

THE MINING PULSE

ISSUE 1 | MONDAY 5 FEBRUARY 2024



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Positive disruption starts now

Welcome to the first edition of our 'shiny' new Show Daily – rebranded The Mining Pulse

Why rebrand? What better time to do so than on Mining Indaba's 30th anniversary where, as you know, we're putting positive disruption at the forefront of everything we do to mark the start of a new chapter in this incredible event's journey. Why not extend this to one of the key communication channels we have with you our audience?

What is *The Mining Pulse*? It's a publication you want to hold on to – in years to come it will perhaps be a collector's item. Its purpose is to keep you informed of all the exciting initiatives you can expect in 2024 and contains an array of valuable and insight content pieces that reinforce some of the key messages that we're honing in on through our various programmes.

Who should read *The Mining Pulse*? You – every event attendee and delegate. This product is designed with your needs in mind and is meant to elevate your overall experience and keep you in the know.

When do you get your next edition? *The Mining Pulse* will be distributed every day from Monday to Thursday; so there are 4 publications in total. Make sure you get every copy.

The Mining Pulse is the brainchild of our senior communications manager Chanel Burke, supported by my vision to add value to something that was in need of a bit of disruptive change. It's a proud moment to see this come to life.

Why positive disruption? For those of you who I've had the pleasure of meeting along my mining career journey – which stretches over many years now – I have seen the ebb and flow of this sector and the many changes it has been through.

Yet despite its path, the future of mining in Africa will encounter more changes than ever before and the key to successful transition is the industry's ability to embrace disruption.

It comes in many forms and is required to truly establish positive change. Mining Indaba is putting a stake in the ground and saying – this is the start of that change, right here, right now. And let it be said – that stake has been planted, in *The Mining Pulse*.



LAURA CORNISH
Mining Indaba

THE SOCIAL AGENDA



World Gold Council Reception
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30th Anniversary Party
Monday 5 February
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Mining Indaba 2024 will mark the start of significant positive change in Africa's mining sector



FRANS BALENI
Executive Advisory Board
Chairman of Mining Indaba

Mining Indaba has evolved into a prestigious event for the whole mining industry in South Africa and beyond the continent. The

number of participants in the event has increased significantly, from approximately 300 attendees in the inception year to over 8100+ this year.

In keeping with our 2024 theme, "Embracing the power of positive disruption: A bold new future for African mining," we want to ignite meaningful dialogues that extend beyond the event and radically transform the conversation on pressing issues.

Engaging conversation is at the heart of Mining Indaba, and ongoing conversation yields benefits for all parties involved as well as the local economies. To improve performance, the industry will tackle specific

challenges that are crucial for its success.

1. The deteriorating infrastructure in South Africa has a ripple effect that affects not only South Africa but also the entire continent.
2. One of the difficulties is the slow process of obtaining environmental approvals. Addressing these delays, along with other challenges, is crucial to incentivise companies to invest.
3. Engaging in community consultation is crucial, particularly when it involves hosting mining activities, as it enables the local community

to provide valuable input and participate in decision-making.

As we look ahead, we are excited to continue the much-needed open dialogue and collaboration, which will drive innovation and sustainable growth in the African mining industry. Through sharing knowledge and experiences, we can collectively address challenges and seize opportunities for positive change. Let us come together at Mining Indaba to forge new partnerships and chart a path towards a prosperous future for African mining.

I look forward to welcoming you all.



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Interview with Sandy Lawrence

“ My vision re-focused from economic success to the balance of responsible investment and the hopes that the citizens of African countries would also benefit from developing projects ”

In 1994 our company, International Investment Conferences had been producing mining conferences for six years in London, New York, Sydney, Toronto, San Francisco, Boston, Las Vegas, Vancouver and Miami. These events featured an ongoing Conference with hundreds of speakers and an exhibit area for more in-depth conversations with participants, as well as social events and Galas.

One of these events, Investing the Americas Conference in Miami was a geographical conference addressing ongoing and developing mining projects in the Americas. As a professional investor conference, it was represented by Mining Ministers from dozens of South and Central American countries and included senior governmental officials in countries working to attract professional investors from around the world to help develop their projects.

This very successful Miami conference series was in its 4th year when post-apartheid South Africa was consuming my thoughts. Investment possibilities in South Africa were newly available to many countries and I was excited to travel to Africa. I hoped to find an interest for our company to develop a similar concept as Investing in the Americas for that region. In 1994, I visited many of the mining companies and investors in Johannesburg. These senior Executives had supported and attended our other conferences and were aware of the global reach of our company. My visit with Johannesburg based leaders confirmed their interest in the concept. The timing of bringing together global fund managers, analysts and international mining companies from other parts of the world to a relaxed informal conference in Cape Town was appealing. It would be conducive to not only investment, but also relationships with government entities, legislators and intermediaries without the formality usually associated with scheduled meetings in their offices.

After visiting Cape Town as a venue, I was confident that this town on the Western Cape of the Atlantic Ocean under Table Mountain could be perfect for the first Indaba. The largest hotel at that time was the Cape Sun International Hotel, which was under the management of Hilton. The hotel would meet all our requirements the first year but

by year two we were scrambling to find enough rooms and exhibit space in Cape Town for the participants. Over the next decade, it was great to see the development of the Cape Town Convention Center and more 4- and 5-star hotels which were a welcome accommodation for the growing attendance.

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What was most consequential for me was when South Africa's Deputy President (and de facto prime minister) Thabo Mbeki was a keynote speaker in the early years. His appearance quieted any reservations that may have existed about an American company hosting an African mining event in South Africa. He was followed two years later by President Kiywite of Tanzania, our first African head of state to speak at the Indaba. Peter Ven der Veen of the World Bank was also an integral supporter and validator of Indaba.

