

CKM Copperbelt KATANGA

Kamoa-Kakula on Track to Become the World's Third-largest Copper Mining Complex by Q4 2024

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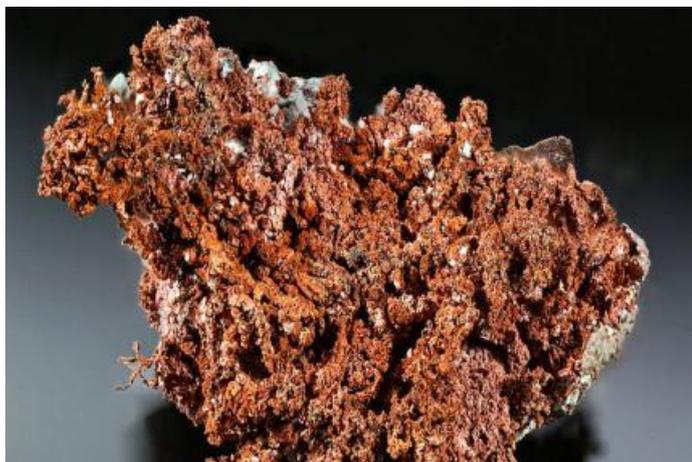
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Prices of the main mining export products of the DRC are down during this week from June 27 to July 2, 2022

This is bad weather for the main mining export products of the DRC. During this week from June 27 to July 2, 2022, the general trend of prices on the international market shows a drop, according to projections by experts from the National Mercurial Commission of the Ministry of Foreign Trade.

Copper shows a drop in price of around 434.7 USD. It is traded around 8960.20 USD per ton this week against 9394.90 USD per ton last week.

Zinc is also down this week at 3640.95 USD per tonne against 3702.40 USD per tonne last week, a negative price difference of 61.45 USD.

As for cobalt, it remains stable on the international market this week at 87,781.05 USD per ton. Tin is also down this week at 33,150 USD per ton against 36,223.75 USD per ton.

Gold is trading this week at \$59.31 per gram versus \$59.38 per gram last week, giving a negative price differential of \$0.07.

Tantalum is at 405 USD per Kg this week against 410 USD per Kg last week, i.e. a negative price difference of 5 USD. Silver ore is stable this week at USD 0.70 per gram.

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Zambian Government Formalises Sakania Border For Export and Transit Exit

The Government through the Ministry of Finance and National planning has formalised Sakania Border post to allow for passage of exports and transit goods to the Democratic Republic of Congo (DRC).

Through the issuance of the Statutory Instrument Number 36 of 2022, signed by the Acting Minister of Finance and Planning Paul Kabuswe, transporters of designated goods as outlined in the SI can now legally exit through Sakania Border.

The usage of Sakania in addition to Mokambo and Kasumbalesa is expected to contribute towards reduction of congestion at Kasumbalesa border.

Further the Government is in the process of upgrading the roads leading to Mokambo and Sakania Borders.

In addition, the Government has advised importers and exporters to take advantage of trade facilitation tools implemented by the Zambia Revenue Authority (ZRA) like pre-clearance in order to avoid delays at the borders.

Zambians must benefit more from mining, minister says

Zambia needs to hold a bigger stake in new mines and local communities should benefit more from the mineral values chain, mines minister Paul Kabuswe said on Wednesday.

"This government is saying Zambians must be an integral part of whatever investment. We can no longer sit in the terraces and watch," Kabuswe said at a conference.

The minister said later in response to questions that the government was planning to increase the state's shareholding in new mines to ensure that Zambia maximises its benefits from the sector.

"Going forward, I don't think there will be a mine where Zambia will own less than 20% (of shares). Those days of 10% shareholdings are gone," Kabuswe said.

Kabuswe said the government needed to have a golden share in new mines, which would give it controlling voting rights.

Zambia's mining investment arm ZCCM-IH holds less than 50% shares in key mining operations and a 20% stake in Kansanshi mine which is majority owned by Canada's First Quantum Minerals.





DRC mining industry produced 121,955 tonnes of copper and nearly 7,000 tonnes of cobalt in January 2022

The mining industry in the Democratic Republic of the Congo produced 121,955 tonnes of copper in January 2022 compared to 130,508 tonnes of copper in January 2021, a drop of around 8,553 tonnes, according to figures from the Central Bank contained in its Digest of statistical information of January 13, 2022.

As for cobalt, 6,498 tonnes were produced in January 2022 compared to 7,383 tonnes in January 2021, a monthly production drop of around 885 tonnes from one year to the next.

Recall that in 2021, the mining industry in the Democratic Republic of the Congo produced 1 million 797,836 tonnes of copper, a record for the past two decades.



Celine Nair takes over role of KCM Provisional Liquidator

Konkola Copper Mines has announced that Lawyer Celine Meena Nair has taken over the role of Provisional Liquidator of the mining giant.

This follows her recent appointment as acting Official Receiver of the Republic of Zambia. Ms Nair has assumed all functions relating to the office of the KCM Provisional Liquidator.

This is according to a statement issued by KCM acting Chief Executive Officer Enock Mponda.

At the time of her appointment, Ms Nair was Principle Legal Officer-International Law and Agteemht at the Ministry of Justice.

Below is the full statement

Celine Nair takes over role of KCM Provisional Liquidator

CHINGOLA, 9th May 2022: I wish to inform the public that Ms Celine Meena Nair has taken over the role of Provisional Liquidator (PL) of Konkola Copper Mines (KCM) following her recent appointment as acting Official Receiver of the Republic of Zambia.

Ms Nair has assumed all functions relating to the office of the KCM Provisional Liquidator.



DRC: IGF indexes 6 mining partnership contracts with private parties not published by Gécamines

Between 2000 and 2008, Gécamines signed 24 partnership contracts (Joint-venture) with private parties representing 100% of its historic available mining reserves.

To date, Gécamines has reconstituted the equivalent of 26% of these reserves of copper (9.3 million tonnes of copper) and 45% of cobalt (1.4 million tonnes of cobalt) and has signed three new contracts joint-venture, reports the General Inspectorate of Finance in its report on Gécamines published in May 2022.

Thus, this supreme control institution detected a lack of publication of certain partnership contracts and a lack of transparency in the signing of contracts, illustrated by the non-publication of certain mining contracts in the Official Journal and on the Unit's website. Technical Coordination and Mining Planning (CTCPM), in violation of Article 25 Ter of the Mining Regulations of June 2018.

By way of illustration, the IGF cites the contracts which are not published as provided for in the regulations: EVELYNE, MVUMILIA, LUILU RESSOURCES, HUACHIN METAL, RECOMINES and KAIPENG MINING.



Copper price heads for biggest quarterly plunge since 2011

Copper prices are down almost 20% in the second quarter, the biggest quarterly fall since 2011, after covid lockdowns in China and slowing economic growth curtailed demand.

Copper for delivery in September fell 2.2% from Wednesday's settlement, touching \$3.70 per pound (\$8,140 per tonne) Thursday morning on the Comex market in New York, the lowest since February 2021.

Other industrial metals were also headed for their biggest quarterly fall in several years, down between 20% and 40%.

"We still see metals falling as a recession in the US is fully priced in," said Commerzbank analyst Daniel Briesemann.

Copper fell 19.8% in the first quarter of 2020 when COVID-19 spread worldwide. There has been no other quarterly plunge on that scale since 2011.

"Right now fund managers are evidently in no mood to worry about copper's micro dynamics. It's the big picture that counts, and the big picture is one of darkening economic clouds on the horizon," wrote Reuters columnist Andy Home.

Briesemann said copper could slip as low as \$7,000-\$7,500 in Q3, but prices should rise towards the year-end.

Barrick Gold Corporation announces the sale of 5,382,587 shares of Perpetua Resources Corp

Mining company Barrick Gold Corporation ("Barrick") announced on June 15, 2022, the sale of 5,382,587 common shares ("Shares") of Perpetua Resources Corp. ("Perpetua Resources") through Nasdaq, Cboe, Direct Edge and NYSE-ARCA (the "Provision").

According to the source, the disposition generated gross cash proceeds of an aggregate amount of C\$21,729,504 (C\$4.04 per common share).

It should be noted that immediately prior to the disposition, Barrick beneficially owned, or controlled and directed, 5,382,587 shares, representing approximately 8.5% of the issued and outstanding shares.

Following the disposition, Barrick no longer beneficially owns, controls or directs the Shares. Barrick made the disposition for investment portfolio management purposes.

Depending on market conditions and other factors, including the business and financial condition of Perpetua Resources, Barrick may in the future acquire securities of Perpetua Resources or dispose of some or all of the securities of Perpetua Resources that it may hold at such a time.

AJN Resources & Congo Resources sign a partnership for the development & promotion of Congolese mining assets

Anxious to enhance and promote its mining assets, the Government of the Democratic Republic of Congo through the Ministry of Portfolio has formalized a partnership with AJN Resources with a view to the creation of the company "CONGO RESSOURCES". This in accordance with the orientations and options raised during the 49th meeting of the Council of Ministers held under the leadership of the Head of State Félix Tshisekedi. The main objective of this new company will be to hold various unexploited permits with high mining potential and to promote them through the financial markets.

According to the briefing note from the Ministry of Portfolio, the valuation system will be done by the transfer of titles (research permits) representing high-potential mining sites within Congo Resources (CR).

"These exploration permits are essentially sites in the gold sector, but in the medium term because other minerals such as lithium and cobalt will be integrated (...). After the integration of these titles within Congo Resources, they will be valued through a cross-shareholding (transfer of shares) in a financial vehicle called AJN Resources, a company listed on the Canadian stock exchange. This is a first for the DRC. Nevertheless, in order to prevent the State does not lose control of this new project, the plan implies that the DRC in exchange for the transfer of these titles, receives 60% of the shares (common shares) of AJN. in the DRC, a monitoring mechanism is integrated which makes it possible to maintain the majority shareholding of the DRC" reads in this document.

In front of the press gathered this Thursday, May 19, 2022 in her office, the Minister of State, Minister of the Portfolio Adèle Kayinda returned to the merits of the creation of this company in partnership with AJN Resources.

"The Democratic Republic of Congo should also draw dividends first of all financially and then from the impact on our population. For us, the approach or the fundamental aspect that we would like to weave from this partnership is that this time it is that the Democratic Republic of Congo is also listed on the Stock Exchange because today with all that we have as deposits, mining assets, we do not have the quality to register, which is why we said to ourselves, we will first gradually go with the partner who is already registered and who has this notoriety that we can go with him as a joint venture and afterwards, as we evolve, we will also be independent ourselves", said explained the Minister of State, Adèle Kayinda.

And to continue:

"This innovation that we have just introduced because I can give you one more little explanation. There are people who come and when they forge partnerships with us, in fact they have nothing, they come with our assets allows you to have the legitimacy to be able to raise funds and in itself it's like they are commissioners and when now he has the contract he signed with the Democratic Republic of Congo, he will now use donors who have funds and that he as a commissioner and finally the one who pulls and we have crumbs now this time we wanted that with the other on the basis of contract where we will be at 60% and that he too we go with the funds that we will raise it that is to say that we carry our mining assets as a pledge that gives us credibility or we are going to commit ourselves".

Adèle Kayinda evokes the advantages for the DRC of being recognized on the stock exchange at the international level. Other benefits will be affected in the materialization of development projects in the country.

"With the stock market, you know if it's done with metals, you manage to raise the value but all of a sudden you're going to be able to commit a lot of funds and these funds will also allow us to be able to finance "other projects in different sectors (water, electricity, basic infrastructure because for us it will also be a source of financing. We have our deposits, our assets but we must develop ourselves", added Adèle Kayinda.

She reassured that the file of AJN RESSOURCES was carefully studied before materializing this agreement.

