

## KAMOA-KAKULA MINING COMPLEX PRODUCED 333,500 TONNES OF COPPER IN 2022

### Inside this edition

ERG to Invest \$1.8 Billion  
in Doubling Copper and Cobalt P  
roduction in Africa 14

Euro Africa Restarts  
Operations at The Kalengwa  
Copper Mines, Worth \$135M 15

Zambia's  
Near-Future in Nicke 18

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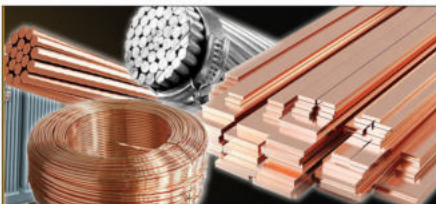
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# Contents

## Cover Story

**Kamoa-Kakula Mining Complex** Produced 333,500 Tonnes of Copper in 2022..... 9

## News Briefs

**Tshisekedi** Appoints Management for **DRC Battery Council**..... 6

## Corporate News

**\$1.5bn Copper & Cobalt** Stock Blocked at **Tenke Fungurume** Amid **CMOC-GÉCAMINES** Dispute..... 7

**CEC** Commissions 34 Mw Solar Power Plant in **Zambia** ..... 8

**Congo's** Largest Bank Expects Mining Loan Portfolio to Surpass **\$1 Billion** ..... 10

**FQM** Records Year-on-Year Increase in Copper Production at **Sentinel Mine**..... 11

**AVZ** Reacts to Two Decrees From the **DRC Ministry Of Mines** Which Notably Revoke the **Manono License** ..... 12

## New Mining Projects

**Critical Metals** Reaches Significant Milestone in **DRC** ..... 13

**Ivanhoe Mines** Seeks a Partner for Increased Copper Mining in **DRC**..... 14

**Euro Africa** Restarts Operations at the **Kalengwa Copper Mines**, Worth **\$135m** ..... 15

## Contracts, Mergers and Acquisitions

**Sandvik** Completes Acquisition of **Polymathian**..... 16

## DRC & ZMB Local News

**Primera Gold DRC Sa** Aims to Monopolize Artisanal Gold Production & Export Over **15 Tonnes** Annually in **The DRC** ..... 17

**Zambia's** Near-Future in Nickel ..... 18

**Zambian** Copper Mine Assets Entice **Sibanye CEO Neal Froneman** ..... 19

## ADVERTISER INDEX

MES .....	IFC
KSB .....	Page 5
Afropo Zambia .....	Page 10
Axishouse .....	Page 19
BSI Steel .....	Page 20
DMW.....	Page 24
MES .....	OBC

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## DRC & ZMB Local News

**DRC's Chamber of Mines** Collaborates With **FEC** & **ARSP** to Provide Strong Support for Entrepreneurs ..... 20

## International News

3 Trucks Smuggling Lithium Detained at **Beitbridge Boarder-Zimbabwe** ..... 21

## Technology & Innovation

**WAE** Delivers First Dump Truck Battery to **FMG** ..... 22

The Race to Make Diesel Engines Run on **Hydrogen**..... 23

## Battery Minerals

**Manganese Batteries** Market May Face Deficit In 2024..... 25

A **Zimbabwean** Lithium Miner Heeds Value Addition ..... 26

**Nickel Market** Faces New Shock as 'Big Shot' Boosts Metal Output ..... 27

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## DRC SEEKS INCREASED PARTICIPATION IN MINING AT 2023 INDABA IN AFRICA

**V**isible through two stands at the opening of the 2023 edition of the Indaba International Mining Conference in Cape Town (South Africa), the Democratic Republic Of Congo (DRC) hopes to attract people to its mining sector.

A mining country par excellence, the DRC has an exhibition stand at the Indaba mining conference where the Ministry of Mines presents investment opportunities in the mining sector. Another specific stand dedicated to Gécamines, so the country does not want to be in the background.

Indaba mining is an important conference held each year in South Africa where the various businessmen and state structures discuss important topics, particularly in terms of investment in the mining sector. The term "Indaba" comes from the Zulu and Xhosa languages. It means "business" or "matter".



## ZAMBIAN BUSINESSMAN PROPOSES ACQUISITION OF MOPANI COPPER MINE

**A** South African company owned by a Zambian, Bizwell Mutale, has offered to buy Mopani Copper Mines for \$2.8 billion. The offer was made in a letter addressed to Rothschild and Company, who are consultants for Zambia Consolidated Copper Mines Investment Holdings (ZCCM-IH).

The letter proposes that \$1 billion will be used for Mopani Copper Mine's internal operations. And The offer has also been sent to the mines minister, ZCCM-IH CEO, financial investment director, and the CEO of Business Gate Kingdom of Saudi Arabia. The letter also states the company's commitment to proceed with the transaction as soon as possible.



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## TSHISEKEDI APPOINTS MANAGEMENT FOR DRC BATTERY COUNCIL

The President of the Democratic Republic of Congo Félix Tshisekedi is pursuing the appointments of leaders from portfolio companies and public establishments. This time, it is the Congolese Council of the Battery and the Directorate General of the Treasury of accounts which were concerned.

### CONGOLESE BATTERY COUNCIL

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MR LECOUTURIER DENIS: CEO

KAKULE VUKO: DGA

NKANGA NTUMBA JEAN-MARIE: Member of the Board of Directors

ZADIO MUYING NOEL: Member of the Board of Directors

MULUMBA MPANDANDJILA THIERRY: Member of the Board of Directors



## UAE AND BELGIUM IMPORTED 96% OF DIAMONDS FROM DRC IN 2022

During the year 2022, the Democratic Republic of Congo exported 11 million 683 439 carats of diamonds for an estimated value of 145 million 992 914 USD, inform the statistics of the Ministry of Mines.

At the forefront of the recipients of the diamond produced in the DRC is the United Arab Emirates in terms of quantity. This country imported in 2022 5 million 846 263 carats of diamonds from the DRC for a value of 67.9 million USD.

The second largest importer of Congolese diamonds is Belgium with 5 million 414,582 carats of diamonds purchased from the DRC in 2022 for a value of 72 million USD. In terms of value, Belgium ranks first.

Taken together, the United Arab Emirates and Belgium buy around 96% of diamonds from the DRC. India, Israel, the USA and CANADA share the remaining 4%.



## RESIDENTS OF SINAZONGWE & ZIMBA IN DISPUTE OVER LITHIUM DISCOVERY

The revelation of Lithium deposits in Southern Province of Zambia has led to conflicts between the residents of Sinazongwe and Zimba Districts.

The communities of both districts are claiming that the lithium falls under their territories, resulting in ongoing disputes.

Benny Siamujansi, the representative of Senior Chief Mweemba, has requested that the Ministry of Local Development supply a map to resolve the disagreement, as he fears it could escalate.

Recently, Paul Kabuswe, the Minister of Mines and Minerals, who visited the area, urged the residents to allow for a safe and controlled process to extract the valuable mineral.

Lithium is utilized in the production of rechargeable batteries for mobile phones, laptops, digital cameras, and electric vehicles.

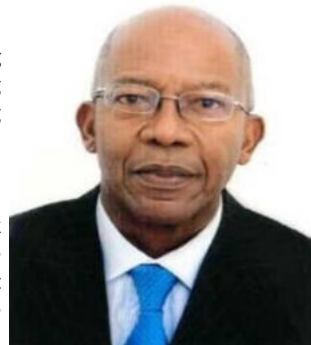


## ZCCM Investments Holdings Appoints Dr. Ndoba Joseph Vibetti as CEO

The Board of Directors of ZCCM Investments Holdings has announced the appointment of Dr. Ndoba Joseph Vibetti as the new Chief Executive Officer of ZCCM-IH, effective February 1st, 2023.

Dr. Vibetti brings over 35 years of experience in the mining, financial and academic sectors, having spent the majority of his career with the Industrial Development Corporation of South Africa in various roles.

He currently serves as a Consulting Dealmaker in IDC South Africa's Mining & Metals Strategic Business Unit, leading the corporation's investment efforts in the Democratic Republic of Congo. Dr. Vibetti has also gained financial and investment experience at Standard Bank and ABN Amro (BV), and has experience in academia as a lecturer in geology at the University of Zambia and the University of the Witwatersrand.



The Board is confident that Dr. Vibetti's background and experience will make a valuable contribution to the success of ZCCM Investments Holdings.

# \$1.5B COPPER & COBALT STOCK BLOCKED AT TENKE FUNGURUME AMID CMOC-GÉCAMINES DISPUTE

**A** growing pile of copper and cobalt worth around \$1.5 billion is stuck in the Democratic Republic of Congo, caught in a standoff over the future of one of the world's biggest battery metal mines.

The huge stockpile of metal is owned by China's CMOC Group Ltd, which is locked in a dispute with its Congolese state partner over royalty payments.

While its exports were stalled in mid-July, CMOC's Tenke Fungurume mine continued to operate near capacity, simply stockpiling extra metal until it could resume shipments, people close say.

The standoff is a stark reminder of the vulnerabilities in electric vehicle supply chains, which are heavily dependent on a small cluster of mines in a handful of countries – in the case of cobalt, Congo is by far the largest supplier.

Battery metal prices have become increasingly volatile as producers struggle to match production with demand, creating headaches for bullish automakers and bearish miners. The

Tenke Fungurume stock poses the threat of more dramatic swings ahead.

Right now, there are about 120,000 tons of copper and about 12,500 tons of cobalt stranded waiting to leave the country, according to people familiar with the matter and Bloomberg calculations.

Copper accounts for the bulk of the value, at around \$1.1 billion at spot prices, but it only accounts for around 7% of total global monthly production and is unlikely to affect international prices when it hits the market.

For cobalt, however, the implications could be seismic. Tenke Fungurume accounts for about 15% of the world's supply – a production share larger than the 10% slice of global oil production controlled by Saudi Arabia.

Surprisingly, the market has done quite well without Tenke's cobalt, as demand for use in electronics has plummeted and production elsewhere has increased, sending prices down more than 60% from the peak of the last year. The eventual release of CMOC stock could drive them

much lower still.

The heart of the problem is the claim by state mining company Gécamines that CMOC lied about its mineral reserves and owes the company \$7.6 billion in royalties and interest. The couple must also negotiate a sales contract to define the conditions for future exports.

Part of the reason the stock has become so prominent is that the CMOC remained hopeful throughout the dispute that a resolution was near, which prevented it from recalling activity on the site, people say.

Still, a deal has so far proved elusive. Every day, approximately 500 tonnes of copper and 50 tonnes of cobalt are added to the metal reserve, creating an increasing logistical and commercial headache for CMOC and its partners.

And when the stock finally begins to move, it is likely to trigger a rush of trucks in the region, driving up freight costs and adding to chronic logistical bottlenecks at the Congolese border.

# BRITISH COMPANIES TO INVEST \$2 BILLION IN ZAMBIA'S ENERGY INDUSTRY

**S**even companies from the United Kingdom have committed to investing \$2 billion to establish renewable energy projects in Zambia, which are expected to generate 2,000 megawatts of electricity.

