maintain full production capacity.

Exploration and development projects were particularly hard hit, with most of these projects either suspended or at least reduced in scale.

In terms of producing companies, most of them had to materially defer construction and development projects under level 3, with many companies having to suspend contractors by evoking force majeure.

In terms of mining right applications,

"SA's exploration budget decreased from $404-million in 2007 to less than $100m in 2018." – Mitchell

Bauba Platinum's Moeijelijk Chrome Mine.

Wesizwe's Bakubung Platinum Mine.

most companies that were surveyed indicated that they had experienced delays due to COVID-19. However, TERS/UIF support was forthcoming for employees, with many companies indicating that they had received funding over this period.

Finally, most companies surveyed indicated that they had to recapitalise and/or apply for bank loans and or were forced to reduce staff.

Despite the challenges, all of the 34 junior mining members of the Minerals Council have survived and are slowly getting back on their feet. One or two companies however have had to go into business rescue.

This clearly illustrates that the junior mining sector is here to stay – they are a hardy bunch of people able to survive tough economic times.

WHAT ARE SOME OF THE EMERGING TRENDS IN THE JUNIOR MINING SECTOR?

A key issue is the demand for minerals post COVID-19 which will impact junior explorers and producing companies. In particular, small-scale diamond producers were extremely hard hit with demand falling away considerably.

Commodities such as platinum group metals, iron ore and gold have been doing well so junior companies involved in these commodities have been able to ride the pandemic better than most other mineral commodities. Copper and nickel, however, have experienced depressed demand with manganese, coal and chrome showing a flattening out of sales.

The Minerals Council junior member companies are involved in all these commodities with the highest concentration in coal.

HAVE GOVERNMENT OR INDUSTRY MADE ANY MOVES TO HELP JUNIOR MINERS DURING THESE TRYING TIMES?

There is currently an ongoing dialogue with government on how to revive the exploration sector in particular. As part of the president's revival of the economy post COVID-19 strategy, a number of work streams have been set up, including a work stream on reviving exploration. Chaired by the Council for Geoscience and including the Department of Mineral Resources and Energy (DMRE) and the Minerals Council, a strategy is being developed to capture between 3% and 5% of global exploration dollars within the next five years.

Issues that require attention include the replacement of the current mining and exploration tracking system to a more efficient online tracking system as well as speeding up the mining application process.

It is also critically important in the agreement that was reached with the DMRE that exploration activity, due to its high-risk profile, remain free of BEE obligations in the Mining Charter. This in itself will be an incentive for potential investors.

Another initiative that is being led by the Junior Miners Leadership Forum in the Minerals Council is the introduction of the flow-through share tax incentive system for exploration projects.

Canada has the most successful junior and exploration sector, which has been largely led by the flow-through share system introduced in 1958. The model is basically a tax incentive that provides for the exploration expenditure of the operating company – this tax is foregone in favour of the investor. Put simply, the investor concludes a subscription agreement with an operating company for the issue of and the subscription for a share called a flow-through share. This share provides the investor with all the rights of an ordinary shareholder but also a right to deduct exploration expenditure incurred by the operating company which will reduce its normal tax liability.

>

Orion Minerals' Prieska project.

The operating company incurs exploration expenditure which qualifies for a deduction from its taxable income and chooses to renounce a portion or the full amount of such expenditure to the holders of the flow-through shares in the year in which such expenditure has been incurred. The operating company loses its right to deduct such expenditure to the extent that the expenditure has been renounced.

The holders of the flow-through shares then become entitled to deduct their portion of the expenditure renounced by the operating company from their taxable income. This deduction is in aggregate limited to the expenditure incurred by the investor in acquiring the flow-through shares.

This type of incentive system has not just sustained Canada's mining sector, but the country's entire minerals value chain – exploration, mining and beneficiation – which have all benefited. From 2000 to 2018 on average Canada attracted $2-billion a year in exploration expenditure. South Africa, on the other hand, has only attracted $194-million annually. Australia almost

Orion Minerals' Prieska project.

matched Canada at $1.8-billion exploration expenditure annually.