"Why go with AJN? For many people, it does not have a good reputation but know that I had time to study and put all the mechanisms so that we cannot fall into nebulous management and there had at least two meetings of the Council of Ministers where I had presented the very first time, the option was lifted from the creation of CONGO RESSOURCES and the second time when the Council authorized me to draw this partnership with AJN", she reassured.

During the period of the partnership contract between the companies Congo Resources and AJN Resources, the Congolese State will be represented by two directors on the Board of Directors of AJN Resources in order to look after the interests of the DRC. In the medium and/or long term, the partnership contract also provides for the establishment of its own financial vehicle which will hold all the research permits existing within the AJN or to be acquired.

Jubilee Metals peaks performance in SA and Zambia

Jubilee Metals Group PLC, a leader in metals processing with operations in Africa has provided a performance update of its new and expanded fully integrated South African Inyoni PGM and Chrome Operations and its Zambian Southern Copper Strategy.

This new and significantly enlarged operational footprint follows a R 786 million investment programme implemented over the past 12 months.

Leon Coetzer, CEO of Jubilee, commented: "The Jubilee team was bold in its plans to expand and optimise the South African and Zambian operations, however a confident, but prudent approach to the deployment of our £ 39.5 million investment programme has already resulted in the delivery of significant results for the Group".

Coetzer continued to say that rolling out their business case across multiple countries, operations and commodities has enabled Jubilee to de-risk, capture economies of scale, and provided exposure to numerous value points throughout the recovery and metal processing chain.

"Our expanding production profile and the economies of scale it provides, offer insulation from the inflationary pressures smaller operators are facing, enabling Jubilee to maintain a cost per PGM ounce produced when fully accounting for the chrome by-product production credits resulting in a net cost of below US\$ 450 per PGM ounce when excluding transport cost," added Coetzer. Jubilee's eastern limb expansion strategy holds the additional benefit of significantly reducing the transport cost of material from this region which makes up the bulk of current transport cost.

South Africa

Jubilee's new and expanded Inyoni Operations has exceeded design throughput targets reaching 86 000 tonnes per month of chrome and PGM containing run-of-mine ("ROM") feed, together with 40 000 tonnes of PGM containing historical tailings material, placing Jubilee on course to achieve its PGM ounce production target of 44 000 ounces per annum through its 100% owned Inyoni.

Inyoni continued to ramp up production rates targeting full production rates during May 2022 and delivered 8 018 PGM ounces from Inyoni operation in calendar Q1 CY2022, an increase of 75% when compared with Inyoni's average production rate of the previous two quarters despite refilling of the operational pipeline after start-up. With the completion of the ramp-up of Inyoni during May 2022, Jubilee expects to achieve the 43 000 PGM ounce guidance for the financial period end to June 2022.

Zambia

Significant milestones were achieved in the delivery of the Southern Copper Refining Strategy in Zambia, which targets to produce up to 12 000 tonnes of copper units per annum including a cobalt by-product from certain cobalt-containing feed streams. Project Roan commissioning activities are nearing conclusion with the official hand-over of the new copper concentrator to the operational team. The ramp-up of the concentrator is expected to reach design capacities during July 2022, which targets the processing of 830 tonnes of copper in concentrate per month for refining at Sable. Initial design capacity able to produce up to 1 200 tonnes of cobalt per annum which has the potential to add significant revenues to the Southern Copper Refining Strategy.

Local Procurements

Project Roan has to date created local employment opportunities for almost 600 people as part of the construction and operational team. The project has brought investment, employment, and opportunities for local service providers to the region. Jubilee's Project Roan and Sable Refinery combined have offered employment and contractor opportunities to more than 800 people, the most of which are long-term, while Jubilee has prioritised local supply of services often working with local companies to assist in developing the required services to create a sustainable support infrastructure. In addition to the copper refining capacity at Sable, the construction of a cobalt refining circuit at the site is underway and expected to commence commissioning during June 2022.

"Crucially, and in line with our goals to promote sustained, inclusive economic growth, the Southern Copper Refining Strategy has resulted in significant job creation, with total jobs filled in Zambia reaching near 800 during the last 12 months. We have prioritised the sourcing of skills and services from our local communities and have, in many instances, partnered with local firms to assist in their growth and development to offer a sustained service to our projects. With the completion of the construction of Project Roan we now look to accelerate our investment program into the Northern Refining Strategy targeting the Luanshya, Kitwe, and Mufulira areas. As we emerge from this phase of significant growth and sustained financial performance, I look forward to providing further updates as our various new projects hit their targeted output in the coming weeks and will be fully reflected in the next financial reporting period" concluded Coetzer.

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Kamoa-Kakula on Track to Become the World's Third-Largest Copper Mining Complex by Q4 2024

Ivanhoe Mines announce, ahead of the Goldman Sachs Copper Day, further details of the Phase 3 expansion at the Kamoa-Kakula Copper Mining Complex in the Democratic Republic of Congo. Phase 3 is expected to increase annualized copper production capacity to approximately 600,000 tonnes per year by the fourth quarter of 2024, which will position Kamoa Copper as the world's third-largest copper mining complex and the largest copper mining complex on the African continent.

Kamoa-Kakula's Phase 3 will consist of two new underground mines known as Kamoa 1 and Kamoa 2, as well as the initial decline development at Kakula West. A new, 5 million-tonne-per-annum concentrator plant will be established adjacent to the two new mines at Kamoa.

Upon commencement of Phase 3 production, Kamoa Copper will have a total processing capacity of greater than 14 million tonnes per annum. The existing Phase 1 and 2 concentrators will be de-bottlenecked and operating at a combined throughput of 9.2 million tonnes of ore per year by the second quarter of 2023, which is expected to increase Kamoa-Kakula's annual copper production to more than 450,000 tonnes. The associated power and surface infrastructure are being designed to support Phase 3, as well as future expansions.

Phase 3 also includes a direct-to-blister flash smelter that will incorporate leading-edge technology supplied by Metso Outotec of Espoo, Finland, with a nameplate capacity of 500,000 tonnes per year of approximately 99%-pure blister copper. It is projected to be one of the largest, single-line copper flash smelters in the world, and the largest in Africa.

Kamoa-Kakula's Phase 3 expansion will also be powered by clean, green hydroelectricity. Kamoa Copper's Inga II partnership is expected to generate an additional 178 megawatts (MW) of renewable hydropower for the Democratic Republic of Congo, providing the Kamoa-Kakula Copper Mining Complex and associated smelter with sustainable electricity for Phase 3 and future expansions, while also benefitting local communities.

Negotiations for an amendment to Kamoa-Kakula's offtake arrangements for Phase 2 production are nearly complete, with copper product currently being shipped under existing, Phase 1 agreements.

Kamoa Copper's Phase 1 and Phase 2 concentrator plants have reached commercial production. Kamoa-Kakula is expected to increase production to approximately 600,000 tonnes copper by Q4 2024.

Mr. Friedland commented: "Together with our joint-venture partner, Zijin Mining, we are resolved to expedite future expansion phases at Kamoa-Kakula to meet rapidly rising copper demand, create profitable growth for our shareholders, and long-lasting economic and social benefits for the Congolese nation and people. The Kamoa Copper team has delivered fantastic results during construction and ramp-up of Phase 1 and Phase 2, and we're confident that record of success will continue as we expand Kamoa-Kakula into one of the world's largest producers of copper metal.

"We are at an inflection point for the copper industry ... one where we must determine how to meet growing demand, even as discovering and building new mines becomes ever more challenging. Humanity will likely require as much copper in the next 22 years alone as it did through this point in its history - approximately 700 million metric tonnes - just to maintain 3% GDP growth. This does not even account for rising demand related to global investment to combat climate change through aggressive electrification.

"We share Goldman Sachs' outlook on the pending supply-demand challenges in the copper market. We are looking forward to meeting with the financial and investment leaders in New York to discuss solutions, and to share the industry leading successes at Kamoa-Kakula ... which at this very moment is the 'greenest' and fastest growing copper mine on the planet."

Note: Kamoa-Kakula production of 600 kt copper in concentrate, is based on expected Phase 1, 2 and 3 steady state production, following de-bottlenecking of both Phase 1 and 2 concentrators, and commercial ramp-up of the Phase 3 concentrator.

Construction progress on the new box cut and twin decline excavations is advancing quickly at the Kamoa 1 and Kamoa 2 mines.

Phase 3 construction works well underway, with Pre-Feasibility Study expected in the second half of 2022

Phase 3 is making solid progress, with detailed design, budgeting and engineering advancing well. Construction progress on the new box cut excavation is advancing rapidly at the Kamoa 1 and Kamoa 2 mines, with decline development expected to start in early May 2022, which will provide access to the major Phase 3 mining areas.

The Pre-Feasibility Study for the Phase 3 expansion is well advanced and expected to be announced during the second half of this year, while first production is anticipated to commence by the end of 2024.



First Quantum Minerals Announces Tristan Pascall as New CEO

First Quantum Minerals Ltd. ("First Quantum" or "the Company") (TSX: FM) today announced that the Board of Directors has appointed Tristan Pascall to the role of Chief Executive Officer (CEO). The appointment came into effect at the Annual General Meeting (AGM) held on May 5, 2022. Tristan will also be joining the Board of Directors.

First Quantum is also pleased to announce the appointment of Alison Beckett as an independent director on the Board of Directors. Alison has a career spanning industry and consulting, including procurement and strategy consulting. She is currently Group Talent Director at Ardagh Group and was previously an advisor providing leadership advisory services at Egon Zehnder. Alison holds an MA in Geography from Cambridge University and MBA from the London Business School.

First Quantum would like to thank Clive Newall, co-founder of the Company, who has retired from the Board of Directors and Philip Pascall, co-founder and CEO since 1996, who has retired from the CEO role. Philip will continue to serve as Chairman of the Board.

"The appointment of Tristan Pascall represents the culmination of a succession planning process led by independent directors on the Board's Nominating and Governance Committee. We believe Tristan's combination of operational, strategic and capital markets experience are fundamental to the continuity



of our unique core capabilities, namely industry-leading project execution and operational excellence," said Robert Harding, Chair of the Nominating and Governance Committee and Lead Independent Director. "On behalf of the Board of Directors, I would like to thank Philip and Clive. As co-founders of First Quantum, Philip and Clive have demonstrated extraordinary leadership and made significant contributions to the development and growth of the Company and I would like to thank them both. I would also like to welcome Alison, who brings with her many years of experience in talent development at the Board and executive level, which will help support the Company through the upcoming period of transition."

"As my time as Chief Executive Officer of First Quantum comes to an end, I would like to thank a number of long-standing Directors and the many loyal and steadfast managers and staff who have worked devotedly with First Quantum, some since its inception. It is these people who have established and who nurture the unique culture of the Company. The Company's capacity for caring and for creative thinking and practices relies on this culture. It is with the continuity of this distinct character and deep talent pool that First Quantum is placed in a very strong position for 2022 and beyond," said Philip Pascall, Chairman of the Board. "I would like to extend my deepest gratitude to all of the Company's stakeholders for their support through the years."

Chambishi Metals set to open, as govt vows to continue working with trusted investors

Negotiations between the state, an unnamed new investor, and the previous owners of Chambishi Metals Plc are nearly completed, according to the government, and will result in the asset becoming operational, more than two years after it was placed on care and maintenance due to a lack of feed for production.

Another mining asset that the government is working to reopen is Luanshya's shaft 28, which is now in talks with a potential investor for prospective operationalization, despite the fact that the talks are still in the early stages.

Mines Minister Paul Kabuswe has disclosed that the transaction on Chambishi Metals will soon conclude to reopen the mine, re-admit the mine's former employees and utilize the recently signed mining and resource sharing agreement with the Democratic Republic of Congo to access the much needed copper concentrates feed that led to the mine shutting down in 2020.

Mr. Kabuswe says government wants to work with investors that can be trusted and are ready to stand by the Zambian people through good and bad times to achieve job creation and increased productivity in the mining sector.

