CKM | May-June 2022
VOLUME 14 | ISSUE 21 | US$ 6,50

CKM CopperbeltKATANGA mining

ZAMBIA AND DRC SIGN COOPERATING AGREEMENTS TO START MANUFACTURING ELECTRIC BATTERIES

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ISSN 2380 060X
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ZAMBIA'S 2021 COPPER PRODUCTION FELL BY 4.5% – STATISTICS AGENCY

Copper production in Zambia dropped to 800 696t last year from 837 996 t the year before, data obtained from the nation's statistics agency showed on Tuesday.

Zambia's cobalt production also dropped to 247t last year from 316t a year earlier, according to the Zambia Statistics Agency.

The Zambia Chamber of Mines said the reduced output was mainly due to operational challenges arising from a lack of recapitalisation due to an unattractive mining tax regime.

"It is only now that we are seeing mining companies recapitalising after mineral royalty was made a deductible expense," The ZCM CEO Sokwani Chilembo told Reuters.

Mining companies operating in Zambia had long complained about what they called "double taxation", with mineral royalty payments not treated as a deductible expense when calculating corporate income tax since 2019.

DE BEERS REASSURES MARKET ITS DIAMONDS DO NOT COME FROM RUSSIA

Diamond major De Beers is encouraging retailers to "buy with confidence" by engaging with their suppliers to understand the origin of their diamonds, following an executive order by US President Joe Biden banning the importation of Russia-sourced diamonds into the US.

Biden made the move as part of a broad package of sanctions against Russia, its State entities and political backers as a result of Russian President Vladimir Putin's decision to invade Ukraine in February.

Many nations have implemented a myriad of sanctions on Russian commodities and products, including oil and gas.

According to business data platform Statista, Russia had the largest diamond reserves anywhere in the world, with a reserve of 650-million carats in 2020. This was followed by Botswana with 310-million carats in its reserves, the Democratic Republic of Congo with 150-million carats and South Africa with 130-million carats.

De Beers points out that its diamonds are mined only in Botswana, Canada, Namibia and South Africa and that Russian diamonds are not part of the De Beers portfolio.

"De Beers Group is committed to working with sightholders to support the US's demand needs and to provide the origin and impact of every diamond we discover and sell," the miner says in a statement.

METSO OUTOTEC CEASES DELIVERIES TO RUSSIA

Finland-based mining and mineral processing technology supplier Metso Outotec will not deliver any equipment to Russia due to the ongoing war in Ukraine and resulting sanctions against business in Russia.

In an update, the company said while the mining industry is "currently not directly targeted," sanctions against the banking sector and individuals, as well as other restrictions, may have an impact on its customers' Russia-related business.

"Due to the current unclear and changing sanction situation, Metso Outotec has temporarily ceased its deliveries to Russia," the company said.

Metso Outotec noted that its customers in Russia "operate in several mining and metals processing sites" across the country.

It said that sales from Russia represented "approximately 10%" of its annual sales in 2021 and that it does not own production or any material procurement in Russia.

ANOTHER ACCIDENT DISRUPTS ZAMBIA'S MOPANI COPPER MINES

Zambia's Mopani Copper Mines on Wednesday reported a second fatal accident in three days at the mine, saying a 35-year-old contractor worker died on Tuesday after falling through the roof of a copper concentrate storage shed.

Operations at the smelter concentrate shed where the accident occurred have been suspended until further notice, the company said in a statement.

Mopani on Monday said it suspended operations at one of its shafts after an accident on Sunday in which one person was killed.

FIRST QUANTUM MINERALS CLARIFIES REPORTS ON KCM AND MOPANI

First Quantum Minerals has reiterated its commitment to invest further in Zambia's mining sector, but has clarified that it has no plans to acquire Mopani Copper Mines (MCM) nor Konkola Copper Mines (KCM), contrary to media reports.

The company has pledged to support government's drive towards growing the nation's copper production, and is working towards investing in its S3 expansion project at Kansanshi mine in Solwezi which will increase production output and prolong the life of mine.

In addition, preparatory works are also underway for the company's Enterprise nickel production project near its Sentinel mine in North-Western Province.

The company (and the mining industry at large) is keen on seeing positive developments in policies that will attract investment in the sector to reach the ultimate goal of three million tonnes of copper production in the near future

NATASHA KALIMUKWA TAKES OVER AS KCM PROVISIONAL LIQUIDATOR

Official Receiver Natasha Kalimukwa has taken over the running of the affairs of Konkola Copper Mines following the resignation of Milingo Lungu as provisional Liquidator for KCM.

Ms. Kalimukwa has announced the development in a statement issued on Tuesday.

She has advised stakeholders to deal with the official receiver in all matters pertaining to Konkola Copper Mines.

Mr. Lungu resigned recently from his position as Konkola Copper Mines Plc Provisional Liquidator with immediate effect and did not give any reasons for his resignation.

The provisional liquidator of Zambia's Konkola Copper Mines (KCM), a company over which Vedanta Resources and the government have been locked in a long dispute.

Zambia's previous government, which owns 20% of KCM through state mining investment firm ZCCM-IH, handed control of KCM to liquidator Milingo Lungu in 2019, triggering the dispute with Vedanta, which owns the other 80%.

It was not immediately clear what Mr. Lungu's resignation would mean for KCM's future.

Vedanta has said it is keen to resolve the dispute over KCM and has pledged to invest $1.5 billion into its operations.

In a letter seen by dated March 17 and addressed to KCM official receiver Natasha Kalimukwa, Mr. Lungu said he had resigned, but he did not give any reason for his decision.

"This serves to inform you that I have with immediate effect resigned as provisional liquidator of Konkola Copper Mines," read the letter."

Ms. Kalimukwa had moved on March 11 to suspend Lungu after receiving a complaint from ZCCM-IH relating to mismanagement.

Mr. Lungu refused to go, however, saying Ms. Kalimukwa had no power to remove him as he had been appointed by a court.

MMG COMMITS TO $600M DRC COBALT EXPANSION

Base metals miner MMG has approved a $500-million to $600-million expansion of its Kinsevere operation in the Democratic Republic of Congo (DRC), extending the mine life for at least another 13 years.

The Kinsevere expansion project will bring yearly production of copper cathode up to 80 000 t and between 4 000 t and 6 000 6 of cobalt in cobalt hydroxide.

Construction will start in 2022 with first cobalt production is expected in 2023.

First copper cathode production from the sulphide orebody is expected in 2024 with the mine to continue production of copper cathode from the remaining oxide orebody during the construction phase.

No mining took place at Kinsevere in 2021. The operation produced 48 017 t in the year and relied on lower grade stockpiles and third-party ores to feed the processing plant.

MMG CEO Liangang Li said the expansion project demonstrated MMG's commitment to investing in Africa and to securing a strong future for the Kinsevere asset.

"We are committed to growing our presence in Africa and following today's commitment, we are excited to start our next phase of growth in this highly prospective region," Li said.

"The project adds a significant amount of cobalt production to our portfolio, at a time when demand from electric vehicles and energy storage systems will accelerate and we transition towards a low carbon future," he added.

The Kinsevere expansion project is one of two key growth projects for MMG, the other being the Chalcomba pit and associated infrastructure at Las Bambas, in Peru. The miner on Thursday announced it had received regulatory approval for the development, which would underpin a production increase at the mine to about 380 000 t/y to 400 000 t/y of copper in concentrate for the medium term.

The Kinsevere Expansion Project and the Chalcobamba development at Las Bambas are expected to add more than 150 000 t/y of copper equivalent production by 2025 compared with the 2021 production level, an increase of 28%.

Total capital expenditure for 2022 is expected to be between $700-million and $800-million, including about $400-million to $500-million attributable to Las Bambas and $180-million to $200-million for the Kinsevere expansion project.

KIBALI'S INVESTMENT IN THE DRC HAS REACHED 4 BILLION USD

Since its installation in the Democratic Republic of Congo (DRC), more precisely in Haut-uélé, Kibali has invested four (4) billion US dollars.

At least that is what Mark Bristow, President and CEO of Barrick Gold announced during the 45th press conference held on Thursday March 24, 2022.

In front of an audience made up not only of media professionals but also of elected officials from this corner of the country, business leaders, members of civil society and students, the CEO of Kibali engaged in a real exercise in accountability. A practice established by this mining giant for more transparency in its actions.

Of this investment of four (4) billion US dollars, approximately one billion dollars was used to pay taxes, levies, and other various payments to state structures in royalties, explained Cyril Mutombo, Resident Director-DRC of Barrick.

In twelve years of existence and activities in the DRC, Kibali has in its account several achievements whether on the side of the infrastructures and subcontractors that have been created.

" It's something we're proud of. And the focus is to look at how the dividends of what we generate are redistributed so that all the surrounding layers can benefit and take advantage of what is done by Kibali" , said the President and CEO of Barrick Gold.

Apart from this brilliant turnover, he also returned to the evolution of the factory. It has been very stable for more than four years since it was installed. It should be noted that this mine is the most automated in Africa.

Women, although not numerous, occupy a place of choice, insisted the boss of Barrick.

Still regarding the mine, it is important to know that 7,783 kt was processed in 2021. There has been a steady increase in recovery in the mills since 2019 and an 89.8% recovery reached in 2021.

On the environmental front, Barrick is sponsoring the launch of the feasibility study for the reintroduction of the white rhineceros in the Garamba National Park.

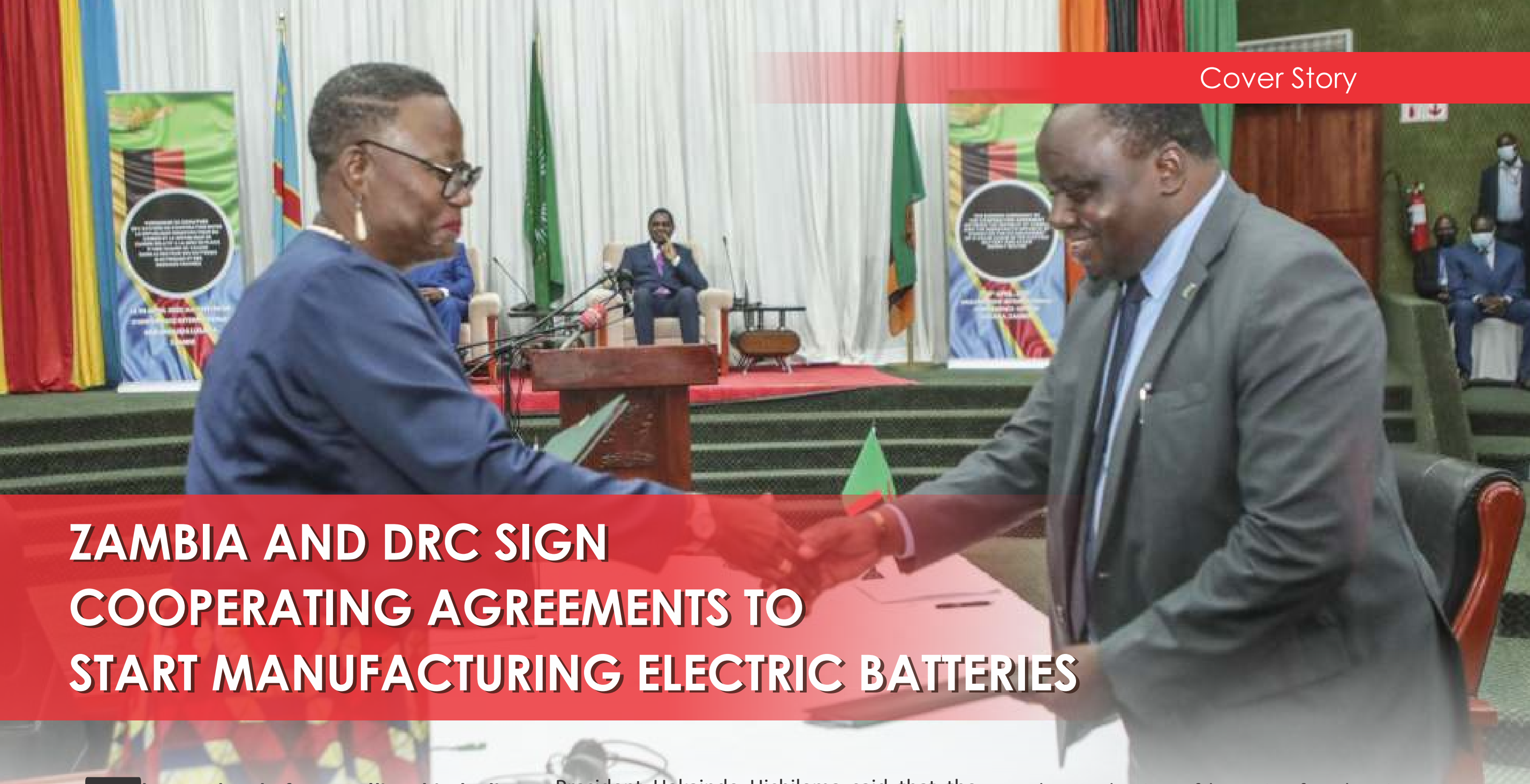
According to the envisaged plan, it will be a question of relocating approximately 50 rhinos which constitute an essential element of the long-term plan for the protection of this species.