There was substantial interest in the Indaba globally, in part due to the fabulous Gala Dinners, sponsored by Anglo American Corporation and Barrick Gold Corporation at Vergelegen. I don't know of a more prized invitation in any event that equaled being invited to that dinner, particularly the year that the beautiful models draped in DeBeers diamonds entered on horseback. Over the years, we added a Golf Tournament at Steenberg Resort and the Table Mountain Challenge which was a walk or run-up this World Heritage Site and many smaller opportunities for participants to get to know each other.

After developing the Indaba, I was fortunate to continue my work with the sponsors, speakers and investors throughout the growth of the Indaba for eleven years, until International Investment Conferences was sold and my contract with the new owners ended in early 2006. The relationships with the Sponsors, Ministries and participants were among the greatest experiences that I have had in my life. I'm proud to see Alfonso Jugo from our team continue to support the Indaba community and Tony Carroll, who is a guiding light in the Ministerial role representing this important delegation. I'm also grateful to our initial Lead Sponsor, Lawrie Williams of

the Mining Journal in London and our Miami based team of Evelio Garavito, Susan Dubel, Robert Pearce, Cheryl Shahan, Jeff Dubel, and Robert Alexandra who traveled with us to Cape Town and were instrumental in building Indaba to be a major international event. The countries of Southern Africa which I had an opportunity to visit still have a place in my heart and although very disappointed that it was not possible this year, I would be honored at some time to revisit the Indaba.

My initial vision of the event came to fruition as I was told after significant years that investment in African mining, as a result of Indaba, had brought unheard of new investment dollars into this continent. At this point my vision re-focused from economic success to the balance of responsible investment and the hopes that the citizens of African countries would also benefit from developing projects. Following the 6th annual Indaba, I visited the Jane Goodall TACARE project in Tanzania, which was a pilot program to find ways of arresting the rapid degradation of natural resources and surrounding communities.

This model offered a workable plan for mining companies to engage and empower local communities with the development of major projects. Recognizing all the good work that had been done in this area by our Sponsoring mining companies, the success of this vision was not as easy to quantify as were the investment monies directed to Africa. Empowerment and responsibility should always remain at the forefront of discussion in an event such as Indaba.

My next venture was a project that began during my time in Cape Town, where the concept of Ubuntu was explained to me by Eddy Cassar, a Cape Town public relations guru. I first heard of Ubuntu when trying to find more rooms for participants for Indaba in our early years. After speaking with the owner of an Inn that had six rooms, she told me we could use only two of them. Not understanding, I asked why not all six rooms? She offered the simple answer that her business only benefits when other innkeepers' benefit. This was the concept of Ubuntu, "I am because you are." The most substantial lesson that I learned at Indaba and one I am still working to adapt to my life.

I am sending my warmest wishes to all those at the 2024 Indaba!

“ I'm proud to see Alfonso Jugo from our team continue to support the Indaba community and Tony Carroll, who is a guiding light in the Ministerial role representing this important delegation ”

TODAYS AGENDA

MONDAY 5 FEBRUARY, 2024

PRESIDENTIAL ADDRESS

Presidents Stage

09:00 – 12:00

Mining Indaba 2024 Opening Ceremony

DISRUPTIVE DISCUSSIONS

Disruptors Stage

14:00 – 14:15

Disruptive Discussions Launch

14:15 – 14:35

Voices of Disruption – Anglo American

14:35 – 14:55

Voices of Disruption – Rio Tinto

14:55 – 15:15

Voices of Disruption – Newmont

15:15 – 15:35

Voices of Disruption – Barrick Gold Corporation

15:35 – 16:20

Disruptive Discussion – Africa exploration pipelines – why so empty?

16:20 – 16:40

The Investor View: Mineral export bans – How does this affect investment opportunities?

16:40 – 17:30

Disruptive Discussion: Security of critical minerals supply: China? The West? Saudi Arabia? Or Africa?

INTERGOVERNMENTAL SUMMIT

Governments Stage

13:00 – 13:10

Opening Remarks – MC Welcome Address

13:05 – 13:15

Welcome Address – South Africa

13:15 – 13:20

Ministerial Address – Republic of Ghana

13:20 – 14:00

From aspiration to reality – promoting Africa’s Mining Vision on the global stage

14:00 – 15:30

Country Showcase – Tanzania

15:30 – 16:00

Balancing supply & security – are international mineral partnerships providing equal value to producers?

16:10 – 17:40

Country Showcase –Zambia – Investing with confidence – power the future

17:40 – 17:45

Closing remarks

TECH AND INNOVATION HUB

Innovators Stage

10:00 – 10:45

Global Electronic and Automotive Producers Talkshop – Can Africa play a meaningful role

10:45 – 11:05

Tech in Action – Anglo American case study on dry tailings technology

11:05 – 11:50

The African elephant in the room: The role of technology in African unemployment

11:50 – 12:10

Bridging Downstream & Upstream: The Responsible Minerals Initiative's Support for value chain collaboration

12:10 – 12:30

Tech in Action: A Mixed Reality Experience: Reimagining the Mining Operator's Day in the Life for a more Productive, Safer and Sustainable Mine

13:10 – 13:55

Shared Data and Interoperability – Are African miners doing enough?

13:55 – 14:15

Tech in Action – Flying LiDAR: Surveying inaccessible areas with ELIOS3

14:25 – 14:45

Tech in Action: Blasting Silos to mine data: A vendor neutral SIC and integration platform

14:45 – 15:45

Proximity Detection Systems

15:45 – 16:05

Newtrax – Using Telemetry Data to Improve Advanced Proximity Detection

16:05 – 16:30

Mission Impossible – 41 miners rescued 0 injuries in 17 days.

16:30 – 17:15

Health and Safety as a Inhibitor to mining productivity: How can technology help?