British High Commissioner to Zambia, NICHOLAS WOOLLEY, reported that the companies from the United Kingdom are currently carrying out feasibility studies and seeking regulatory approvals before proceeding with their projects.

Mr. WOOLLEY revealed that the companies are planning to establish solar and wind energy projects in various regions of the country, which will produce power to be sold to the country's Electricity supplier ZESCO (Zambia Electricity Supply Cooperation)

British envoy informed that the 2,000 megawatts will be ready to be added to the national grid within the next 2 to 5 years.

And Head of Economic Development and Green Growth at the British High Commission in Zambia, SARAH BLOOM, stated that the country's energy sector needs a lot of regulatory reforms for it to attract more investment.

Ms. BLOOM pointed out that tariffs need to be attractive and that ZESCO should be in a good financial situation in order to purchase power from independent producers.

Meanwhile Special Assistant to the President for Finance and Investment, JITO KAYUMBA, said that President

HAKAINDE HICHILEMA is determined to reform the energy sector to make it more enticing to investors.

Mr. KAYUMBA stated that the government is working towards attracting more investments in the sector to achieve energy surplus in the coming five years.

He emphasized that the current energy crisis has highlighted the urgent need to increase the amount of energy the country produces to surpass the demand.

The seven British firms that are investing in Zambia are Hive Green, Western Power, Buffalo Energy, Africa GreenCo, First Quantum Minerals Solar Energy, Vitalite Solar, and Solar Aid.

# CEC COMMISSIONS 34 MW SOLAR POWER PLANT IN ZAMBIA

**Z**ambia's Copperbelt Energy Corporation (CEC) has commissioned a 34 MW solar power plant in Kitwe, the country's first large-scale solar photovoltaic facility.

The 34 MW photovoltaic (PV) power plant is CEC's first step into renewable energy, but with an aim to achieve 300 MW of renewable energy resources over the next four years, it is certainly not the last.

The solar plant covers a total area of approximately 30 hectares and includes 61,300 solar PV modules, 150 inverters, six transformer stations and 4 km of transmission line.

The project, which took ten months to build and cost \$22m, was constructed by local and international contractors, employing a total of 800 people at its peak.

And CEC Board chairman Mr LONDON MWAFULILWA, said, "The annual yield of the plant will average 54.9 GWh

and will contribute to carbon savings of 51 kilotons, enough to supply approximately 10,000 homes with a consumption rate averaging 15 units per day."

Mr Mwafuilwa added that CEC aims to make tangible and real contributions to the development of a green economy in Zambia and is committed to developing 138 MW of wind energy with its partner UPEPO Zambia, as well as an additional 64 MW planned for Itimpi in Garneton.

The company also plans to develop 138 MW of wind energy in Masaiti in the Copperbelt, bringing online at least 200 MW of new power generation from renewable energy sources by the end of 2024.

The company is also planting one million trees to replenish forest areas that have been depleted and increase carbon sinks for the absorption of carbon dioxide.

CEC is working on deploying cleaner fuels to replace fossil diesel used in thermal power generating units.

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# KAMOA-KAKULA MINING COMPLEX PRODUCED 333,500 TONNES OF COPPER IN 2022

Ivanhoe Mines' (TSX: IVN; OTCQX: IVPF) Executive Co-Chair Robert Friedland and President Marna Cloete announced today, ahead of the 2023 Future Minerals Forum at the King Abdulaziz International Conference Centre in Riyadh, Saudi Arabia, that the Kamoakakula Mining Complex in the Democratic Republic of Congo (DRC) produced 333,497 tonnes of copper in concentrate in 2022, achieving the upper-end of the original 2022 production guidance range of 290,000 to 340,000 tonnes. Kamoakakula's 2022 production achievement represents a year-over-year increase of 215%.

The 2023 annual production guidance for Kamoakakula is estimated at between 390,000 to 430,000 tonnes of copper in concentrate, following the anticipated completion of the debottlenecking program early in the second quarter of 2023.

Mr. Friedland commented: "Kamoakakula has firmly established a track record of excellence during the development of Phase 1 and Phase 2 operations, which has led to an industry-leading growth profile in terms of copper production that will continue as we bring Phase 3 online. Kamoakakula also stands out among its peers as one of the few mining operations worldwide to strongly deliver on its original 2022 production guidance, which is a further testament to the team of engineers and contractors who commissioned the Phase 2 concentrator several months ahead of schedule."

"With the Phase 3 expansion well on track, including the integration of Africa's largest single-line blister-copper flash smelter, Kamoakakula is poised to become one of the world's leading producers of vital copper metal for global markets ... a producer that will have one of the lowest, if not the lowest, carbon footprints in the industry. Ivanhoe Mines looks forward to a long, prosperous partnership with the Democratic Republic of Congo government, the Congolese people, our joint-venture partners, and the international investors that have been integral in making these exceptional achievements possible."

## 2023 Production Guidance for the Kamoakakula Mining Complex

Kamoakakula's 2023 production guidance is based on several assumptions and estimates as of December 31, 2022, including among other things, assumptions about the timing for the completion of the debottlenecking program. Guidance involves estimates of known and unknown risks, uncertainties and other factors that may cause the actual results to differ materially.

### Kamoakakula 2023 Guidance

Contained copper in concentrate (tonnes)  
390,000–430,000

All figures are on a 100%-project basis and metal

reported in concentrate is before refining losses or payability deductions associated with smelter terms.

Kamoakakula produced 333,497 tonnes of copper in 2022, an increase of 215% compared with 2021

Kamoakakula's 2022 production guidance was raised from an initial range of 290,000 to 340,000 tonnes, following the successful ramp-up of Kamoakakula's Phase 2 concentrator plant, which was commissioned several months ahead of schedule and declared commercial production on April 7, 2022.

During the fourth quarter, Kamoakakula produced 92,761 tonnes of copper. Kamoakakula also reported 93,288 tonnes of copper floated, which includes the contained copper still in the circuit that was floated, but has not yet been filtered to produce a final concentrate. As of December 31, 2022, there was a balance of approximately 5,670 tonnes of copper in the circuit, which will be filtered into a final concentrate once the debottlenecking program is complete. For the full year of 2022, in line with the Kamoakakula's upper end of guidance, 338,087 tonnes of contained copper were floated.

The difference between floated and filtered copper arises from the current bottleneck in concentrate filter capacity, as the Phase 1 and 2 milling and flotation circuits continue to operate above design capacity. Floated copper is temporarily stored as a slurry in a fully-lined pond, which will be reclaimed into the concentrate thickener and filter press once the fourth Larox filter press is installed as part of the debottlenecking program.

Kamoakakula's previously announced debottlenecking program is over 90% complete and is progressing ahead of schedule. All the major equipment for the program, including the fourth Larox filter press from Metso Outotec of Espoo, Finland, has been delivered to the site. The final step of installation will take place over the next few months, with cold commissioning targeted to take place in April 2023.

The new concentrate thickener nears completion. Once complete, the Phase 1 and 2 concentrators are expected to reach a combined processing capacity of 9.2 million tonnes per annum.

Kamoakakula Mining Complex produced 333,500 tonnes of copper in 2022 2

In the foreground, the expansion of the concentrate storage and dispatch warehouse is nearing completion. The fourth Larox filter has been delivered to site and will soon be installed at the rear of the facility.

Kamoakakula Mining Complex produced 333,500 tonnes of copper in 2022 3

As part of the debottlenecking program, the new scavenger-cleaner flotation cell (circled in red) on the Phase 1 concentrator is undergoing final

installation.

Kamoakakula Mining Complex produced 333,500 tonnes of copper in 2022 4

The debottlenecking program will increase the combined processing capacity of the Phase 1 and Phase 2 concentrator plants to approximately 9.2 million tonnes per annum and increase the rate of copper production to approximately 450,000 tonnes per annum.

During 2022, the Kamoakakula Mining Complex milled approximately 7.1 million tonnes of ore at an average feed grade of 5.5% copper and produced 333,497 tonnes of copper in concentrate. A total of 2.0 million ore tonnes were milled during the fourth quarter at an average feed grade of 5.4% copper.

Tonnes of ore milled in the fourth quarter were slightly lower by approximately 3.5%, on a quarter-on-quarter basis due to intermittent electrical power supply disruptions on the DRC grid. Kamoakakula is working with the DRC state-owned power utility, SNEL, to minimize any future disruptions to operations.

On December 27, 2022, a total of 27,424 dry tonnes of ore were milled through the Phase 1 and 2 concentrators – a daily record for both facilities. This is equivalent to an milling rate of 9.1 million tonnes per annum (after accounting for availability).

A total of 120,000 tonnes were drawn from the run-of-mine stockpiles in the fourth quarter. While the ongoing expansion of underground infrastructure at the Kakula Mine takes place, ore continues to be drawn periodically from the stockpile to maximize copper production, as the concentrators are currently operating over design capacity.

The recently completed east truck tip and bin at the Kakula underground mine will increase mining rates to feed the Phase 1 and 2 concentrators.

Kamoakakula Mining Complex produced 333,500 tonnes of copper in 2022 5

Kamoakakula's high- and medium-grade ore surface stockpiles totaled approximately 4.08 million tonnes at an estimated, blended average grade of 4.05% copper. Contained copper in the stockpiles at the end of December totaled more than 165,000 tonnes (the current copper price is approximately \$8,600 per tonne).

Copper flotation recoveries during 2022 from the Phase 1 and 2 concentrators averaged 86%.

The Kamoakakula process engineering team, together with several internationally-recognized external metallurgy specialists, continue to investigate the feasibility of new technologies to economically recover additional copper from the tailings stream of the Phase 1 and 2 concentrators, to potentially increase overall recoveries above Kamoakakula's 86% design target.



# CONGO'S LARGEST BANK EXPECTS MINING LOAN PORTFOLIO TO SURPASS \$1 BILLION

**R**awbank Sarl, based in Kinshasa, predicts that its lending to the Democratic Republic of Congo's mining industry will surpass \$1 billion this year, with an increase of over 20%, fueled by growing demand and strong prices for the country's strategic minerals.

The bank's mining loan portfolio increased to \$820 million in 2022, nearly doubling its credit offerings from the previous year, according to Etienne Mabunda, commercial director at Rawbank Sarl. The loans include credit to mining companies, subcontractors, and salaried workers at large firms.

High mineral prices and a recent law mandating more Congolese nationals to work as subcontractors in the industry resulted in significant investments in Congo's copper, cobalt, gold, tantalum, tin, and tungsten industries last year, Mabunda said.

The shift towards greener energy has also spurred demand for minerals used in the production of EVs, solar panels, and turbines.

Congo is a leading producer of cobalt, a key component in batteries, and one of the world's largest copper producers. The government is exploring the development of chrome, nickel, and lithium deposits, according to Congolese President Felix Tshisekedi.