Ultimately, Kibali was able to sign its specifications with the community.

"This process was not easy for us, it took us three years of negotiation with the communities. To date, we are very happy to have concluded these negotiations. Kibali has finally signed its specifications and we will continue with the various partnerships with the German Cooperation (GIZ), USAID. ", noted Cyril Mutombo.

" We are building a long-term business with stable future growth ," concluded Mark Bristow.

The vision of this mining giant is indeed to be the most valuable gold company in the world by finding, developing and exploiting the best assets with the best people.



ZAMBIA AND DRC SIGN COOPERATING AGREEMENTS TO START MANUFACTURING ELECTRIC BATTERIES

The DRC head of State Félix Tshisekedi and his Zambian counterpart Hakainde Hichilema decide to harmonize their development policies and strategies vis-à-vis the mining and industrial sector for the success of the market relating to the establishment of a value in the electric battery and clean energy sector. To do this, they have set up a framework called "Battery Council of the Republic of Zambia and the Democratic Republic of Congo (DRC – Zambia Battery Council).

"Our two brotherly states agree to set up a common governance framework, called the Battery Council of the Republic of Zambia and the Democratic Republic of the Congo (DRC-Zambia Battery Council), whose Executive Committee will be composed of the two Heads of State, the Deputy Secretary General of the United Nations Economic Commission for Africa (ECA), as well as the President of the African Export-Import Bank (Afrexim Bank) In addition, this governance body will be equipped with a Technical Committee in charge of monitoring and evaluating the initiative; Creating a harmonized legislative and regulatory framework as well as a system of incentives common to the two States, for a business environment favorable to the development of the said value chain anda flourishing economic microcosm" reports the final communiqué sanctioning the end of the bi-partisan meeting held this Friday, April 29, 2022.

And to continue:

"Identify a pilot site for the erection of a battery value chain industry to house the project in DRC, Zambia or straddling the two countries. For this purpose, the government of DRC and Zambia make available for this project sites located respectively in the province of Haut-Katanga Katanga and in the province of Copperbelt; Affirm that the Initiative will be mutually beneficial by creating a unified and coherent partnership that maximizes gains without any competition between our two countries".

President Hakainde Hichilema said that the signing of cooperation agreements between Zambia and the DRC to start manufacturing electric car batteries is key to poverty alleviation on the continent.

He said that yesterday's agreements prove that his attendance at a DRC economic forum was the right decision as it gave birth to yesterday's event.

The President however said the signing is one thing and emphasized the need to actualize the agreement.

Mr Hichilema says Africa has for long been viewed as a source of raw materials but the narrative is now being changed.

The President thanked the DRC government for staying the course and providing leadership over the initiative.

And DRC President Felix Tshisekedi said the two countries are home to at least 80 per cent of minerals required for the production of electric car batteries.

Mr Tshisekedi said Zambia and the DRC have decided to be masters of their own destiny. He said the agreement will create a value chain for the production of batteries for electric cars which will be key to the economies of Zambia and the DRC.

The two Presidents also welcome the commitment of the United Nations Economic Commission for Africa (ECA), technical partner as well as that of the African Export-Import Bank (Afrexim Bank), financial partner who support this initiative, in particular for fundraising. required for its implementation. They also invited other partners interested in this transformative initiative for the economic development of their respective countries.

This agreement follows the DRC-Africa Business Forum held in Kinshasa in November 2021 under the theme "developing a value chain and a market around the battery, electric vehicle and renewable energy industry in Africa", the Republic of Zambia and the Democratic Republic of Congo represented by their Heads of State had agreed to work together to materialize this initiative as soon as possible.

The Republic of Zambia and the Democratic Republic of the Congo; Border states hold about 70% of the world's cobalt reserves.

BRITISH FIRM PLANS TO INVEST $100 MILLION IN ZAMBIA MINE EXPANSION

Britain's Moxico Resources plans to invest $100 million to expand its majority-owned Mimbula copper mine in Zambia, UK Minister for Africa Vicky Ford said on Wednesday.

The investment will create new jobs and increased tax revenues for Zambia's government, Ford said in a statement released by the British High Commission in Zambia while she was on a visit to the country.

Ford was visiting Zambia to launch a new investment model, which she said marked a key moment for Britain's financing of private sector growth and infrastructure across Africa.

"We are committed to supporting countries grow their own economies, bolster private sector investment and trade, and deliver the returns that will support wider socio-economic development," Ford said.

The Mimbula Copper Project is located in Zambia's copper belt on the outskirts of Chingola town, more than 400 km north-west of Lusaka.

The copper-rich deposit is located on a large-scale mining licence held by Moxico Resources through its Zambian subsidiary, Mimbula Minerals.

Moxico holds an 85% ownership in the licence holding company and 15% is held by Moxico's Zambian partners. The mining licence was granted in May 2017, with a validity for 25 years.

2022 MMG FIRST QUARTER PRODUCTION RESULT

MMG Limited (MMG) today released its production result for the first quarter of 2022, delivering 79,058 tonnes of copper and 49,736 tonnes of zinc in the three months to 31 March 2022.

MMG Interim CEO, Liangang Li said the Company delivered solid production in the first quarter while working to overcome workforce availability in Australia as a result of COVID-19 restrictions.

"Copper production in the first quarter was 2% above the prior corresponding period on the back of higher mill throughput and recovery rates at Las Bambas. Zinc production was 27% below the prior corresponding period as Covid-19 impacted workforce availability and Dugald River and Rosebery contended with lower ore grades, in line with the planned mining sequence across both mines," said MMG Interim CEO Liangang Li.

Mr Li said the Company was focused on its next target – delivering growth in its African and Latin American operational hubs.

"In March we announced the investment approval of the Kinsevere Expansion Project and the receipt of permits for the development of the Chalcobamba pit in Las Bambas from the Peru Ministry of Energy and Mines. These projects will add in excess of 150,000 tonnes of copper equivalent production per annum by 2025 offering a strong production outlook as demand for our products increases amid a global shift toward decarbonisation," he added.

Mr Li added that the Company will continue to take a proactive approach to managing community relations in Peru in order to ensure the development of Chalcobamba and to maintain smooth operations for the Las Bambas mine.

"We are disappointed by the actions taken by local community members on 14 April 2022. We provide large social investment and business support to local communities and take our commitments seriously. Las Bambas is a significant contributor to the local, regional and national economies and we will continue to pursue peaceful and constructive dialogue with the aim of reaching an enduring solution," Mr Li said.

With higher production rates at Las Bambas and Kinsevere expected in the second half, the Company maintains its full year copper guidance in the range between 345,000-370,000 tonnes. Full year zinc production guidance is also maintained in the range of 225,000-255,000 tonnes.

AFRICAN ENERGY METALS TO ACQUIRE WHISKEY COBALT MINING'S STAKE IN MANONO PROJECT

TSX-V-listed African Energy Metals has acquired Whiskey Cobalt Mining's (WCM's) interest in the Manono tin, tantalum and lithium project, in the prolific Manono area in the Tanganyika province of south-east Democratic Republic of Congo.

The disposal by WCM of the project, comprising an exploitation permit covering about 30 km2, will involve WCM assigning African Energy Metals an exclusive option agreement with Liberty Mining and Investments to enter both parties into a 50:50 joint venture on the project.

The Manono concession is about 90 km northeast of Manono in Kiambi, and about 440 km aerial distance to the north of Lubumbashi.

The project has artisanal mine workings and an internal report based on exposed mineralisation in artisanal pits prepared for Liberty, which indicates a potential of up to 25 200 contained tonnes of tin at a grade of 5%.

The Manono district was heavily mined for tin going back to the early 1900s. Most recently, AVZ Minerals made a significant lithium-rich (lithium, caesium and tantalum) discovery 30 km due west of the African Energy Metals project.

The AVZ Roche Dure mineral resource is reported at 400-million tonnes, grading 1.65% lithium oxide.

The acquisition agreement is structured as a binding memorandum of understanding to be converted into a definitive agreement during the 60-day due diligence period.

As consideration for the acquisition, African Energy Metals will reimburse supported prior expenses, assume certain financial obligations and issue 2.5-million of its common shares to WCM.

A further 2.5-million common shares of African Energy Metals will be placed in escrow only to be released when positive lithium results are obtained from preliminary testing during the due diligence period.

In addition, a royalty of 5% on net revenue from any small-scale tin production will be paid to WCM and is also tied to similar escrow provisions and capped at $500 000.

BARRICK SEES SCOPE TO GROW ZAMBIA COPPER OUTPUT

Barrick Gold Corp., the world's second-biggest producer of the precious metal, sees opportunity to grow its copper production in central Africa, especially with a pro-business government having won power in Zambia last year, Chief Executive Officer Mark Bristow said.

The company already operates the Lumwana copper mine in northwestern Zambia. It considered selling that operation in 2019 after receiving interest from potential buyers following its merger with Randgold Resources Ltd. and Bristow's appointment as CEO earlier that year but never followed through.

"The Lumwana copper mine in Zambia has been a real success following our merger with Randgold," Bristow said in response to emailed questions. "We see the central African copper belt as offering significant opportunity for our copper initiative and the new business-friendly government there is a breath of fresh air."

Prices for copper used in electric vehicles and wind turbines have surged to records this month, intensifying the hunt for new projects to meet growing demand. Interest in Zambia's mining industry has grown since Hakainde Hichilema won presidential elections in August last year and began following through on pledges to revive the economy and boost employment by attracting private investment.

Pamela O'Donnell, Canada's High Commissioner to Zambia, on Tuesday told Hichilema that companies from her country, including Barrick and First Quantum Minerals Ltd., were interested in investing in Zambian copper mines previously operated by Glencore Plc and Vedanta Resources Ltd.

First Quantum Minerals, which owns Zambia's two biggest mines, said it has no plans to acquire the Mopani and Konkola copper mines, but is rather rather focusing on its own expansion plans, the company said in a statement. Barrick hasn't ruled that option out.

"We are already invested in Zambia and would consider further opportunities which meet our investment filters and leverage our established in-country investment base," Bristow said.

ALPHAMIN TO PROCEED WITH MPAMA SOUTH MINE DEVELOPMENT

Tin miner Alphamin Resources on March 29 said it had taken the decision to proceed with the development of the Mpama South mine and processing plant in the Democratic Republic of Congo.

Alphamin is targeting first tin production at Mpama South by December 2023.

The mine is estimated to produce contained tin of 7 232 t/y at an estimated all-in sustaining cost of $15 188 /t.

The mine is expected to deliver earnings before interest, taxes, depreciation and amortisation of about $187-million a year at an assumed tin price of $40 000/t.

Alphamin estimates the capital development cost for Mpama South at $116-million. The project will be funded from cash reserves.

"The development of Mpama South as a brownfield expansion is expected to increase Alphamin's annual tin production by 65% to a targeted 20 000 t from full-year 2024.

"Tin and technology are interlinked and, consequently, global demand for tin continues to increase despite constrained supply.

"This development decision and the resultant additional production expected by the end of 2023, position us to deliver more tin into this widening market deficit," comments CEO Maritz Smith.

Meanwhile, following assay results from 22 additional drill holes, the Mpama South inferred resource has increased by 75% to 3.42-million tonnes.

Alphamin highlights considerable additional resource growth potential at Mpama South.

Drilling is ongoing with considerable mineralisation intercepted beyond the updated mineral resource boundary.

Meanwhile in another report, JSE-listed Alphamin Resources Corporation has announced positive drill results from the Mpama South prospect and the Mpama North mine, at its Bisie tin complex, in the Democratic Republic of Congo.

Mpama South is a high-grade tin resource adjoining the southern end of Alphamin's operating Mpama North mine.

The company has been drilling at this prospect to expand its mineral resource estimate (MRE), an update for which should be published as soon as end-March or early April.

Notable high-grade assay results returned on the Mpama South prospect include 22.7 m, grading 3.12% tin from 391 m, 16 m, grading 2.89% tin from 297 m and 12.5 m, grading 2.48% tin from 387 m.

Simultaneously, Alphamin is conducting expansion drilling on the Mpama North mine, particularly on the Mpama North Deeps target. The most significant intercept having been discovered from recent drillhole assays is 14.4 m grading 21.75% tin from 432 m.

Alphamin says mineralization at Mpama South remains open in multiple directions and management is confident of the project's ongoing growth prospects.