A model based on flow-through shares has been developed by the Minerals Council and presented to both the DMRE and National Treasury.

There is an ongoing conversation in this regard.

HOW DO YOU SEE 2021 PLAYING OUT FOR EMERGING MINERS?

It is difficult to predict but junior mining companies have demonstrated that they are a hardy group and despite the challenging times have kept going. A lot will depend on

the demand for minerals which in turn will depend on the health of the world economy, China being a key player in this regard. Domestically, issues such as a second wave of COVID-19 leading to further lockdowns would affect the junior sector. However all things being equal, we are cautiously optimistic that the junior sector should be in better health in 2021 than in 2020. ■

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AFRITIN MINING OPERATIONAL UPDATE

AIM-listed AfriTin Mining continues with the Stage I of Phase 1 production ramp-up of its pilot mining and processing facility and recently produced 48.2 tonnes of tin concentrate from its flagship asset, the Uis Tin Mine (Uis) in Namibia. The company is targeting the processing of 45 000 tonnes of ore per month, to produce 60 tonnes of tin concentrate (36 tonnes of tin metal) per month for Stage I of Phase 1. Providing an operational update in November 2020, the African tin mining company said that plant availability and utilisation had increased steadily which, combined with improved plant processing rates, yielded increased plant production. The company was on track to achieve nameplate production of 60 tonnes a month of tin concentrate by the end of 2020.

CEO Anthony Viljoen said that once nameplate capacity was realised, the company would progress towards Stage II, expanding its production levels even further. "AfriTin continues to remain well-positioned to take advantage of the improving tin market fundamentals, as it looks to achieve its vision of becoming a large-scale tin producer in Namibia."

ORION MINERALS WINS AAMEG AWARD

Australian junior miner Orion Minerals recently received the AAMEG's inaugural Emerging ESG Leader Award. Orion Minerals is accelerating the development of the Prieska Copper-Zinc Project in the Northern Cape. The winners of the AAMEG Africa Awards (The Australian-Africa Minerals & Energy Group) set the benchmark for Australian mining companies delivering projects that have sustainable and tangible benefits to the communities and countries in which they operate.

The Emerging ESG Leadership Award acknowledged Orion's exemplary work in the environmental, social and governance (ESG) space, the relationships it has forged with its host communities and its contribution to socio-economic development in South Africa's Northern Cape province, the group said. "We hope to inspire a new generation of emerging mining companies. By turning the traditional mining approach to ESG on its head, we have shown the value of meaningful connections and insisting that ESG is a business and moral imperative," said Orion chairman Denis Waddell.

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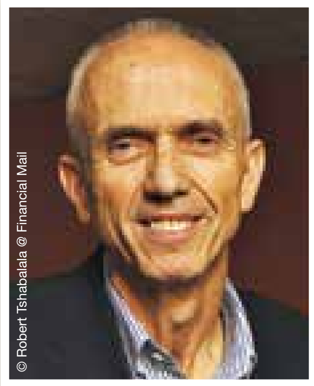
YOU ONLY LIVE TWICE

2020: THE YEAR OF PERFECT VISION

In the James Bond movie *You Only Live Twice*, the hero actually does get to live again. But in the spoof sequel *You Only Die Once*, everything is a disaster and nothing goes right. Which example does South Africa want to follow? We certainly know which example it has been following.

What will South Africans remember most 20 years from now about 2020 – the Year of Perfect Vision? Obviously they will remember COVID-19, the virus that caused more disruption, unemployment and misery than in any single year they have ever known.

