CRITICAL MINERALS ASSOCIATION

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JEFF TOWNSEND IN CONVERSATION WITH NEIL HUME AT ANNUAL WAOML CONFERENCE 2022

GLENCORE INVESTING US$200M INTO LI-CYCLE

CMA PARTNERS WITH TRAINING PROVIDER GEOLOGICA

CIRCULOR AWARDED TECHNOLOGY PIONEER BY WORLD ECONOMIC FORUM
Welcome to our May Critical Minerals Association monthly newsletter & updates on the critical minerals space.

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- US Urges ‘Race to the Top’ for Critical Minerals at Africa Indaba Mining Conference
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- EnergySource Minerals Raises Investment from Schlumberger and TechMet
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- Satarla and Edumine Team Up to Provide ESG Course
- Reflections on Community Communication for Exploration Geologists

Kirsty, Jeff & Olimpia

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@CMA_Minerals    Critical Minerals Association
Canadian Natural Resources Minister Jonathan Wilkinson on Wednesday announced a call for proposals for the Critical Minerals Research, Development and Demonstration Programme (CMRDD).

This component of the programme would provide C$10.95-million in funding for pilot plants and projects to support the development of critical mineral value chains. This funding is part of the C$47.7-million initiative announced in the 2021 Budget for federal research and development to advance critical battery mineral processing and refining expertise.

"Emission reduction in both the extraction and processing of critical minerals is essential to Canada's green economy. Through the CMRDD, we will work with successful applicants to develop new and innovative ideas and pilot projects for the enhancement of the mineral and mining sector, essential to lowering emissions, increasing our competitiveness, and strengthening our energy security," said Wilkinson.
The Joe Biden administration told Africa’s leading mining executives and officials this week that they are poised to play a key role in the clean-energy revolution, but only if African officials clean up corruption and other problems in the sector.

In a 10 May keynote address to South Africa’s Mining Indaba – the world’s largest mining investment conference – Jose Fernandez, the under secretary of state for economic growth, energy and the environment, laid out his government’s energy policy priorities.

These include a “just and inclusive clean energy transition”; the creation of “robust, sustainable, and transparent supply chains for critical minerals”; and the promotion of transparent financial and regulatory environments and natural resources management.

READ ON HERE
Jeff Townsend, Co-founder of CMA, had the privilege of attending the Annual World Association of Mining Lawyers (WOML) Conference in Dubrovnik, Croatia.

On day one of the conferences, Jeff was interviewed by Neil Hume, Natural Resources Editor at Financial Times, and discussed all things critical minerals with an emphasis on the UK’s (lack of) Critical Minerals Strategy.

MORE ABOUT WAOML HERE
Manchin: It’s Imperative That America Increases Responsible Energy Production To Contribute To A Strong North American Energy Alliance.

U.S. Senator Joe Manchin (D-WV), Chairman of the Senate Energy and Natural Resources Committee, delivered the following remarks during a full committee hearing to examine ways to strengthen the energy and mineral partnership between the U.S. and Canada to address energy security and climate objectives.

"It makes no sense whatsoever for us to so heavily invest in electric vehicles as a climate solution when that means increasing our reliance on China, because right now we’re not simultaneously increasing our mining, processing, and recycling capacity at the same rate in the United States."

READ ON HERE
Further $6M to Find Technological Solutions for WA Mining

Investing in research to find technological solutions has never been more important for the mining industry to enable it to continue to deliver economic, environmental, and social benefits to Western Australia.

This is why the McGowan Government has committed a further $6 million over the next four years to the Minerals Research Institute of Western Australia (MRIWA) to enable it to progress research in key focus areas.

In addition to the work already underway on the Net Zero Emission Mining and Green Steel Challenges, applications are now open for research proposals that find technology solutions in the following areas:

- critical minerals - to enable security of supply for international markets and increased downstream processing;
- precision and low impact mining to reduce waste and footprint of the sector;
- alternative uses of tailings and waste from mineral processing, leveraging the principles of circular economy; and
- the uptake of clean energy technologies to support growth in minerals.

READ ON HERE
The CMA had the opportunity to partake in another Responsible Raw Materials Conference. Jeff Townsend and Kirsty Benham outlined how the CMA engages with policymakers at various levels of Government.

By unifying the industry, from exploration through to processing, and service providers, we are able to successfully influence UK Government and drive the critical minerals agenda forward.

The Green Energy Transition must be a just one, but to do that we need to extract, transport, process and refine critical minerals in a responsible way.

WATCH HERE
Li-Cycle’s latest high-profile investor will be natural resources giant Glencore, which has agreed to back the Canadian battery recycler to the tune of US$200 million.

Under commercial agreements that the two companies have come to, Glencore’s primary metals supply business for lithium battery manufacturers will be able to leverage Li-Cycle’s materials recovery and recycling ecosystem.