This while opportunities exist for the Mpama North mine to add production from previously unmined lower-grade blocks to the mining schedule, while much of the eastern target of Mpama North remains open and untested.

DRC MINES MINISTER INSISTS ON HARMONIZATION OF RELATIONS WITH TFTPS FOR DEEPER BILATERAL AND MULTILATERAL RELATIONS

Antoinette N'samba Kalambayi, National Minister of Mines opened the meeting with the Technical and Financial Partners (TFPs) working in the Mining sector within the framework of the Mines Thematic Subgroup.

At the opening of this meeting on Thursday, February 24, 2022, the Minister of Mines Antoinette N'SAMBA KALAMBAYI insisted on the harmonization of relations with tfTPs for the intensification of bilateral and multilateral relations.

She cited some challenges including the updating of geological and mining knowledge, the establishment of Artisanal Exploitation Zones, the fight against fraud with the industrial gold belt in eastern DRC, the operationalization of FOMIN, the capacity building of Ministry of Mines agents, the digital transformation of the Ministry of Mines, the signing of mining and quarry titles revocation orders, etc

The Ambassador of CANADA to the DRC, Benoît Pierre Laramée, Leader of the TFPs who participated in the meeting of the TFPs with Her Excellency the Minister of Mines, delivered a word of circumstance.

In his words, the Ambassador insisted on a shared vision and took up some challenges. These include the fight against mining fraud, the violation of human rights, the improvement of the business climate, good governance.

It should be noted that the meeting began with the welcome of the Coordinator of the CTCPM, Mr. MABOLIA Yenga, who for his part had circumscribed the framework of the meeting.

The workshop work was divided into the following three groups:

Traceability

Governance and Transparency

Community development.

The SG at the mines said in his words that the exchanges will continue. The final report will be validated by the Minister of Mines on March 28, 2023.

KAMOA COPPER ACHIEVES RECORD Q1 2022 PRODUCTION OF 55,602 TONNES OF COPPER

New daily production record of 1,202 tonnes copper produced on April 8

Phase 2 concentrator declared commercial production on April 7; Kamoa Copper to increase annualized copper production to more than 400,000 tonnes

First copper production from Kamoa-Kakula's Phase 3, including copper metal from on-site flash smelter, expected in Q4 2024

Ivanhoe Mines to issue Q1 2022 financial results and host conference call for investors on May 10

Kolwezi, Democratic Republic of Congo–(Newsfile Corp. – April 11, 2022) – Ivanhoe Mines (TSX: IVN) (OTCQX: IVPAF) Co-Chairs Robert Friedland and Yufeng "Miles" Sun are pleased to announce that the Kamoa-Kakula Mining Complex in the Democratic Republic of Congo has set a new quarterly production record in the first quarter of 2022, with 55,602 tonnes of copper in concentrate produced. Kamoa Copper milled 1.08 million ore tonnes during the quarter at an average feed grade of 5.91% copper.

The Kamoa-Kakula Phase 2, 3.8 million-tonne-per-annum concentrator plant successfully declared commercial production on April 7, 2022. In addition, Kamoa-Kakula set a new daily production record on April 8, 2022, with 25,126 tonnes milled and 1,202 tonnes of copper produced.

Management now expects that the early commissioning of the Phase 2 concentrator plant will enable Kamoa Copper to reach the upper end of its 2022 copper production guidance of 290,000 to 340,000 tonnes.

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 as the Phase 1 concentrator.

Kamoa-Kakula's Phase 1 and Phase 2 concentrator plants now are both in commercial production. Kamoa Copper will increase its annualized copper production rate to more than 400,000 tonnes from this month forward.

Mark Farren, Kamoa Copper's CEO, commented: "The Phase 2 concentrator has been successfully commissioned in record time. We can expect to see a doubling of copper output for the remainder of this year, as well as further increases into 2023 as the de-bottlenecking program is executed. It has been wonderful to see how quickly Phase 2 reached commercial production, as our team leveraged prior learnings and experience from Phase 1.

"Our project team's focus now will be firmly on Phase 3 execution. We intend to deliver the Phase 3 project once again on time, and on budget. Phase 3 is targeting first production by Q4 2024. We are proud of what our people have achieved in a very short space of time – and are equally determined to reach the next milestones along a similar trajectory."

Mr. Friedland added: "We must again commend the operations team at Kamoa Copper for their consistent ability to exceed all expectations. Over the past three years, Ivanhoe Mines and its partners have continued to demonstrate an ability to deliver world-scale mining development projects ahead of schedule, and on budget ... a real-world unicorn in this industry. In under three years, we fully expect Kamoa-Kakula to become the world's second-largest global copper producing complex. Details will be announced later this year with the release of the Phase 3 Pre-Feasibility Study in the third quarter.

"It is certainly an exciting time to be a shareholder and employee of Ivanhoe Mines, as we embark on a period of unprecedented growth to emerge as the world's next major, diversified mining company, in close partnership with our local communities.

"The global markets are experiencing a historic, long-term, and acute shortage of the vital metals we require to achieve the electrification and decarbonization of the world economy. London Metal Exchange stocks of its six main metals (copper, aluminum, zinc, lead, tin, and nickel) are at their collective lowest level since at least 1997 ... and senior management at Ivanhoe Mines sees ourselves as an integral part of the solution by providing the metals the world urgently needs for electrification ... together with our joint venture partner, Zijin Mining, we are resolved to expedite future expansion phases at Kamoa-Kakula to generate stable, profitable growth and provide lasting

economic and social benefits for the Congolese nation and people."

Kamoa-Kakula set a fresh daily production record of 1,202 tonnes copper on April 8, 2022. During the first 17 days of production, the Phase 2 plant regularly exceeded its design throughput capacity.

Installation of Kamoa-Kakula's third Larox Filter press from Metso Outotec of Espoo, Finland. (L-R) Ma Ying Hua, Bench Worker; Huang Ya Wen, Welder; Gaby Kabeya, Plumber; Yang Hui Ming, Bench Worker.

Details of the Phase 2 concentrator commercial ramp-up.

In late March 2022, the Company announced that the Kamoa-Kakula Mine's Phase 2 concentrator plant began hot commissioning significantly ahead of schedule. First ore was introduced into the Phase 2 milling circuit on March 21, 2022, and first copper concentrate produced approximately four months ahead of the originally announced development schedule.

Commercial production from the Phase 2 concentrator was declared on April 7, 2022. During the first 17 days of production, Phase 2 regularly exceeded its design throughput capacity. On April 8, 2022, Kamoa-Kakula set a new daily milling throughput record of 25,126 tonnes.

Kamoa Copper's previously announced de-bottlenecking program also is progressing on schedule. The program will see Kamoa-Kakula increase the combined design processing capacity of the Phase 1 and Phase 2 concentrator plants by approximately 21%, to 9.2 million tonnes per annum, up from 7.6 million tonnes per annum.

Once completed, the de-bottlenecking program will enable the copper production from Kamoa-Kakula's first two phases to exceed 450,000 tonnes per year by Q2 2023, positioning Kamoa Copper as the world's fourth largest copper producer.

Updated Pre-Feasibility Study for Phase 3 scheduled for Q3 2022; Phase 3 production scheduled for late 2024

The Pre-Feasibility Study for the Phase 3 expansion is well advanced and expected to be announced during the third quarter of this year. Kamoa-Kakula's Phase 3 will consist of two new mines known as Kamoa 1 and Kamoa 2, as well as the initial decline development at Kakula West. A new, larger concentrator plant will also be established adjacent to the two new mines at Kamoa. The associated power and surface infrastructure for Phase 3 will be designed to support future expansions.

In addition, Phase 3 includes a 500,000-tonne-per-annum, direct-to-blister flash smelter to produce approximately 99% copper metal, and the replacement of turbine 5 at the Inga 2 hydroelectric power station. The turbine replacement will supply additional clean hydro-electric power for the Phase 3 expansion and smelter.

Phase 3 is achieving solid progress, with detailed design, budgeting and engineering well advanced. Construction progress on the new box cut and twin decline excavations remain on track at the Kamoa 1 and Kamoa 2 mines.

Phase 3 is expected to begin production by the end of 2024.

Excavation work, pictured as at April 2022, is advancing quickly at Kamoa-Kakula's new box cut for the twin declines that will provide access to the Phase 3 mining areas.

Kamoa-Kakula's enlarged concentrate storage warehouse to accommodate Phase 1 and Phase 2 production volumes.

Ivanhoe Mines to issue Q1 2022 financial results and host conference call for investors on May 10

Ivanhoe Mines will report its Q1 2022 financial results before market open on Tuesday, May 10, 2022.

The company will hold an investor conference call to discuss the Q1 2022 financial results at 10:30 a.m. Eastern time / 7:30 a.m. Pacific time on the same day. The conference call dial-in is +1-647-794-4605 or toll free 1-888-204-4368, quote "Ivanhoe Mines Q1 2022 Financial Results" if requested. Media are invited to attend on a listen-only basis.

An audio webcast recording of the conference call, together with supporting presentation slides, will be available on Ivanhoe Mines' website at www.ivanhoemines.com.

After issuance, the Financial Statements and Management's Discussion and Analysis will be available at www.ivanhoemines.com and at www.sedar.com.

Kamoa-Kakula achieved record quarterly production of 55,602 tonnes of copper in concentrate in Q1 2022, with 19,605 tonnes copper produced in March.

Construction now is underway at the Kamoa Center of Excellence, which once in operation, aims to create a sustainable and community-centered learning environment in the heart of the Democratic Republic of Congo. Kamoa Copper's leadership team hosted the ground-breaking ceremony in December 2021.

The Kamoa Centre for Excellence will be a future-ready learning environment hosted within an adaptable campus. This community advanced training centre will create a legacy of collaboration, supporting local infrastructure and economic growth.

WATER POLLUTION IN YENGE AND KAPANGA VILLAGES IN THE DRC: SICOMINES SA CLEARED OF ACCUSATIONS

The Provincial Division of Mines has once again cleared the Sino-Congolaise des Mines (SICOMINES SA) of the accusations and campaigns of bad faith orchestrated against it for some time in social networks and the media by certain organizations, in particular the NGO African Resources Watch (AFREWATCH).

According to a publication dated March 24, 2022 on the social networks of the African Natural Resources Observatory (AFREWATCH), an NGO for the promotion and protection of human rights working in the natural resources sector, demonstrating a certain mining company carrying out work to mitigate a large influx of wastewater by irrigating a rubble and gravel dam alongside a blue wire mesh fence, SICOMINES was once again cited.

Said publication (a press release) reveals that one of the basins containing acid waste from the mining company SICOMINES had given way on Tuesday, March 22 around 11 a.m., letting the toxic liquid content flow into the Kalemba river, causing the passage of serious new impacts among the communities of Yenge and Kapanga villages including flooding of dwelling houses, vegetable gardens, fish ponds, water wells.

SICOMINES has not remained silent in the face of these accusations and has, on each occasion, wanted to prove and demonstrate concretely, to be an ideal partner that promotes green development in the DRC in environmental protection, using quality materials of the latest generation. This joint venture has become, for some time, the target of detractors wanting to damage its image. From the poor treatment of its agents to the pollution of the environment, the SCM has been picked up in all directions, without wavering.

SICOMINES denies all the accusations made against it, as set out in the press release published by the NGO AFREWATCH, which charges it with organizing the dumping of industrial wastewater on the fields and homes of Yenge and Kapanga.

To this end, a mission carried out by the Department of Protection of the Mining Environment (DPEM) has, following an investigation, noted several findings, including in particular a significant influx of water escaping from another mining concession. other than Sicomines, contrary to the revelations in the AFREWATCH press release.

The Mining Environmental Protection Department (DPEM) organized an investigation upstream and downstream of the Kalemba River, with the aim of shedding light on a press release and images on social networks, published by this NGO.

A group of experts from the DPEM has, for this purpose, carefully examined the images and videos published by Afrewatch upstream, and carried out a descent on the ground with a view to feeling with the finger and establishing a possible causal link between the concession of Sicomines and this spill on the Kalemba River.

According to the DPEM report, the results of these surveys revealed that the images as described in the press release from the NGO AFREWATCH do not reflect the realities on the ground.

To this end, several findings were revealed by the DPEM according to which Sicomines is neither involved in this dumping of industrial wastewater on the Kalemba River, nor in the negative impacts on the fields and homes of the villages of Yenge and Kapanga, such as alleged in a press release, videos and images published by the NGO Afrewatch made public last month through social networks.

Investigations carried out on site by the DPME also indicated that there is no evidence of massive flow of water or chemicals upstream or downstream of the Sicomines in the Kalemba River.

However, underlines the DPME report, Sicomines has a disposal basin made up of waste from the extraction process. Thereupon, the outpouring waters of the Sicomines which escape are channeled through specific channels to be immersed in the initial recycling circuit.