INDUSTRY INTEL
Insiders Stage

14:00 – 15:00

World Bank: Harnessing Africa's Mineral Wealth: Opportunities for Revenue Mobilization and Structural Development

15:00 – 17:00 (By invitation only)

Alternative Mining Indaba Company/Community Dialogue

15:15 – 16:00

World Bank: Launch of the State of the Artisanal and Small-Scale mining Sector Report with Author Meet & Greet/ Press Conference



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Mixed tidings for SA as electric vehicles rev up performance

DAVID MCKAY

Miningmx

ONE in five cars to hit the road this year will be electric. That's equal to a million new cars per month which will take the adoption rate of the technology to about 30% in China and 20% in Europe. Consumers, it seems, are getting their heads around some of the negative factors that dissuaded them in the past such as performance and range, according to S&P Global Commodities. Even affordability without government subsidies is improving, the research house says.

For commodity markets in general, such as nickel and copper, continued EV growth is good news. After a moderate to disappointing price performance for so-called battery metals in 2023, the trend this year is the friend for the likes of Glencore. In the context of robust demand it only then takes a surprise disruption to supply to tip the scales in favour of a major deficit and a handsome price run.

Look no further than the dying weeks of December when Anglo American slashed its copper production forecast for this year and Panama shut down Canada's First Quantum Minerals' Cobre Panama following a long-standing court dispute about its licensing. In a heartbeat an expected 250,000 ton surplus in copper turned into a 500,000 ton deficit, according to SP Angel, a UK stockbroker.

But for South Africa, a healthy market for electric vehicles brings mixed tidings. Thriving copper prices is exactly the news emerging miners



such as Orion Minerals and Copper 360 require as they finance new production of the metal. But for the country's platinum group metals (PGMs) producers – which remove noxious emissions from internal combustion engines – a thriving EV market is bad news.

Shares in the country's flagship PGM producer Anglo American Platinum (Amplats) collapsed last year as PGM prices plummeted, especially palladium and rhodium especially. The platinum price was static. This was despite supply deficits in all three metals, platinum, particularly, where the deficit reached a record one million ounces.

The presence of above ground stocks and investor shorting outweighed physical shortages, according to Metals Focus which analyses precious metals markets. A reduction in Chinese PGM imports this year and continuing concerns about the rate of China's growth is set to continue the theme of depressed metal prices in 2024. "Looking ahead to this year, we anticipate a continuation of these dynamics," it said in a report this month.

At best, the palladium and rhodium prices are likely to stabilise. Gold, too, is set for a quieter year, according to Metals Focus. "Looking ahead, we expect downward pressure to persist in the first half of 2024," it said. "This view rests upon a belief that the first rate cut by the Fed will come later than currently price in by the financial markets," it said. But the outlook isn't as pessimistic for gold as for PGMs, even if record central bank gold purchases in 2022/2023 will be hard to match this year.

Gold will stabilise below \$1,900/oz, about 10% beneath its current value, partially owing to geopolitical pressures in Ukraine, the Red Sea and Middle East, it said. "The drop in real yields and pressure on the dollar, plus the abundance of systemic risks, still turbulent geopolitics and richly priced equities, should all favour fresh gold investment," Metals Focus says.

According to the Minerals council, nearly 27% of total South African mineral sales in 2022 was from coal, making the sector the second largest contributor to revenue from mining. For this year, however,

coal prices are expected to continue a price correction that kicked off in 2023.

A report by the International Energy Agency estimates global coal demand will fall 2.3% between now and 2026, even in the absence of governments announcing, and implementing, stronger clean energy and climate policies. "This decline is set to be driven by the major expansion of renewable energy capacity coming online in the three years to 2026," the agency comments.

Thungela Resources, a coal producer housing the assets demerged by Anglo American in 2022, saw a 38% decline in its share price last year. Another coal producer Exxaro Resources fell 7%. While the flagging fortunes of the fuel will hardly come as a surprise to either company, it will certainly hasten their efforts to diversify: Exxaro into renewable energy, Thungela into offshore markets, lessening its exposure to Transnet, the failure of which will continue to be manifest this year.

Richards Bay Coal Terminal is due to publish its export numbers for 2023 on January 25. No prizes for guessing the picture that will paint. It's quite possible exports will hit a new record low after registering a 30-year low in 2022 of just over 50 million tons. In this regard the performance of Transnet is an outlier for South African mineral exporters. Anglo American's CEO Duncan Wanblad reckons Transnet will continue to underperform this year, capping potential price peaks for bulk minerals iron ore, manganese and coal itself.



DISRUPTIVE DISCUSSIONS THAT DEFINE THE FUTURE

MITV is your #1 platform for thought-provoking discussions that shape the future of mining.

With a commitment to delivering impactful content around the clock, we strive to make a difference not just locally but on a global scale as well. Join us as we explore groundbreaking ideas and inspire change in the world.

A PREVIEW OF THE REVOLUTIONARY LINEUP OF SPEAKERS



Neal John Froneman
CEO
Sibanye-Stillwater



Dr. Josh Goldman
Co-founder and President
KoBold Metals



Christopher Griffith
CEO
Vedanta Base metals



Sihle Mdluli
Executive: New Business
Development
African Rainbow Minerals



Rohitesh Dhawan
CEO
International Council on
Mining and Metals (ICMM)



Inga Petersen
Executive Director Global
Battery Alliance



Joseph Starwood
Worldwide Mining Industry
Leader
Microsoft Corporation



Jennifer Peyser
Senior Vice President/Executive
Director
Responsible Business Alliance/
Responsible Minerals Initiative



Dr. Marit Kitaw
Interim Director
African Union- African Minerals
Development Center (AMDC)



Dr Rebecca Maserumule
Chief Science and Technology
Representative
Department of Science and
Innovation



Semih Ozkan
Executive Director - EMEA
Energy, Power, Renewables
JP Morgan



Duncan Wanblad
Chief Executive Officer
Anglo American

Water usage management: Vital for a sustainable future

GERARD PETER

Senior Editor, Mining Review Africa

In a water-scarce Africa, there is a strong demand for mines to effectively manage their water usage. How do they get this right? Mining Review Africa finds out more from Amelia Briel, Environmental Section Manager and Amanda Cassa, Senior Civil Engineer at Knight Piésold (KP).