And Commerce And Trade Minister Chipoka Mulenga whose Ministry supervises the Zambia Development Agency-ZDA- which deals with the sale of mining assets however, expressed ignorance over the impending sale of the mine but was quick to mention that his ministry will look into the transaction should it receive any formal communication.

The ERG group, owners of Chambishi Metals Plc applied to place the mine on care and maintenance in January 2020 after an alleged failure to secure feedstock to sustain operations which has left the asset non-operational since with over 500 workers declared redundant.

Anglo American to return to Zambia with Arc Minerals copper deal

Junior exploration company Arc Minerals has entered into an agreement with a subsidiary of diversified miner Anglo American, which formalises the parties' intention to form a joint venture (JV) with respect to Arc's copper/cobalt project in the North-Western province of Zambia.

Under the agreement, Anglo will have the right to earn a 70% interest in the JV for an aggregate investment of up to \$88.5-million, including a cash consideration of up to \$14.5-million, while Arc will retain the remaining 30%.

"This agreement represents a major turning point for Arc and follows many months of negotiations. I am delighted to be signing this agreement with Anglo American which will, upon execution and completion of the definitive agreements, result in the potential for significant investment by a reputable major mining company in the tenements in north-west Zambia," Arc executive chairperson Nick von Schirnding said on May 12.

Several key commercial terms of the JV have been agreed in principle under the agreement.

Among these terms is that Anglo will have the right to retain an ownership interest of 51% by funding exploration expenditures equal to \$24-million on or before 180 days after the third anniversary of start of the JV.

Additionally, Anglo will need to make cash payments to Arc totalling \$14.5-million in tranches. The first \$3.5-million will be paid upon the official formation of the JV and signing of JV documents.

Thereafter, \$1-million must be paid each year for three consecutive years.

Finally, a payment of \$8-million is due by the project's Phase 1 end date.

Following the completion of Phase 1, Anglo will have the right to retain an additional ownership interest equal to 9% for a total ownership interest of 60% by funding \$20-million of additional exploration expenditures within two years of the Phase 1 end date – the Phase 2 end date.

Upon the completion of Phase 2, Anglo will have the right to retain an additional ownership interest equal to 10% for a total ownership interest of 70% by funding \$30-million within two years of the Phase 2 end date.

For as long as it holds the largest interest in the JV, Anglo will have the right to nominate three directors, while Arc will have the right to nominate two. All JV board decisions will be adopted by majority vote.

The agreement sets out the core principles under which the JV will be formed subject to satisfactory due diligence, a restructuring of Arc's assets in preparation for the JV, negotiation and execution of definitive agreements, the approval of the transaction by the relevant boards of directors and the relevant government and regulatory authorities and other customary conditions.

An exclusivity period has been agreed for up to 90 days to allow for due diligence, and up to an additional 90 days for the negotiation and execution of the JV documents.

KOMATSU ACQUIRES MINE SITE TECHNOLOGIES

Komatsu, through its wholly owned subsidiary in Australia, has agreed to acquire Mine Site Technologies (MST), a provider of operational optimization platforms for underground mining that leverage communication devices and position tracking systems.

"Empowering its customers growing use of digitalization and automation to improve

safety and productivity, Komatsu plans to work with MST Global to help customers build digital ecosystems with real-time insights and alerts, voice and communication technologies, software solutions, robust network infrastructure and wireless and geospatial technologies," the equipment supplier said in a release.

With a global customer base, MST Global

offers a platform to visualize and monitor the underground mining environment and enable control from a remote operations center.

By adding MST Global's expertise in the introduction of communication devices and optimization platforms, Komatsu aims to enhance the speed at which it offers advanced technology solutions, including the automation and teleoperation of mining equipment underground.

Gemfields achieves highest ever revenue with May emerald auctions, netting \$43.3m

A series of five sequential mini-auctions of emeralds held by gemstone miner Gemfields from May 9 to 26 saw all 38 lots on offer being sold and set a new record for the highest revenue and the highest average price per carat achieved, at \$43.3-million and \$155.90/ct, respectively.

Gemfields has held 41 auctions of Kagem-sourced emeralds since July 2009, generating \$835.3-million in total revenues.

Besides the May auctions, Gemfields netted \$37.8-million in revenue at auctions held during November 1 to December 6, where the average value amounted to \$150.65/ct.

Product and sales MD Adrian Banks says Kagem's second auction of this year has again been "hotly contested, reaffirming the remarkable levels of demand prevailing in the emerald and ruby markets".

He adds that the auction marked the first time in history that a sizeable emerald auction was hosted in Bangkok, Thailand.

The May auctions contained a selection of grades that are typically offered at Kagem Mining auctions of higher-quality emeralds, as well as one special piece.

The auction lots were made available for in-person and private viewings by customers in Bangkok.

Following the viewings, the bidding took place via an

online auction platform specifically adapted for Gemfields which permitted customers from multiple jurisdictions to participate in a sealed-bid process.

The rough emeralds sold were extracted by Kagem Mining - 75%-owned by Gemfields and 25% by the Industrial Development Corporation of Zambia.

The proceeds of this auction will be fully

repatriated to Kagem in Zambia, with all royalties owed to the Zambian government being paid on the full sales prices achieved at the auction.

As a result of the auction, Kagem's first half auction revenues now total \$85.7-million, which compares with the \$92.3-million obtained from all auctions in 2021, "highlighting the step-change being experienced in the market", says Banks.





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**Glencore agrees to pay more than 1.2 billion USD in
the United States to settle its corruption cases**



Mining and commodities trader Glencore has settled investigations into corruption and market manipulation in the UK and US that have dogged the company for years.

In February, Glencore announced it had set aside \$1.5 billion to cover settlement costs in the US, UK and Brazil, and the company confirmed it would appear in court in the United States on Tuesday under "proposed resolutions" to investigate his activities.

Later in the day, the UK's Serious Fraud Office (SFO) charged Glencore with seven counts of corruption in Cameroon, Equatorial Guinea, Ivory Coast, Nigeria and South Sudan. A London judge will sign separate penalties for Glencore at a sentencing hearing on June 21.

In the United States, the miner pleaded guilty to violating the Foreign Corrupt Practices Act, agreeing to pay \$700 million to resolve the corruption investigation and more than \$485 million to settle accusations of market manipulation.

"Glencore today is no longer the company it was when the unacceptable practices giving rise to this misconduct occurred," Chairman Kalidas Madhavpeddi said in the statement.

The company further agreed to pay more than \$39.5 million under a resolution signed with Brazil's Federal Prosecutor's Office (MPF) as part of its corruption investigation.

For the past four years, Glencore has been investigated by the US Department of Justice (DOJ), the SFO and Brazilian authorities for alleged money laundering and corruption.

The Swiss company revealed in 2018 that the US DOJ had requested documents related to the group's activities in the Democratic Republic of Congo (DRC), Nigeria and Venezuela as part of an investigation into possible cases of corruption and corruption. money laundering.

Ivanhoe Mines first quarter 2022 review of mine construction and exploration activities

Ivanhoe Mines (TSX: IVN) (OTCQX: IVPF) announced its financial results for the three months ended March 31, 2022. The first quarter was highlighted by many important milestones, including: the early declaration of Phase 2 commercial copper production at the Kamoa-Kakula Mining Complex; the commencement of lateral mine development toward the high-grade Flatreef platinum-group-metals orebody at Platreef; a new agreement to return the ultra-high-grade Kipushi Zinc Mine to commercial production; and the initiation of an extensive regional drilling program at the Western Foreland Copper Exploration Project. All figures are in U.S. dollars unless otherwise stated.

HIGHLIGHTS

- Ivanhoe Mines recorded a profit of \$21.5 million for Q1 2022, compared to a profit of \$20.4 million for the same period in 2021. Ivanhoe Mines' share of profit from the Kamoa-Kakula copper joint venture and finance income therefrom totaling \$115.4 million, were the principal contributors to the profit recorded in the first quarter.
- The Kamoa-Kakula Mining Complex set a new quarterly production record during the period, with 55,602 tonnes of copper in concentrate produced. Commercial production from the Phase 2 concentrator was declared on April 7, 2022.
- A de-bottlenecking program is underway at Kamoa-Kakula to expand processing capacity of Phase 1 and Phase 2 concentrators by 21%, to a combined 9.2 million tonnes of ore per year. Copper production from Kamoa Copper's first two phases is projected to exceed 450,000 tonnes per year by Q2 2023.
- Kamoa-Kakula's cost of sales per pound (lb.) of payable copper sold was \$1.08/lb. for Q1 2022, while cash costs (C1) per pound of payable copper produced totaled \$1.21/lb., compared to \$1.12/lb. and \$1.28/lb. respectively in Q4 2021.
- During Q1 2022, Kamoa-Kakula sold 51,919 tonnes of payable copper and recognized record EBITDA of \$399.4 million and revenue of \$519.6 million, with an operating profit of \$380.5 million.
- On May 3, 2022, Ivanhoe Mines announced details of the Phase 3 expansion at Kamoa-Kakula, which will include an additional 5-million-tonnes-per-annum concentrator adjacent to new underground mines at Kamoa - named Kamoa 1 and Kamoa 2. Phase 3 will increase total processing capacity to more than 14 million tonnes of ore per annum, and grow annualized copper production to approximately 600,000 tonnes by the fourth quarter of 2024. This production level will elevate Kamoa-Kakula to the world's third-largest copper mining complex, and the largest copper mining complex in Africa.
- Ivanhoe Mines has a strong balance sheet with cash and cash equivalents of \$562 million as at March 31, 2022, and expects that Kamoa-Kakula's expansion capital for Phase 2 and Phase 3 will be funded from copper sales and facilities at Kamoa.
- During the first quarter of 2022, Ivanhoe commenced a regional drilling program, expected to total approximately 95,000 metres, targeting Kamoa-Kakula-style copper mineralization on its Western Foreland licences, which cover approximately 2,407 square kilometres in close proximity to the Kamoa-Kakula mining licenses.
- Exploration models that successfully led to the discoveries of Kakula, Kakula West, and the Kamoa North Bonanza Zone on the Kamoa-Kakula joint-venture mining licence are being applied to the extensive Western Foreland land package by the team of exploration geologists responsible for the previous discoveries.
- On May 9, 2022, Ivanhoe Mines announced the completion of the Platreef Project's Shaft 1 changeover to a production shaft, as well as the first blast on the 950-metre level, which marked the commencement of lateral mine development toward the high-grade Flatreef platinum-group-metals, nickel, copper and gold orebody.
- In February 2022, Ivanhoe Mines announced the outstanding results of a new independent feasibility study for the Platreef Project that builds on the alternate scenario to expedite production, based on a steady-state production rate of 5.2 million tonnes per annum, confirming the viability of a new phased-development pathway to fast track Platreef into production in Q3 2024.
- The Platreef 2022 Feasibility Study yields an after-tax NPV8% of \$1.7 billion and IRR of 18.5% at long-term consensus metal prices. At spot prices as at May 6, 2022, the after-tax NPV8% increases to \$3.5 billion and the IRR increases to 27%.

- In February 2022, Ivanhoe Mines and Gécamines signed a new agreement to return the ultra-high-grade Kipushi Zinc Mine back to commercial production.

- Ivanhoe Mines announced the positive findings of an independent feasibility study for the planned resumption of commercial production at Kipushi based on a two-year construction timeline. The Kipushi feasibility study's sensitivity analysis at spot zinc prices of approximately \$1.70/lb. (May 6, 2022), results in an after-tax NPV8% of \$2.4 billion with an after-tax real IRR of 75.8%.

- On May 2, 2022, Ivanhoe Mines issued its fifth annual Sustainability Report, highlighting the company's commitment to becoming a global ESG leader in mining.