The DPME also points out that the water collected by the drain of the secondary basin is redirected to a station equipped with 4 submerged pumps which return the water to the ore processing plant and/or to the discharge basin according to the needs in water supply.

The water retention basin of the company SICOMINES SA, is a basin which collects all the water that comes from the companyâ€™s installations. It is important because the capture of runoff water, seepage water and stagnant water in the concession to be recycled and sent back to the mineral processing plant.

At the level of the upper Kalemba dike, which constitutes the point downstream of the flow of wastewater from the company SICOMINES SA, KCC and the former dike of GECAMINES SA â€œPoto Potoâ€ , the latter is located 1500 meters in downstream of the concession of the company SICOMINES SA, after taking samples behind and in front of the bridge connecting the road leading to the village of Yenge, once again no sign of accidental spillage of factory water.

The DPEM also underlined the importance attributed by the company SICOMINES SA in the environmental management of its concession, which makes available colossal material and financial resources for the maintenance of these two waste basins with an obvious technology for its mining.

On this, Sicomines deplores the distortion of information made by several NGOs in order to tarnish its image both nationally and internationally. It also recalls its commitment to support the DRC in its development as well as to promote respect for human life in the protection of the environment.

RELAUNCH OF MIBA PRODUCTION AGENTS & WORKERS MUST CONTRIBUTE

For the Management Committee, this result cannot be achieved without Miba agents and workers getting back to work effectively.

This is the meaning of the appeal that MIBA Management launched on Tuesday, April 12, 2022, to its staff during a meeting at the Miba circle in Mbuji-Mayi, capital of the province. of Kasai Oriental.

"We have no room for error to experience failures. We have to maintain the production tool", noted the interim Managing Director of this company, Mr. Paulin Lukusa.

It was also an opportunity for the ADG ai of Miba to ask agents to beware of disinformation.

According to concordant sources, this moral discussion took place after scenes of fights by agents in front of the FNB Bank. They showed their refusal to receive 50% of their salaries.

"We need to improve our production. I made the staff think that we have to work to raise our heads. We have the second chain of the laundry which we must complete its assembly and put into operation, it would allow us to increase production. added Mr. Paulin Lukusa.

For her part, Ms. Monique Kamwanya, Administrative Clerk, CEO of Miba was called upon to maintain this style of frank dialogue.

"We ask him [the Administrator] in any case to keep this pace. He asked us to work, to have a team spirit. So we're really happy. Like a father, he told us that if we continue to make a mess, investors will not think of us, "she said.

The Bakwanga Mining Company or "Miba" is one of the main companies in the Democratic Republic of Congo.

It is a mixed company in which 80% of the shares are held by the Congolese State, the rest by foreign investors, the main one being the Belgian company Sibeka.

It is mainly active in diamond mining in Kasai (Mbuji-Mayi and Tshikapa).

Miba is overwhelmed with debts running into millions of dollars and employees are facing salary arrears of several months.

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PABEA-COBALT IDENTIFIES 14,850 CHILDREN AND 6,250 YOUNG PEOPLE IN MINING AREAS IN HAUT-KATANGA AND LUALABA

About 14,850 children (girls and boys) and their parents as well as 6,250 young people are involved in the cobalt supply chain in the provinces of Lualaba and Haut-Katanga.

These figures are revealed by the Congolese Government through the Support Project for the Alternative Welfare of Children and Youth Involved in the Cobalt Supply Chain (PABEA-Cobalt). This, after an identification mission carried out on the ground in the two provinces.

Funded by the African Development Bank Group (AfDB) aims to achieve zero children in artisanal cobalt mines and mining sites.

According to the Coordinator of the Coordination Unit of the PABEA-Cobalt Project and Director General of the National Promotion and Social Service Fund (FNPSS), Me Alice Mirimo Kabetsi, this project will allow social reintegration which will concern aspects of schooling, health, nutrition and civil registration.

The second part of this project is to eradicate definitively in the Democratic Republic of Congo the phenomenon of children working in the mines by taking care of the economic reconversion of the parents.

She further indicated that "the mission to identify the direct beneficiaries of the project to support the alternative well-being of children and young people involved in the cobalt supply chain was launched on January 24 in Kolwezi, in the province from Lualaba. »

And to add: "This activity organized by the province of Lualaba in collaboration with the PABEA-Cobalt aimed at creating employment and self-employment for young people. The interim Governor of Lualaba, Mrs. Fifi Masuka, had requested the involvement of all the structures of her province concerned by this question for the success of this mission".

GÉCAMINES SUSPENDS ITS LEGAL ACTION AGAINST CHINA MOLYBDENUM

Congolese state mining company Gécamines has suspended its legal action against China Molybdenum, which was stripped of control of its giant Tenke Fungurume copper and cobalt mine in the country last month, as authorities seek a solution to a dispute between the companies.

The Congolese government announced in August that it had formed a commission to re-evaluate the mine's reserves and resources in order to "fairly claim (its) rights". Several Gécamines officials have been named to the commission as the DRC claims it owes it billions of dollars.

In February, a local court appointed a temporary administrator to run Tenke Fungurume for six months after Gécamines, a minority shareholder in the mine, accused China Moly of refusing to share technical information about the project, including the size of the mine. its mineral reserves.

Talks between China Moly chief executive Sun Ruiwen and Prime Minister Sama Lukonde Kyenge over the past few weeks appeared to have resolved some issues.

The Congolese government said on Tuesday that it had drawn up "a roadmap to get out of the crisis, as well as a timetable, so that the two parties reach an agreement", Communications Minister Patrick Muyaya told the wire. Ministry Twitter.

"In the meantime, the legal proceedings remain suspended in order to restore a peaceful climate of exchange and harmony between the two parties," Muyaya said.

China Moly said in a separate statement that there had been "significant progress" in negotiations and approved the involvement of an independent third party to resolve its dispute with the DRC government over new royalty payments. .

The Shanghai and Hong Kong-listed company said the engagement of an internationally recognized third party would facilitate expedited dispute resolution and further boost the company's confidence in investing in the DRC.

Expansion in the balance

China Moly acquired its majority stake in Tenke Fungurume in 2016 for $2.65 billion from US miner Freeport-McMoRan. In 2019, it spent an additional $1.14 billion to increase its stake to 80%.

Last year, the miner announced plans to invest $2.51 billion to double copper and cobalt production at the giant mine. The project, which is expected to be completed and commissioned in 2023, is expected to increase average annual copper production by 200,000 tonnes and increase cobalt production by 17,000 tonnes.

Tenke Fungurume, the second largest copper mine in the DRC, produced 209,100 tons of red metal and 18,500 tons of cobalt last year. The operation is expected to produce up to 267,000 tonnes of copper and 20,500 tonnes of cobalt in 2022.

The DRC has the world's largest reserves of cobalt, a key ingredient in electric vehicle batteries, and the Tenke mine is one of its biggest employers, with around 7,000 workers and contractors.

NAVA BHARAT, PARENT COMPANY OF MAAMBA COLLIERIES PLANS $100 MILLION INVESTMENT IN PHASED MANNER

Paloncha based Nava Bharat Ventures Limited (NVBL) which is celebrating its golden jubilee year of its formation is gearing up to invest 100 million US dollars to further its operations, informed the company Chief Executive Officer (CEO) Ashwin Devineni.

Established in 1972 as an Indian Ferroalloys manufacturer, the company is now a multinational firm operating in India, South East Asia and Africa. The company successfully completed 50 years in the industry and is aiming further its organic and inorganic growth.

Nava Bharat currently produces over 2,00,000 tons of Ferroalloys each year and operates several power plants. It is working with hundreds of sugarcane farmers to produce and process sugar as well as ethanol, the CEO noted.

In an interaction with the media here he revealed that as part of its efforts to give back to society, the company is also investing in corporate social responsibility (CSR) activities by promoting healthcare, education, livelihood and rural development initiatives.

Speaking on the company's growth so far and future plans he said "Our biggest achievement is that we survived. Many companies have shut down, but we have been growing steadily. Though our strategy looks conservative, we are always on a growth path"

The company has grown organically and now it is a diversified group, with businesses in metals manufacturing, power, mining, agribusiness and healthcare. VBL is primarily a Ferro Alloys Company supported by power generation. Ferro Alloys is doing well and the steel outlook looks good, Devineni noted.

"We are looking at increasing our Ferro Alloys production capacity when we have raw material security. The company is looking for mines in Zambia and will announce once we finalise a deal. In the energy vertical, the company may gradually shift business direction from coal-fired power generation to more sustainable processes", he said explaining the expansion plans.

To tap growth opportunities further the NVBL plans to invest $ 100 million over the next three years. Apart from Ferro Alloys, the company is making a few calculated investments in the agriculture and healthcare sectors as well.

The company can mobilise required funds for investments through internal accruals and debt. It is listed on both of India's major stock exchanges – the NSE and the BSE, he added. Nava Bharat which began its Ferro-Silicon production in Andhra Pradesh in 1975 later expanded into sugar production in 1980. It went on to include manganese in its metals portfolio in 1989 and began power generation for self-consumption and sale in 1997.

In 2004 the company's first wholly-owned international subsidiary was established in Singapore. In 2010, NVBL's international assets grew to include Maamba Collieries, Zambia's largest coal mine concessionaire. It led to the development of a 300 MW power plant in Zambia n 2016.

KIBALI POWERS AHEAD WHILE BARRICK PLANS FURTHER INVESTMENTS IN DRC

Africa's largest gold mine, Kibali, has made a strong start to 2022 and is on track to equal its 2021 production this year.

Last year it again replaced the reserves depleted by mining and its prolific KZ trend of orebodies continues to deliver opportunities for significant open pit and underground growth.

Speaking to media, Barrick president and chief executive Mark Bristow said Kibali had notched up several other key deliverables during the current quarter.

These include the signing of a cahier de charge with the surrounding communities to formalize their role in identifying and overseeing the mine's investment in social development projects.

Another section of the Durba road to Watsa has been completed and the resettlement of the Kalimva-Ikamva and Pamao villages has started with the first group of people moving into their new homes.

On the health and safety front, there have been zero lost time injuries during the quarter so far, the malaria and HIV programs continue to deliver infection rate reductions and 60% of our employees have been vaccinated against Covid-19, versus a national average of 1%.

In addition to Kibali's long-standing support for conservation measures in one of DRC's leading national parks, African Parks and Barrick are looking to reintroduce the white rhino to the Garamba national park. In what will be the largest exercise of its kind, the plan envisages the relocation of around 50 white rhinos to Garamba creating a new population group which is critical in the long-term plan to protect this species.

In line with Barrick's development strategy, the mine also launched the Garamba Alliance in partnership with the US Agency for International Development (USAID).

Since the project that became Kibali was acquired in 2009, its probable mineral reserves were doubled to more than 10 million ounces1 of gold in 2010. Construction then started the following year, three hydropower plants were built and the infrastructure – including the road to the Ugandan border – was developed.

The mine went into production in 2013 and still today has more than 10 years of mine life ahead, with 2021 total proven and probable mineral reserves of 83Mt at 3.60g/t for 9.6Moz2 of gold, before considering extensions to known orebodies and new discoveries.

Since 2009, Kibali has invested almost $4 billion in the DRC in the form of royalties, taxes and permits; infrastructure and community development; salaries; and payments to local suppliers and contractors, which have created a thriving regional economy.

"Barrick is continuing to invest in the DRC, not only by developing the many new growth opportunities which are extending Kibali's life, but also through pursuing greenfields exploration and other opportunities across the country as we search for our next world-class discovery," Bristow said.

BILLIONAIRE FRIEDLAND SECURES RAIL DEAL TO TAP GUINEA IRON ORE

A mining company controlled by billionaire Robert Friedland has secured access to a Liberian railway that opens the way for it to tap vast iron ore reserves in neighboring Guinea.

The deal with the Liberian government provides High Power Exploration Inc. with an outlet for its Nimba concession, which holds an estimated 1 billion tons of high-grade iron ore. The miner expects to start work by 2024 on a rail link that will connect with a line running to Liberia's Buchanan port.

"The rail is critical for us to be able to export our mineral production," Guy de Selliers, chairman of Societe des Mines de Fer de Guinee, HPX's subsidiary in Guinea, said in an interview. "The fact that we now know we'll have access de-risks the whole project."

Liberian Information Minister Ledgerhood Rennie didn't immediately respond to a request for comment.

HPX plans to start producing at Nimba in 2027 and wants to eventually extract about 450 million tons of iron ore. The company estimates it will cost almost $2.8 billion to develop the mine, including $600 million for rail and port investments in Liberia.

HPX also sees the potential to expand mining operations in northern Liberia and southern Guinea, de Selliers said.

Buchanan port and its rail connection is being upgraded by ArcelorMittal SA. Liberia is currently reviewing an agreement with the steelmaking giant on who will be able to use that link.