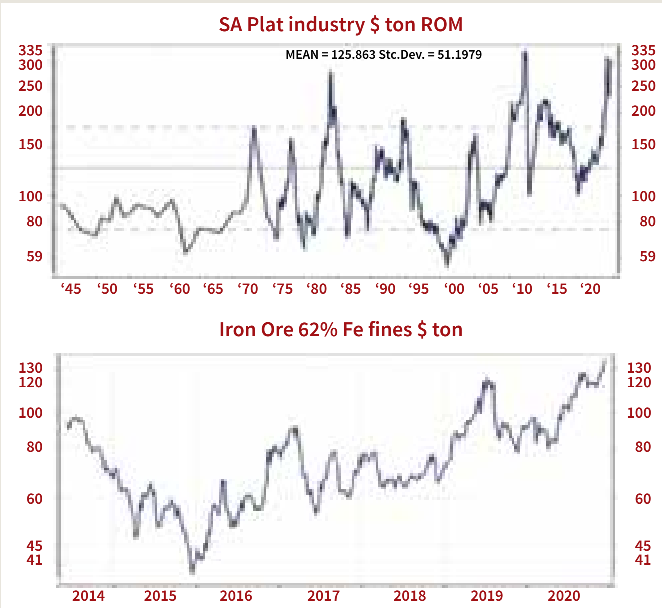

© Robert Tshabalala @ Financial Mail

Peter Major
Mergence Corporate
Solutions Director: Mining

But is that all they will remember? What about South Africa's mining industry? What will it remember most about 2020? The virus? The temporary lockdown? Or the raging platinum group metal (PGM) prices? Because 2020 was really the Year of PGMs for South African miners.

On a macro scale, the world will remember iron ore prices even more than the insane rhodium and palladium prices, and with good reason. The whole world produces iron ore – about three billion tonnes of the stuff every year – worth over $300-billion in 2020. But the world only produces 15 million ounces per annum of PGMs, which at today's ungodly prices works out to barely $30-billion a year: i.e. 10% of iron ore.

Perspective is everything in economics and mining. But we are South Africa, so we generate nearly $18bn of that $30bn a year of world PGM revenue. And our platinum mines employ almost as many people (170 000) as the next two largest local mining sectors – gold and coal which employ about 90 000 people each. So without a doubt, 2020 in South Africa was the Year of the PGMs with 2021 looking like more of the same.



No better sign of the Change of Times is SA's Annual Mineral Sales Table. The country ran on gold and diamonds for 100 years from 1880 onwards. But by 1980 the PGM industry was far overtaking diamonds, as was South Africa's coal and iron ore producers. Chrome and manganese eclipsed diamonds by the 1990s.

But while coal has remained dominant in SA for the past 20 years of the new millennium, that distinction changed dramatically and probably forever in 2020 – the year that coal lost its number one position. Interestingly, gold lost its place as number one in 2000 – a position it held in South Africa and the world for 100 years. Coal lost its number one position in 2020 – after less than 20 years.

PGMs are the clean, green metal of the future (unless you examine where nearly half come from – enormous, terribly destructive open pits).

Coal can only go down from here for a multitude of good and long overdue reasons. Hugely destructive and polluting to mine, even more polluting to burn (as well as to wash, transport and dispose of); and to top it off – economically expensive as well. The new hydrogen economy is the talk of the town with clean, green metals which include platinum at the forefront for fuel cells and hydrogen generation.

South Africa never ran out of diamonds and it most definitely never ran out of gold. Internal politics and policies forced the closure of those deposits. But it is external, world policies that are forcing South Africa to get out of coal and try as the ANC might, this is one battle that it cannot win.

Fortunately though, nature is going to help. Nature has endowed South Africa with more PGMs than even gold – and it is the great usability of those PGMs that will keep global demand for them strong. As a top-up, nature has provided SA with an abundance of the heavy minerals ilmenite and rutile for making titanium and zircon, garnet and high-quality pig iron as valuable accessory metals. The country has the world's third largest vanadium resources – so necessary in a greening, sustainable energy environment. South Africa will never have a shortage of coal, nor of uranium. But if current trends continue, those two commodities and even oil, and someday gas too, will remain in the ground until the long-awaited Second Coming.

Who could have guessed the commodity price winners of a turbulent 2020? Best to have just been the lowest cost producer (and investor) and let nature take its course. But for the "other than" passive investment professionals – it is critical to always remember: you don't make money guessing when and where a cataclysm is going to take place. You make your money, and your name, on how you react when the cataclysm occurs. And how you react has a lot to do with how quickly, ethically and transparently you react.