Given the fact that mines are now compelled to adhere to ESG best practices, there is greater emphasis on mine water management. "Today, there is not only a focus on how water is used in a mining operation but also how it impacts the environment and communities. Also, the buyers of a mine's commodities place great emphasis on ESG and this includes water management," says Briel.

Cassa adds, "It is also about

ensuring the effective use and reuse of water through water balance modelling. There is a focus on how mines can reuse the water they process and take less potable/raw water out of the environment."

Briel states that the introduction of the Global Industry Standard on Tailings Management (GISTM) is also compelling mines to think about their impact on the environment during rehabilitation and post-closure. Mines now have to take an integrated lifecycle approach, from pre-construction to post-closure.

While many of the large mining houses subscribe to GISTM, it is not an absolute requirement yet. However, Cassa explains that the South African Bureau of Standards (SABS) along with industry advisors are currently updating its SANS 10286 legislation which is

the mandatory code of practice on mine residue to include GISTM compliance among other updates.

Proper implementation of systems will conserve water

While dry tailings is a more environmentally friendly option, Cassa points out that this is expensive and as such, particularly in South Africa, a conventional slurry deposition tailings dam, which contains a lot of water, is the preferred deposition method. "If designed and managed properly, this will work.

In my experience, there is often a disconnect. A 'perfectly' designed tailings dam and return water system does not necessarily equate to a system that can be easily or even practically implemented and managed.

"Ultimately, it is up to the mining company, with advice from the

Engineer of Record (EoR), to determine how to effectively reduce the water in a tailings dam and store it in a return water dam before reusing it within the mine's circuit," she says.

Briel explains that the approach to water management is different to each region in Africa. "For example, South Africa is water scarce country so we have to be very efficient with our water. Meanwhile, in other jurisdictions where there is a positive water balance such as the DRC and Ghana, so it must be ensured the tailings dams do not keep too much water on the dam or they could become unstable.

"At the end of the day, it is not just about ensuring that water reuse benefits a mine's operations, we also need to consider the cost to the environment and on human health," she concludes.

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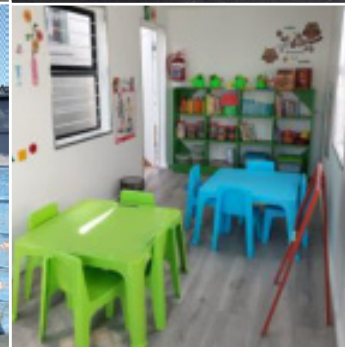
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MORE BEHIND THE STORY



COMMITTED TO DRIVING POSITIVE CHANGE WITHIN THE INDUSTRY, MINING INDABA TAKES GREAT PRIDE IN ADDING VALUE TO THE COMMUNITY AROUND US THROUGH A RANGE OF ESG-LED INITIATIVES.



DID YOU KNOW:

Making exhibitor stands sustainable

- ScanDisplay's fabric shell scheme solution was used exhibition stands, enabling exhibitors to reuse graphics, reduce waste, and store them post-event.
- Re-usable tiled carpets were used.
- Replaced 75 banners with digital screens and pillar wraps.

Ladles of Love

- Ladles of Love will sponsor Masonwabe's Nourish Our Children program, providing a customised meal plan for ECD children based on age, gender, and nutritional needs. The programme began at the beginning of this year.
- The Mining Indaba team is planning a charity day post event to assist with herb garden, cooking, preparation, and final revamp and branding of the kitchen.

Recycling graphics

- The team recycles signage by donating non-reusable graphics to Sealand Gear, a Cape Town-based maker of repurposed outdoor bags and apparel, which uses leftover fabric for bag inners.

Expanding school gardens

- In partnership with Call 2 Care, we visited Windmeul Primary School: Vrygunspad, where we contributed to the expansion of the school garden by donating and planting vegetable and fruit trees.

Donating magazine collateral

- Donation of surplus magazines to Silverleaf School in Dunoon, were used to recycling funds to purchase seeds and plant vegetables for 1500 children.

Supporting Township from 2018–2023

- Job creation: 45 women were employed for 18,500 hours and produced 16,800 bags.
- High labour content: the income of the cooperatives was 30% of the bag value.
- Recycling: 20,000 plastic bottles were recycled to produce 3,000 bags.
- Last year, the remaining delegate bags were donated to Mvula Primary School in Cross Roads.
- In partnership with CTICC, the Mining Indaba team visited Thembani Primary School, a government school in Langa Township. Together, we transformed three learning spaces by cleaning, organising and painting the interior with bright and fun colours to create an inspiring space for young learners and teachers.

Donating R200 000 to Cotlands Children's Charity

- In 2023, we donated R200,000 to Cotlands Children's Charity, a non-profit organization that provides care, assistance and development opportunities to young children and their families from vulnerable communities.

Communities and Collaborations

- Building a carbon-negative school in Cape Town in partnership with Breadline Africa. One of our chosen projects for this year is to provide 74 children at Masonwabe Educare Centre, a Township school located outside of Cape Town, with dignified and safe facilities using carbon-negative building technology.

Converting meeting spaces into classrooms

- In partnership with Breadline Africa, we donated a repurposed shipping container, which was used as a meeting room during the event, to Ubunye Educare Centre, where the repurposed shipping container was converted into a multi-functional learning centre for young learners with special learning needs.



Resourcing Africa's wealth of critical minerals is an 'everybody wins' opportunity

JOSEPHINE CLERKIN
Associate, Tavistock

There are few that argue that in order to achieve global climate targets, the world requires a rapid scaling of the mining industry's output of critical minerals.

The ambitious plans of states for the deployment of clean energy sources, alongside clean technologies including electric vehicles (EVs) will supercharge the demand for these materials in the next decade. The International Energy Agency estimations for lithium demand by 2040 range between 13 and 51 times today's levels, whilst cobalt and graphite may see 6- to 30-times higher demand than today, depending on the direction of battery chemistry evolution.