CALEDONIA SETS NEW PRODUCTION BENCHMARK, SUFFERS FATALITY IN FIRST QUARTER

Caledonia Mining's Blanket mine, in Zimbabwe, produced 18 515 oz in the first quarter of this year – a record for any first quarter and up 40% from the 13 197 oz produced in the first quarter of 2021.

For the full-year, the miner expects to produce between 73 000 oz and 80 000 oz of gold.

CEO Steve Curtis says the 18 515 oz is ahead of Caledonia's expectations and reflects the increased capacity at Central Shaft. "The ramp-up in production towards our quarterly target of 20 000 oz means that we are on track to meet our annual production target."

However, he says a fatality occurred during the first quarter.

"We always take the safety of our employees very seriously and I join my colleagues in expressing our sincere condolences to the family, friends and colleagues of the deceased."

LIEBHERR AND BHP STRIKE ENGINE INTEGRATION DEAL

Germany-based equipment manufacturer Liebherr has signed an agreement with Australian miner BHP to integrate its engines into BHP's existing R 9600 600-tonne excavator fleet at the South Flank mine in Western Australia.

The integration follows intensive factor and field validations on the D98 engine series, which includes a two-year validation study at BHP's Jimblebar mine.

Liebherr said the D98 series completes the existing Liebherr engine portfolio for mining equipment by expanding into the upper power range.

The company noted that the D98 series engine offers low fuel consumption and consequence emissions reductions. Additionally, the engine is also compatible for use with sustainably produced Hydrotreated Vegetable Oil (HVO) fuel which can significantly reduce CO2 emissions.

The first D9812 repowered R 9600 is scheduled to be operational by early quarter 1 2023, with repowers of the remaining R 9600 fleet over 2023 and 2024.

Steve Campbell, BHP's general manager for South Flank, said: "We're looking forward to continuing with this collaboration which promises to bring performance and availability improvements to South Flank as we continue to ramp up production."

Mark Pickett, vice president of Minerals Australia Supply also commented: "We welcome the introduction of Liebherr engines into our equipment to deliver a more sustainable outcome and lower overall cost, as well as allowing Liebherr to have better control of product improvement.

NAMIBIA'S NEW ERA OF HYDROCARBON EXPLORATION AND PRODUCTION

As Namibia's second important discovery in recent weeks, Namibia's oil and gas industry is set to create an influx of new investment, and local content opportunities for the country. The African Energy Chamber (EnergyChamber.org) sat with Ian Cloke, COO Afentra to discuss the enormous potential of what could engineer Namibia's new era of hydrocarbon exploration and production for the country.

How will Namibia's growing oil and gas sector transform the country's economy?

Oil and gas development, depending on the scale, can lead to a transformation of a country's economy; delivering high skilled jobs, trickle down employment and other benefits particularly if there is the correct focus on local content and supply chain. Whilst at scale oil & gas can transform the national economy careful attention has to remain on enhancing existing sectors to ensure continued diversity in the economy.

Whilst the local use of gas for power can have a significant positive benefits and impact on the local economy, it is often more beneficial to export oil to maximise national revenue. Whilst in some specific cases local refining can be positive this should be based on a thorough holistic perspective of the economics.

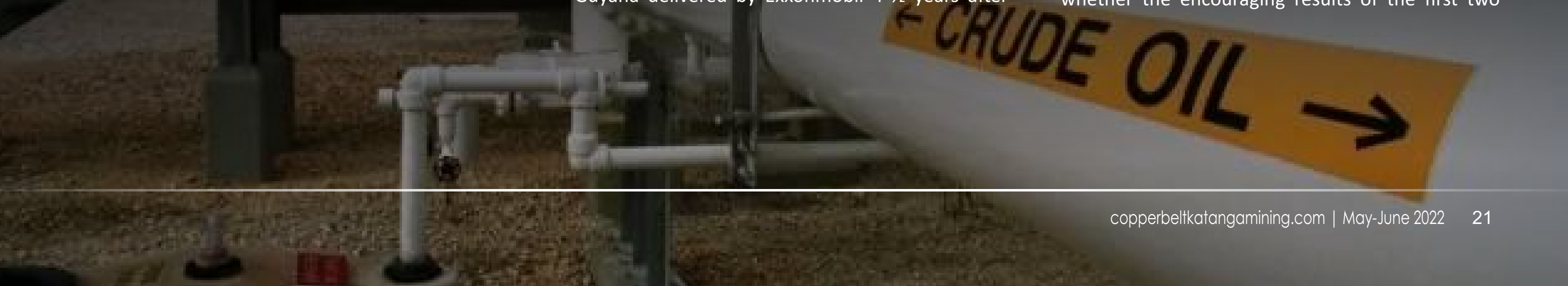
What will be the key to boosting oil output between now and 2025?

The majority of 'greenfield' deepwater oil projects take around 6 to 8 years from discovery to first oil with many taking much longer. However, there are some projects which have been delivered in around 4 years and these should be the template if value is to be realised early. Africa has pioneered 'fast track' discoveries, the most significant being the Jubilee development in Ghana, where following the Mahogany-1 discovery in 2007 Tullow and its partners Kosmos and Anadarko delivered this significant deepwater development to first oil in in 3 ½ years. There are other examples of "early delivery" of first oil such as Ceiba development in Equatorial Guinea, the Kuito development in Angola and more recently the prolific Liza development in Guyana delivered by Exxonmobil 4 ½ years after discovery.

The key to the delivery of the Jubilee development in such a compressed timeline was the alignment of the strategic objectives of all stakeholders, particularly Government and the main investors, both the oil companies and their financial providers. This led to an aligned and collaborative process for defining and approving the overall development plan. On the technical front there is a need to accept that the development will proceed in parallel with the appraisal of the discovery, this can be perceived to increase development risk but if managed appropriately within a collaborative partner group can assist in making the appraisal process more efficient and cost effective. In addition, that there needs to be recognition that standardisation rather than technical perfection can significantly enhance the long-term value outcome for all stakeholders.

Green hydrogen is still a very immature technology and could be an important future contributor to the Namibian economy

Onshore in Kavango basin, we all watch with interest whether the encouraging results of the first two



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wells which encountered shows translate into oil discoveries which can be commercially developed using Namibia's excellent road & rail infrastructure. The last two big onshore discoveries in Uganda and Kenya have taken many years for their developments to be sanctioned due to a combination of many factors. In the event of a commercial discovery in the Kavango basin there is much to learn from these two significant oil discoveries.

To what extent will the development of Namibia's oil and gas projects attract a wider range of operators and diversify the African exploration landscape?

Namibia already has the benefit of a large number of players in the offshore which remains under-explored. In the event that the Venus and Graaf discoveries are indeed commercial, and the Government demonstrates it is supportive of efficient delivery of first oil this is likely to significantly improve the attractiveness as an investment destination. The Kudu gas project could also be enabled by export of gas from any deepwater project to shore.

Namibia has drawn a wealth of oil majors including Tullow, Total, GALP, Shell, ONGC and ExxonMobil. How will Namibia's competitive petroleum exploration scene help state-owned National Petroleum Corporation of Namibia (NAMCOR) take a stand in shaping the country's prospects?

The development phase, post discovery, is very different to the early exploration phase. Namcor and the Namibian government have done an excellent job in attracting "exploration dollars" in a competitive global exploration environment despite the historical lack of success. They need to reflect on the current environment for oil & gas investment and consider how they can also be supportive towards their investors through the development and production phase. If they can create strategic alignment with the companies developing the discoveries it likely that this will bring significant benefit and value to all stakeholders.

What should be done from a regulatory point of view to develop an oil and gas Ian?

Whilst Namibia has a strong regulatory environment for oil & gas exploration this will need to be adopted to ensure it is appropriate for the development and production phase. The implementation of this regulatory environment can and should take time to ensure it is both appropriate and has longevity. It is therefore important that Government regulators and the companies leading the development agree on an interim way forward to ensure no delay to first oil and the country reaping the economic benefits of both the development and production phases. This can be achieved, as was the case in Ghana, by the companies self-regulating through the application of appropriate standards applied in more mature regulatory environments of which there are many appropriate examples. This self-regulation not only applies to technical, environmental and safety aspects of the development but also areas such as local content and use of the local supply chain. If the companies proceed on this basis and the national regulators take a flexible and pragmatic approach, a world class regulatory environment can be developed in parallel with the initial oil and gas developments for the benefit of all stakeholders.

Namibia is positioning itself as a leader in the emerging market for green hydrogen. What role do you feel hydrogen will play in Africa's energy transition?

Green hydrogen is still a very immature technology and could be an important future contributor to the Namibian economy. However, there are other areas with the energy transition which are much more mature such as solar and wind which could have a significant and positive impact on the economy and importantly reduce energy poverty faster. This combination of wind, solar and hydrocarbons could create a diverse and reliable energy supply which could further underpin the diversification of the Namibian economy as well as making an immediate positive economic impact. This approach can be complimentary to "exploring" the potential of less mature opportunities such as green hydrogen.

SERCEL DEPLOYS WING SYSTEM AT ZAMBIAN MINE

France-based exploration technology company Sercel has said its wireless WiNG land acquisition nodal system has been deployed to a mining exploration programme at the First Quantum Minerals-owned Kansanshi copper mine in Zambia.

The company said a 30-kilometre WiNG node array was deployed to acquire passive seismic data over nine months at the mine and the adjacent Solwezi basement dome.

It claimed the WiNG wireless nodal acquisition system has a "lightweight form factor and compact design," which makes it simple to deploy compared to conventional seismometers. By using an ultrasensitive advanced digital sensor, the technology enables "detection of even the weakest signals."

It said the programme aims to explore the crustal structure of the mine area using background seismicity, including ambient noise, mine blasting, local and regional earthquake and teleseismic events.

The programme is a collaborative effort between the Ministry of Mines of Zambia, First Quantum Minerals and Oxford University's Earth Sciences Department. It is part of the UK Research and Innovation (UKRI) Copper Basin Exploration Science (CuBES) project.

Emmanuelle Dubu, Sercel's chief executive officer, said the project's goal is to "help meet tomorrow's global resource exploration needs."

SOLAR LIGHTING HIGHMAST SOLUTION FOR STEELPOORT COMMUNITY | **BEKA SCHRÉDER**

BEKA Schréder is proud to have supplied the LED solar lighting highmast solution for the Steelpoort community in the Limpopo Province. With this new lighting installation, the community benefits from security lighting even during loadshedding.

The SOLARFLOOD has been installed on three newly erected highmasts in Steelpoort. The masts have been strategically located in high pedestrian traffic areas, such as schools, community centres, clinics and taverns, which ensures safer transit of the community especially during times affected by loadshedding.

The SOLARFLOOD is a South-African designed and manufactured solar lighting highmast solution for outdoor open area and rural applications and provides a high performing, robust option for off-grid solar lighting requirements.

Combined with the OMNISTAR-MINI luminaire, the SOLARFLOOD provides a reliable lighting solution with a high Ingress Protection level (IP 66) that withstands high ambient temperatures. The OMNISTAR-MINI range is a sustainable off-grid performer with a superior lumen/watt ratio.

Solar Lighting Highmast Solution for Steelpoort Community | BEKA Schréder 2

With this new lighting installation, the community benefits from security lighting even during loadshedding.

BEKA Schréder's high-performing optics allow for mounting of up to 20m, providing high-quality light where it is needed.

The photovoltaic energy conversion is optimized by highly efficient Monocrystalline solar module technology. This, in conjunction with our Maximum Power Point Tracking (MPPT) charging system and our lithium battery technology, provides a state-of-the-art quality system, offering the required system autonomy and providing a long-lasting solution to operate in any of our very challenging African environmental conditions.

BEKA Schréder locally develops and manufactures sustainable LED lighting products, designed and suitable for local conditions.

We are very proud to be associated with Two Rivers Platinum and Braigan Energy, a division of Braigan Group, in providing a solar LED lighting solution for this project.

For further enquiries, contact Johan van Deventer at +27 (0)11 238 0056 or pta@beka-schreder.co.za.

Look out for
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May-June Edition
at this year's
DRC Mining Week
in Lubumbashi, DRC
1-3 June 2022

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NEW DELIVERY FOR ELPHINSTONE WR810 FLEET

The Elphinstone range of WR810 underground support vehicles is designed to thrive in the harshest underground hard rock mining environments. The new WR810 Delivery with crane adds another support application to Elphinstone's expanding underground support fleet.

Choosing the right support vehicle for an underground mining operation can significantly increase the productivity of the production fleet and reduce operational costs.

The WR810 is a highly configurable, 10-tonne nominal base platform, comprising a scissor lift, agitator (6m3), fuel and lube truck, and water cannon. According to Elphinstone's Sales and Support Representative for Southern Africa, Kyle Allen, the WR810 model range is growing.