South Africa has done a horrible job of phasing out gold from its commodity mix – just as the whole world woke up to the need for a real currency. And SA's government has done just as bad a job at trying to drive down the road of life with eyes glued to the rear view mirror, trying to preserve and promote coal and oil and chasing away those investors and others who sought to invest and build new-age energy producers and transmitters.

For heaven's sake, let's correct those two huge strategic (and tactical) blunders before creating and implementing any more destructive mineral and energy policies and legislation. As James Bond says: "You only die once. Make it count."

Note: At today's prices rhodium is 45% of PGM miners' revenue, palladium 27% and platinum 20% and 8% is "other". ■

FORTUNE FAVOURS THE BRAVE

AECI Mining Explosives makes bold moves

By Nelendhre Moodley

The onset and spread of the COVID-19 pandemic was so swift and surprising that business strategies, scheduled mergers, acquisitions and product launches took a back seat as companies grappled with the impact of lockdowns and keeping employees safe. Few companies were bold enough to go ahead with intended business plans.

Global explosives manufacturer AECI Mining Explosives defied the odds, taking the courageous step to bed down on its recently acquired Brazilian acquisition, and launched an innovative new product, the Powergel X².

AECI Mining Explosives MD Edwin Ludick is however quick to point out that these activities were done within controlled parameters and within the guidelines set out in terms of lockdown regulations.

In line with its geographical expansion focus, AECI acquired an explosives business in the Brazilian state of São Paulo in 2018. Following the transfer of all operating licences to the AECI Group at the end of February 2020, the company began bedding down on the acquisition, which includes ownership of a bulk emulsion and packaged explosives manufacturing plant as well as distribution and storage facilities. The Lorena facilities currently serve mainly the Brazilian construction and civil blasting industry with exposure to the large mining sector. AECI Mining Explosives is looking to unlock opportunities in mining by leveraging the group's experience in underground and surface mining.

NEW PRODUCT LAUNCH

Following the market's requirement to find a solution for blasting in unstable conditions, AECI Mining Explosives developed and launched its latest bulk emulsion offering, Powergel X². This product is designed for surface mining applications where extreme blasting conditions such as hot holes and reactive ground, or a combination of both, exist. The product is differentiated by the fact that most competitor products available on the market cater for either reactive ground or hot holes, but not both.


AECI Mining Explosves in Lorena, Brazil.

> "AECI Mining Explosives has **bedded down** on its **Brazilian** acquisition and **launched** the **Powergel X²**." – Ludick

IMPACT OF COVID-19

While the pandemic has devastated the local economy, the mining sector overall performed better than many sectors. The majority of commodities were under pressure, barring gold.

Given that the coal industry is a key component to keeping the lights on, AECI Mining Explosives' business was kept ticking.

"Following the onset of the pandemic, the AECI Group took swift and strategic measures to ensure that we drove safety at our operations, paid employees full salaries and kept our teams intact without turning to retrenchments," says Ludick.

The company was quick to set up a health and safety task team, which included key medical personnel and outlined policies and guidelines that carved a way forward for the company and its employees.

Given the restrictions placed on international travel, the company's ability to scope and target new areas of growth in the US had been limited, as was the scheduled grand opening of AECI's new facility in Brazil.

"Owing to the pandemic, the grand opening of the factory – which was scheduled for April – had to be postponed," says Ludick.

LESSONS FROM THE PANDEMIC

The pandemic has heightened the need for implementing greater safety and cleanliness measures. "Although the scheduling of product delivery has impacted business, this new normal has made way for closer relationships with our customers."

Going forward, these measures will continue to underpin the way in which businesses operate, especially in terms of sanitising.

POWERGEL X^2

Powergel X^2 is designed for surface mining applications where extreme blasting conditions such as hot holes and reactive ground, or a combination of both, exist.