In all scenarios currently laid out by analysts, the expected demand dramatically exceeds the rate of supply. The urgency of reaching Net Zero is

incompatible with the level of planning and research normally deemed necessary for a task of this magnitude.

The prominence of this objective continues to thrust a range of metals, and the mining industry as a whole, into the spotlight, as a key driver of the energy transition. Africa in particular is widely regarded as one of, if not, the world's largest untapped mineral reserve, abundant in these key minerals that will fuel the energy transition, including, cobalt, manganese, graphite, lithium, nickel and copper.

A recent report from the World Bank, titled: "Africa's Resource Future", determined that the continent holds a dominant position in several vital metals, hosting 75 per cent of the world's cobalt, 68 per cent of manganese, 59 per cent of graphite, and a plethora of undeveloped resources of lithium.

There is obviously an opportunity for the African

continent (one, it must be said, that has presented itself previously with other commodities, including oil) that this scenario can and should promote economic transformation and growth, with rising revenues and investment across the continent.

In Zimbabwe for example, which is said to hold where lithium exports have grown from US\$1.8 million in 2018 to US\$70 million in 2022, and then US\$209 million worth of exports in the first 9 months of 2023, showcasing the capacity for dramatic economic growth on the coat tails of the lithium and battery minerals sector.

In order for this growth to be sustainable and replicated across the continent it is important that confidence is created for investors.

There is no doubt, African states require foreign investment for this advantage to ever be realised; Resource

nationalism, demonstrable in the rise in export bans in the past few years, is but one manifestation of the recognition from resource-rich states that the playing field is tilting increasingly their favour.

The immediate task at hand, therefore, is for mutually beneficial and fair partnerships between states and mining companies to expand. This is a challenge for both the continent and the entirety of the mining community to ensure that the journey towards Net Zero is equitably felt by all contributors.

The shared goal of meeting the global demand for critical minerals drives this: there is a win-win scenario that Africa can now offer the mining industry and the world, and it is well within reach.

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PGM Mining Understanding ESG Metrics



DALE MUNRO
Consultant, PGM Mining

As a member of the Investing in In 2023, Metals Focus released our inaugural PGM ESG Focus report, offering a deep dive into the Environmental, Social, and Governance (ESG) metrics of six key PGM mining companies, collectively responsible for nearly 90% of the global mined supply. These are: Nornickel, Implats, Sibanye-Stillwater, Amplats, Northam and RBPlats. This article shares some insights from the report, shedding light on the industry's evolving strategies and the challenges it faces in an ever-changing ESG landscape.

PGM miners have recognised the critical role of ESG in shaping their future performance and financial stability. Beyond traditional risks like market-driven uncertainties, ESG has emerged as a top business risk. Executive performance evaluations now hinge on ESG metrics, reflecting the industry's commitment to responsible and sustainable practices.

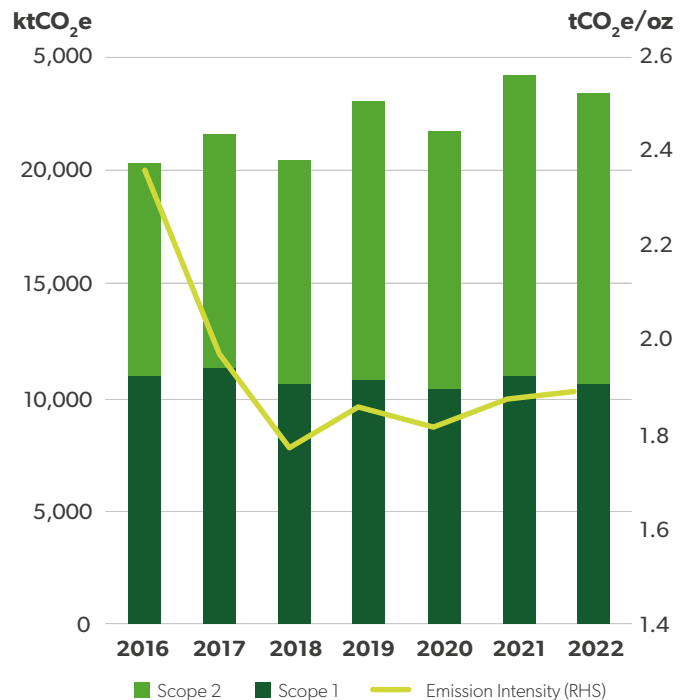
The industry is increasingly focusing on reducing greenhouse gas (GHG) emissions, driven by the growing use of Life Cycle Assessments

by consumers and national commitments to the Paris Agreement. South African operators, heavily reliant on coal-fired Eskom for energy, face high GHG emissions but have committed to achieving net-zero emissions by 2050, with interim goals of a 30% reduction by 2030. Decarbonisation strategies hinge on replacing Eskom power with own generated renewables, or securing power purchase agreements from lower carbon sources. However, implementation delays due to land claims, permitting issues, and grid access challenges persist, are hampering efforts to reduce carbon emissions.

Despite a concerted focus, the 3% year-over-year reduction in Scope 1 and 2 emissions to 23,410 ktCO₂e for the surveyed companies in 2022 was due to a milder Russian winter, which lessened heating needs for Nornickel, and decreased smelter utilization in South Africa due to maintenance activities. The emission intensity per ounce of PGMs produced rose by 1% y/y to 1.89 tCO₂e/oz, as the reduction in overall production offset the decrease in emissions. Separately, SO₂ emissions rose by 10% y/y, due to the recovery of smelting at Nornickel after the flood in 2021.

The recent tragic event at Impala Rustenburg highlights the risks associated with PGM mining. Despite the industry's commitment to a 'zero harm' policy, aimed at eliminating fatalities and life-threatening injuries, 2022 witnessed 21 fatalities, a decrease from 28 in 2021. This number marks a significant reduction from the peak of 33 fatalities in both 2015 and 2016, and reverses

Total Greenhouse Gas Intensity



the rising trend observed from 2018 to 2021. On a positive note, the average Lost Time Injury Frequency Rate (LTIFR) – a key indicator of workplace safety – improved, decreasing by 16% year-on-year to 2.7 injuries per million hours worked. This continued the overall downward trend in LTIFR, reflecting ongoing efforts to enhance safety measures in PGM mining operations.