Principal projects and review of activities

1. Kamoa-Kakula Mining Complex

39.6%-owned by Ivanhoe Mines

Democratic Republic of Congo

The Kamoa-Kakula Mining Complex, a joint venture between Ivanhoe Mines and Zijin Mining, has been independently ranked as the world's fourth-largest copper deposit by international mining consultant Wood Mackenzie. The project is approximately 25 kilometres west of the town of Kolwezi and about 270 kilometres west of Lubumbashi. Kamoa-Kakula began producing copper in May 2021 and achieved commercial production on July 1, 2021.

Ivanhoe sold a 49.5% share interest in Kamoa Holding Limited (Kamoa Holding) to Zijin Mining and a 1% share interest in Kamoa Holding to privately owned Crystal River in December 2015. Kamoa Holding holds an 80% interest in the project. Since the conclusion of the Zijin transaction, each shareholder has been required to fund expenditures at Kamoa-Kakula in an amount equivalent to its proportionate shareholding interest. Ivanhoe and Zijin Mining each hold an indirect 39.6% interest in the Kamoa-Kakula Mining Complex, Crystal River holds an indirect 0.8% interest and the DRC government holds a direct 20% interest.

Kamoa-Kakula's Phase 1 and Phase 2 concentrator plants now are in commercial production.

Health and safety at Kamoa-Kakula

At the end of March 2022, Kamoa-Kakula reached 796,966 work hours free of a lost-time injury. Three lost-time injuries occurred in Q1 2022. The project continues to strive toward its workplace objective of zero harm to all employees and contractors.

Kamoa-Kakula has successfully focused on prevention, preparation, and mitigation in managing the risks associated with COVID-19. Large-scale testing, combined with focused preventative measures, ensured that positive cases were quickly identified, isolated, and treated, with cross contamination kept to a minimum. Kamoa-Kakula also continues to focus intensively on rolling out vaccinations across the workforce and local communities. More than two thousand employees have received at least one dose of the vaccine.

As the pandemic evolves, the medical team at the Kamoa-Kakula hospital continues to review and update risk-mitigation protocols to protect the health and safety of employees and community members.

Kamoa-Kakula summary of operating and financial data

This release includes EBITDA and "C1 cash costs per pound" which are non-GAAP financial performance measures. For a detailed description of each of the non-GAAP financial performance measures used in this release, and a detailed reconciliation to the most directly comparable measure under IFRS, please refer to the Non-GAAP Financial Performance Measures section of this release and to the company's MD&A for the three months ending March 31, 2022. C1 cash costs are prepared on a basis consistent with the industry standard definitions by Wood Mackenzie cost guidelines, but are not measures recognized under IFRS. In calculating the C1 cash cost, the costs are measured on the same basis as the company's share of profit from the Kamoa Holding joint venture that is contained in the financial statements. C1 cash costs are used by management to evaluate operating performance and includes all direct mining, processing, and general and administrative costs. Smelter charges and freight deductions on sales to final port of destination, which are recognized as a component of sales



revenues, are added to C1 cash cost to arrive at an approximate cost of delivered, finished metal. C1 cash costs exclude royalties and production taxes and non-routine charges, as they are not direct production costs.

Record quarterly production of 55,602 tonnes of copper in Q1 2022; Phase 2 concentrator declared commercial production on April 7, 2022

First ore was introduced into the Phase 2 milling circuit on March 21, 2022, and first copper concentrate was produced approximately four months ahead of the originally announced development schedule. The Phase 2 concentrator plant is a mirror image of the Phase 1 plant, with a design throughput of 475 dry tonnes per hour, or 3.8 million tonnes of ore per year. Over the last six months, the Phase 1 plant has consistently exceeded design ore throughput by approximately 10% to 15%.

During the first 17 days of production, Phase 2 regularly exceeded its design throughput capacity, and continues to perform at similar throughput and recovery rates to the Phase 1 concentrator. Commercial production from the Phase 2 concentrator was declared on April 7, 2022.

Copper recoveries progressively increased from an average of approximately 81% in July 2021 to approximately 85% in September 2021. Copper flotation recoveries averaged approximately 86% in the fourth quarter of 2021 and achieved a record 88.5% in December 2021. The Phase 1, steady-state-design copper recovery is approximately 86%, depending on ore feed grade.

The Phase 1 concentrator currently is running at a throughput that is in excess of its design capacity of 3.8 million tonnes per annum by more than 15%, with 117% of design throughput achieved in December.

Kamoa-Kakula set a new quarterly production record in the first quarter of 2022 with 55,602 tonnes of copper in concentrate produced, up from the 54,481 tonnes of copper in concentrate produced in the fourth quarter of 2021 and 41,545 in the third quarter of 2021. A total of 1.08 million ore tonnes were milled during the first quarter of 2022 at an average feed grade of 5.91% copper.

Phase 3 expansion to include additional 5 million-tonne-per-annum concentrator, adjacent to two new underground mines

Engineering and early works for the Phase 3 expansion, including a new box cut and twin declines to access new mining areas, are progressing quickly. Kamoa-Kakula's Phase 3 will consist of two new underground mines known as Kamoa 1 and Kamoa 2, as well as the initial decline development at Kakula West. A new, 5 million-tonne-per-annum concentrator (Mtpa) plant will be established adjacent to the two new mines at Kamoa.

Upon commencement of Phase 3 production, Kamoa Copper will have a total processing capacity greater than 14 million tonnes per annum. The existing Phase 1 and 2 concentrators

will be de-bottlenecked and operating at a combined throughput of 9.2 million tonnes of ore per year by the second quarter of 2023, which will increase annual copper production to approximately 600,000 tonnes.

Phase 3 is making solid progress, with detailed design, budgeting and engineering advancing well. Construction on the new box cut excavation is advancing rapidly at the Kamoa 1 and Kamoa 2 mines, with decline development expected to start in early May 2022, which will provide access to the main Phase 3 mining areas.

Kamoa-Kakula smelter basic engineering and earthworks underway

Early works on the planned direct-to-blister flash smelter at Kamoa-Kakula adjacent to the Phase 1 and Phase 2 concentrator plants is underway. The smelter is designed to use technology supplied by Metso Outotec of Espoo, Finland, and has been sized to process the bulk of the copper concentrate forecast to be produced by the Phase 1, 2 and 3 concentrator plants, with a production capacity of 500,000 tonnes per annum of approximately 99%-pure blister copper.

China Nerin Engineering Company Co., Ltd. has been appointed to carry out the basic engineering design and develop a control budget estimate for the smelter with some early works engineering and procurement activities running in parallel. Work is progressing well and tenders for all long lead item have been issued to the market.

The smelter, once in operation, will enable Kamoa-Kakula to reduce its C1 cash costs per pound of payable copper produced by approximately 10 to 20%, driven by significantly reduced transportation costs, decreasing overall volumes shipped by more than half.

Early works on the direct-to-blister flash smelter at Kamoa-Kakula adjacent to the Phase 1 and Phase 2 concentrator plants is underway.

Yann Kabeya Mubela, mining supervisor, Kamoa Copper, stands in the new box cut and twin declines excavation site.

Ore stockpiles now hold more than 4.8 million tonnes grading 4.57% copper, containing more than 220,000 tonnes of copper at the end of March 2022

Kamoa-Kakula's total high- and medium-grade ore surface stockpiles totaled approximately 4.8 million tonnes at an estimated grade of 4.57% copper as of the end of March 2022. The operation mined 1.67 million tonnes of ore grading 5.29% copper in Q1 2022, which was comprised of 1.53 million tonnes grading 5.50% copper from the Kakula Mine,

including 0.65 million tonnes grading 6.90% copper from the mine's high-grade centre, and 0.14 million tonnes grading 3.08% copper from the Kansoko Mine.

Kamoa-Kamoa's Phase 1 and Phase 2 concentrator plants and the ore stockpiles at the Kakula Mine's northern decline. The direct-to-blister flash smelter is being constructed adjacent to the Phase 1 and Phase 2 concentrator plants.

Kamoa-Kakula Phase 2 off-take amendments signed

Kamoa Copper - the operating company of the joint venture between Ivanhoe Mines, Zijin Mining Group, Crystal River and the Government of the Democratic Republic of Congo - has signed amended copper concentrate and blister copper offtake agreements on competitive arm's-length commercial terms, for 100% of Kamoa-Kakula's Phase 1 and 2 copper output.

The amended terms of the existing offtake agreements with CITIC Metal (HK) Limited (CITIC Metal) and Gold Mountains (H.K.) International Mining Company Limited, a subsidiary of Zijin, extend to include 50% each of the copper products from Kamoa-Kakula's Phase 2 production, in addition to Phase 1 production currently under offtake. The offtake agreements are evergreen for the production volumes from Phase 1 and 2, including copper concentrate and blister copper resulting from processing of copper concentrates at the Lualaba Copper Smelter, but will exclude future copper products to be produced from Kamoa Copper's own smelter, when commissioned.

The offtake agreements contain standard, international commercial terms, including copper payables and treatment and refining charges referenced against the annual benchmark across the copper industry.

CITIC Metal and Zijin will continue to purchase the copper concentrate at the Kakula Mine and the



blister copper at the Lualaba Copper Smelter on a free-carrier basis, meaning the buyers will be responsible for arranging freight and shipment to the final destination via African ports.

First Quantum Announces Board Approval of US\$ 1.25 Billion for the Kansanshi S3 Expansion and Enterprise Nickel Project

First Quantum Minerals Ltd. is pleased to announce that the Company's Board of Directors has approved the S3 Expansion at the Kansanshi mine and the Enterprise nickel project.

"First Quantum has been working constructively with the Government of Zambia's New Dawn administration as part of their efforts to reform the mining sector, attract investment and increase Zambia's copper production. The approval of the projects reflects First Quantum's increased confidence in the investment climate in Zambia," commented Tristan Pascall, Chief Executive Officer. "The S3 Expansion and the Enterprise nickel project are a key part of our brownfield growth strategy. The Kansanshi mine has been a cornerstone asset for First Quantum for 15 years and the S3 Expansion will expand production and extend the mine life for another two decades. The low-cost, high-grade Enterprise nickel project is well placed to supply the rapidly growing electric vehicle battery sector. The approval of these two projects is an important milestone for the Company's path towards responsible production growth of the metals needed for the global green energy transition."

Work on both projects will start immediately. The Company is re-commencing detailed engineering works for the S3 Expansion to determine purchase orders for key long-lead items, including the SAG mill, ball mill and in-pit crushing station. A mining contractor will be mobilized for the Enterprise nickel project in order to commence pre-stripping of the pit in June 2022. The development timeline and capital commitments of both projects remains consistent with the three-year guidance recently provided by the Company on January 17, 2022.

ZAMBIAN INVESTMENT CLIMATE

The approval of the projects follows the efforts of the New Dawn administration to enhance both the investment climate for mining and to seek commitments from the mining sector to contribute to the national economy and to corporate social responsibility. These initiatives will help establish a platform for more stable, durable and responsible mining in Zambia.

The Government of Zambia's (the "Government") commitments address the ease of doing business in Zambia, covering areas such as expediting immigration procedures in exchange for commitments for local employment levels, competitive pricing of power transmission and power procurement from independent sources which in turn will support renewable energy projects, and measures to ensure the ease of importing and exporting goods.

The approvals follow the re-introduction of the deductibility of mineral royalties for corporate income tax assessment purposes that became effective January 2022. This measure realigned Zambia with international best practice. The Government's commitment to improve the predictability of the mining fiscal regime also provides the certainty needed to support large capital investments in Zambia.

Furthermore, First Quantum and the Government have successfully resolved all points of contention that have been stumbling blocks to progress on the S3 Expansion and Enterprise nickel project. This includes reaching agreement in respect to the outstanding value-added tax receivable sum and an approach for repayment based on offsets against future mining taxes and royalties.