Companies such as Ivanhoe Mines Ltd., CMOG Group Ltd., and Eurasian Resources Group Sarl are expanding their operations in Congo, while BHP Group and Anglo American Plc have considered entering the market, despite its risky reputation due to rampant corruption.

"Central Africa has great potential in terms of its ability to supply the minerals and metals we require," said Anglo American CEO Duncan Wanblad in a recent interview. "If the policies are favorable, there's no reason why a company like ours can't consider this region."

Rawbank is managing the risk by maintaining

a capital that exceeds the minimum required by the central bank of Congo, according to Etienne Mabunda, Commercial Director of the Kinshasa-based lender, it has been increasing its capital through retained earnings and shareholder injections to ensure compliance with prudential ratios, Mabunda said. The bank is primarily owned by members of the Rawji family in Congo.

The lender primarily relies on client deposits and financing from multilateral banks for funding, Mabunda stated. Rawbank is competing with the Congo unit of Kenya's Equity Group Holdings to become the largest lender in the country, after the latter merged with Banque Commerciale du Congo.

In 2023, Rawbank plans to raise its single obligor limit to offer more support to Congo's major miners. The bank will also broaden its offerings to new Congolese-owned companies involved in mining services to provide equal opportunities for growth in the sector and the DRC economy, according to Mabunda.



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# GECAMINES AIMS TO DIVERSIFY INTO MINERALS FOR ENERGY TRANSITION

**C**ongo's state-run mining company, Gecamines, aims to explore for minerals critical to the energy transition, such as lithium, tin, and rare earths, said the company's Chairman Alphonse Kaputo Kalubi, on 7th February.

The company, which was once one of the world's leading copper and cobalt producers in the 1980s, hopes to increase production to 100,000 tonnes of copper per year and diversify its operations.

Kaputo mentioned that Gecamines' geologists will organize campaigns to prospect for various minerals including lithium, tin, cobalt, coltan, titanium, wolframite, gold, and rare earths. He encouraged potential investors to consider "win-win partnerships" to extract these minerals.

However, Gecamines faces challenges, including illegal artisanal mining on its sites, which results in the smuggling of resources, including gold and tin,

tantalum, and tungsten ores.

Kaputo emphasized the need for industrial mines to work alongside artisanal miners, where possible, in order to improve conditions and prevent the exploitation of the company's concessions.

He stated that "we can no longer tolerate the disgraceful conditions in which artisanal diggers work, and we can no longer tolerate that our state and Gecamines...be robbed of their riches."

## FQM Records Year-on-Year Increase in Copper Production at Sentinel Mine

**F**irst Quantum Minerals has reported a year-on-year increase to 242,000 tonnes of copper production at its Sentinel mine, 9,000 tonnes higher than in 2021, and record quarterly production of 73,000 tonnes in the fourth quarter of 2022, 13,000 tonnes higher than Q4 2021 and 9,000 tonnes higher than Q3 2022.

However, production at its Kansanshi was 146,000 tonnes, which was lower than in 2021 due to lower grades. The lower production reflects a combination of lower sulphide grades from narrow-veined regions, depleting oxide ore, and restricted access to high-grade blocks due to an accumulation of water in the main pit in the second and third quarters of 2022.

Copper production at Kansanshi in Q4 2022 was 35,000 tonnes, a reduction of 17,000 tonnes from Q4 2021, but 5,000 tonnes higher than in Q3 2022 as access to high-grade areas improved following successful dewatering of the pit.

"It is pleasing to see that the focus on operational improvements has resulted in a strong end to 2022. We continue to monitor the macroeconomic conditions closely and debt reduction remains a priority," commented Tristan Pascall, FQM's Chief Executive Officer.

"Disciplined and responsible growth continue to be a focus at First Quantum. The CP100 Expansion remains on schedule to exit 2023 at 100 million tonnes per annum and work is well underway for the S3 Expansion. We are also pleased that the Enterprise nickel project will enter its first production this year. These projects are a key part of the Company's brownfield growth strategy over the next several years," he continued.

The mining firm further revealed that capital expenditure guidance has increased to \$1.6 billion in 2023 and \$1.8 billion in 2024, reducing to \$1.5 billion in 2025 with the completion of the S3 Expansion project at Kansanshi.

It added the expenditure increases in 2023 and 2024 are principally due to inflationary pressures on sustaining capital and the timing of expenditures for project capital. This includes the re-phasing of the S3 Expansion and higher costs for crusher relocations at the mine sites.

Kansanshi copper production in 2023 and 2024 reflects similar levels as in 2022 with lower oxide grades and sulphide grades while mining vein-hoisted areas. Copper and gold production in 2025 includes limited production associated with the S3 Expansion, expected to commence in the second half of 2025.

Nickel production at Enterprise is expected to commence in the first half of 2023 with a ramp-up to total plant throughput and recovery in 2024. 2023 production guidance for Enterprise includes 5,000 tonnes of pre-commercial production results.

# AVZ REACTS TO TWO DECREES FROM THE DRC MINISTRY OF MINES WHICH NOTABLY REVOKE THE MANONO LICENSE

**T**he Manono lithium project is becoming like a *Novellas* television series, every day we are witnessing a new enigma, which in reality only delays the start of lithium exploitation in the province of Tanganyika in Manono by the Australian company, AVZ Minerals which owns 75% of the shares of Dathcom. Dathcom being a Joint-Venture between the Congolese State represented by COMINIÈRE which should hold 25% of the shares, of which 15% were illegally sold (according to the IGF which is the General Inspectorate of Finance of the DR Congo) to the Chinese of ZIJIN through the Dathomir company of the Chinese citizen, Simon Cong and 5% in MMCS a company registered in Mauritius.

AVZ reacts to two decrees from the DRC Ministry of Mines which notably revoke the Manono license 1

On December 6, 2022, COMINIÈRE had asked the Ministry of Mines of the DR Congo to postpone the judgments on the partial waiver of PR13359, something which should block the procedure for transforming the PE13359 exploration permit into a PR13359 operating permit for Dathcom.

COMINIÈRE had considered that the transaction of 60% of the Dathomir shares of the Chinese Simon Cong to the Australians of AVZ Minerals, had not respected the agreements of the joint venture; "The terms of the transaction for the sale of 60% of the shares of DATHOMIR and AVZ Minerals were never communicated to COMINIÈRE so that it could exercise its right of pre-emption. This is why COMINIÈRE is right to question this transaction before the Authority, even up to international arbitration." Said COMINIÈRE's lawyer.

In addition, COMINIÈRE accused AVZ Minerals of having put forward incorrect figures in the feasibility study presented to the Ministry of Mines on behalf of Dathcom; "Overbilling at the level of construction services, the acquisition price of factories for metallurgical treatment as presented in the feasibility study are more than ten times higher than the actual price. »

COMINIÈRE claimed in particular 100% ownership of the Mpiana Mwanga hydroelectric power station, of which AVZ Minerals, through an agreement with the Ministry of Energy and Water Resources, should be part of the Manono project; "Spoliate the heritage of the State, by declaring that thanks to a law firm, AVZ was able to recover the hydroelectric power station of Mpiana Mwanga. However, COMINIÈRE owns 100% of the plant. »

Over-invoicing on the part of AVZ Minerals for certain projects, AVZ declared having already spent 70 million \$US in the Manono project, COMINIÈRE speaks of only 2 million \$US. Violation of sub-contracts and other accusations which had

prompted COMINIÈRE to seize the Minister of Mines.

Now in a tweet from the ACAJ ASBL (Congolese Association for Access to Justice), we discover that on January 28, 2023 the Ministry of Mines of the DR Congo had signed two judgments on the granting of the exploitation permit PE13359:

"ACAJ congratulates the Minister of Mines for having signed decrees nos. 00031 and 00032 dated 28/01/23 reporting decrees nos. 00147 and 00080 respectively granting operating permit no. 133359 to DATHCOM Mining SA and taking note of its partial renunciation of exploration permit no. 13359. It is a courageous decision that allows the state-owned company COMINIÈRE SA to recover all of its rights to the Manono lithium concession. ACAJ reiterates to the Government its request for a review of the DATHCOM contract. » Signed by Kapiamba Georges, representing ACAJ.

ACAJ declares to support COMINIÈRE SA in this action against AVZ Minerals, claiming that AVZ has never communicated within 90 days, all the documents relating to the financing of the DATHCOM SA project raised on the stock market, according to letter n ° CEM / DG /139/ckk/22 of 7.12.22 from COMINIÈRE.

Note that for the moment we have no official press release from the ministry on the decrees, through me our Kongopress editorial team has written to the ministry for more details on the decrees. Here is the response received:

"Hello Kiki Kienge, We have received your message. We will recontact you as soon as possible. Thank you for your patience. » Ministry of Mines DR Congo.

These decrees from the Ministry of Mines of the DR Congo, would call into question the shares of AVZ Minerals in Dathcom, something which risks further prolonging the start of exploitation of lithium in Manono in other legal proceedings.

Now the Australian company, AVZ Minerals has just reacted in a press release today, February 6, 2023, which would confirm the existence of the decrees of the Ministry of Mines despite the absence of an official announcement:

"AVZ Minerals Limited (ASX: AVZ, OTC: AZZVF) (AVZ company) refers to its announcement of May 4, 2022 confirming the ministerial decree of the Minister of Mines (Mdm) of the Democratic Republic of Congo (DRC), to award the mining license for the Manono lithium and tin project (Manono project) to Dathcom Mining SA (Dathcom).

As the company indicated at the time of this announcement, the ministerial decree excluded a

northern part of PR13359 covering approximately one-third of the entire permit, which under the DRC Mining Law would be renewed, in the form of a new 5-year Research Permit (PR) to Dathcom.

Subsequently, the company had protracted discussions with the relevant authorities in the DRC over a range of mining-related issues, which led the Cadastre Minier (CAMI) to delay the issuance of the charges surface fees to Dathcom, preventing the completion of the process of converting the research license into a mining license.

The company has now received notices that the DRC Ministry of Mines has issued two additional Ministerial Decrees, dated January 28, 2023, in relation to the Manono Project permit.

Which have the effect of:

1. Cancellation of the Ministerial Order which recognized a declaration of partial renunciation of PR13359 by Dathcom, i.e. the northern part which was not covered by the Ministerial Order to convert the PR into a operating permit (PE or Mining License).
2. The cancellation of the ministerial decree which converted the southern part of permit 13359 from a PR to a PE or Permis d'Exploitation minier.

AVZ notes that the aforementioned Ministerial Order recognizes:

The requirement of a harmonious and healthy cooperation between the shareholders of Dathcom as a prerequisite for the progress of the development of the Manono project.

The ongoing disagreements, conflicts and differences between the shareholders that blocked the development of the Manono project and the resulting impasse prevents the Congolese State from benefiting from the development of PE 13359.

The company is seeking independent legal advice regarding the two ministerial decrees dated January 28, 2023, while accelerating discussions to clarify the intentions of the competent authorities of the DRC.