The upcoming elections in South Africa, with associated heightening tensions and increased attention on the country's socio-economic challenges, are already having an impact on PGM mining. Consequently, maintaining a social license to operate is becoming increasingly imperative. The report identifies a shift

in community engagement. In 2022, payments to

governments fell by 18% year-on-year to \$7.7 billion, primarily due to reduced revenues from lower production and basket prices, impacting royalties and taxes. In contrast, community development expenditure grew by 5% to \$868 million.

Miners are grappling with the inadequacy of traditional financial metrics, such as return on investment in assessing the effectiveness of ESG strategies. This challenge is compounded by the dynamic nature of stakeholder demands and evolving ESG regulations. The sector, already pressured by falling prices and increasing operational costs, finds itself at a critical juncture. Efforts to enhance ESG performance, which often require significant investment, are under increased scrutiny in this strained financial climate.

Exploration deficit hampering sector



HALIMA FROST
Features Reporter, Mining Weekly

South Africa's mineral exploration sector is underperforming, with as much as a 15-year deficit in terms of the required exploration activity for a minerals- and mining-prolific country, posits industry employers' association Minerals Council South Africa junior and emerging mining leadership forum chairperson Errol Smart.

With little to no major prospecting projects currently in the pipeline, the country has, in the past two decades, fallen from 5% of global exploration expenditure, to less than 1%, with the greatest decline from 2020 to 2022.

"Importantly, one of the fundamental reasons for the dip is the lack of an efficient, transparent, off-the-shelf

cadastral system to manage mineral right applications, transfers and sales," he stresses.

Smart will be a panellist of a discussion, titled 'South Africa's empty exploration pipeline', at this year's Investing in African Mining Indaba, during which the declining exploration sector will be addressed.

"The Minerals Council has, for years, lobbied the Department of Mineral Resources and Energy for just such a system as one of the mechanisms to reignite South Africa's exploration sector."

Exploration is key to ensuring future mines can be built, as it typically takes up to 15 years for a mine to be found and developed, encompassing the time it takes for the discovery of an economically feasible mineral deposit to the construction of a mine, he points out.

With the dearth of exploration in the past two decades, recovery in this field of minerals development depends on the urgent creation of a regulator and investment climate that attracts prospectors, states Smart.

"This is vital as South Africa develops a critical minerals strategy and finds its place in the

global supply and demand chain for these minerals."

Smart points out that some of South Africa's neighbouring countries are better examples of how exploration can be pursued, and where modern, off-the-shelf digital cadastral systems are deployed with great success.

"South Africa cannot afford to be left behind as the continent develops critical mineral strategies to attract investment and opportunities to generate wealth, jobs and social development," he asserts.

Key Minerals Region

South Africa has many of the critical minerals needed for low-carbon economies and technologies to reduce reliance on fossil fuels and the impact of carbon emissions, including platinum group metals (PGMs), chrome, manganese, copper and rare-earth elements.

"While South Africa is mining many of these minerals, there are many more that could potentially be found and extracted if the constraints on exploration were lifted," Smart notes.

For the sake of South Africa's mining future, it is vital that these obstacles are unblocked, and

that the benefits can start to flow through in the form of investment in mines, society and industry.

These investments will go towards bolstering the development of a modern and competitive economy that realises the benefits of its mineral wealth for its citizens and the rest of the world, he adds.

"It is through international and local partnerships built on trust and integrity that South Africa can play a significant role in the domestic and global critical minerals economy."

Indaba Focus

Minerals Council has identified exploration, the security of critical minerals, logistics, PGMs and the green hydrogen economy as key areas of interest for the Investing in African Mining Indaba.

Other topics in focus are issues such as proximity detection systems for mining machinery, mining sustainability standards and prosperity for near-mine communities after mining. "The Minerals Council is an advocacy and lobbying organisation on behalf of its members, and we have a vital voice in these discussions as we ensure mining matters for South Africa," he concludes.

Disruption is thy name



TONY CARROLL

Executive Advisor: International Mining Indaba, Advisory Board

As a member of the Investing in Africa Mining Indaba Advisory Committee it is my pleasure to welcome you back to marvelous Cape Town and the 2024 Mining Indaba. For the past nearly three decades, I have been honored to have been a part of shaping an event that was started by a WOMAN with 250 delegates in a crowded ballroom and MEN displaying rocks and weathered topographical maps on card tables but now has become the largest mining investment event

in the WORLD and Cape Town's leading business event of the year. If you don't believe me, ask anyone who has tried to make a last minute hotel booking for restaurant reservation. As Alexander Dumas coined "rien ne reussit comme le succes" or "nothing succeeds like success"!

Twelve months ago we decided to make "disruption" the theme of the 2024 Mining Indaba. But isn't disruption a universal feature of the mining industry and disruption can arise for an array of sources. Market disruptions has been a part the industry since the Bronze Age as evidenced by gold rush in California's Mother Lode in the mid-19th century and the former Transvaal at the turn of the last century. Disruption in mining even appears in science fiction as evidenced in the movie Avatar where the heroine Neytin thwarts rapacious miners extracting "unobtainium".

And these market forces can be deflating as seen in the dramatic downturn of cobalt and platinum

prices this past year. They can be the result of labor unrest as the Ludlow Massacre in Colorado in 1914 to more recently at Marikana in South Africa's Northwest Province.

The can he health related as seen in the decimation of mine workers in Botswana at the onset of the HIV/AIDS pandemic to, more recently, the Covid crisis which curtailed demand for base metals but saw a rapid increase in diamond prices as wealthy consumers substituted luxury cruises with luxury jewelry.