"We are expanding the range of applications to meet the underground support equipment requirements of our customers," Allen says.

With a payload of 11,130 kilograms, the new WR810 Delivery with crane ensures parts, components, equipment, and maintenance personnel are transported safely and securely throughout the mine.

Crane for day to day heavy lifting

The fully integrated Hiab X-HiDuo 092 'optimal performance' loader crane features a rated lifting capacity of 8.8 tonne metre (TM) and a 7.7-metre outreach, providing a reliable solution for day-to-day heavy lifting.

"Operated by manual lever control or via the wireless joystick remote, the operator can manoeuvre loads from a distance with built-in intelligence and automatic speed control (ASC) for safe and effective load handling," Allen says.

Safety features include emergency crane stops located on the manual control station and wireless joystick remote. Stabiliser legs with levelling sensors provide a safe foundation with easy pack up for safe transit. The checker plate deck features thoughtfully positioned tie-down points and three-point access with high visibility green handrails and ladders on both sides.

Tier 3 and Tier 4 Final engine arrangements

The C7.1 ACERT Tier 4 Final engine arrangement is optional, adhering to EU Stage V exhaust emission standards. The engine arrangement offers a dual horsepower configuration set at 151 kilowatts (202 horsepower) for a higher performance rating. The lower reduced ventilation rating at 129 kilowatts (173 horsepower) is possible through a simple software change performed by a Caterpillar dealer.

The C7.1 ACERT Tier 3 engine arrangement rated at 168 kilowatts (225 horsepower) is the standard option for less stringent emission regulations. Matched to the engine is a Cat five-speed (three-speed reverse) transmission fitted with a lock-up torque converter.

Downtime during service and maintenance is reduced through some clever engineering and design features. Quick change air filters and 500-hour oil service intervals also reduce downtime and keep machines in operation for longer for greater productivity. The on-board warning & protection system continuously checks all critical machine functions for early warning and fast fault finding, recorded for analysis.

Safety is always a priority at Elphinstone

Safety is one of the most important aspects of any piece of machinery employed in the mining world.

"The majority of key safety items on the WR810 are mandatory base machine options," Allen says.

Safety features include firewalls and heatshields, machine interlocks, centralised isolation points (engine disconnect switch, starter isolation switch, jump-start receptacle and fire system activation, if fitted). Optional features include an integrated fire suppression system and metallic fuel water separators made from a non-flammable material. Emergency stops are fitted as standard inside the cabin, at ground level on the front left-hand side of the machine and located near the access ladders on the left and right hand side of the deck.

Operator station designed for comfort with exceptional visibility

Integrated into the WR810 operator station is a ROPS (roll-over protective structure) ISO 3471:2008 and FOPS (falling object protective structure) ISO 3449:2005 that offers protection to the operator. The operator station is designed to seat three people in comfort with exceptional visibility. This is ideal for training purposes, and allows the complete crew to travel collectively rather than deploying an additional light vehicle for personnel transport.

The driver's seat is a 'T' seat with air suspension, and the crew seats are a standard 'T' seat or optional 'T' seat with air suspension.

Ergonomically designed machine controls are located for the operator to control the machine functions with minimal effort. The result is greater concentration on vehicle operation, with reduced operator fatigue.

Oscillating hitch and articulation

The oscillating hitch provides superior operator comfort, four-wheel ground contact and reduced wear on the hitch and steering components. Includes a heavy duty 600mm (1ft 11in) deep frame section through oscillating hitch area with +/- 42.5° steering articulation and +/- 10° oscillation.

"The WR810's oscillating platform prevents the transfer of rough conditions from the rear frame into the front frame. The benefit is a far superior ride by allowing the rear frame to oscillate," Allen says.

Elphinstone looks to the future

Having invested a lot of resources into product development, Elphinstone has its eyes set on battery electric next.

"We've got the Tier 3 and Tier 4 engine – the next step is to add battery electric on the WR810 model," Global Sales and Marketing Manager, Tim Mitchell.

"We've commenced the project; we have a project team focused on that, and we're also developing other products in parallel and taking customer feedback.

"If we can't add value to our customers' business with our product then we might as well close our doors. Because that's our ultimate aim," Mitchell says.

The battery electric products are still in the development phase, but Elphinstone plans to have them commercially available in 2024.

South African representative Kyle Allen and Global Sales and Marketing Manager, Tim Mitchell, will be attending African Mining Indaba and welcome you to visit stand 732. All Elphinstone products are available via the Global Cat Dealer Network.

KCM IS ONE OF THE MINING COMPANIES IN WHICH ZCCM-IH HAS KEY INTEREST-MINES MINISTER

Minister of Mines and Minerals Development Paul Kabuswe has updated Parliament on the status of Konkola Copper Mines (KCM) liquidation process.

In a ministerial statement, Mr. Kabuswe said the liquidation of KCM has come with the task of sustaining mine operations by implementing several funding and strategic initiatives.

Mr. Kabuswe said KCM has been split into two subsidiary companies namely KCM Smelterco Limited and KCM Mineral Resources Limited (KMR) with two separate management structures and employee arrangements.

He said the splitting of KCM resulted in transferring of 5,588 employees from the company to the newly formed companies and subsequent payment of redundancy packages at a total cost of US$110 million.

"Konkola Copper Mines (KCM) has been under the full control of the provisional liquidator who has been tasked with sustaining its operations by implementing several funding and strategic initiatives. Effective 1 February, 2021 a decision was taken to split KCM into two separate business units; to improve operational and financial efficiencies. The split was done by formation of two subsidiary companies, namely KCM Smelterco limited and KCM Mineral Resources Limited (KMR) with two separate management structures and employee arrangements. Both companies are currently wholly-owned by KCM (in liquidation)," Mr. Kabuswe stated.

"Madam Speaker, Smelterco comprises the Nchanga smelter & refinery, the Nampundwe pyrite mine, the tailings leach plant, and the old east mill. KMR comprises the mining units (Konkola underground mine, Nchanga open pits and underground mines), support services such as hospitals, schools and corporate offices, the 500 tons per day acid plant, and the tailings dams. Madam speaker,The splitting of the business operations into two companies for the purpose of mining and processing as subsidiaries of KCM resulted in transferring of 5,588 employees from the company to the newly formed companies and subsequently payment of redundancy packages at a total cost of US$110 million. The redundancy package was phased in three (3) equal installments. As at 31 December 2021, the redundancy packages had been paid in full," he stated.

Mr. Kabuswe confessed that KCM has had operational challenges in the past that include under-investment in the development of ore reserves.

"Following the resignation of Mr Milingo Lungu from his position as provisional liquidator for KCM on 17th March 2022, Ms Natasha Kalimukwa assumed the role of provisional liquidator by operation of law. I wish to acknowledge that KCM has had operational challenges in the past attributed to the following: Under-investment in the development of ore reserves which has resulted in failure to realise economies of scale to cover high production costs; poor de-watering infrastructure; liquidity and capital constraints and significant interest-bearing loans that have increased from us$1.188 billion to us$1.55 billion as at 31st December 2021;low equipment availability; and poor infrastructure among others," the Chililabombwe Member of Parliament added.

Mr. Kabuswe said the future of KCM lies in the Konkola Deep Project (KDP) which has been partly implemented with the initial sinking of the number 4 shaft at Konkola.

"It is gratifying to note that the picture is showing a positive trajectory. For instance, integrated copper production over the past two months has increased from an average of 4,300 to 6,100 tonnes. This represents a 41% increase in production. It is also worth noting that this is the highest integrated production achieved ever since KCM was placed under liquidation. Furthermore, KCM has put in place plans to increase production to 7000 tonnes per month. I wish to inform the house that the future of KCM lies in the Konkola deep project (KDP). This project has been partly implemented with the initial sinking of the number 4 shaft at Konkola. However, additional work is required to complete the project. The project is estimated to take 4.5 to 5 years of construction, equipping and development before the company experiences increased production and the benefit of the investment," he said.

Mr. Kabuswe concluded:"The completion of this project will result in the life of mine being increased to about 35 years as estimated by KCM management. Let me conclude by assuring the house that KCM is one of the mining companies in which ZCCM-IH has key interest. To this effect in order to establish the current state of the company, ZCCM-IH is undertaking a number of measures including carrying out review and technical evaluation of the company to ensure that the company is viable and remains competitive."

ANGLO'S NEWLY NAMED NUGEN HYDROGEN POWERED MINING TRUCK SET FOR MAY 6 LAUNCH

The launch of Anglo American's hydrogen-powered ultraclass mine haul truck – newly named nuGen™ – has been set for May 6, 2022 at Anglo Platinum's Mogalakwena open pit platinum operation in Limpopo Province, South Africa. The final achievement of first public movement of the truck, a converted 291 t class Komatsu Mining 930E, will be a huge moment for Anglo's low carbon transition and Scope 1 and 2 emissions reduction plans as it works towards its stated interim target of 30% reduction in GHG emissions by 2030, including eight sites carbon neutral by that date.

The truck is strictly speaking not purely powered by hydrogen – it is an FCEV truck – including both hydrogen fuelcell and lithium battery technology.

Anglo American says that nuGen™ is an example of its Future Smart Mining™ in action – "demonstrating how Anglo American is applying innovative thinking and technological advances to address major sustainability challenges – for Anglo American, their people and the world more broadly."

A lot is riding on nuGen™ – Anglo American's Tony O'Neill, Technical Director, has stated that while the total-cost-to-operate will be comparable to diesel the system will achieve direct parity by 2030 adding that the FCEV trucks will allow for 50- 70% reduction in emissions (Scope 1 and 2 for open-pit mines).

Anglo said in 2019 that it has seven sites in planning for rollout completion by 2030, including the Los Bronces and El Soldado copper mines in Chile.

At Mogalakwena, a full 40 truck rollout was planned to start in 2024. Hydrogen-powered trucks are also on the cards for its KumbaIron Ore operations in South Africa, which include both the Sishen and Kolomela mines. The nuGen™ Zero Emission Haulage Solution brought together some impressive global technologies – the 2 MW powertrain consisting of Canada-made Ballard Power Systems fuel cells (eight FCveloCity®-HD 100 kW modules) and a Williams Advanced Engineering (WAE) battery power module built in Grove, Oxfordshire, UK which were brought together with the electronics system by the main integrator and Anglo technology partner First Mode, in Seattle USA.

The on-truck hydrogen fuel tank was developed by Netherlands-headquartered NPROXX while off-truck technology and infrastructure includes a 3.5 MW electrolyser plant from Norwegian company Nel Hydrogen for hydrogen production and Plug Power refuelling system.

The overall hydrogen production, storage and refuelling complex was designed by Anglo and ENGIE. Anglo itself is also a significant investor in both Ballard and First Mode.

WAE was recently acquired by another mining giant – Fortescue Metals Group – to work with its Fortescue Future Industries (FFI) division, which has built and already begun testing its own FCEV truck, based on a converted 221 t Terex Unit Rig MT4400, in Perth, Australia.

HOW INTERNET OF THINGS TECHNOLOGY REDUCES OPERATIONAL COSTS FOR MINES

Industry 4.0 has enabled mining and tunnelling industries to optimise operations beyond what we thought was possible. With a focus on safety and productivity, technology continues to develop and facilitate effective operations, but with these advancements come concerns about change and making new investments.

Embracing Internet of Things (IoT) technology not only promises safer and more productive operations, but it also helps to make them more cost-effective. From improved maintenance to making operators' jobs easier, IoT could save your mining operation money.

SERVICE OPTIMISATION

"Better equipment uptime using analytics and AI or machine learning to predict failure and the impact that has on availability significantly improves the service of your equipment," Jaarinen explains.

Predictive maintenance allows mining operations to optimise maintenance schedules, preventing costly downtime and extending the service life of expensive equipment. AI and machine learning collate data from service history and the performance of the same model in other environments to maximise uptime and address any issues proactively.

TROUBLESHOOTING AND REMOTE DIAGNOSTICS

According to Jaarinen: "If we can do something remotely to support our customers or sites, then this will decrease costs on an operational level as well. For example, data can provide valuable insights for first-time resolution so if we do have to visit a site for repairs, we go in already knowing what the problem is."

Some operational problems cannot be predicted, but with remote diagnostics, the time spent on repair is significantly reduced. Repair teams do not have to carry out extensive diagnostics themselves, have the right instructions handy, and can come prepared with any necessary spare parts.

DIGITAL TWINS AND OPERATIONAL PLANNING

Digitalisation has not just changed the equipment that we use, but also the way we work. Having access to rich data and digital twin technology helps operators to make better-informed decisions.

"We have all-around better operational planning with data and digital twins," Jaarinen explains. "For example, simulating the operations helps us to understand the best possible operational models."

OPTIMISING HAZARD ALERTS AND SAFETY PROCEDURES

Making operations safe for workers is of course a key priority, so technology such as collision avoidance systems or gas detection allows operators to get to safety in the event that something does go wrong.