Glencore will supply both manufacturing scrap and end-of-life lithium-ion batteries to Li-Cycle’s facilities, while the metals company will offtake black mass, battery grade end products and by-products from the recycler. Glencore will also supply Li-Cycle with sulphuric acid, which is a key reagent in the proprietary recycling process Li-Cycle has developed.
We are delighted to announce a partnership with GeoLogica. This partnership not only offers CMA members the opportunity to attend a range of energy transition and mining courses at a discounted rate, but also provides a joint voice and support for the building of a responsible and secure UK critical mineral supply chain.

GeoLogica offers a unique portfolio of training aimed at both individuals and organisations for the net-zero carbon energy transition. Critical metals extractors will need to generate and rank exploration prospects efficiently, evaluate project risk and increase geoscience productivity. The impact of increased extraction is, however, often overlooked and it remains vital that these materials are sourced and extracted in the most responsible manner possible.

GeoLogica courses that specifically address mineral and mining topics include an overview of the critical minerals landscape (course number E503), an examination into rare earth elements as critical resources (E530), a course looking at the environmental and social governance issues (E538), and a new approach to mineral exploration workflows and risking (E505). Upcoming 2022 courses can be viewed here.
Two newly approved rare earth projects could boost diversity of supply for the strategic minerals used in everything from mobile phones to wind turbines.

The EU and the UK are almost solely reliant on imports from China for rare earth minerals that are integral to low carbon and digital technologies. As the clean energy transition takes effect, diversifying supply has become a top political priority. Developers of two new rare earth projects say they can provide part of the solution to Europe’s supply project. Pensana, a new company started in 2019, has secured approval to build what it says will be the world’s first sustainable rare earth separation facility in the new Humber Freeport in the UK.

The $125m facility hopes to produce around 12,500 annualised tonnes of rare earth oxides, including 4,500 tonnes of magnet metal rare earth oxides. This is approximately 5% of 2025 projected world demand, according to the company. To supply the facility, the company is in tandem developing a greenfield mine, called Longonjo, in Angola.
Circulor, a global tech company and the leader in supply chain traceability, was chosen from hundreds of candidates as one of the World Economic Forum’s “Technology Pioneers”. Founded in 2017 and headquartered in London, Circulor provides the most proven, mature and complete solution for gaining full visibility into complex industrial supply chains.

“Circulor is honoured to be included in this prestigious group — World Economic Forum Technology Pioneers over the past two decades have become some of the world’s most well-known brands that are positively contributing to our global economy, society and climate,” said Johnson-Poensgen. “We must decarbonise our heavy and complex industries, and we believe Circulor offers the most comprehensive approach to do so. We look forward to both learning from and contributing to Forum dialogues so that technologies that are good for our people and planet can go even further.”

READ ON HERE
Mkango has signed a nonbinding term sheet with environment, social and governance-focused company CoTec Holdings, in relation to investments by CoTec into Mkango and Mkango’s subsidiary, Maginito, and in collaboration in downstream rare earth technologies.

The transactions are expected to include several key components, including that CoTec will invest £2-million into Mkango by way of a two-year, unsecured convertible note, providing Mkango with additional working capital as it advances financing discussions for the Songwe Hill rare earths project, in Malawi, and the Pulawy separation plant project, in Poland.

Also, CoTec will invest £1.5-million into Maginito, equating to a 10% equity stake in Maginito for the purposes of strategic investments in downstream rare earth technologies and working capital.

READ ON HERE
Critical Minerals News

The following May news articles from Argus Media, Mining Weekly, Mining Magazine, and others, provide an overview of critical mineral mining for:

- Cobalt
- Copper
- Graphite
- Lithium
- Manganese
- Nickel
- Rare Earth Elements
- Tungsten

*The Critical Minerals Association takes no credit for any articles and makes no endorsement of any of the content.*
Cobalt

- **Global**
  - **Project Blue [12.5.22]**
    - The global supply chain of cobalt is the most at risk among the critical materials needed for the energy transition, a recent report by market intelligence provider Project Blue shows.

- **Africa**
  - **Congo [11.5.22]**
    - Democratic Republic of Congo Mines Minister Antoinette N’Samba Kalambayi is seeking to cancel a decree granting Entreprise Generale du Cobalt (EGC) a monopoly over artisanal cobalt produced in the country, she told Reuters on Wednesday.

  - **Congo [26.5.22]**
    - Chinese investment in Congolese cobalt: the challenges of international mining investment.