S3 EXPANSION

The S3 Expansion is expected to transition the current selective high-grade, medium-scale operation to a medium-grade, larger-scale mining operation that will be more appropriate for the higher proportion of primary, lower-grade sulphide ores at depth. As outlined in the NI 43-101 Technical Report filed in September 2020, the S3 Expansion, when completed, will comprise of a standalone 25 million tonne per annum ("Mtpa") processing plant with a new larger mining fleet that will increase Kansanshi's total annual throughput to 53 Mtpa. Once the expansion is completed, copper production from Kansanshi is expected to average approximately 250 thousand tonnes per annum ("Ktpa") for the remaining life of mine to 2044.

A significant portion of the initial construction works for the S3 Expansion have been previously undertaken with much of the civil and structural work onsite completed. The remaining work includes completion of the remaining engineering design works, procurement and installation of equipment, electrics, controls and infrastructure. The S3 processing train will comprise of a 28-megawatt SAG mill and a 22-megawatt ball mill. The open pit mine will be expanded to increase the supply of sulphide ore from the Main Pit and extend into the South East Dome deposit. The expanded mining fleet will use similar ultra-class equipment as First Quantum's other key mines and will benefit from new electrical loading and drilling equipment along with the extension of the current electric trolley assist infrastructure.

In parallel with the expansion of the mine and processing facilities, the Company plans to increase the throughput capacity of the Kansanshi smelter from 1.38 Mtpa to

1.65Mtpa of concentrate. This will enable the smelter to produce over 400 Ktpa of copper anode.

The total capital expenditures associated with the S3 Expansion is expected to be \$1.25 billion, which includes \$900 million on the S3 plant and mine fleet and \$350 million for pre-stripping of the South East Dome pit. Approximately \$800 million of this spending is included in the Company's current three-year guidance released on January 17, 2022 with the balance falling beyond the guidance period. First production from the S3 Expansion is expected in 2025.

ENTERPRISE NICKEL PROJECT

The Enterprise nickel sulphide deposit is located 12 kilometers northwest of the Sentinel copper mine. As outlined in the NI 43-101 Technical Report filed in March 2020, proven and probable reserves at Enterprise total 34.7 million tonnes of ore at 0.99% nickel.

The Enterprise nickel project will consist of a single, main open pit and one extension to the southwest. It will utilize the existing 4 Mtpa nickel circuit that was previously built as part of the original Sentinel processing complex. The main workstream to bring the project online will be the pre-strip of waste. The development timeline for Enterprise is expected to be approximately twelve months. At full production, Enterprise is expected to produce an average of 30 Ktpa of nickel in high-grade concentrate.

The total capital expenditures associated with the Enterprise nickel project is expected to be approximately \$100 million. Pre-stripping of the Enterprise pit of \$60 million is included in the three-year guidance provided earlier this year along with \$40 million related to infrastructure and plant commissioning. Expected first nickel production of 5,000 to 10,000 tonnes of nickel in 2023 is included in the Company's three-year guidance.

RESPONSIBLE MINING

The S3 Expansion and the Enterprise nickel project underlines First Quantum's continued standing as the largest private sector employer and the largest contributor to corporate social responsibility in the mining sector in Zambia. The Company is committed to local procurement and the advancement of Zambian small and medium sized business development in North Western Province. Power for both projects will be supplied predominantly from renewable sources, including the existing hydropower within Zambia, as well as potential wind and solar power projects that are under consideration by third parties.

ERG Africa's Metalkol Wins Three Awards for Galvanising and Mentoring Women in the Democratic Republic of Congo

Environment Social Governance (ESG)
Corporate social responsibility DRC

Metalkol received three certificates of merit for championing women in the workplace

Eurasian Resources Group Africa's (ERG Africa) Metalkol Women's Committee received three awards of merit from Réseau des Organisations Congolaises pour la Promotion Agro pastorale et des Actions Féminines* (ROCPAF) for its positive impact women in the region.

ROCPAF is a non-governmental organisation committed to furthering the agro-pastoral promotion of women's activities, seeking out women who have distinguished themselves in fields championing women. Winners were selected through a robust nomination and voting process and acknowledged at a ceremony in Kolwezi.

Sholpan Danyarova, Metalkol's Head of Talent and Organisational Development said: "It is an honour to accept these awards on behalf of the Women's Committee. Although the Committee was only established in 2021, it has had an immense positive impact on our team, and we are grateful to ERG Africa and the Metalkol leadership for creating a culture and workplace in which women can thrive."

At the event, Ms Danyarova accepted the following certificates on behalf of Metalkol:

- Metalkol Merit Award: for the management of women in the company

- Ms Danyarova Individual Merit Award: for her efforts as a leader of women at Metalkol

- Women's Committee Merit Award: for successfully hosting a Women's Committee event on the 8th of March 2022. The event mobilised women and provided coaching topics related to International Women's Day

"I respect how the around 130 women at Metalkol are taking charge of their future and a more sustainable tomorrow, with us. By actioning their collective vision via the Women's Committee, they are addressing and educating the entire team on issues that impact women – bringing more cohesion and inclusion to our workplace," said Sergei Verbitckii, Acting CEO at ERG Africa.

Women's Committee Merit Award recognised the Metalkol International Women's Day event, which took place on the 8th of March this year and aligned to the national theme, Gender equality today for a sustainable future. The event echoed the ERG's message of gratitude and support for women within the organisation for challenging the stereotype that mining is not an industry for women. It also reinforced how women at ERG are contributing to a sustainable future for all by working for an organisation which responsibly

mines for critical minerals essential for the global clean energy transition.

"As the Chair of the Women's Committee, I see it as my duty to ensure the women at Metalkol have the tools they need to succeed in each facet of their lives – we are mothers, friends, colleagues, mentors, and climate warriors – committed to a better future for ourselves and generations to come," concluded Yvette Kayembe, Access Control Support Clerk and Chair of the Women's Committee.

About Eurasian Resources Group Africa:

Eurasian Resources Group (ERG) is a leading diversified natural resources group with integrated mining, processing, energy, logistics, and marketing operations. The Group operates in 15 countries and is a major employer in the industry.

ERG Africa combines the Group's assets on the African continent and forms a key part of the Group's long-term international growth strategy. ERG Africa is a principal producer of cobalt and copper in the Democratic Republic of Congo, and has further assets and development projects in manganese, fluorspar, bauxite, platinum and thermal coal in South Africa, Zimbabwe, Mali, Zambia and Mozambique. SABOT, a leading cross border road hauler in the Southern and Central African region, also forms part of its operations.

Zambia: Hope for Kabwe Lead Poisoning Victims

The Zambian government's recent actions to address the toxic legacy of lead in Kabwe, in central Zambia, brings hope to affected communities, 15 Zambian and international nongovernmental organizations said today.

In March 2022, Zambia's President Hakainde Hichilema established a new technical committee to tackle extreme levels of lead pollution from a former mine and smelter in Kabwe, and to protect human health and the environment. The committee met for the first time on June 3 at the Ministry of Green Economy and the Environment and will propose a plan for a sustainable solution to the contamination in Kabwe.

"The Zambian government's willingness to seek a long-term, sustainable solution together with stakeholders is a crucial development for addressing the environmental disaster in Kabwe," said Namu Chuma, director of the Kabwe-based Environment Africa. "As civil society, we stand ready to support this process."

The Ministry of Green Economy will oversee the committee, with representatives from the Zambia Environment Management Agency, the Ministry of Local Government and Rural Development, the University of Zambia, and civil society organizations. The president has asked nongovernmental organizations to take an active role in the committee's work, expressing appreciation for their efforts to address lead pollution.

Kabwe was the site of a mine and smelter that polluted the environment with extremely high levels of lead. The mine was originally owned by British colonial companies, including Anglo American, from 1925 to 1974, and later nationalized. Already in 1936, doctors' certificates revealed that smelter workers experienced lead poisoning. Although the mine was closed in 1994, its waste was never

cleaned up, and lead dust from the uncovered waste dumps continues to blow to nearby residential areas, polluting homes, yards, schools, and play areas.

Medical researchers estimate that over 95 percent of children living in the vicinity of the former mine have elevated blood-lead levels, and about half the children urgently require medical intervention. Human Rights Watch has documented the harmful impact of the pollution on children's health and education rights. Overall, up to 200,000 people have elevated blood lead levels. Ongoing hazardous small-scale mining at the former mine site compounds the situation.

"We hope that the technical committee will develop a concrete and feasible plan for the comprehensive clean-up of Kabwe mine waste that the government will promptly carry it out," said Juliane Kippenberg, associate children's rights director at Human Rights Watch. "This is a vital opportunity to protect the children of Kabwe."

The issue of Kabwe lead contamination has received increasing attention in Zambia and internationally. Earlier in 2022, a United Nations report on violations of the right to a healthy environment highlighted the case of Kabwe as a "sacrifice zone." In 2021, the UN special rapporteur on toxics and human rights wrote to the Zambian government, urging robust steps to ensure the health, safety, and well-being of local populations in Kabwe. Lawyers from South Africa and the United Kingdom have filed a class-action lawsuit against Anglo American on behalf of affected children and women of childbearing age in Kabwe.

"The contamination at the former Kabwe mine site has been left unaddressed for decades," said Bishop Clement Mulenga of Kabwe Diocese. "We encourage the committee to engage affected communities and publicly share information about their progress and findings."

The battle of Kigali and Kampala for the control of Congolese minerals (A report)

In their report released on Tuesday, New York University's Congo Study Group (GEC) and its research partner Ebuteli put the control of Congolese minerals back at the heart of the resurgence of M23 and the launch of the joint FARDC-UPDF operation.

The two research entities explain that Dott Services, which was chosen to carry out the construction of the roads linking the DRC to Uganda, is a major player in understanding the renewed conflicts in the region.

For context, the DRC and Uganda are bound by agreements that should lead to the construction and modernization of 1,182 kilometers of the main road network linking the two countries. This project is proceeding in stages. The first concerns 223 kilometers of priority roads at an estimated cost of 335 million USD. Three parties have pledged to fund this first step. Uganda and DRC would contribute 20% each and Dott Services, the implementing company will cover the remaining 60% (201 million USD). Kampala has already authorized the disbursement of 66 million, while Kinshasa has still not decided on the first disbursements while the project was officially launched in June 2021 by Yoweri Museveni and Félix Tshisekedi.

GEC and Ebuteli explain that in November 2020, Dott Services had signed a contract with the Congolese state mining company Sakima, by which it acquired

mining sites of strategic importance in the province of Maniema, rich in tin, tantalum and tungsten, as well as gold.

"To do this, it created the Punia Kasese Mining (PKM) joint venture, in which it owns 70% of the shares. The remaining 30% is owned by Congolese state-owned mining company Sakima. The contract also provides for the creation of a processing plant for ores and precious metals allowing the joint venture to launch infrastructure projects in the region, as well as the rehabilitation and development of hydroelectric assets", details the report of the GEC and Ebuteli.

At the same time, Rwanda has also been active in the mining sector in the DRC. Kinshasa and Kigali signed in June 2021, a series of mining contracts. In particular, there is the agreement signed between the presidents of the two countries, stipulating that the gold produced by Sakima will be refined in Rwanda by the relatively unknown local company Dither Ltd. Dither and Sakima also signed another contract that says Dither will provide funding for "the start of mining operations", add GEC and Ebuteli.

In 2021, gold was Uganda's most important export commodity, worth \$2.24 billion. "Most of this gold comes from the DRC and a decline in access to Congolese gold would have major economic consequences," the researchers add.

Kabuswe reiterates Zambia's commitment to revamp mining sector

Minister of Mines and Minerals Development, Paul Kabuswe, has reiterated the government's commitment to reviving the mining sector in Zambia and make it responsive to the needs of the country.

Mr. Kabuswe says Zambia is a major player in the mining sector in Africa hence the need to put in place effective policy measures that will make the industry viable and contribute positively to the country's economic agenda.