"We can increase the safety of the operators by alerting them to or even preventing risky situations," Jaarinen adds. Not only does this prevent the risk of downtime, but it also keeps heavy equipment and vehicles safe.

GETTING CONNECTED WITH NORMET

To reap the benefits of IoT, the first step is to get your equipment connected. Normet works with its customers to make this process easy and ensures that data privacy is protected with secure data storage. In addition to being able to provide easy-to-use data reports, Normet can support each customer with their specific needs in mind so that they get the most out of their equipment.

GREEN ENERGY TRANSITION PRESENTS 'UNPARALLELED' OPPORTUNITY FOR ZAMBIA

The green energy transition presents an "unparalleled" opportunity for Zambia, but for it to work, the mining sector needs a fair, predictable and stable regulatory framework, law firm Herbert Smith Freehills partner and Africa co-chair Peter Leon said during an address at the Chatham House Conference, in Lusaka, Zambia, on March 30.

The administration of President Hakainde Hichilema has previously stated its intention to increase the country's copper production from about 800 000 t/y to about three-million tons a year within the next decade to meet the surge in demand for materials that enable the green energy transition.

Mining is currently Zambia's dominant industry, accounting for 10% of gross domestic product, more than 70% of foreign exchange earnings, 30% of government revenue and 8% of formal employment.

Despite the prominent role the mining sector plays in Zambia's economy, to achieve the ambitious production targets, Leon believes Hichilema should seek to reinvigorate Zambia's mining sector.

This would require increased production at existing mines and the establishment of new mines, which can only be achieved by attracting foreign investment back into the country.

Zambia is home to vast reserves of copper and cobalt and is the second-largest producer of copper in Africa, after the Democratic Republic of Congo.

Although copper and cobalt are both strategic metals which play an important role in the green energy transition, Zambia's cobalt reserves remain largely unexplored and unexploited, principally owing to investor uncertainty, Leon explained.

"Green energy technologies require an enormous quantity of minerals to construct, including copper and cobalt. At this juncture, there is a two-thirds gap between current production rates and future demand for minerals needed for the green energy transition," he pointed out.

Leon said the production of minerals such as graphite, lithium and cobalt could increase by nearly 500% by 2050 to meet the growing demand for clean energy technologies, while the demand for copper had resulted in an exponential price increase.

"Rapid growth in the Zambian mining sector cannot be achieved unless it is underpinned by a fair, predictable and stable regulatory framework which is implemented and administered by competent government officials in an open and transparent manner," Leon enthused.

In addition, he said the regulatory framework and the manner in which it was administered would establish an investor-friendly business environment that would attract foreign direct investment and stimulate growth.

Zambia's government has made some efforts to increase the attractiveness of its mining sector through fiscal incentives. For example, it reduced the corporate tax rate for all companies from 35% to 30% and it reintroduced the tax deductibility of mineral royalties against corporate income tax. This has undone the double taxation practice which was greatly affecting recapitalisation efforts, Leon said.

Moreover, the government announced that it intended to operationalise the Mining Appeals Tribunal, the aim of which was to enhance transparency and provide governance in dispute resolution.

However, Leon said these steps were not enough.

"Foreign investment – and therefore copper and cobalt production – will not increase unless the government reforms the mineral law regime to better accord with international best practice, and implements mechanisms to ensure that the law is administered in an efficient and effective manner," he said.

Leon noted that the need to revise the mineral law framework to better accord with international best practice was emphasised when considering that, despite the introduction of business-friendly mining policies within the last year, copper output for the start of this year was weaker than production in the first quarter of 2021.

He indicated that the new mineral law framework should stipulate clear substantive and procedural requirements with which applications for reconnaissance, exploration or exploitation licences must comply to obtain a licence.

It should also limit the discretion afforded to government officials who must grant an application and issue a licence if an applicant complied with the procedural and substantive requirements imposed by the law.

Lastly, it should afford applicants a one-off opportunity to remedy any defects in an application, before the application is rejected.

"If Zambia followed suit, this may promote investment into expanding the production of existing mines, and the exploration, and subsequent establishment, of new mining operations," Leon said.

By growing the mining sector in Zambia through the introduction of business-friendly policy and reforming the legislative and regulatory regime governing mining, Leon believes Zambia will increase investor confidence.

"Through such initiatives, Zambia could drastically grow its exports of minerals needed for the Green Energy Transition and, thereby, take advantage of this lucrative opportunity, which, in turn, could lead to a rapid growth of the Zambian economy," Leon concluded.

ALPHAMIN KICKS OFF POTENTIAL SALE AS TIN PRICES SURGE

Alphamin Resources Corp., one of the world's largest tin miners, has kicked off a potential sale of the company as prices of the metal surge, people with knowledge of the matter said.

Canadian-listed Alphamin, which is working with boutique advisory firm Cutfield Freeman & Co., has sent out marketing materials to prospective bidders, the people said. It has asked for initial offers by the end of the month, according to the people, who asked not to be identified because the information is private.

Alphamin jumped 16% to C$1.30 a share as of 2:45 p.m. in Toronto, giving the company a market value of C$1.65 billion ($1.3 billion). Investment firm Denham Capital is its biggest shareholder with a 57% stake, according to data compiled by Bloomberg. The company could attract interest from Chinese bidders as well as private equity funds, according to the people.

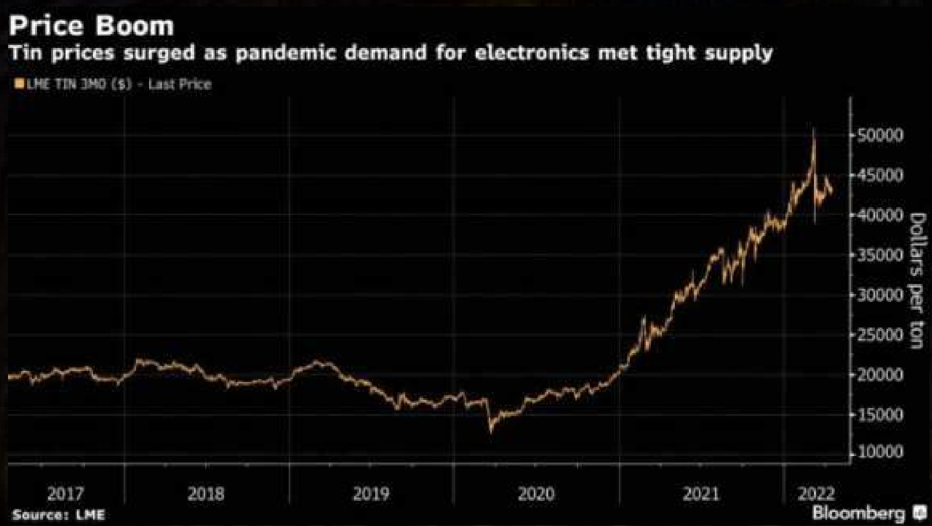
Tin is having a moment amid a new focus on the supply chains for technology products. Prices for the metal, used as solder in chips made by companies like Taiwan Semiconductor Manufacturing Co. and Intel Corp., hit an all-time high of $51,000 per metric ton in March. It was trading Tuesday at $43,090, still up about 150% since the start of 2020.

Alphamin announced in November it was seeking a strategic review to maximize shareholder value. It said at the time it would consider options including a potential sale, extension of its mine life, balance sheet restructuring or shareholder distributions.

Deliberations are ongoing, and there's no certainty they will lead to a transaction, the people said. Chief Executive Officer Maritz Smith declined to comment beyond Alphamin's previous statements. A representative for Cutfield Freeman also declined to comment, while a spokesperson for Denham Capital didn't immediately respond to a request for comment.

Alphamin's Mpama North mine in the Democratic Republic of Congo is considered to be one of the world's highest-grade tin mines. It accounts for around 3% of world usage of the metal, producing 10,969 tons of tin concentrate in 2021. That's due to expand as the company starts output at the nearby Mpama South project in December 2023.

Trading house Gerald Metals currently holds an offtake agreement for the tin concentrates produced by Alphamin at its Mpama North asset.



THE DRC BATTERY COUNCIL: BUILDING THE SUSTAINABLE BATTERY SUPPLY CHAIN OF TOMORROW

The country's mining sector currently accounts for 98% of exports, 18% of GDP and 11% of jobs. If the DRC captures 20% of the market share for battery production, it will add around US$54 billion to its income and raise its GDP tremendously," says UN Under-Secretary-General Vera Songwe.

AVZ Minerals Ltd - The DRC Battery Council: Building the sustainable battery supply chain of tomorrow

Africa is a resource-rich continent, home to some 30% of the world's known mineral reserves, including 40% of known gold and up to 90% of chromium and platinum reserves.

For centuries, this mineral wealth has been extracted by foreign nations or companies with very little value returned to the countries they are taken from, leaving Africa with little to gain from the global mineral supply chain.

The Democratic Republic of Congo (DRC) is seeking to change that unequal dynamic, taking the first steps to building a sustainable battery value chain within the DRC and greater Africa with the support of the new Democratic Republic of Congo Battery Council.

WHAT IS THE DRC BATTERY COUNCIL?

The main objective of the Democratic Republic of Congo's DRC-Africa Business Forum in 2021 was to foster "the development of a battery, electric vehicle and renewable energy value chain and market in Africa".

The DRC-Africa Business Forum – after two hours of roundtable debate – brought together high-level stakeholders to form the Democratic Republic of Congo's Battery Council with three strategic objectives:

Support value creation of strategic minerals in Africa and strengthen productive capabilities in the battery value chain, to generate job creation on the continent via the battery value chain;

Ensure a socially, environmentally responsible and sustainable battery value chain, which improves the lives of women and the youth; and

Encourage local and African champions to invest in the battery industry.

The council intends to set up a special financial vehicle to facilitate private investments and the participation of the population, and will also:

Leverage partnerships to attract and promote investment and innovation and technology for the transformation of Africa's strategic minerals;

Accelerate intra-African trade, skills building and research to unlock innovation along the battery value chain leveraging the African Continental Free Trade Area (AfCFTA);

Collaborate to promote extensive partnerships and far-reaching exchanges of innovative ideas to ensure that the battery value chain is sustainable and accrues value to the local economy;

Catalyse, fast-track and scale up action towards the vision; and Facilitate the generation of evidence-based studies, data, information on the battery value chain in the DRC and Africa.

The council's goals have garnered support from the UN Economic Commission for Africa, which champions economic cooperation among its member states.

"The DRC is at the heart of the battery value chain, as it is home to about 70% of world's cobalt reserves," UN Under-Secretary-General and executive secretary of the Economic Commission for Africa Vera Songwe said.

"The country's mining sector currently accounts for 98% of exports, 18% of GDP and 11% of jobs.

"If the DRC captures 20% of the market share for battery production, it will add around US$54 billion to its income and raise its GDP tremendously."

The head of state of the DRC and current chair of the African Union Commission (AU), Félix-Antoine Tshisekedi Tshilombo, also expressed his enthusiasm for the council to begin pursuing its goals: "The machine is now launched, it is necessary to start right after this forum."

WHO'S INVOLVED?

The key participants included representatives of Zambia, Tanzania and Morocco, the UN Economic Commission for Africa, African Union Commission and Afreximbank.

Other organisations included Africa Finance Cooperation, African Development Bank Group, Bosch Africa, The Arab Bank for Economic Development in Africa, and AVZ Minerals Ltd (ASX:AVZ).

AVZ Minerals was the only aspiring mining company to be invited to the forum, which managing director Nigel Ferguson sees as a logical choice.

"We're sitting with one of the globally significant lithium and tin resources and the current geopolitical climate is gaining greater focus on green technology," Ferguson said.

"The Australian Ambassador visited just recently and she said the DRC President, Felix Tshisekedi, was very keen on having more Australian companies come and do business in country because we've got a very good reputation for our technical expertise, our transparency and our professionalism.

"We also recognise the importance of having a local community that's realising benefit from a national asset."

AVZ Minerals has built its brand on a near 'zero emissions' operation, with an independent greenhouse gas assessment confirming the Manono Lithium and Tin Project could have one of the lowest carbon footprints of any hard rock lithium mine in the world.

"The DRC and Africa are strategically positioned to play a pivotal role in the global transition to clean energy and decarbonisation and the Manono project will greatly assist to improve the fortunes of the Congolese people, which AVZ Minerals is very supportive (of)," Ferguson commented.

CHALLENGES TO BE OVERCOME

There are many structural challenges to be overcome before the DRC Battery Council can meet its goals, not least of which is energy and transport infrastructure.

The DRC currently operates under a large electricity deficit, where once it supplied excess energy to its neighbours.

Secretary-General of EGC (General Cobalt Company) and energy expert Vincent-Noël Vika Raissa Kikunda said that overcoming this first hurdle was paramount, and "the country will have to invest a billion dollars each year to hope to solve its electricity problem".