Words of AVZ Managing Director, Mr. Nigel Ferguson :

The company apologizes for the continued frustration felt by shareholders and our lead investor, who remains committed and eager to expedite the funding needed to initiate development of the Manono lithium project. The potential economic, social and environmental benefits for the people of Manono, DRC and Africa are huge and will last for generations are huge and will last for generations. Nothing will deter the Board of Directors and myself from seeking a fair outcome for our shareholders, which my executive team is working tirelessly to achieve. We will provide a further update to shareholders as soon as we are able to do so. »

We already apologize for possible errors that may be found in the translation of the press release.



## CRITICAL METALS REACHES SIGNIFICANT MILESTONE IN DRC

**C**ritical Metals has begun copper production at the Molulu project, a former copper cobalt mine in the Democratic Republic of Congo.

The production launch comes after the completion of on-site preparation work and the arrival of necessary mining equipment. This is a significant development as the company aims to acquire additional assets.

The mine will initially operate on a single-shift schedule, with an estimated output of 10,000 tonnes of copper oxide ore per month in steady-state production. The copper ore produced in January 2023 will be stored for sale in the market in February 2023.

All copper extracted from the Molulu mine will be sent to nearby processing plants, with four in the Likasi and Lubumbashi areas showing interest in purchasing the ore.

The company's team is also exploring ways to boost monthly copper production and will provide updates as they become available.

Additionally, test samples have been taken from the Central and South Cobalt Anomalies, with 180 samples sent for independent analysis at a local laboratory. Results will be announced when they are ready.

To increase awareness of Critical Metals among global investors, two London-based mining analysts will join the company's board on a visit to the Molulu mine in February.

The trip aims to provide a better understanding of the mine's copper oxide and sulphide production, cobalt potential, and cash flow for potential investors.

With much of the necessary infrastructure in place, the company has assembled a strong team of mining experts on-site, including a project manager, four geologists, two mine engineers, a mine manager and local support staff. With copper prices currently above \$9,000 per metric tonne, the company is well-positioned to capitalize on the market.

Meanwhile Russell Fryer, CEO of Critical Metals, said: "We are thrilled to announce the start of production at the Molulu project, which was completed on budget and we expect to begin selling copper oxide ore as early as next month.

The company expects to be free-cash flow positive by the end of H1 2023, demonstrating the high cash flow potential under current market conditions. We anticipate increased activity at Molulu in the coming months, especially as the rainy season ends in March, and we look forward to expanding monthly copper ore production.

In an exciting development for the company, two London-based mining analysts will visit the Molulu mine in February. These analysts are well-respected and their research on Critical Metals will be read by family offices, wealth

management firms, and buy-side institutions in the UK, Europe, Africa, Australia, and North America. I am excited to showcase all the hard work that has been done at Molulu.

2022 was a transformative year for Critical Metals and 2023 looks to continue this positive trend. I believe the Molulu project has the potential to become a leading producer of cobalt and copper in the DRC and I look forward to updating shareholders on our progress throughout the year.

I want to express my gratitude to our local DRC partners for their patience and ongoing support as we embark on this journey. They are essential to our success and we are grateful for their guidance, knowledge, and partnership."

The Molulu project

The Molulu Project is situated approximately 98 km north of Lubumbashi in the Katanga Copperbelt, and 30 km northwest of the village of Malambwe.

The Katangan Copperbelt, where copper has been mined since the late 19th century, is home to the Molulu Project. The mineralized zones in this area are located at the western end of the Katangan Copperbelt, which is known as one of the world's most important metallogenic provinces, and is home to some of the world's most abundant deposits of copper, cobalt, and uranium.

## ERG TO INVEST \$1.8 BILLION IN DOUBLING COPPER AND COBALT PRODUCTION IN AFRICA

**E**urasian Resources Group (ERG), a mining company supported by Kazakhstan, has announced its plan to invest \$1.8 billion in doubling its African copper and cobalt production.

The expansion in the Democratic Republic of Congo is expected to take place over a four-year period, and is driven by the increasing demand for metals necessary for the transition to green energy.

The CEO, Benedikt Sobotka, believes that the rise in demand for battery materials as more electric vehicles are produced puts ERG in a favorable position.

ERG currently produces 200,000 tons of copper and 25,000 tons of cobalt each year from its mines across the central African copperbelt. The CEO

believes that if the projections for future electric vehicle production are accurate, there will be a need for much more cobalt and copper.

To support its projects in Congo, where electricity supply from the grid is unreliable, the company is exploring the possibility of investing in small hydro power plants, as well as solar and battery storage.

Mr. Sobotka expressed skepticism regarding the company's previous plan to build a 600-megawatt coal-fired plant in Mozambique, due to the lack of adequate transmission capacity and potential difficulties in finding buyers for the excess power.

ERG is owned by the same shareholders who previously controlled Eurasian Natural Resources Corp., which was once listed on the London Stock Exchange.

The UK's Serious Fraud Office has been investigating ENRC since 2013 for alleged corruption in its deals in Congo. ERG is not under investigation and denies any wrongdoing. The CEO stated that while ERG has no immediate plans to go public, if it did, it would likely list on a stock exchange in Canada.

ERG also expects to begin producing platinum group metals from Zimbabwe in the next two years. The construction of a concentrator plant at the Bokai platinum project is slated to start by the end of the year and could ultimately be the size of Anglo American Platinum's Unki mine, which produces approximately 200,000 ounces of platinum group metals annually.

## IVANHOE MINES SEEKS A PARTNER FOR INCREASED COPPER MINING IN DRC

**I**vanhoe Mines is in talks with potential partners to develop copper assets in the Democratic Republic of Congo (DRC), as the world faces a global copper shortage, fueled by new challenges for supply flows and a increased demand.

"We're in all kinds of strategic discussions and you know, most of the most interesting investors tend to be sovereign investors," Ivanhoe Mines founder Robert Friedland told Bloomberg TV. "We only want to do things that help him grow."

The shift to decarbonization will require large amounts of copper to produce electric vehicles (EVs), extend transmission lines and install new cables in renewable energy

sources.

According to the International Copper Study Group (ICSG), very few major copper mines have started operations in recent years, with only two opening between 2017 and 2021.

Although there are now four mines coming on line or developing almost simultaneously – Kamoakakula in Congo, Quellaveco in Peru and Quebrada Blanca II and Spence-SGO in Chile – major market players are still forecasting a massive shortfall in supply by 2030.

Speaking this week in South Africa at the Indaba conference, Friedland said 700 million tonnes of copper had been mined in human history and another 700 million

tonnes would be needed over the next few years. next 22 years just to maintain annual global growth rates of 3%.

The mining veteran made his fortune from Canada's Voisey's Bay nickel project in the 1990s. Since then he has been involved in some of the world's biggest mining discoveries, including the giant Oyu Tolgoi copper mine in Mongolia and the Kamoakakula project in the DRC.

The Congolese copper mine produced 333,500 tonnes of metal in 2022, more than double its production a year earlier. It is currently undergoing an expansion (Phase 3), which will take production figures up to 620,000 tonnes per year by 2024 when completed.

# EURO AFRICA RESTARTS OPERATIONS AT THE KALENGWA COPPER MINES, WORTH \$135M

**T**he Chairperson of Mufumbwe District Council, Lemmy Namukuka, has confirmed that Euro Africa Kalengwa Mines Limited has begun construction of a processing plant at the Kalengwa copper mine site, following the granting of a mining license.

The license had been the subject of a legal dispute between Kalengwa Processing Zone Limited and Euro Africa Kalengwa Mines Limited, with the latter emerging as the eventual license holder.

The mine is expected to produce 15,000 tons of copper annually, potentially adding \$135 million to Zambia's forex earnings if proceeds are banked locally.

The mine site reportedly has some of Zambia's highest copper content ore, with annual production

potentially doubling with the deployment of the right technology and expertise. It is not clear whether there will be further legal challenges to the development of the mine.

According to media reports, Kalengwa Processing Zone Limited had previously applied to the mining licensing committee for a judicial review of the decision to terminate its exploration license and reinstate Euro Africa Kalengwa Mine Limited's license. However, the Chairperson did not provide details about this.

He stated that he had been informed by the Country Managing Director of Euro Africa Kalengwa Limited that the company was close to completing the environmental impact assessment report required by the Zambia Environmental

Management Agency (ZEMA).

Construction of the processing plant is expected to be finished within three months, after which production will begin. The Chairperson anticipates an increase in business activities, with the influx of people to the mine leading to more job opportunities and the opening of new businesses.

The council also expects to benefit from an increase in property tax and land rates, which will help fund environmental and socioeconomic activities.

The Kalengwa mine is located in Zambia's northwestern province, approximately 800 km northwest of Lusaka and 400 km southwest of Kitwe.

# ZAMBIANS FLOCK TO NEWLY UNCOVERED GOLD MINE IN LUMEZI DISTRICT, WITH A RUSH OF 4,000 PEOPLE

**T**he Lumezi Town Council in Eastern Province, Zambia, has expressed concern over the unregulated gold mining activities taking place in the Kabulasisi Local Forest under Chief Kazembe's jurisdiction.

The Public Relations Officer of the Town Council, Irvin Muyumbwa, has stated that the influx of over 4,000 people to the mining site is

a matter of public health concern.

The Council Secretary, Mary Sinkala, visited the mining site with Public Health Inspectors and Council Police to assess the sanitary and safety conditions.

The team found that the temporal toilet facilities and refuse bins at the mining site needed improvement.

Sinkala also expressed concern about the

difficult access to the mining site, as people have to cross the Lundazi River using buckets, resulting in two reported drownings.

However, The Council plans to procure a Banana boat to ease crossing the river and provide access to clean, safe drinking water and During the visit, the District Aids Coordinating Advisor also educated the people on preventive measures and distributed more than 1,400 condoms.

# A NEW PARTNERSHIP WILL IMPROVE BATTERY RECYCLING IN SOUTH AFRICA

**A** business in the United States and a South African investment business have signed a term sheet to form a joint venture to build and operate two environmentally sustainable battery recycling facilities in South Africa.

Through the joint venture, the companies aim to bring radical change to the management of South Africa's battery waste.

The partners are Tabono Investments, a leading investment company in Africa with experience in mining, logistics and recycling and ACE Green Recycling, an innovative recycling platform for battery materials.

"Green energy is on the rise in South Africa," said Tabono co-founder Liran Assness, "and with it, lead-acid and lithium-ion battery usage."

Tabono's other co-founder Reon Barnard added, "With dedicated environmentally friendly ways of recycling batteries, the world can leverage valuable materials like lead, lithium and cobalt, and power our future in a less harmful way."

The facilities will separately process and recycle lead-acid and lithium-ion batteries utilizing ACE's proprietary technology that creates zero Scope 1 emissions by operating without fossil fuel-based heating. Both recycling facilities will be greenfield projects to be developed and operated by the joint venture. Under the new structure, ACE will have 51% ownership and Tabono will own 49%.