Climate can also be a disruptor of mine operations whether due to flooding as seen in Mozambique or El Nino caused droughts that lower water flows powering hydro-electric power. And disruptions can be political whether a sudden ban on the export of raw minerals or processed rare earths to the rerouting of ore shipments from the Red Sea to here at the Cape of Good Hope due to the Houthi attacks on shipping. And, lastly, they can be technological

with the advent of new seismic methods or the development of a sodium ion battery that could greatly diminish demand for lithium and graphite.

We have tried to capture this the theme of disruption in every aspect of the Mining Indaba from keynote speakers, main stage panels and the intergovernmental, junior investor and technology sessions. We also have made a conscious effort to increase the involvement of women where fully 40% of our panelists are women and the Women in Mining side events woven throughout the four days. We also continue to engage with civil society as ignoring the interests of civil society are certain to be source of disruption.

We welcome your thoughts and ideas to help us to continue to evolve this event because standing still always means that you are falling behind. Enjoy the show and the marvels of Cape Town and the Western Cape.

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Africa's critical minerals play an important role in the global green energy transition



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Africa has become a key battleground in the global race to secure critical minerals and Australian companies have emerged as the continent's most trusted partner.

While China, the US, Europe and other major economies dominate the critical minerals conversation, it is Australian mining's technical expertise and approach to local engagement which is allowing African countries to unlock their critical minerals potential.

There are more than 50 ASX-listed companies mining, developing and exploring for critical minerals on the continent, covering every commodity from lithium to graphite. Many will be hoping to emulate Syrah Resources, the ASX-listed company which set the battery minerals pace in Africa with development of the massive Balama graphite project in Mozambique.

Syrah's journey at Balama has not been simple with instability in both markets and country making it far from smooth. The last year, however, has

seen Syrah find its feet. The company is now mining and processing on a campaign basis, allowing it to match Balama's output with market requirements.

"We continue to max out our inventory capacity, shipping capacity is on-off depending on anode demand, that led to the decision in the June quarter to switch to a campaign model," Syrah managing director Shaun Verner said. "We were trying to run continuously but were running into problems because of lumpy demand so we took the decision to stop at full inventory and restart when stocks were run down.

"It actually improves our efficiencies, because previously we were unintentionally campaign mining anyway. Recoveries and power efficiencies are harder when you are running at low throughput. And you avoid more of the unpredictable occurrences if you are planning your shutdowns."

It is clear that Syrah enjoys the support of a government which hasn't always managed to project the best image to international investors.

"We've had a good experience with national and provincial governments and the eight communities around us are extremely supportive of Balama. And the opportunities that have been brought in. So, we are not seen as a significant political challenge and there is good stability around the resource industry and investment, especially when you compare it to other parts of the continent."



Among those to follow Syrah in the graphite space is Walkabout Resources which is preparing to switch on its Lindi Jumbo graphite project in Tanzania as the mining world gathers in Cape Town. Walkabout and other Australian juniors including EcoGraf, Black Rock mining and Evolution Energy are enjoying new momentum as a result of the graphite market's rebound and the investor-friendly policies of Tanzanian President Samia Suhulu Hassan.

Developments in the lithium space have similarly been complicated. The most advanced of the juniors is Leo Lithium, which is building the Tier-1 Goulamina mine in Mali in partnership with China's largest lithium company, Ganfeng Lithium.

However, the ongoing security issues in the West African country and prolonged negotiations with

government over the terms of the mining convention mean Leo has not moved as quickly as it would like.

In rare earths, Central East Africa is emerging as the most exciting province, with Ionic Rare Earths in Uganda, Peak Rare Earths in Tanzania and Lindian Resources and Globe Metals & Mining in Malawi all advancing their stories.

Lindian chief executive Alistair Stephens said his company's Kangankunde rare earths project could be both disruptor and enabler in the global rare earths supply chain.

"It is a disruptor to the current supply chain, but also an enabler because it will be easier for more rare earths mine developments because this project will provide the initial security needed to build the downstream capacity."