Powergel X^2 is ready to break new ground.

"Furthermore, the pandemic has reiterated the long-held belief that cash is king. Companies that were highly geared towards debt have been the earliest casualties of the pandemic. Going forward, companies will be focused on ensuring that they remain in a strong cash position. For AECI, which is responsibly geared, this is a clear reminder to continue to remain so."

The pandemic also fast-tracked the move to digitalisation with more people turning to digital platforms, which helped companies keep people operating in safer working environments.

"In fact, we held our first Teams farewell for one of our executives in the Mining Chemicals business – Liesl de Villiers. Although this has been a novel way to send off our colleague, we managed to successfully deliver a full programme, including speeches. Digitalisation has certainly paved the way for doing business differently and more safely."

2021 – THE YEAR AHEAD

Given that there are no established models of growth for 2021, Ludick expects that it will be "a combination of growth that was expected between 2019 and 2020 and possible curtailment due to slower recovery" – this as the second wave of the pandemic takes hold of key global markets. If we are able to recover to the original 2020 expectation, the

Our Executive team regularly visits the plant to ensure covid regulations are adhered to.

AECI's digitalisation strategy is focused on ensuring that the company is ready for future technology disruptions.

world economies would have done well.

"The impact of the second wave will be less severe as measures have already been implemented in the first round of the pandemic," he says.

For the year ahead, AECI Mining Explosives is looking to continue driving its growth strategy; targeting territorial expansion, which entails scouring the markets for new areas of opportunity, including growth nodes in Africa, Australia, South America and tracking the North American market.

According to Ludick, South America offers extensive opportunity and a chance to expand its footprint into the Chilean and Peruvian markets, as they offer untapped growth potential. They will also be looking to leverage off their strong presence in Africa, continuing to identify areas for opportunity, especially those in Central Africa and gold-rich West African destinations.

"In Africa, we adopt our successful hub and spoke method, whereby we establish a presence in a particular area and from there we scan neighbouring countries for

Edwin Ludick.

opportunities."

The explosives manufacturer plans to either "put up emulsion plants or acquire established facilities" in identified growth nodes.

"In 2021, we will continue to participate in tender processes, competing with the best in the industry as well as target acquisitive growth, especially opportunities that are a good fit with our strategy and which can deliver good returns on investment." ■

PANDEMIC RATTLES GLOBAL MARKETS

Brelko is stirred but not shaken

By Nelendhre Moodley

The world has been shaken, markets have been rattled and companies have been rolling off the bandwagon by the thousands. The COVID-19 pandemic continues to leave death and destruction in its wake, forcing everyone to revaluate their lives and business strategies.

2021 is certainly going to be a year of reinvention. But for companies whose foundations are built on innovation and technology, with an eye to future sustainability, the process will be less painful.

For Gauteng-based Brelko, 2020 has been a tough year. However investments made over the years related to sustainability, including those associated with diversity, product innovation and patents, employee training and local manufacturing capabilities, have enabled the company to ride out the COVID-19 wave as best as possible.

Brelko is a Level 1 B-BBEE-accredited company, supplying polyurethane rollers, belt scrapers, Keyskirt chute sealing systems, belt centralising systems and polyurethane hi-impact systems across a number of sectors, predominantly the mining sector.

DRIVING THE SUSTAINABILITY AGENDA

Sustainability is described as the ability to exist constantly; which means always reinvesting to keep a business relevant for the future.

"Brelko has a robust sustainability agenda, identifying and progressing about 20 top priority areas at any given time. This helps us to improve efficiency, productivity and ultimately profitability," says MD Kenny Padayachee.

The company was established 33 years ago as a producer of conveyor belt cleaning equipment, but today it has grown to the point where it supports the entire conveyor belt needs in terms of spillage.

"We reinvest in the company with a view to add value across the larger supply chain. Over the years we have honed our skills to become a totally local manufacturer; producing our own designs and 3D drawings to manufacture, install and maintain our products. In fact, over the past five years we started designing and manufacturing the moulds that produce our

range of products inhouse," says Padayachee.