"We are committed to ensuring emerging markets benefit from our clean battery recycling solutions," said Nishchay Chadha, ACE CEO and co-founder.

"Combining our expertise with Tabono will ensure development of safe and sustainable closed-loop solutions for battery materials within South Africa."

Once established, the joint venture will leverage each partner's strengths. ACE has developed a portfolio of proprietary technologies to recycle lead-acid and lithium-ion batteries and capture their critical materials at market-leading recovery yields. Tabono brings vast experience in the minerals and industrial services industries across Botswana, Mozambique, Tanzania and South Africa.

Earlier this year, Tabono Investments acquired a stake in Advanced Group, a risk management, mitigation and emergency response specialist entrenched in the mining sector.

# SANDVIK COMPLETES ACQUISITION OF POLYMATHIAN

**S**andvik announced on Wednesday 1st February that the company has completed the previously announced acquisition of Polymathian Industrial Mathematics ("Polymathian")

The Australian-based provider will form part of Sandvik Mining and Rock Solutions', Business Unit Deswik. Polymathian's solutions for automated decision-making and optimization complements Deswik's suite of mine planning software and consulting services whilst remaining OEM agnostic. Deswik, a leading mine planning software company, was previously acquired by Sandvik in April 2022.

"We are very excited to welcome Polymathian to the Deswik family," said Matt Chilcott, CEO of Deswik. "Our employees have been the driving force behind our success. Introducing the talent, experience, and innovative technologies of the Polymathian team will position us to deliver even higher value to mining operations globally."

The addition of Polymathian to Sandvik Mining and Rock Solutions broadens the offering and is another step towards enhancing the productivity of the mining customers' value chain. Combined with Deswik's software solutions, the acquisition

creates a unique digital portfolio that will help customers optimize their data driven operations.

Polymathian's co-founders, Dr. Ben Hollis, Jonathon White and Steven Donaldson will join Deswik's senior management team and continue to lead the development of Polymathian's software suite and technology platform.

"We are thrilled to be joining the Sandvik Group and believe that our combined expertise will lead to great advances in the field of data analytics for the mining industry," Hollis said. "We look forward to leveraging Sandvik's global reach and resources to bring our software solutions to even more customers around the world."

The terms of the acquisition have not been disclosed.

## About Sandvik

Sandvik is a global, high-tech engineering group providing solutions that enhance productivity, profitability and sustainability for the manufacturing, mining and infrastructure industries. We are at the forefront of digitalization and focus on optimizing our

customers' processes. Our world-leading offering includes equipment, tools, services and digital solutions for machining, mining, rock excavation and rock processing. In 2021 the Group had approximately 39,000 employees and revenues of about 86 billion SEK in about 150 countries within continuing operations.

## About Polymathian

Polymathian adds significant value for customers by solving complex planning and scheduling problems with software solutions that utilise advanced industrial mathematics. Polymathian are a team of innovators, software engineers and mathematicians transforming the way industry makes complex planning and scheduling decisions.

## About Deswik

Deswik is a global leader in delivering efficiency focused solutions to the mining industry through its software and consulting services. Deswik's team of experienced mining engineers and software developers work side-by-side to provide tailored solutions that deliver measurable value to our customers. Deswik's solutions are applicable to all mining sectors and commodities and span across the various stages of the mine planning value chain



# ZAMBIA ATTRACTIVE FOR PRIVATE SECTOR ENERGY INVESTMENT

**Z**ambia's energy sector has become one of the best destinations for private sector investments, Copperbelt Energy Corporation Plc's (CEC) Chief Financial Officer, Mutale Mukuka, has asserted.

Sharing his views on various aspects of the business and the Zambian energy sector recently, Mukuka said the improving economic variables in the country, ongoing sector reforms and the government's focus on dialogue with the private sector, made for an attractive investment environment.

Mukuka stated that the levels of investor comfort were also expected to be bolstered by the positive performance of other key economic indicators and the economic recovery programme supported by the International Monetary Fund (IMF).

He was particularly happy with the government's focus on deepening dialogue with private economic actors.

"It is good the Government is prioritising dialogue with key stakeholders in growing key sectors of the economy, such as mining and energy. The Public

Private Dialogue Forum is trying to see how we can identify the bottlenecks so as to facilitate for private money to come, not just in the energy sector but in the country as a whole," Mukuka explained.

"And if you add up all of these things that are happening, such as sector reforms, you will see that this is the country you want to be in as an investor because you will be assured that you are making an investment in a stable country."

He said in this vein, CEC fully backed the public consultations undertaken by the state following the release of the electricity Cost of Service Study report at the back end of 2022 and the subsequent government Green Paper. The consultations were intended to take on board various stakeholders' social and economic interests prior to actioning any report findings and recommendations.

"We think highlighting stakeholders' social and economic needs that need to be taken care of is quite key to assuring the financial health of the electricity industry as a whole to allow for the required growth, not only in the sector but in the

country as a whole," Mukuka said.

On the reform front, the government has been removing legacy obstacles to private investment into the energy sector through reforms specifically focused on encouraging the growth of electricity generation and trading.

Mukuka said it was crucial that the government was pursuing reforms that promote the private sector to thrive through the provision of a tariff that allows for the financial health of industry players and, also, takes care of stakeholders' social and economic needs.

The enactment of the Electricity Act of 2019, which repealed the Electricity Act of 1995, became the country's closest discernible attempt to end the single-buyer model, and to regulate the generation, transmission, distribution and supply of electricity in a manner that improves supply and encourages private sector investment.

Zambia is also positioning itself to become the regional hub for power trading, given the power deficit in Southern Africa and the expected increase in demand, especially from growth in mining activities in the mineral-rich Democratic Republic of Congo (DRC).

## PRIMERA GOLD DRC SA AIMS TO MONOPOLIZE ARTISANAL GOLD PRODUCTION & EXPORT OVER 15 TONNES ANNUALLY IN THE DRC

**P**rimera Gold DRC SA has apparently met expectations in its first week of operations, as reported by Congolese authorities. Despite only declaring 34 kg in the province of South Kivu in 2022, the company's performance exceeded the government's monthly goal of 10 kg per counter.

According to the company's figures, none of the 9 official counters or the additional 10 unregistered counters in South Kivu were able to reach this target, resulting in an export rate of just 1.5 kg per year, or 0.09 kg per month per counter.

Based on a week's worth of data, the company estimates that over 20 tons of gold from small-scale mining is being smuggled out of South Kivu province, amounting to more than 100 million USD per month that is not being reported to banks.

The joint venture aims to collect all gold produced by small-scale mining and export more than 15 tons per year, equating to over a billion dollars that will be reported to banks.

The initial batch, presented in Kinshasa on Friday, was created using a supply chain developed by Primera Gold DRC SA. The Congolese authorities

noted that the biggest challenge was to ensure the gold's traceability throughout the supply chain.

The first batch of gold to be exported and sold on the international market was composed by following a process that connects small-scale miners organized in functional cooperatives, traders, and authorized buyers, as well as specialized purchasing and operating centers in Bukavu, South Kivu. Primera Gold aims to ensure that all traders are banked and that all transactions are conducted

# ZAMBIA'S NEAR-FUTURE IN NICKEL

**W**ith eight months behind us since First Quantum Minerals took to the stage at the 2022 Investing in African Mining Indaba and announced a \$100 million cash injection to bring Zambia's Enterprise Nickel Mine online, the time is ripe for an update.

Mining For Zambia touched base with Enterprise's team in the country's North-Western Province to find out how close the project is to producing the first nickel concentrate, on its mission to become a global top-ten producer of the coveted battery metal. Here's a progress report.

1. Waste stripping: removing waste rock to expose the ore

Waste stripping was "the task of the day" back in July, when the job of digging up millions of tonnes of near-surface level weathered rock (regarded as "waste material") and moving it out of the way had recently begun.

Enterprise has a notably high 'strip ratio', meaning that a high proportion of the rock within which nickel ore deposits are found is just that: ordinary rock.

In other words, workers will have to remove and relocate around nine cubic meters of waste material for every one cubic meter of ore that can be mined. And it can't be relocated without due care. Only when waste stripping is done properly can the ore be safely and sustainably exposed.

With more than double the expected amount of rainfall this season, the process has seen its fair share of challenges, say contractors who are working hard to ready the mine for production.

But, against the odds, they're still on track. Approximately 85% of the waste stripping is now complete. And the opportunity to put Enterprise's pumps and water management systems to the test in fairly extreme conditions was an unexpected silver lining, workers say.

The haul road: a surfaced road for transporting ore from the mining pit to the processing plant

A haul road between the mining pit at Enterprise and the nickel processing plant at Sentinel, 15 kilometres away, needs to be surfaced so that ore can be efficiently transported on heavy duty trucks throughout the wet season and dry seasons without stirring up too much dust or mud.

Once it reaches Sentinel, the ore will then be crushed, milled and, finally, processed into nickel concentrate in the plant. The road is almost complete – watch this space!

In addition, the team is building a bridge over the haul road so the general public can cross safely, minimising interaction between people in cars or on foot, and mining vehicles.

3. The processing plant: a purpose-built facility for processing nickel ore to make nickel concentrate

This is another big ticket item and, ultimately, the place where the alchemy will happen at Enterprise. The processing plant was constructed within close reach of Sentinel's copper processing plant back in 2015 but, because of policy instability and a low nickel price, running the plant wasn't financially viable.

The operation was put on 'care and maintenance' – or, essentially, decommissioned – with only the bare minimum of work being carried out to prevent damage to equipment and infrastructure.

Years of being out-of-commission have taken their toll. Equipment saw all its rubber parts perish in the summers that have gone by, and everything is in need of thorough servicing – and equally thorough testing – to ensure that it's in good working order before the plant is officially recommissioned. The good news? The team is on track to complete the process by March 2023.

Project Manager at Enterprise, Axel Kottgen, reports on the progress: "There was a lot of refurbishing to do at the plant, after several years of being basically out-of-action.

We have already started to crush some waste material for the purpose of testing the crushers, to make sure the whole system works. At this stage, everything is looking good."

The next step will be to send the first ore to the crushers and then to the mills for further refinement. That's on track to happen within the next two months, and the goal is to produce the mine's first nickel concentrate in the first half of 2023. "We plan to produce between 5,000 and 10,000 tonnes of nickel this year," says Mr Kottgen.

"Then, by the end of 2023, we can declare commercial production." "We plan to produce between 5,000 and 10,000 tonnes of nickel this year," says Mr Kottgen. "Then, by the end of 2023, we can declare commercial production."

4. More jobs for more locals

When First Quantum Minerals committed to investing a final \$100 million to bring Enterprise online, it also committed to creating 700 jobs at the operation. The company is "still actively

recruiting" – says Mr Kottgen – but has already filled approximately 600 full time positions.

"Both Enterprise and the mining contractor who is responsible for the mining operation have been striving to recruit labour from the surrounding communities because we want to have locals involved in the project. In terms of unskilled labour, we've also been pushing to recruit locally as much as possible," says Mr Kottgen.