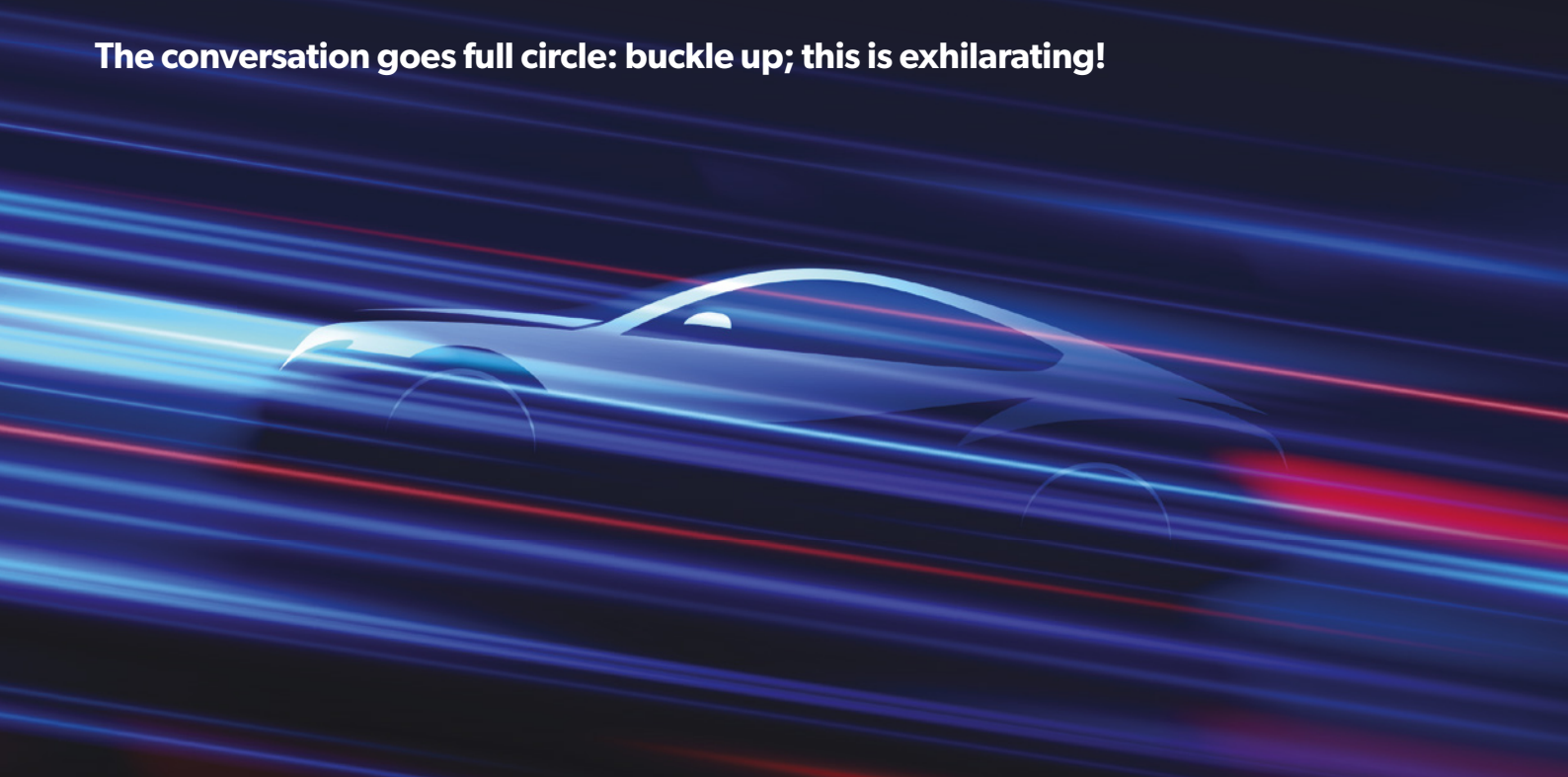
SHIFTING GEARS:

Mining Indaba Launches the First Ever Automotive & Electronics Club

Mining Indaba will launch the first Mining Automotives & Electronics Club in 2024, involving key stakeholders to collaborate on building value propositions and achieving business objectives.

Mining and automotive and electronics sectors are forming a new collaboration, investing in critical minerals mining projects through off-take agreements. They prioritise responsible sourcing and transparent supply chains. Mining Indaba is an ideal platform for these sectors to engage with mining firms and explore business opportunities.

The conversation goes full circle: buckle up; this is exhilarating!



“The launch of the Club his is a groundbreaking moment for Mining Indaba - the world is changing and mining stakeholders are expanding in an energy changing world. We are excited to bring new sectors to market and collectively work together to build greater investment opportunities for mining in Africa with end users such as the automotive, electronics and technology sectors. This Club sets the foundation for this to be achieved.”

Laura Cornish, Head of Content, Investing in African Mining Indaba

Pioneering the Future: Unveiling Africa's Mining Potential, Advances, and Opportunities



SHEILA KHAMA
Executive Advisor: Africa,
Mining Indaba

The mining industry has undergone significant changes in recent years, moving away from being an isolated sector to becoming integrated into the wider economy. This shift has been driven by concepts such

as domestic linkages and local content, which aim to increase local participation in mining activities.

The growing integration of mining into the larger economy is a step forward for the industry. In this context, local supply participation has improved significantly, with citizens now engaging in mineral equity and processing.

We have seen an expansion of trade in African countries within the minerals supply chain, with South African suppliers making inroads into Senegal and other geographical regions.

It is crucial for the government and other stakeholders to

recognise that mining is not an isolated activity but a catalyst for multiple industries.

Instead of solely focusing on mining companies, the government should adopt a broader perspective that considers the downstream industries, such as steel, aluminum, and jewelry, that rely on mining products. By viewing mining as a starting point for industrial development, countries can create a conducive environment for the growth of these industries and unleash their economic potential.

To become a relevant and advanced industry, the African mining sector needs to embrace

digitalisation and automation. By integrating technologies like artificial intelligence, robotics, and data analytics into mining operations, companies can increase efficiency, reduce costs, and improve safety.

Fostering collaboration between the mining industry and policymakers in education is crucial to ensuring that the workforce is equipped with the necessary skills to operate and manage these advanced technologies. This can be achieved through partnerships, vocational training programs, and curriculum development that aligns with the evolving needs of the mining industry.

CMOC
CMOC Group Limited

A global metals producer with a diversified portfolio on four continents – Asia, Africa, South America and Europe – CMOC is a major producer of tungsten, cobalt, niobium and molybdenum, as well as a major producer of copper.

Annual figures of 2023 show that the Group is the world's leading producer of cobalt. Annual production has reached 419,539 tonnes of copper and 55,526 tonnes of cobalt.

CMOC conducts its operations in strict compliance with ESG rules. The Group has been awarded the MSCI ESG AA rating in recognition of its compliance with the highest international ESG practices. CMOC is listed on the Shanghai and Hong Kong stock exchanges.

With a particular focus on metals vital for new energy sources, CMOC is developing the copper and cobalt mines of Tenke Fungurume Mining and Kisanfu Mining in the DRC. At the same time, the Group has forged a strategic partnership with CATL to create ACC in the same region.

CMOC promotes the value chain in Africa, South America and remains a reliable source of supply capable of meeting the demand for metals in the global energy transition.

Tenke Fungurume Mining SA (TFM)
One of the world's largest producers of copper and cobalt. The commissioning of new units has brought significant impacts on CMOC Group's overall metals output.

Kisanfu Mining SARL (KFM)
Phase I of the KFM project, annual production exceeding 113 thousand tonnes of copper and 33 thousand tonnes of cobalt.

ACC Value Chain Limited
Joint venture between CMOC and CATL. ACC plans to invest in the development of the value chain for metals used in electric batteries.

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