He told ZANIS in an interview in Cape Town, South Africa yesterday that this is why the government will continue to interact with other players in the industry to learn and to woo more investment that will benefit the country.

He said the 2022 investing in African Mining Indaba, which will be held in South Africa from 10 to 12 May 2022, is one of the many platforms that Zambia intends to use to attract investment to the country's mining industry.

The minister added that such forums give Zambia an opportunity to market itself and substantiate why investors should consider investing in the country.

"You know that Zambia is the major player in the mining sector not just in Africa but the world as a whole. This is why we will continue interacting with other players in the industry in order to showcase our potential and why we should be a preferred investment destination," he said.

Mr. Kabuswe cited that the mining indaba is one of the biggest mining events that present enormous opportunity for the sector in Africa to engage and devise mechanisms of improving for the benefit of their people.

Meanwhile, Mr. Kabuswe has expressed optimism that the current reforms being undertaken by the new dawn administration to improve the mining sector would attract more investment through the indaba.

He said having President Hakainde Hichilema as

one of the main speakers at the indaba will put Zambia in a more advantageous position.

"As you know the stance that the new dawn administration has taken to revamp the mining sector and make it more viable, this is the platform that will help us get more investors and having President Hichilema as one of the main speakers will put us in a good position to sell our country to the world," he added.

The Mines Minister is participating in the ministerial symposium in Cape Town and is expected to give a presentation on global solutions for the regional challenges and the next steps forward.

Zambia is participating in the 2022 Investing in Africa Mining indaba that has attracted three heads of state, heads of governments, captains of the mining industry and other global leaders.

President Hichilema is expected to arrive in South Africa today and participate in the indaba as one of the main speakers.

DRC: TOWARDS THE DEVELOPMENT OF THE GRAND KASAÏ DIAMOND

The Congolese Minister of Mines, Antoinette N'Samba Kalambayi, met on Monday May 30, 2022 with a delegation from the Antwerp World Diamond Center.

During this interview, the two parties discussed the certification of diamonds from the province of Kasai in the Democratic Republic of Congo (DRC).

Antwerp World Diamond Center is a public-private company which officially represents and coordinates the Antwerp diamond sector and which should invest in the diamond sector in Kasai.

According to the sources of the Ministry of Mines, this delegation from Antwerp World Diamond Center also mentioned the Oridjema project which was launched in Kananga, capital of the province of Kasai Central, with the

support of the CEEC and SAEMAPE under the leadership of the Minister of Mines. A project aimed at the traceability of the diamond exploited by artisanal operators in order to strengthen production.

According to the head of this delegation, the Oridjema project will in particular make it possible to develop a value chain of diamonds produced by cooperatives and from artisanal and small-scale mining.

For Jean-Paul Kapongo, Director of the assistance and supervision service for artisanal and small-scale mines (SAEMAPE), the launch of this project is a winning bet.

To this end, he reassured to get involved, in line with the vision of the Minister of Mines, because they have the responsibility to supervise all the craftsmen.

ZCCM-IH engages Rothschild & Co. to assist with the strategic review of Mopani Copper Mines

Market Announcement: Rothschild & Co. engaged to assist with the strategic review of Mopani Copper Mines Plc

This engagement follows a competitive procurement process in which five other companies, both local and international, participated.

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ARBITRATION HEARING SET FOR JANUARY IN VEDANTA-ZAMBIA DISPUTE

Zambia's decision three years ago to take control of a copper mine in the country's north will be subject to an arbitration hearing in January, the country's mines minister said on Wednesday, after a lengthy dispute over the mine's ownership.

Zambia in May 2019 handed control of Konkola Copper Mines (KCM) to a state-appointed provisional liquidator, triggering a legal battle with its previous owner, India-listed Vedanta, with arguments heard in Zambia and South Africa.

Zambia's government accused Vedanta at the time of

failing to honour licence conditions, including promised investment – accusations that Vedanta has denied.

Mines Minister Paul Kabuswe said the referral to arbitration came after legal rulings.

"Following the Court of Appeal's decision to stay proceedings and refer the matter back to arbitration – a decision supported by the Supreme Court – a hearing is now set for 9th January 2023," Kabuswe said in a statement.

"In the interim, efforts are continuing to find a solution that unlocks KCM's potential and delivers

maximum benefit to the people of Zambia."

Kabuswe again denied speculation that the government plans to give KCM back to Vedanta, saying Vedanta had "sacrificed" its licence to operate in the country.

Vedanta did not immediately respond to a request for comment.

The company last month offered to step up investment in KCM and implement several social responsibility programmes if it resumes control of the firm.

DRC investment climate has improved under Felix Tshisekedi's administration, US report says

From openness to foreign direct investment to the fight against corruption, including the return of the DRC to AGOA, the implementation of reforms to improve the judicial system, transparency in the management of public finances, the facilitation business through the Single Window for Business Creation (GUCE), the raising of the country's sovereign rating, are all assets taken into account by an American report on investments in the DRC and which make the administration of Félix Tshisekedi in his efforts to improve the business climate.

At a time when all the countries of the world are competing in initiatives to attract and retain private investment that will help sustain growth, create jobs and promote inclusive development, the Democratic Republic of Congo has also been working, since election of Félix Tshisekedi in January 2019, to create an environment conducive to doing business by adopting regulations that help entrepreneurs start businesses, hire and grow their businesses. A process notably taken up as one of the pillars of the Action Program of the President of the Republic, as well as that of the Government, and whose objective is to promote the emergence of the private sector and to impose the country as a investment destination of choice in Africa.

This bet is particularly appreciated by the Americans who, in a report on investments in the DRC, note certain efforts in improving the business climate. Since the election of Félix Tshisekedi, the Democratic Republic of Congo has not only emerged from political isolation but also the country has taken a big step in facilitating foreign investment on its soil. As proof, the American giant Pepsi is in the process of establishing itself during this month of April 2022 in the pilot economic zone of Maluku, on the outskirts of Kinshasa.

The DRC becomes more attractive

After a careful analysis of the business climate

indicators in the DRC, Americans note in the report the openness to foreign direct investment (FDI), particularly from the United States of America. It is precisely in this perspective that the Head of State Félix Tshisekedi created a Unit dealing with the Business Climate within the Presidency of the Republic, the highest institution in the country to monitor the improvement of the economic environment and business climate, and interface with the business community.

This American report also justifies this improvement in the business climate by raising the sovereign credit rating of the DRC with the rating agencies. In July 2020, the Standard & Poor's rating agency downgraded the DRC's outlook from "positive" to "stable" due to the likely impacts of the pandemic. Early on, the DRC showed resilience in 2020, as the global recession did not devastate its commodity-dependent economy as deeply as many economists had expected.

Thus, while the World Bank predicted a recession in the Congolese economy with a negative growth of our GDP of 3.5% (for the first time since 2001), the Congolese economy thwarted this prognosis by posting a growth of its GDP around 0.8% in 2020 due to the "dynamism of extractive activity". In view of these improvements, Standards & Poor's Global Ratings raised the sovereign credit rating of the DRC from "CCC+/C" to "B-/B" in January 2022, thus allowing the DRC to join the club of African countries rated "B-" by the Agency, including Nigeria and Cameroon.

Fight against corruption

The other positive point of the attractiveness of investments in the DRC is the fight against corruption and money laundering in which Kinshasa is committed. Moreover, Kinshasa and Washington are

linked by a partnership relating to the promotion of democracy, human rights and the fight against corruption.

This report fully appreciates the efforts of current leaders to prosecute managers of institutions implicated in corruption and others. Better, Félix Tshisekedi has created an entire anti-corruption agency (APCL) to improve the DRC's reputation for corruption, thus improving the DRC's score on the corruption perception index in 2021: 169th out of 180.

In view of these advances, the United States is very involved in supporting efforts for change in the DRC. They continue to engage in discussions on the importance of the fight against corruption, the fight against money laundering, and also on how to promote competition and attract American investors.

It should be noted that ANAPI (Agency for the Promotion of Investments), in its roadmap, has four strategic orientations, namely: (i) simplification, dematerialization and strengthening of the transparency of administrative procedures; (ii) simplification of taxation and promotion of access to credit; (iii) modernization of commercial justice and improvement of the resolution of commercial disputes; and (iv) improvement of consultation, communication and reform monitoring.

These reforms are all part of a systemic and sustainable perspective; that of the elimination of all obstacles to good business practice for any economic operator, synonymous with economic profitability for the private sector, improvement in the level of employment, increased tax revenue and increased income. These are all essential elements to increase the attractiveness and improve the competitiveness of the Congolese economy.

Eighth and last missing miner found dead in flooded Burkina Faso mine

The body of the last of eight miners who drowned in a Burkina Faso zinc mine owned by Trevali Mining Corp when it flooded on April 16 was found on Monday, the government said.

The seven other bodies have been recovered gradually from the mine's underground passages since May 24, when the first four were discovered.

Hopes of finding any survivors had already dissolved by then, as rescue teams had found no one inside a chamber in which there had been a slim chance that the eight missing miners who had not managed to resurface might have sought shelter.

"After 66 days of searching, the eight miners who disappeared after the flooding... have finally all been found dead," the government said in a statement.

The victims were six Burkina Faso nationals, one Tanzanian and one Zambian.

The Perkooa mine was flooded after torrential rain fell unexpectedly during the West African country's dry season.

Both the government and Canada-based Trevali have opened investigations into the incident.

COPPER PRICE REBOUNDS AS CHINA EASES COVID RESTRICTIONS- May 2022

Copper prices rose in May 2022 on buoyed by easing covid-19 restrictions in China.

Shanghai will start allowing more businesses in zero-covid areas to resume normal operations from the start of June, deputy mayor Zhang Wei said as the city prepares for the end of lockdown.

"Sentiment had been buoyed by hopes that China is making progress towards an exit from strict lockdowns," commodity strategists at ANZ said in a note.

Copper for delivery in July rose 2.62% from Wednesday's settlement price, touching \$4.28 per pound (\$9,433 per tonne) midday Thursday on the Comex market in New York.

The most-active June copper contract on the Shanghai Futures Exchange ended daytime trading down 0.3% at 71,530 yuan (\$10,576.04) a tonne.



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BME'S FIRST BIT120 BATTERY-ELECTRIC RETROFIT HEADS FOR WA GOLDFIELDS



New South Wales-based Batt Mobile Equipment (BME) has announced the release of its first BIT120, a 20 t Integrated Tool Carrier battery-electric retrofit system.

The first machine is being sent to Gold Fields' St Ives mining operation in Western Australia on a 12-month hire agreement.

The company is also in the middle of another two BIT120 builds for Barmenco Holdings Pty Ltd, the Perenti-owned underground contract mining company.

The BIT120 leverages the learnings from the TRITEV project, which was part of an initiative developed under Project EVmine, with the help of METS Ignited.

3ME Technology and Batt Mobile Equipment (BME) unveiled the industry-first machine under this project in 2020, which was sent to Aeris Resources' Tritton copper mine as part of a collaboration that dates back to 2017.

Based on a second-hand Volvo diesel-powered L120E, the TRITEV required a "ground-up rebuild" from the 3ME

and BME teams, 3ME Chief Business Development Officer, Steven Lawn, told IM back in 2020.

This included removing all diesel internal combustion engine components, except the transmission and drivetrain; modelling the expected duty cycle at Tritton; developing a battery-electric system to suit the application at hand; writing the vehicle control unit software; integrating the system into the existing platform; and providing a mechanical overhaul of the machine.

Just last year BME was given a boost in its pursuit to electrify the mining sector, being awarded a A\$4.55 million (\$3.13 million) grant to build heavy-duty battery-electric vehicles for underground hard-rock mines as part of the Australian government's Modern Manufacturing Initiative (MMI).

Not long before that, it signed a ~A\$140 million deal with 3ME for the supply of upwards of 150 Electric Vehicle Engine packages over the next five years to power its 20 t Integrated Tool Carrier BEV retrofits.