Finding people with the precise skills needed who come from the (rural and still-developing) areas surrounding these mines has been a challenge since Sentinel copper mine was completed in 2015. Enterprise's team decided it was time to find a way to fill this gap in skills which, in recent years, has often forced mines in North-Western Province to look to Copperbelt Province or other parts of the country when recruiting.

What better way to find people with the right skills locally than to set up a local training centre?

**WHAT BETTER WAY TO FIND PEOPLE WITH THE RIGHT SKILLS LOCALLY THAN TO SET UP A LOCAL TRAINING CENTRE?**

5. A new training centre right on the mine's doorstep

Enterprise, as part of FQM Trident Ltd, is putting plans in motion to set up an accredited training centre where locals within Kalumbila District can gain the skills that a growing mining sector needs.

"Lately it's been difficult to find people locally who have the requisite skills because there is a training and education gap in those areas," says Mr Kottgen.

"We want to focus on training the young local communities to fill artisan roles, driving ore trucks and operating mining equipment," he says. "Training people in the particular skills that are in demand will enable us to recruit more people locally – which ultimately helps to increase employment in the communities around the mine, too."

The company's main mining contractor is eager to work with Enterprise to establish the training centre, and will provide equipment and other necessary support.

It's a win-win situation. Before long, large mining companies like FQM Trident Ltd and mining contractors of all sizes will have a pool of people from which to recruit locally

And, as Enterprise ramps up to become the largest nickel mine on the continent, Zambians with precisely these skills will be increasingly in demand.

# ZAMBIAN COPPER MINE ASSETS ENTICE SIBANYE CEO NEAL FRONEMAN

**S**ibanye Stillwater CEO Neal Froneman is interested in acquiring Mopani Copper Mines in Zambia as he pushes to secure metals key to the green-energy transition.

The asset would give Johannesburg-based Sibanye a springboard into Africa's second-largest copper producer, after the company pulled out of a Brazilian deal a year ago.

Sibanye is among the investors involved in a sales process organized by Rothschild & Co. South Africa on behalf of state-owned ZCCM Investments Holdings.

"We like copper. Mopani is obviously of interest to us and Zambia is in our backyard so we like what we see," Sibanye Chief Executive Officer Froneman said in an interview. "We have got a number of entry points into Zambia. Mopani is just one of the entry points we are looking at."

Commodities giant Glencore sold Mopani two years ago to ZCCM for \$1.5 billion, after clashing with the previous Zambian government over the future of the long unprofitable operation.

As part of the deal, some of the cash generated by Mopani goes toward settling the \$1.5 billion debt owed to Glencore, which also retains offtake rights to copper output until the full amount is settled.

While the money owed to Glencore makes the potential transaction "a complex issue," a deal could be finalized by the middle of this year, the CEO said. The company has signed a non-disclosure agreement as part of the sales process.

"We have a good relationship with Glencore, we work together in the chrome here in South Africa, so I think we are very well positioned, but we have to compete with other companies," Froneman said.

A spokesman for Glencore declined to comment. Rothschild didn't immediately respond to emailed questions.

Mopani, which struggled to pay its bills last year even as copper prices remained elevated, needs about \$300 million of investment to complete expansion projects started by Glencore.

Froneman said he's encouraged by Zambian

President Hakainde Hichilema's efforts to attract investors and hopes the government plays a "constructive" role in the potential acquisition.

An acquisition would help restore Froneman's deal-making credentials after Sibanye terminated the \$1.2 billion purchase of Santa Rita nickel and Serrote copper mines in Brazil, sparking a dispute that's now before a UK court.

Since its formation in 2013 from a spinoff of Gold Fields's oldest South African gold mines, Froneman has bought platinum, palladium, nickel and lithium projects in Zimbabwe, Europe and the US.

Sibanye's experience — turning around Lonmin's operations and operating some of the world's deepest mines — mean the company is well placed to both win and run Mopani, Froneman said.

"We are also a company that can deal with adversity, if I can call it that," Froneman said. "There's not many companies that have a balance sheet to tolerate or to take on a risk like this."



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# DRC'S CHAMBER OF MINES COLLABORATES WITH FEC & ARSP TO PROVIDE STRONG SUPPORT FOR ENTREPRENEURS

The members of the Chamber Of Mines of the Federation Of Companies Of Congo (FEC), led by Louis Watum, were received, on Wednesday February 15, 2023, by the Director General of the Regulatory Authority For Subcontracting In The Private Sector (ARSP), Miguel Kashal Katemb.

On the menu of their exchanges, the methods of direct collaboration and exchange of information between the Chamber of Mines and the ARSP.

Satisfied with this meeting, Louis Watum, President of the Chamber of Mines of the FEC believes that happy prospects are envisaged between the

two parties.

"We wanted to offer him congratulations in person because we didn't have time to do that last year when he was elevated. We also did an overview of everything it takes to promote local contracting.

We share the same concern to see the Congolese men and women who go into subcontracting to create wealth and ultimately constitute this middle class that we are calling for.", did he declare.

And to add: "We also talked about the collaboration that we must have as the Chamber of Mines, we who carry the National Club of Subcontractors and the

Regulatory Authority for Subcontracting in the Private Sector. They were very fruitful talks.", specified Louis Watum.

Beyond the dimension of collaboration, the two parties discussed the roadmap for the activities planned for 2023.

It should be noted that since his appointment as head of the ARSP, the Director General Miguel Kashal has continued to meet with the parties involved in subcontracting.

All these initiatives aim to enforce the law on subcontracting in order to create a middle class of the rich, in accordance with the vision of the Head of State, Félix-Antoine Tshisekedi.



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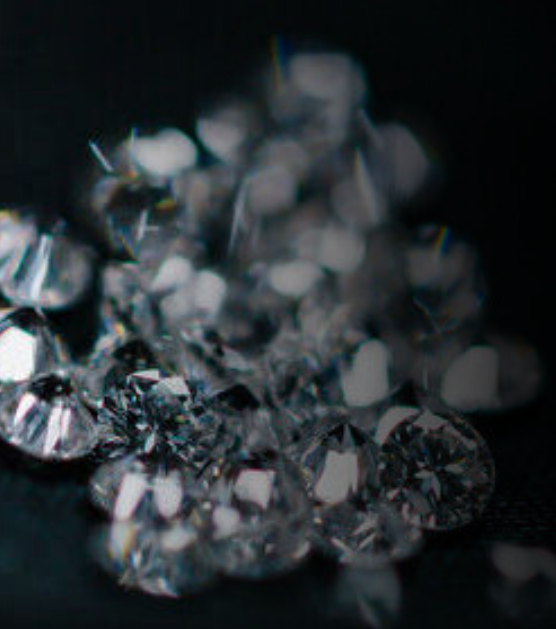
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# BOTSWANA AND DE BEERS CLASH OVER DIAMOND PROFITS AND DEMAND FOR LARGER SHARE



**P**resident Masisi of Botswana warned to end the relationship with South African diamond company, De Beers, if the ongoing sales agreement negotiations do not favor the country.

The 2011 sales agreement governing the terms of marketing diamonds produced by Debswana – a 50-50 joint venture between the government and De Beers – expired in 2021.

It has been extended by the parties, who cited the coronavirus outbreak as the reason for the delay in concluding negotiations, and will end on June 30, 2023.

Speaking at a rally of his ruling Botswana Democratic Party (BDP) in his home village of Moshupa, about 65 kilometers from the capital Gaborone, Masisi warned, "If we

don't reach a win-win situation, each side will have to pack up and go home."

Under the 2011 agreement, the mining company De Beers received 90% of the rough diamonds produced while Botswana, Africa's largest diamond producer, received 10%. In 2020, Botswana's share was increased to 25%.

In 2020, Botswana's share was increased to 25%.

Today, "we got a glimpse of how the diamond market works, and we found out that we received less than we should have," said Mr. Masisi, who spoke in both English and the local language, Tswana.

"We also found out that our diamonds are bringing in a lot of profit and that the (2011) agreement had not been favorable to us," he added, before warning.

## 3 TRUCKS SMUGGLING LITHIUM DETAINED AT BEITBRIDGE BORDER-ZIMBABWE

**B**eitbridge Boarder post Yesterday intercepted a consignment of lithium ore on three haulage trucks belonging to one Bernard Tafadzwa Mnangagwa.

The ore was being smuggled to South Africa and was declared as manganese, it is alleged.

The government recently banned the exports of raw lithium with immediate effect in an effort to value-add minerals and support local production and employment creation.

The ban was effected through STATUTORY INSTRUMENT (S1) 213 OF 2022 titled Base Mineral Export Control (Unbeneficiated Lithium Bearing Ores) Order 2022.

Officer commanding Beitbridge police district, Chief Superintendent Tichaona Nyongo referred all questions to Police General Headquarters.

Efforts to get a comment from national police spokesperson Assistant Commissioner Paul Nyathi were fruitless.

But on 30.12.2022 morning, MINES and MINING DEVELOPMENT Ministry officials arrived at the border post to attend to the trucks, now under police

and Zimbabwe National Army guard.

It is Understood that the raw mineral was extracted from places near Sandawana in Mberengwa, and transported to Bulayo, where it was kept near Khami Café close to Bulayo's Vehicle Inspection Department.

The mineral was reportedly stored there to facilitate smuggling.

Lithium, a vital resource that is becoming increasingly important as the world shifts towards clean energy systems, has attracted significant attention from Zimbabwe as it seeks to maximize the value of this mineral.

The country has abundant deposits of Lithium and, with rising global demand and firmer prices, it has become an attractive destination for investment in this resource.

Export bans have also been viewed as a way to create an industrial renaissance in Africa through value addition. In an effort to establish a vibrant Lithium value chain in the country, the country, the government recently announced a ban on raw Lithium exports.



# WAE DELIVERS FIRST DUMP TRUCK BATTERY TO FMG

**F**ortescue's decarbonisation journey has taken a major step forward today, with WAE Technologies (WAE) completing and delivering to Australia the largest battery of its kind, ready to be installed in a prototype zero-emission battery electric mining haul truck that Fortescue is developing with Liebherr.

The state-of-the-art 1.4MWh prototype power system sets the pace for ground-breaking innovation in heavy industry and is a bespoke design intended for integration into a 240-tonne mining haul truck.

The battery will be integral to Fortescue's US\$6.2 billion decarbonisation strategy to help eliminate fossil fuels from its terrestrial iron ore operations, which includes replacing its existing diesel-fuelled fleet with battery electric and green hydrogen-powered haul trucks.

A team of 50 engineers and technicians are responsible for developing the pioneering power system, which weighs 15 tonnes, measures 3.6m long, 1.6m wide and 2.4m high, and is made up of eight sub-packs, each with 36 modules, all individually cooled and each with its own battery management system.

It is a massive achievement that has been completed in record time and marks several firsts for an electric mining haul truck battery, with energy storage of 1.4MWh, the ability to fast-charge in 30 minutes and capacity to regenerate power as it drives downhill.