Secretary-General Vika highlights that without access to financing and sovereign guarantees, long-term energy purchase contracts may fill the gap.

DRC will also likely need a more robust rail network, potentially a large industrial port and greater integration of the local population into the electric battery industry.

The private sector will be integral to the upskilling of DRC citizens, a role AVZ Minerals is already engaged in.

The mining company has plans to build and fit-out a school at Manono, the local town adjacent to AVZ's mining project, and also intends to draw on a large pool of extensive mining experience in the form of locally recruited on-the-job traineeships.

"Giving locals an opportunity to have a skill or a trade and uplift themselves is something that's very close to us," Ferguson explained.

"The DRC is well endowed with not only natural mineral resources but also in their people. There's a long history of mining in the country and many people are very technically capable.

"I'm absolutely comfortable with the fact that there's enough technical capacity here to be able to fulfil those roles."

Ferguson also highlighted a need for political stability and regulatory flexibility across greater Africa, often cited as one of the major reasons the continent can be risky to invest in.

David McLachlan-Karr, the Resident and Humanitarian Coordinator of the UN in DRC, commented that the Congo has the capacity to change the distribution of benefits from the green mineral value chains.

"Investors believe in this project and are involved. The work will be very complex, requiring a focused approach," McLachlan-Karr said.

“Investing in this sector in DRC won't just yield financial returns, but will be vital for the global reaching of the Paris agreement, and improving lives in DRC."

ELECTRIC VEHICLE GROWTH OUTPACES INSTALLATION OF BATTERY CHARGERS

As electric vehicle sales take off, the number of those EVs on the road is growing faster than the number of public charging points to support them. That's one of the high-level conclusions from an in-depth study on the state of public charging infrastructure that my BNEF colleague Ryan Fisher published recently.

The number of EVs on the road per public charging point globally rose to 9.2 at the end of last year, from 7.4 at the end of 2020.

EV per public charging point

That's not surprising. Last year was a breakout year for plug-in vehicle sales globally, with 6.6 million sold, while charging infrastructure growth was more in line with historical averages. The global data hides a lot of nuance though. At the country level the dynamics get really interesting. For example, despite record EV sales in China last year, public charging points there kept pace and the ratio between EVs and chargers has been relatively constant since 2018. This is because of a huge push taking place in China to expand charging infrastructure taking place — the country claims more than half the world's public charging points.

In markets like the US, the number of EVs on the road per charger has grown steadily higher over the last year, so there are fewer chargers for every EV on the road. That effect is even more pronounced in Europe, where EV sales have surged since 2019. In Germany, the ratio went from 8 EVs per public charging point in 2019 to 20 in 2021.

EV per public charging point

A country like China probably needs more public chargers than the US or Germany because of the housing stock there, as a much higher share of people there live in high rise apartments. Those high-rise dwellers are less likely to have home charging options and will need to rely on the public network more than an EV owner in a U.S. suburb who does 80-90% of their charging at home in their garage.

The landscape in the respective geographic regions is similar when it comes to fast and ultra-fast chargers. In China, there are 16 EVs for every ultra-fast charger; in the US that figure is over 100. In the Netherlands, which has the most favorable charger-to-EV ratio overall, most of the plugs are slow chargers.

There's a temptation, when analyzing the data, to fall back on widely accepted, general notions about how more charging infrastructure is needed. That's certainly true, especially given the growing EV fleet in the years ahead. But it's not inherently a bad thing if the ratio of EVs on the road per charger rises. More private investment in charging infrastructure is needed, and to get there, higher utilization per charger will be required to improve the economics of operating a given station.

Many stations are under-utilized. Most fast chargers need somewhere between 8-10 charging events per day to start to make a decent return for the investor, according to our analysis at BNEF. The exact number depends heavily on prices, charging speeds, site costs, fee structure, government support, and several other issues.

A balancing act is needed: fast charging operators want more charging sessions per day. But too many sessions could mean there are times when a driver will have to wait because a charging station already is occupied. That in turn worsens the customer experience. Operators want high utilization, but not so high that customers get frustrated. Tesla's Supercharger stations are unique on this front. Supercharger sites have an average of 10 ultra-fast charging points or outlets, while competing networks generally have two to four. Unsurprisingly, Tesla customers love this.

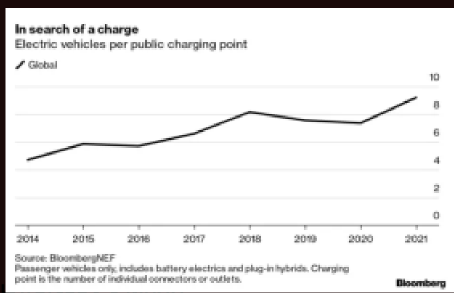
EV per fast and untra-fast public charging points

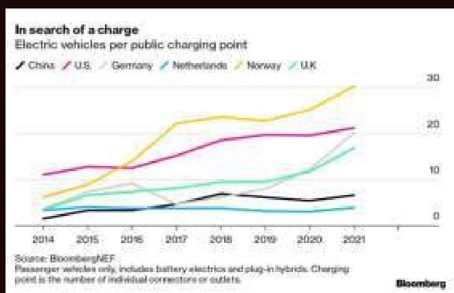
That may not be scalable globally, and getting it right every time will be tricky. In the long term, we're expecting the ratio to level out somewhere between 30 to 40 EVs on the road per public charging point. That's about where Norway, the most mature EV market in the world, is today.

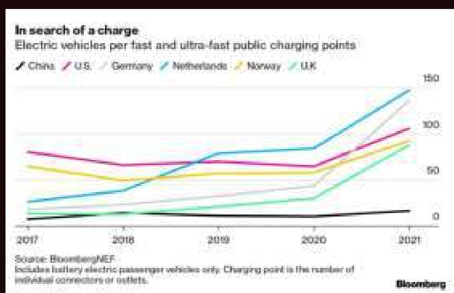
Some markets will be higher or lower depending on the types of houses in the area, the strength of the electrical grid, how high charging speeds eventually go, and government policy. Already there are a growing number of 350kW stations popping up that are capable of adding 100 kilometers of range to an EV in just a few minutes.

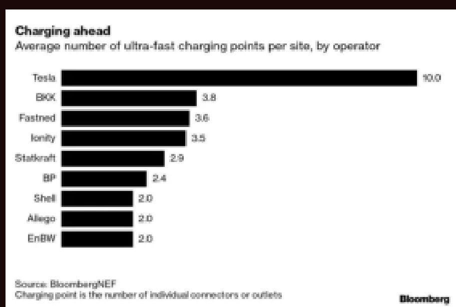
Charging point per site, by operator

Each country will likely end up with a different mix of home, public and workplace charging, and varying spreads of power outputs. On a global level, the ratio of EVs on the road to charging points will likely keep climbing in the years ahead. That's not necessarily a bad thing.









JULIEN PALUKU INVITES CONGOLESE TO INVEST IN THE ELECTRIC BATTERY MARKET VALUED BETWEEN 8 AND 10 TRILLION USD

The Minister Of Industry, Julien Paluku, is mobilizing local investors in the electric battery production project in the Democratic Republic of Congo (DRC).

On an official mission in the copper city of Lubumbashi, the Congolese Minister of Industry wants to see the Congolese be the first to take the initiative to take ownership of this vast and ambitious project launched by the Government of the Democratic Republic of Congo (ground floor).

According to him, this project aims to mobilize financial resources estimated at between 8 and 10,000 billion US dollars by 2030-2040.

"The electric battery sector will mobilize enough resources which are estimated in terms of billions of dollars. I said previously that this project was between 8 and 10,000 billion US dollars by 2030 and 2040. For the President of the Republic Félix Tshisekedi, this project should not only benefit foreigners. It is for this reason that we are meeting in Lubumbashi to mobilize three types of actors. The first is the Government which must invest in this project, the second actor is the banking sector. When we listened to the bank delegates' presentation, they told us that bank assets are now at 14 billion USD compared to 10 billion USD a year ago, i.e. bank assets have increased by 40% in a year. These assets can allow us to finance the development of the Republic. The third is made up of institutional players such as SONAS, CNSS, FPI and FONER. They have means that are naturally hoarded. So instead of putting the money in the bank, they can use it to finance this project so that in the years to come they can have safe dividends that they generate as savings. said the Minister of Industry, Julien Paluku in an interview with Okapi radio. they can use it to finance this project so that in the years to come they can have safe dividends that they generate as savings said the Minister of Industry, Julien Paluku in an interview with Okapi radio. they can use it to finance this project so that in the years to come they can have safe dividends that they generate as savings. said the Minister of Industry, Julien Paluku in an interview with Okapi radio.

Bearer of the vision of Félix Tshisekedi who wants to create a class of Congolese millionaires, this member of the Warriors Government indicated that the launch of the African Center of Excellence which will be based at the University of Lubumbashi demonstrates the Congolese Government's determination to transform the natural resources available to the country into tangible wealth for the development of the country.

It should be noted that the kick-off of the activities of this Center of Excellence will be followed by the installation of a pilot plant for the manufacture of batteries and electric vehicles.

WALIKALE TERRITORY IN THE DRC PRODUCED MORE THAN 48,000 TONNES OF TIN BETWEEN 2019 AND 2022

The territory of Walikale located in the province of North Kivu in the Democratic Republic of Congo (DRC) has produced 48,715.54 tonnes of tin since 2019 to date, states Mrs. Antoinette N'samba, Minister of Mines.

According to the Congolese Minister of Mines who answered the oral question with debate sent to her by Senator Victorine Lwese Bakuamoyo on mining in the DRC, this production generated more than 618.8 million USD.

As for the concerns raised by the senator on the distribution of profits from the mining royalty of the territory of Walikale, the Minister Antoinette N'Samba indicated that these profits are distributed in accordance with article 526 of the Mining Regulations in force in the Democratic Republic of Congo. .

"The mining royalty collected on the production of Alphamin Bisie Mining (ABM) is distributed in accordance with Article 526 of the Mining Regulations: 15% of this royalty is paid directly to the Account of the decentralized territorial entity in whose jurisdiction s mining operates, in this case the Wanianga sector, in the Walikale Territory ", underlined Antoinette N'Samba.

Regarding the inventory of the execution of the specifications of the company ABM, the Minister of Mines of the DRC informed that this company has signed with the communities affected by its project the specifications of social responsibility, dated February 12, 2021. These specifications provided for a certain number of actions divided into fourteen (14) projects, the execution of which should start in 2021.

Currently, the implementation of the said specifications is already making significant progress, in particular certain social actions have been carried out and others are in progress:

Out of a total of nine (9) schools planned, two (2) primary schools respectively in Ndingala and Malumbu villages are built, equipped and already functional, and two (2) primary schools in Mubi and Obyanda villages under construction;

Ongoing assembly of ten (10) greenhouses for the agricultural project;

Three (3) studies respectively in the fields of health, agricultural opportunities, and socio-economic previously envisaged have already been carried out for the conduct of the projects planned in the said fields;

Ongoing drilling of wells in the villages of Malumbu, Ndingala, Obyanda, in a pure drinking water supply project envisaged in all the villages of the geographical area.

In addition to tin, the territory of Walikale abounds in gold, wolframite, coltan (Nb-Ta), colored stones (amethyst, tourmaline and corundum), rare earths such as monazite, among others.

EPIROC, SSAB TO BUILD CARBON-FREE VALUE CHAIN

Sweden-based mining equipment manufacturer Epiroc has launched a partnership with steelmaker SSAB to secure fossil-free steel for use in its mining equipment as part of a broader push to cut carbon emissions.

SSAB is working to deliver fossil-free steel to the market at a commercial scale in 2026. It delivered the first steel made of hydrogen-reduced iron in 2021.

The company works with iron producer LKAB and energy company Vattenfall as part of the HYBRIT initiative to develop a value chain for fossil-free iron and steel production, replacing coking coal traditionally needed for steelmaking.

Epiroc will initially use fossil-free steel for material for a prototype underground machine produced at its facility in Örebro, Sweden. The plan is to increase the usage of fossil-free steel over time.

Martin Lindqvist, SSAB's president and chief executive officer, described the collaboration as the natural next step in the company's efforts to mitigate climate change.

"Demand for fossil-free steel is increasing, which is one of the reasons for SSAB to bring forward its green transition with the ambition to largely eliminate carbon dioxide emissions around 2030," Lindqvist said.

Helena Hedblom, Epiroc's president and chief executive officer, said the partnership would help the company support its customers and reach its climate goals.

"It is clear that our innovation agenda goes hand-in-hand with our customers' sustainability agenda," Hedblom said.

Earlier in April 2022, LKAB ordered a third Scooptram ST18 automated loader from Epiroc for its Kiruna mine.

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