UGANDA DISCOVERS GOLD DEPOSITS WORTH 12 TRILLION USD

Uganda announced that it had discovered 31 million metric tons of gold waiting to be mined in the country after several surveys were conducted. A spokesperson from the Ministry of Energy and Mineral Development in Uganda, Solomon Muyita, said that these reports are aimed at attracting gold miners and investors in the crypto sector.

In a bid to boost the country's economy, the Ugandan government has licensed Wagagai gold mining company, a Chinese firm to start producing gold products in Busia district. The company embarked on the construction of its gold refinery valued at USD200m in phases in the district in 2016. Muyita said that the discovered gold could start being mined immediately.

Mining in Uganda: Ground breaking ceremony of Busia's gold mine project, largest gold deposit so far

quantified in Uganda estimated @ 12.5 tonnes of mineable gold, investor Wagagai's initial investment is USD50 million, 3,000 direct jobs. @StateHouseUg @ G C I C U g a n d a @ R w a k a k a m b a pic.twitter.com/sF6Zz937p8— Uganda Investment Authority (@ugandainvest) October 5, 2021

Refining gold locally could enhance job creation, and improve social service delivery to those living close to where the mineral is extracted. Ugandan President Yoweri Museveni has called for the local refinement of the the commodity, calling any external refinery criminal. "It is criminal for anybody to argue for the continued exports of raw materials in Africa, when there is 90% more value in that product that you are giving to the

outsiders" he said.

Tan Chun Chi, the general manager of Wagagai gold mining company, says that the investment has reached US \$60 million. He explains that they have

been lagging behind

in the construction due to the lack of the two licenses. The company has recently obtained a gold production license in March this year and has a 21-year lease to mine

gold in the country. and expect to double their speed because they expect to begin gold production by July 2023.

The company has invested \$200M towards constructing a refining facility. Despite all the gold discovered in the country, the mining difficulty is notably high, and this impacts the amount of gold that is actually mined. Around 2500 to 3000 metric tonnes are mined every year.

"If this is indeed the volume that we have, it is time to clean our house, and do business, in developing ourselves and our country, by going to the middle income status and beyond." said Winnie Ngabirwe Mineral Development Expert.



ANGLO AMERICAN STARTS AUTONOMOUS HAULAGE AT LOS BRONCES COPPER MINE IN CHILE

As part of the continuous innovation that Anglo American seeks to achieve its purpose of re-imagining mining to improve people's lives, the first two autonomous trucks at the Los Bronces copper mine in Chile were launched today – which are converted 290 t Komatsu 930E-4 trucks. This project is part of the site's modernisation program, which includes the start-up of five Epiroc PV351 autonomous drilling rigs and the inauguration of its Integrated Remote Operation Centre (IROC), which both happened in 2021.

The event was held simultaneously at two locations: at the IROC, located in the Las Condes district, Santiago and at the Main Office, an autonomous truck operation centre located at the Los Bronces mine, in the Lo Barnechea district. The launch was attended by the Chilean Undersecretary of Mining, Willy Kracht; the Director of Sernageomin, Ignacio Domeyko; and the head of Sernageomin's Department of Major Projects and Tailings Deposits, Jorge Vargas. Meanwhile, on behalf of Anglo American, the event was led by the company's Executive President in Chile, Aaron Puna; the General Manager of Los Bronces, Patricio Hidalgo; the Vice President of People and Organisation, Sofia Sánchez; and the manager of Mine Modernisation, Cristóbal Mimica; in addition to workers and collaborators of Anglo American.

This initiative seeks to use cutting-edge technology as an enabler to promote a safer, more inclusive environment with a better quality of life for people, generating new opportunities for specialisation through training and education. At the same time, it allows more efficient use of resources, by having a more integrated vision of the operation based on Anglo's FutureSmart Mining™ approach.

"I want to congratulate the effort that Anglo American has made and it seems to me that the mining of the future is present. Seeing that an autonomous

truck is put into operation, with all the efforts that this implies, in terms of transforming work and the skills that have to be given to mining workers; deserves our respect. And all these efforts show us how value is generated around mining," said the Undersecretary of Mining.

As of this moment, Los Bronces becomes one of the few operations in the world with a mixed operation, that is, it will have autonomous trucks, governed by the Komatsu FrontRunner AHS technology, which uses a WiFi network to function; and by trucks controlled by operators in the cabin, simultaneously. "Thanks to these trucks, the safety levels of our workers will be significantly increased. The quality of life of those who work in this area will improve by operating from remote centres, reducing the presence on the ground and, therefore, travel times," explained the Executive President of Anglo American in Chile.

Cintia Aros, Operator Principal Transporte Los Bronces, also referred to the start-up of the trucks: "This initiative is literally re-imagining mining, and it is improving us as workers. It is a great development and learning." In its entirety, the project contemplates an investment of \$150 million and it is estimated that in 2024 62 trucks with this technology will be operating at Los Bronces.

The majority of the fleet (some 56 units as of end-2019) are Komatsu 930E models though it also operates the 313 t Caterpillar 795FAC (11 units). Both of these models are diesel-electric drive. The 930E is the same truck that Anglo American working with collaborators including First Mode used for conversion to hybrid hydrogen fuel cell-lithium battery operation at Mogalakwena platinum mine in South Africa – recently seeing first movement as the nuGen™ truck. The use of this technology is also expected to be rolled out at Los Bronces by 2030 as part of a stated aim to have the new power trucks running at seven mines by that date.

Liebherr launches green fleet plan with Fortescue, WAE

German-Swiss equipment maker Liebherr Mining plans to create a battery-powered truck fleet in partnership with Australia's Fortescue Metals Group, with the UK's Williams Advanced Engineering helping provide green drive technology.

An agreement signed today in Colmar, France at Liebherr Mining's plant headquarters, will see Fortescue acquire 120 Liebherr haul trucks for its mining operations. The first of the zero emission-haul units will be fully operational within Fortescue's mine sites by 2025.

Liebherr will supply the trucks, while Fortescue Future Industries (FFI) will work with WAE - which Fortescue acquired in May - on the green drives and battery-electric vehicle technology.

"The mining industry can't miss this opportunity," Andrew Forrest, the chairman and founder of Australian miner Fortescue Metal, said at the signing ceremony. "Mining is the biggest polluter on the planet, and we are at a point in human history where we can stop that."

"The heavy equipment [segment] can be one of the first industries to go fully green. All of these massive pieces of equipment can evolve, and are being designed to evolve. ... Why can we not dream, of a peaceful pollution-free world?"

Fortescue noted in a statement that the commitment to acquire the 120 units represents approximately 45% of the current haul truck fleet at Fortescue's operations, and that truck haulage consumed approximately 200 million litres of diesel in FY21 and accounted for 26 per cent of Fortescue's Scope 1 emissions.

"This project provides an excellent opportunity for us to accelerate the integration of clean energy battery and fuel cell power systems into our mining equipment,

which supports our vision and defined strategy to offer future zero emission equipment with the best suitable power train technologies," said Oliver Weiss, CTO of Liebherr Mining. "As a leader in green technologies for the international heavy industry and a world class mining owner-operator, Fortescue is an ideal partner for decarbonized mining equipment and technology initiatives, sharing the same vision as us."

The partnership will also assist the future evolution of the Liebherr business. "A mining product that will be developed through a close partnership of two tier one companies, including access to the latest zero emission technology, will create an immense industry opportunity and demand," said Dr. Jörg Lukowski, Executive Vice President for Sales and Marketing of Liebherr Mining. "It also supports our future investment as we expand Liebherr's already extensive manufacturing capability including at our truck facility in Newport News Virginia USA, and of course into our service and support network in Australia."

The deal will play out in phased segments, with a two-year joint development period enabling the development and integration of Fortescue's proprietary-owned power system into Liebherr's proprietary-owned base truck.

Liebherr will supply mining haul trucks to Fortescue in both battery electric truck and fuel cell electric truck configurations, in accordance with Fortescue's requirements.

President of the Administrative Board of Liebherr-International, Dr. h. c. Willi Liebherr said, "This partnership with Fortescue will draw from Liebherr's industry leading equipment and technology, as well as Fortescue Future Industries' expertise in green technologies, to deliver zero emission mining."

Orica's 4D bulk explosives tech gains traction in Australia

Having launched its 4D™ bulk explosives technology at MINExpo 2021 in Las Vegas, in September, Orica is now demonstrating the innovation to coal customers on Australia's East Coast.

The 4D bulk system enables the real-time tailoring of explosives energy to geology across a blast, delivering improvements in fragmentation, on-bench productivity and an overall reduction in drill and blast costs, according to Orica. It is designed to enable customers to, the company says, seamlessly match a greater range of explosives energy across a mine's geology and target specific blast outcomes in real time.

Back in September, the company said the first release of 4D would begin with Australia from the end of 2021, and it appears Orica has stuck with that schedule.

"We are happy to share that, in Australia, we are currently demonstrating 4D to customers in the East Coast's coal mines, each with a unique focus to their needs," the company told IM. "For example, with one customer, we are demonstrating how 4D technology can reduce their overall drill and blast cost through lower explosives consumption, as well as better manage vibration in specific areas of their operation."

With another customer, Orica is applying the 4D technology to its Fortis™ Clear range of bulk explosive products – formulated for use in applications where the generation of post-blast fume could be experienced – to demonstrate the reduction of fume risk in soft and wet ground, it added.

The technology is also being developed across Orica's Fortan™ and Aquacharge™ bulk systems but will eventually be applied across Orica's full suite of bulk systems.

4D is being delivered to these customers through Mobile Manufacturing Units (MMU™) equipped with LOADPlus™, Orica's proprietary in-cab smart explosives delivery control system that, it says, enables accurate and efficient delivery of formulated explosives products to plan.

By combining emulsion blended with ammonium nitrate porous prills, 4D supports both pumped and augered loading methods across dry, wet and dewatered hole conditions. An outcome of this capability is greater on-bench productivity by Orica's fleet of 4D-enabled, without the need to change raw materials in the MMU, Orica says.

Delivering up to 23% more relative bulk strength for hard-rock applications and

SAMA LUKONDE REAFFIRMS DRC GOVT'S DETERMINATION ON THE CREATION OF ELECTRIC BATTERY MANUFACTURING PLANTS AT THE LOCAL LEVEL

May 11 in Cape Town, South Africa, on the sidelines of the Indaba Mining investing Forum, the Prime Minister, Jean-Michel Sama Lukonde answered questions from the press. The head of the Congolese government combed through all the relevant issues at the center of the Indaba Mining conference.

Taking advantage of this opportunity, he reaffirmed loud and clear the determination of the Democratic Republic of Congo to position itself, in Africa, in the production of electric batteries with regard to a large deposit of Lithium available to the Country.

is an ongoing process. You saw us go to Zambia. You have seen us reaffirm this here at Indaba with other African countries," said Prime Minister Sama Lukonde.

The Head of Government also reassured potential investors about the country's security issue, which remains under the control of the Republic's defense forces, which are sparing no effort to bring peace to the East and secure investments.

other reintegration strategies that we want to have especially people who demobilize from these armed groups. The appeal that is launched is that in the pacification work that we are doing, very quickly at the same time as we are working on the infrastructures, we are going to secure the investments that may come and allow rapid development," he said. he reassured.

The Head of Government of the Warriors also says that he has taken the necessary measures with regard to the artisanal exploitation of minerals and the protection of children and pregnant women in mining quarries.

"Craftsmanship remains a reality in the DRC with a large number of our Congolese compatriots who are in this sector. It is up to us, as a government, to bring some security to this sector. It is an evolutionary sector of course to be supervised until its transformation towards the industrial. But before arriving there, it would be necessary to make sure that we can work according to certain standards. First at the level of the Laws of the country, you saw that "there are structures that are supposed to help this sector to regulate crafts through certain strategic products including cobalt. Today, with the action of the Government, we are going to make sure to put in place this instrument which will come to accompany and give the standards with which the cooperatives which are supposed to supervise these craftsmen and guarantee in particular that we can make sure of not having children or pregnant women in the Mines and guarantee them a certain education", undertook the Prime Minister.