Fortescue Future Industries CEO Mark Hutchinson said, "WAE and Fortescue are working together to seek to decarbonise faster and more

effectively than any other major industrial company in the world."

"The battery system, designed for our zero-emission battery electric mining haul trucks is an important part of our strategy to reach real zero terrestrial emissions (Scope 1 and 2) across our iron operations by 2030"

"WAE's battery expertise compliments FFI's green hydrogen projects and cements Fortescue as a leader in the technologies needed for the green energy transition."

The battery has now arrived at Fortescue's workshop in Perth, Western Australia, and will be assembled and installed, before its transported to the Pilbara for world-leading testing on site in 2023.

WAE Technologies CEO Craig Wilson said, "Today marks the latest milestone in the rapid development of state-of-the-art zero-emission technology for Fortescue's mining trucks. This high-performance power system not only boasts the highest energy storage of its kind, but will also be the first to offer 30-min fast charging."

"This system is the first of many technologies that can help enable Fortescue to realise its industry leading 2030 net-zero target. Powered solely by renewable energy, it will help prevent enormous amounts of fossil fuel from being used in the mining industry, with the goal to not compromise the vehicle's load capacity. This is an inspiring example of what can be achieved combining Fortescue's pioneering green energy vision for its global vehicles and WAE's extensive expertise in advanced batteries."

# KAZUNGULA BRIDGE FEATURES NEW DECORATIVE LED LIGHTING SOLUTION | BEKA SCHRÉDER

**K**azungula Bridge is a road and rail bridge over the Zambezi River between the countries of Zambia and Botswana at the town of Kazungula.

The 923-metre-long bridge links the town of Kazungula in Zambia with Botswana. The bridge features a single-line railway track between two traffic lanes and walkways for pedestrians.

Before the bridge was opened for traffic, direct traffic between the two countries was possible only by ferry. The bridge takes advantage of the short 135-metre border the two countries share at the river and is curved to avoid the nearby borders of Zimbabwe and Namibia.

BEKA Schröder has supplied the LED lighting solution for the Kazungula Bridge and the Botswana and Zambian border posts.

Kazungula Bridge Lighting

KAZUNGULA BRIDGE

The beautifully constructed bridge called for a decorative LED lighting solution to complement its features. HESTIA LED luminaires on curved poles have been installed on the bridge.

Lighting for pedestrians was not forgotten, making it safer for them to walk along the bridge. The elegance of the luminaires and poles, together with the energy savings which will be achieved through LED technology whilst still achieving a high light output, were a winning combination.

Kazungula Bridge Lighting

BOTSWANA AND ZAMBIA BORDER POSTS

Decorative LEDSHINE LED post tops provide road and general lighting to the Botswana border post. This luminaire has been designed to limit upward lighting to create a visually pleasing light distribution.

The LEDSHINE luminaire's limiting energy consumption compared to conventional luminaires results in it being a valued investment. Thanks to its reliable performance, and no need for relamping and regular maintenance, the LEDSHINE is the ideal luminaire for your urban decorative application.

LEDFLOOD-MIDI floodlights provide general area lighting for the truck and inspection parking areas. The LEDFLOOD luminaire range has been designed to offer energy savings, low maintenance requirements and precise light control.

BEKA Schröder develops and manufactures energy-efficient LED lighting products in South Africa, designed and suitable for local conditions.

We are very proud to be associated Daewoo Construction, Gibb and Hatch Consultants in providing a decorative LED lighting solution for this project.

For further enquiries, contact Isaac Morifi at 011 238 0000 or [export@beka-schreder.co.za](mailto:export@beka-schreder.co.za), or Riaan Bubb at 021 510 8900 or [ct@beka-schreder.co.za](mailto:ct@beka-schreder.co.za).

# THE RACE TO MAKE DIESEL ENGINES RUN ON HYDROGEN

**I**t's a new hydrogen-diesel hybrid engine affectionately known as "baby number two" that could help to decarbonise some of Australia's heaviest industries. The test rig is large – it has its own room adjoining a lab and looks at first glance like many other large motors, but beneath its metallic skin could lie game-changing technology.

Engineers at the University of New South Wales (UNSW) say they have successfully modified a conventional diesel engine to use a mix of hydrogen and a small amount of diesel, claiming their patented technology has cut carbon dioxide (CO<sub>2</sub>) emissions by more than 85%.

It's the work of Prof Shawn Kook and his team at the university's School of Mechanical and Manufacturing Engineering.

"The interest in converting an existing diesel engine into a clean-burning hydrogen engine is extremely high," Prof Kook tells the BBC at his laboratory in Sydney. Enquiries have come from Germany, South Africa, Brazil, Japan and China.

"We mount the hydrogen direct injection system into existing diesel engines, which can be applied to any conventional engine," he adds.

What makes their system unique, according to Prof Kook, is the way it mixes the hydrogen and diesel and then introduces it to the engine cylinder for combustion.

Unlike fossil fuels, hydrogen does not produce CO<sub>2</sub> when burnt, so it has long been seen as a greener fuel source.

About 90% of fuel in the UNSW hybrid diesel engine is hydrogen but it must be applied in a carefully calibrated way.

If the hydrogen is not introduced into the fuel mix at the right moment "it will create something that is explosive that will burn out the whole system," Prof Kook explains.

He says that studies have shown that controlling the mixture of hydrogen and air inside the cylinder of the engine can help negate harmful nitrogen oxide emissions, which have been an obstacle to the commercialisation of hydrogen motors.

The Sydney research team believes that any diesel trucks and power equipment in the mining, transportation and agriculture sectors could be retrofitted with the new hybrid system in just a couple of months.

Prof Kook doubts the hybrid would be of much interest in the car industry though, where electric and hybrid vehicles are already advanced and replacing diesel cars.

However, he says Australia's multibillion-dollar mining industry needs a solution for all its diesel-powered equipment as soon as possible.

The diesel engine converted to run on hydrogen at the University of New South Wales

Image caption, It's an ordinary diesel engine but runs on 90% hydrogen

"We have so many established diesel-powered generators, mega-trucks and underground machines. How do we decarbonise all those existing diesel engines? One way is to shut down everything and get new technology in, which will take decades," he says.

The plan is for the hybrid to run off a hydrogen-diesel mix or, in the absence of hydrogen, it can revert to diesel only.

Prof Kook hopes his new generation engine will become a commercial product within two years.

Tim Buckley, the director at Climate Energy Finance, a public interest think-tank in Sydney, believes the technology has the potential to "transform the Australian mining industry dramatically".

"There's always an element of scepticism in the work I do to evaluate what is

hype and hope as opposed to reality. Having said that, this University of New South Wales breakthrough does appear to be pretty material. If they can pull it off it is a huge opportunity," he says.

The Australian team is in a global race to develop hybrid diesel-hydrogen engines. Engineers in other countries are working on their concepts and designs but the Sydney team believes it has an edge.

"I think we have a breakthrough compared to most other research groups in the world where we can actually achieve a higher percentage using hydrogen over diesel," explains Xinyu Liu, a UNSW PhD student from China.

"Emission-wise, CO<sub>2</sub>-wise we can achieve a higher reduction than the other methods. The concept has been proven using the previous small-scale engine. We are trying to implement this idea into a larger scale, which is more [applicable] to industry."

The race to make diesel engines run on hydrogen 3

Image caption, PhD student Xinyu Liu (left) says the UNSW team's research is ahead of other diesel-hydrogen projects

The bigger version, or the UNSW's "baby number two", has twice the volume of the original prototype and has the potential for a "massive reduction in CO<sub>2</sub>" emissions, according to Prof Kook.

The vision is laid out in a paper published in the International Journal of Hydrogen Energy.

Much of the invention's impact on the environment will depend on where the hydrogen comes from.

While small amounts of hydrogen are being extracted directly from the ground, most hydrogen is manufactured, in a process that emits CO<sub>2</sub>.

Green hydrogen, produced by using electricity from renewable power to split water into hydrogen and oxygen molecules using an electrolyser, is seen as the answer. But the technology and the electricity needed is costly, so at the moment only a small amount of hydrogen is produced this way.

But the costs are likely to come down and with abundant sunshine and wind, Australia has a lot of potential to produce renewable electricity, which could one day be used to make more green hydrogen.

The Climate Council, an independent organisation, believes that sustainable hydrogen gives Australia the chance to end its reliance on fossil fuels.

"Australia is one of the world's largest coal exporters and the largest liquefied gas exporter," the Council wrote in a 2021 briefing. "Both are polluting fossil fuels, and Australia is paying a high cost for that with more severe and frequent extreme weather events like bushfires, heatwaves, and drought."

The race to make diesel engines run on hydrogen 4

Image caption, Australia has great potential for renewable electricity, which could be used to make green hydrogen

For now, the UNSW project remains in the nursery in the laboratory. Academic endeavour needs the financial heft of outside investment and the hands-on input and knowledge of a mining company or engine manufacturer.

"Our vision is to impact Australian mining, agriculture and construction industries first and then move out to the rest of the world to make a bigger impact," says Prof Kook.

Australia has some of the world's biggest resources companies and they have all committed to aggressive decarbonisation targets. Technology is the key.

"The idea of blending hydrogen and diesel together in an existing engine is something of a Holy Grail for decarbonising heavy industry and mining," adds Tim Buckley.

He has this existential question for the engineers at UNSW: "Can they actually deploy it in a commercial setting and replicate it outside the university?"



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We are thrilled to announce that as media partners of **DRC Mining Week 2023**, we are currently working on a special edition of the **CKM eMagazine**. This edition will be distributed at the **DRC Mining Week 2023** in Lubumbashi, **Democratic Republic of Congo**, from June 14-16, 2023.

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# MANGANESE BATTERIES MARKET MAY FACE DEFICIT IN 2024

**A**n essential component of the steel-making process, manganese has played an increasing role in the battery market. (Stock Image)

The high-purity manganese market may face a deficit as early as 2024, according to people in the industry.

An essential component of the steel-making process, manganese has played an increasing role in the battery market. The metal sulphate is an important stabilizing ingredient in the cathodes of batteries widely used in electric vehicles and electronics.

Volkswagen, Mercedes, Tesla, and GM are among the companies that have announced intentions to use high-purity manganese in their cars. A Chevy Bolt, for example, can contain over 24 kg of manganese.

"The reason nobody is talking about manganese is that it's very cheap, and it's taken for granted," said Andrew Zemek, special adviser at CPM Group.

While the lithium price has skyrocketed over the last couple of years, passing \$80,000 per tonne and other metals like cobalt and copper reached over \$8,000 per tonne, manganese sulphate costs less than \$1,000 per tonne in China.

But increasing demand from the EV industry and the subsequent deficit of high-purity manganese may impact the metal price in 18 or 24 months, according to Euro Manganese CEO Matt James.

"There's been a build-out of manganese sulphate capacity in China and that has been enough to feed the current demands of the battery industry," James told MINING.com. "But going forward, we're going to see significant growth in both the European and North American battery industry. Both of those will require their own supply chains."