Key developments in the spotlight include expanding the factory to accommodate its ever-growing needs, completing construction of the company's warehouse and stocking it, continuously upgrading employee skills sets and improving software systems, among others.

Brelko's skills development and training programmes work to align their workforce with the latest technological developments.

"Where accountants see employees as liabilities and expenses, we at Brelko see our people as assets, and certainly as an appreciating asset, as they continually add value to the company through productivity. When you invest in people you bring out the best in them which ultimately translates to increased returns," says Padayachee.

Given its niche market product range, seeking out new clients and markets and diversifying its geographical footprint beyond Africa is a strategic focus area for the equipment manufacturer.

"We have an ear to the ground, constantly pursuing new clients. We put ourselves out there to find these new clients, whether it is in Africa, Saudi Arabia, Mexico or the USA. In fact, our endeavours have resulted in Brelko being present in 40 countries across the globe. Essentially, we believe in our product and its capabilities and understand the benefits that our premium-quality products can deliver to clients, especially in terms of improved productivity and longevity. And so we seek out companies that we believe will benefit from adopting our products."

2021 – WORKING WITHIN THE CONFINES OF A NEW NORMAL

The good news is that a new COVID-19 vaccine has been developed by Pfizer, an American multinational pharmaceutical corporation, and German company BioNTech, which is considered to be 90% effective. However it may be a while yet before it reaches the continent, so it will be business as (un)usual for a bit longer.

Nevertheless, the conveyor belt cleaning equipment manufacturer will be steaming ahead on its earmarked projects, which includes rolling out and completing Phase 4 of its solar project.

In a bid to reduce its reliance on Eskom's unreliable power supply, in 2018 Brelko took a decision to roll out phase one and phase two of its solar power project.

By November 2020, the company completed phase 3 which delivered 500KW of power bringing the total off-grid power supply to 2 000KW.

Coupled with an anticipated completion of phase 4 in 2021, which is set to deliver a further 1 000KW, the company will also acquire batteries to store up excess power.

Once complete, the solar power plant will produce 3 000KW per day, allowing Brelko to be off-grid and independent of the local power producer. This will ensure a constant supply of power to run the factory on a 24-hour basis.

Further to this, the company is scheduled to complete construction of its massive 2 500m² warehouse. The three-level custom-designed warehouse will be equipped with a hydraulic goods lift for increased efficiency.

"The years of investment to improve productivity, efficiency and ensure future sustainability have paid off. During a challenging time like this, we have been able to cope easily," says Padayachee. ■

INDUSTRY HONOURS BME'S SAFETY JOURNEY

A stellar safety performance based on strong employee commitment has earned blasting and explosives leader BME a Sustained High-Performance Award from the chemical sector, the company said. The accolade was part of the Responsible Care Awards run annually by the Chemical & Allied Industries' Association – held this year as a virtual event. BME, a member of the JSE-listed Omnia Group, was a runner-up in this Category B award last year.

"This is a real achievement for every employee in the business, as workplace safety can only be achieved as a team," said Joe Keenan, managing director of BME. Keenan highlighted how buying across the board was key to improving safety results, as staff internalised the ways that safety affected and improved their lives.

The company's safety journey has seen its recordable case rate decrease from 0.7 in 2016 to just 0.06 by September 2020, according to Ramesh Dhoorgapersadh, BME's general manager for Safety, Health, Environment, Risk and Quality.


Joe Keenan.


Ramesh Dhoorgapersadh.

"This was achieved by creating a 'cultural movement' within the organisation under our Safety For Life brand," said Dhoorgapersadh. "This brand focuses on the triple bottom line: safety for people, the environment and the commercial sustainability of the business."

Throughout the 18-month journey, the company raised issues like driver awareness and fatigue management – as well as the concept of visible, felt leadership. He noted the steady improvement in employees' spontaneous reporting of small incidents and near misses, which has become increasingly the norm in line with the accepted safety culture.

BME has received accolades from the Chemical & Allied Industries' Association.

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