Jean-Michel Sama Lukonde leads a strong government delegation to the Indaba Mining Investing Forum where he had the opportunity to present the opportunities offered by the DRC in the mining sector and in the energy transition in the face of global warming.



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ZESCO advances green drive - Zambia

“We are on course to advancing green energy through our Renewable Energy department” said the ZESCO Limited Acting Managing Director Mr. Peter Chamfya. Zambia through the Ministry of Commerce, Trade, and Industry hosted a European Union (EU) – Zambia Inaugural Economic Forum on 18 and 19 May 2022 at Mulungushi International Conference Centre in Lusaka.

The Economic forum which was held under the theme “Economic Transformation through Green Growth” was graced by His Excellency the President of the Republic of Zambia, Mr. Hakainde Hichilema, attracted over 400 delegates spanning from 27 member states of the European Union and Zambia.

The forum birthed synergies with common goals to generate private sector investments, business opportunities and partnerships with a view to foster economic growth through exploring sustainable products and services.

ZESCO Limited was one of the main sponsors of the event and speaking when His Excellency the President, Mr. Hakainde Hichilema toured the ZESCO stand, Mr. Peter Chamfya, who is also Director for Distribution, said that “Green Energy plays a key role in the energy transition due to its low environmental impact and offers an alternative to non-renewable energy and helps fight global warming by not producing greenhouse gases or increasing carbon emissions.”

Mr. Hichilema applauded ZESCO for supplementing the government’s efforts to transform the energy industry with no limitation to the electricity sector and encouraged ZESCO to pursue the go green agenda and take the lead.

Over 90% of ZESCO’s electricity is hydro generated making the corporation’s overall carbon footprint low and with the passing of time, ZESCO has gone beyond generation of clean green energy by making electricity available and accessible to low-income households in selected areas by introducing subsidized connection fees through collaborative efforts with the EU under the “Pamodzi Zambia Project”.

Recently, Zambia and ZESCO experienced a lot of challenges in the electricity sector due to changes in the climate and for this reason ZESCO decided to invest in alternative sources of energy in line with the government of the Republic of Zambia’s strategies to foster inclusive, equitable, accelerated development through the sustainable use of human and natural resources, through the Ministry of Green Economy and Environment to particularly focus on the sustainable use of natural resources.

ZESCO Limited has positioned itself in line with the concept of green growth and has since developed more clean generation sources such as hydropower, solar, wind, geothermal, decommissioned more diesel propelled generators and connected the North-western Province and Lukulu District to the national electricity grid. All this is in line with the low carbon development agenda as outlined by its Environmental Sustainability Department. The corporation’s objectives are set to improve the generation mix, increase energy capacity, and increase access to electricity.

Solar Power projects are currently underway at different stages of implementation such as the ZESCO/Masen Kanona where a 100MW plant will be developed in Chitambo District of the Central Province, the Muzuma Project of 75MW Solar PV plant in Choma District, of Southern Province the Wind Chanka Project of 150MW in Isoka district, of Muchinga province and the Geothermal plant Chongo Project in Mpika district in Muchinga province.

Renewable energy helps conserve natural resources and provides reliable power supplies and fuel diversification, which enhances energy security and lower risk of fuel spills while reducing the need for imported fuels and problems associated with natural gas leaks.

The corporation is enthusiastic about this development as it will not only improve the quality of electricity supply to existing customers but also ensure to that there is less pressure on our natural forests created by high demand of wood fuel and charcoal.

Chinese, Australian investors battle for largest lithium deposit

Australia's AVZ Minerals Ltd. is battling to retain control of what is potentially the world's largest untapped lithium deposit amid ownership claims from Chinese investors, according to Boatman Capital.

AVZ's interest in the Manono lithium project in the Democratic Republic of Congo could fall to 36% from 75%, London-based short-seller Boatman said in a research report on Friday. That may follow its planned sale of a 24% stake this month and a flurry of lawsuits from companies, including Zijin Mining Group Co., claiming ownership, documents published by Boatman show.

"At best, AVZ faces months or years of legal fights" to block a claim by a Zijin subsidiary, Boatman said in the report. "At worst, AVZ will lose control of Manono."

AVZ said Friday it extended the voluntary suspension of the trading of its stock on the ASX until June 1, having halted selling and buying of its shares May 9 as it waits for the Congolese government to complete its permit approvals for Manono. AVZ, with a market capitalization of about A\$2.75 billion (\$1.9 billion), had soared more than 400% over 12 months.

Congo is an important source of materials needed in the transition to clean energy. It's the world's largest producer of cobalt and holds vast deposits of lithium, both key ingredients in electric-vehicle batteries. Chinese companies have moved aggressively to secure supplies from the central

African country, and now control about half of Congo's cobalt output and approximately 70% of its copper production.

In China, the world's biggest EV market, lithium prices have climbed more than 400% in the past year, stabilizing in recent months as stringent Covid restrictions weigh on manufacturing.

The Perth-based company said earlier this month it was "a matter of days" from securing its mining permit. A week later, it announced that Zijin's Jin Cheng Mining Company Ltd. had requested arbitration at the International Chamber of Commerce in Paris to claim a 15% share of the mining project that it says it acquired from state-owned miner Cominiere last year.

Boatman published a contract that showed Jin Cheng agreed to pay \$33.4 million to Cominiere for the stake.

Zijin said in a May 9 statement that it had followed the law and complied with the joint venture agreement for the Manono project. "Zijin Mining will actively protect its legitimate rights and interests, and continue to address future issues through litigation and arbitration," it said.

AVZ and Zijin did not immediately respond to separate requests for comment on Friday.

'Meritless agreement'

AVZ said the agreement is "meritless" because it has the right to preempt any share sale by Cominiere, which currently holds 25% of the project. The company says it is in "advanced

discussions" with the government to acquire the 15% itself.

Congo's Mines Minister Antoinette N'Samba Kalambayi and Cominiere's Managing Director Athanase Mwamba Misao didn't immediately respond to separate messages requesting comment Friday.

AVZ is already set to sell a 24% stake in the project to Chinese battery maker Suzhou CATH Energy Technologies at the end of this month for a \$240 million investment. That's about five times the value per share in the Cominiere-Jin Cheng agreement.

The dispute with Zijin isn't AVZ's only shareholder battle over the ownership of the lithium deposits. Last year, the company said it paid Dathomir Mining Resources Sarl \$20 million for a 15% stake in the project, bringing its total shareholding to 75%. Now the company, owned by longtime Chinese investor in Congo, Cong Maohuai, has sued in Congo to annul the deal. AVZ's subsidiary is appealing.

Cong did not immediately respond to an email requesting comment Friday.

The project is planned to develop the first lithium mine in Congo. Cong's company, Societe de Gestion Routiere du Congo, is managing the rehabilitation of a 290 mile-long export route from Manono at a cost of about \$285 million, according to AVZ.

Source: Mining.com

DRC MINISTER OF MINES SIGNS THE EXPLOITATION PERMIT IN FAVOR OF AVZ MINERALS, WHAT NEXT?

The Minister of Mines of the Democratic Republic of Congo (DRC), Antoinette N'Samba Kalambayi, has signed an order granting an exploitation permit to the mining company AVZ Minerals for its Manono lithium project.

The announcement was made by the Australian mining operator on Wednesday May 4, 2022.

With the signing of this decree, he thinks, AVZ Minerals is thus entering a decisive turning point for its plans to materialize this flagship asset, the Manono lithium project.

Once the document from the Minister of Mines has been obtained, AVZ Minerals is therefore obliged to pay the surface rights to the mining cadastre, through its subsidiary Dathcom, to make the allocation official.

Experts inform that this last step should be completed within a few days.

"The receipt of the ministerial decree awarding the mining license paves the way for AVZ to begin developing what is arguably one of the most important new mining projects in the world, which will contribute significantly to global green energy transition," said Nigel Ferguson, CEO of AVZ Minerals.

According to inside sources, a final investment decision is expected in the next few days before starting construction of the Manono mine.

For now, we are informed, AVZ Minerals is working to raise the necessary funds (545.5 million dollars), alongside its Chinese partner Suzhou CATH Energy Technologies.

The first tonnes of lithium spodumene are expected around the last quarter of next year.

Hitachi Energy selected for haul truck electrification solution

Global technology company Hitachi Energy has been selected as a technology vendor in the Charge On Innovation Challenge.

Founded by BHP, Rio Tinto and Vale, together with multiple industry patrons, the initiative sees the world's mining industry unite to solve one of the biggest challenges in decarbonising mining operations – the electrification of haul trucks.

Hitachi Energy's proposal met the judges' rigorous criteria for interoperable solutions, the company says.

The flexible design enables electricity to be safely delivered to large battery-powered off-road electric haul trucks, while maintaining or improving productivity levels.

The end-to-end solution connects the mine's electrical grid directly to its haul trucks and other vehicles, such as excavators.

Advanced power electronics and digital technologies are key to the design of Hitachi Energy's innovative solution to electrify the haul trucks, which are used to transport materials.

At the heart of the design is Grid-eMotion Flash – a pioneering solution for sustainable e-mobility, enabling the haul trucks' batteries to be rapidly and safely recharged in just a few minutes, the company explains.

"Hitachi Energy has leveraged our Grid eMotion Flash technology from the transportation industry and is adopting it to meet the specifications and technical requirements of the mining industry," Hitachi Energy Industry Solutions VP Matt Zafuto tells Mining Weekly.

To further optimise energy use across the mine, Hitachi Energy is also able to deliver a full solution, including its e-mesh digital solutions for e-mobility. Moreover, there is a holistic and detailed monitoring and control solution for the charging process and the grid connection system. A range of remote and on site services will also be made available to support the transition to the new technologies and the efficient operation of the new infrastructure.

"The Charge On Innovation Challenge is another great example of how we are collaborating with whole industries to accelerate the energy transition towards a carbon-neutral future."

"Hitachi Energy's proposal is for an innovative haul truck 24/7 electrification solution that will help the world's mining industry to decarbonise without

compromising on productivity.

"Electricity will be the backbone of the entire energy system and together with customers and partners, Hitachi Energy is pioneering technologies and software for advancing a sustainable energy future for all," says Hitachi Energy CTO Gerhard Salge.

Zafuto indicates that the company anticipated this development in late 2020, and was already in high-level planning when the Charge On solicitation became public in early 2021.

Unit tests will begin at the end of 2023 and field trials will begin in early 2024.

Hitachi Energy intends to make its solution available to all interested truck original-equipment manufacturers.

The solution delivers 8 MW of power, which enables vehicles to be charged in just a few minutes in a safe way at the points of loading and unloading.

Flash charging means that trucks can operate 24/7.

It has an interoperable, flexible energy transfer system that is free of any catenary infrastructure and that can easily adapt to mine site changes over time.

It also boasts dynamic energy management to increase reliability, resiliency and power quality as mining operations transition to broader electrification including their larger haul trucks.

The solution is posited to achieve greater levels of sustainability, while maintaining core operating practices and productivity of the mine.

Zafuto expands that the solution engenders reduced energy costs as a result of transitioning to electrified vehicles from diesel power; reduced carbon emissions at the mine site owing to vehicle electrification; and an overall increase in environmental sustainability for mining customers by reducing their dependence on petroleum and diesel products.

In terms of challenges, he notes that electrification of haul trucks will require validating that the local grid is able to deliver the energy required for the trucks in a safe, efficient way.

"Hitachi Energy has vast experience in energy delivery and microgrids, along with the software systems, communications and digital technology required to deliver fully electrified operations at the mine site," he acclaims.



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