"As the market looks to source locally, in North America because of the Inflation Reduction Act (IRA) or Europe because of geopolitics, when they start to look at the high-purity capacity in both of those regions, it is very very small," James said.

Manganese batteries market may face deficit in 2024 2

"The Chinese price does not reflect a western price. The price today in Europe and North America commands a significant premium," said James.

People in the industry estimate the price at \$3,300 per tonne by 2027 — growing to \$4,000 by 2031 for Europe and North America, considering the cost of freight from China and costs with green credentials.

## RELIANCE ON CHINA

Over 92% of high-purity manganese sulphate conversion capacity is in China. Currently, only two plants outside of China are in production, one in Japan and the other in Belgium.

Vibrantz Technologies produces high-purity manganese in Belgium and sources its ore from South Africa, Gabon, and Brazil.

The other producer outside China is Nippon Denko in Japan, which also uses imported ore.

Combined, these two facilities produce around 5% of the global high-purity manganese sulphate.

"I don't see a risk of shortage in the short term because so much capacity is being built in China," said Aloys d'Harambure, executive director of the International Manganese Institute.

However, the market may have to adjust with the United States and Europe moving to build their own supply chain of battery materials.

"The environmental, social, and governance procedures in China are sometimes not as strict as in other, European and North American and, some African countries. The cost of high manganese sulphate that you see from China is not realistic from the rest of the industry," said d'Harambure.

According to Sam Jaffe, vice president of Battery Storage Solutions, China can always "blow out" the North American and European competitors if it chooses to do so.

But that dynamic is changing.

"As we move to intracontinental supply chains, China remains a huge factor in the high-purity manganese market, but it's not the single determinant of where those markets will move," said Jaffe.

## PIPING MANGANESE

By 2031, North America is expected to require over 200Kt of high-purity manganese annually.

The continent, however, has no current high-purity manganese processing capacity to supply a large number of battery gigafactories and cathode plants under development.

South32 is developing the first new US manganese mine in decades. The company has allocated \$55 million of capital expenditure to work on the Hermosa project in Arizona for the current fiscal year and expects to begin a pre-feasibility study before mid-2023.

In Europe, Euro Manganese is developing its Chvaletice Project in the Czech Republic, the only sizeable, classified resource of manganese in the European Union.

The project entails re-processing manganese deposits contained in waste (tailings) from a decommissioned mine that operated between 1951 and 1975.

The company plans to convert the carbonate to high-purity manganese metal and sulphate and send it to Euro Manganese's planned processing facility in Quebec where it will be converted into a liquid sulphate. The site is adjacent to two proposed cathode plants allowing the liquid sulphate to be piped directly into the cathode production processes.

"Going forward, we're going to see a European battery industry and a North American battery industry," said Jaffe. "Both of those are growing at a tremendous pace and are gonna require their own supply chains, including a supply chain for manganese. And when you thinking about moving forward, I would talk about 10 years from now or over the next five years."

# A ZIMBABWEAN LITHIUM MINER HEEDS VALUE ADDITION

**A** Chinese billionaire and a South African firm have partnered to establish a lithium processing plant in Mutoko, Zimbabwe as a result of the government's ban on exports of lithium ore and unpurified salts. The plant is expected to produce two million tonnes of lithium concentrate per year.

The other month, the government implemented a ban on exports of lithium ore and unpurified salts, with the exception of ore samples sent for analysis.

The ban requires that mineral exports be refined or beneficiated within Zimbabwe to meet international trade standards, adding value to the country's finite mineral resources and creating jobs.

The chairperson of Suzhou TA & A Ultra Clean Technology, Mr. Pei Zhenhua, has signed a joint venture with Mutoko Lithium (Private) Limited to establish a plant that will produce two million tonnes of lithium concentrate per year. Mr. Pei's company already has mining interests in various countries including Zimbabwe, the Democratic Republic of Congo, and Nigeria.

Mr. Pei's companies are listed on stock exchanges in China and Australia, among other countries, where he holds majority and minority equity. This multi-million dollar investment in Zimbabwe is a sign of continued confidence in the country's second republic, led by President Mnangagwa, whose policies have unlocked many opportunities for investment.

Both parties confirmed that the investment in the lithium processing plant was a result of their confidence in the economic environment in Zimbabwe. The Chinese partner, Suzhou TA & A Ultra Clean Technology, holds a significant share of the lithium battery market and has a strong demand for the mineral due to the increasing use of electric vehicles and the shift towards clean technology.

The joint venture will produce two million tonnes of lithium concentrate per year, and negotiations between the two parties have been smooth. They are committed to putting the plant into production as soon as possible. Mr. van de Spy, the leader of Mutoko Lithium, stated that they find Zimbabwe an attractive country due to its abundance of resources and human capital.

Mr. Pei, the leader of Suzhou TA & A Ultra Clean Technology, stated that they are committed to complying with Zimbabwean laws in regards to the joint venture and their investment in the country.

Mr Pei, the leader of Suzhou TA & A Ultra Clean Technology, stated that the company arrived in Zimbabwe on January 11 and has an existing investment in Bulawayo that is performing well.

He expressed that the company has confidence in making investments in Zimbabwe and has successfully signed a contract to build a two million tonne lithium processing plant in the Mutoko area.

And Mr. Pei emphasized that the investment will contribute to the social and economic well-being of the country. The company plans to comply with laws of the country, and also plans to give back to the community, such as building schools and clinics for local communities.

Mr. Pei stated that as part of their social responsibility and as a good corporate citizen, the company plans to employ local people and train them in mining and business ventures. He said he believes in the utilization of local people for the good of any investment.

Mr. Pei expressed his gratitude towards their partner and Zimbabwe for their hospitality during the visit. He now better understands the country and its people, and is confident that the investment will be a huge success.

He also stated that the investment will boost employment in the country and that both parties are confident in the success of the project and are ready to put their capital in the project to accelerate the construction of the plant.

He declined to disclose the value of the investment in the lithium processing plant in Zimbabwe, stating that he was bound by Chinese Stock Exchange rules where his firm is listed.

On Friday, 13.01.2023 Mr. Pei and his team were in Insiza district, Matabeleland South Province, visiting Fort Rixon to assess progress at the site of the Zulu Lithium project. The China-based company had a revenue of \$20.2 billion in 2021.

According to the company's 2022 third-quarter report, Mr. Pei owns a 5.8% stake in CATL through his majority stake in Ningbo Liane, a 79.9% stake in the holding company Ningbo Lianhe and another 35% stake in Suzhou TA&A Ultra Clean with his wife. According to Forbes, the businessman is ranked among China's wealthiest people. He also chairs the board of Premier African Minerals (PAM), a multi-commodity mining and natural resource development company and was assessing progress of the high-impact Zulu Lithium project in Fort Rixon.

The Zulu Lithium project, located in Zimbabwe, is considered one of the largest undeveloped lithium-bearing pegmatite in the country, spanning an area of 3.5 square kilometers. The area is rich in lithium and tantalum mineralization.

As lithium demand is rapidly increasing globally, driven by its use in the ceramics industry, mobile phone manufacturing, and the production of automotive batteries.

# NICKEL MARKET FACES NEW SHOCK AS 'BIG SHOT' BOOSTS METAL OUTPUT

**T**he billionaire at the center of last year's nickel short squeeze is planning a major shift in his production mix, in a move that could reshape global supply dynamics and inject fresh volatility into the battered nickel market.

Xiang Guangda's Tsingshan Holding Group Co. is seeking to profit from an unusually large premium in the price of refined nickel metal – the type that is deliverable on exchanges in London and Shanghai – over the intermediate forms that Tsingshan supplies for battery manufacturing, according to people familiar with the matter.

Tsingshan, which is already building facilities to produce refined nickel in Indonesia, is in discussions with several struggling Chinese copper plants about processing its material into the more-valuable refined metal, said the people, who asked not to be identified discussing private information. If successful, Tsingshan's plan, together with similar moves by its peers, could double Chinese refined nickel production this year, from about 180,000 tons in 2022 — adding roughly a fifth to global refined output.

Xiang's move is a response to a growing divergence in the nickel world: total supply is headed for a years-long surplus, driven by a surge in production from Indonesia where Tsingshan and others are ramping up output of the intermediate forms like ferronickel and mixed hydroxide precipitate that now dominate the market. Xiang — known in commodities circles by the nickname "Big Shot" — and other Chinese producers are also increasingly

concerned about a weakening outlook for electric-vehicle demand in China, the people said.

On the other hand, supplies of nickel metal have remained tight, helping keep prices relatively high compared with the rest of the market.

A reversal of that dynamic could create fresh volatility for the London Metal Exchange nickel contract, which has regularly experienced wild swings in recent months amid thin trading volumes and shortened hours. The LME is still wading through the fallout from the crisis, when it suspended the market for a week and canceled billions of dollars of trades, and is expected to publish an independent review of the events this week.

The plan to use copper plants to process nickel is a novel one, but the process has already been applied successfully during a trial at a smaller factory in central China, the people said. Tsingshan is holding early talks with a number of copper producers, including Yanggu Xiangguang Copper Co., a major copper smelter that was idled once last year amid financial difficulties.

Tsingshan didn't respond to multiple requests seeking comment. Xiangguang didn't respond to emailed requests for comment.

Tsingshan has a long history of reshaping the nickel market — even before last year's short squeeze that brought the LME to its knees. In the mid-2000s, it helped unlock Indonesia's vast nickel resources by developing a way to use its low-grade ore to make stainless steel cheaply. More recently, it has led a massive increase in

production to supply the battery industry.

An increase in refined production could help replenish global exchange inventories, which have hovered near multiyear lows, and help reduce the severity of squeezes in the future. It would come at a time when the biggest producer of refined nickel — Russia's MMC Norilsk Nickel PJSC — is considering a 10% reduction in output this year.

For Tsingshan, the increased access to refined metal will also help minimize the risks involved in trading on the LME, which it uses to hedge its output. In March, Tsingshan was the focus of a massive short squeeze on the LME, with prices soaring as much as 250% in two days when the Chinese company stopped being able to pay its margin calls. Tsingshan's position was complicated by the fact that, despite being the world's top nickel producer, it didn't produce any nickel metal that could be delivered on the LME.

The copper plants will only require a simple technical adjustment to be able to produce nickel metal from nickel sulphate through a hydrometallurgical process, and could be ready in a short period of time, the people said.

Tsingshan and its partner companies could provide intermediate supplies to increase refined production from such plants by 150,000 to 200,000 tons a year, according to the people. That would represent three times the total inventory currently held in LME and Shanghai Futures Exchange warehouses combined. In addition, there are new nickel refineries being constructed in China and Indonesia.

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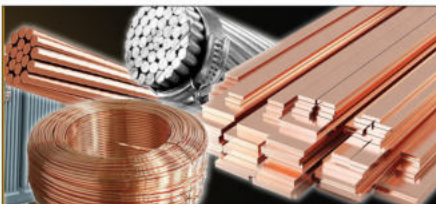
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