  - **Zambia: Moping Copper Mines [24.5.22]**
    - Zambia’s Mopani Copper Mines plans to resume cobalt production that was halted more than a decade ago after international prices collapsed, an executive at state-owned ZCCM-IH said on Tuesday.
Copper

• Global [1.5.22]
  • Rio Tinto Ltd, Freeport-McMoRan Inc and other global miners, spurred by rising prices and demand, are deploying a raft of new leaching technologies that can extract low concentrations of copper from waste rock and help avoid lengthy mine permitting delays.

• North America
  • USA: Hudbay Minerals [26.5.22]
    • Judge rules Hudbay's new Copper World mine prep can continue in Santa Ritas, Arizona, USA.
    • [https://fronterasdesk.org/content/1783190/judge-rules-hudbays-new-copper-world-mine-prep-can-continue-santa-ritas](https://fronterasdesk.org/content/1783190/judge-rules-hudbays-new-copper-world-mine-prep-can-continue-santa-ritas)

• Latin America
  • Chile [24.5.22]
    • Chile’s government is looking at a gradual implementation of a proposed ban on mining near glaciers to limit the impact on some of the world’s biggest copper mines and their planned projects high in the Andes.
  • Peru: MMG [12.5.22]
    • The community of Fuerabamba in the Andean region of Peru was resettled eight years ago to make way for a giant Chinese-owned copper mine, in a $1.2 billion scheme billed as a model solution to protests dogging the South American nation’s mining sector.
Graphite

• Africa
  ○ Madagascar: BlackEarth [18.5.22]
    - BlackEarth Minerals partners with Circulor to implement product traceability from graphite mining to EV end users.

• Europe
  ○ Sweden: Talga [27.5.22]
    - Talga has reported a 54% increase in the resource estimate for its Vittangi graphite project, in Sweden, adding more than 10-million tonnes to Europe’s largest graphite resource.

• Oceania
  ○ Australia: International Graphite [30.5.22]
    - International Graphite Ltd is targeting the expansion of the graphite resource at the Springdale Project in Western Australia.

○ Australia: Mineral Commodities [30.5.22]
  - Mineral Commodities has established a pathway to commercial production of high-purity graphite in Australia after completing its Cooperative Research Centres project or “CRC-P” with Australia’s national science agency CSIRO and Doral Fused Materials.
Lithium

• Global [25.5.22]
  ▪ The Trouble with Lithium: Elon Musk wants to mine it, China is scouring Tibet for it, battery makers are crying out for it.
  ▪ https://www.mining.com/web/the-trouble-with-lithium/

• Africa
  ○ Zimbabwe: Zhejiang Huayou Cobalt [30.5.22]
    ▪ Shanghai-listed mining company Zhejiang Huayou Cobalt, controlled by billionaire Chen Xuehua, will invest $300 million into its Arcadia lithium mine near Harare, Zimbabwe.
    ▪ https://www.forbes.com/sites/gloriaharaito/2022/05/30/chinese-mining-billionaire-to-invest-300-million-in-zimbabwe-lithium-project/?sh=72fd0b273dd1

• Asia
  ○ China: Yajiang Snowway Mining Developmen [23.5.22]
    ▪ An auction for a controlling stake in a Chinese lithium mine has garnered 3,448 bids, underscoring the scramble to secure the battery metal that’s key to the clean-energy transition.
    ▪ https://www.mining.com/web/mine-auction-draws-3448-bids-amid-scramble-for-lithium/

• Europe
  ○ UK: Benchmark [12.5.22]
    ▪ Benchmark has moved to weekly publishing of its price assessments for Chinese lithium grades.
Manganese

• **Global [11.5.22]**
  - Could manganese be a replacement for geopolitically problematic cobalt and pricey nickel?

• **Africa**
  - **South Africa [30.5.22]**
    - Gqeberha’s role as a key port for the export of manganese comes with high environmental and health costs.

• **Asia**
  - **Malaysia: OM Holdings [31.5.22]**
    - Manganese miner, OM Holdings has extended its $120-million offer for the remaining 25% interest in Malaysian operating subsidiaries OM Sarawak and OM Samalaju from the end of May, until June 14.

• **North America**
  - **Canada: Manganese X [17.5.22]**
    - Manganese X Energy will advance its pilot plant project after completing its Battery Hill manganese project preliminary economic assessment.
Nickel

- **North America**
  - **Canada: Vale [6.5.22]**
    - Tesla has agreed on a long-term deal to buy nickel from global miner Vale as the carmaker looks to secure the raw materials needed for its batteries.
    - [https://www.ft.com/content/352129a3-9d77-4a0d-9ce2-4d385cb1ce27](https://www.ft.com/content/352129a3-9d77-4a0d-9ce2-4d385cb1ce27)
  - **USA: PolyMet [5.5.22]**
    - The US Environmental Protection Agency has dealt a fresh blow to PolyMet Mining’s plans to build an open-pit copper-nickel mine in Minnesota, by recommending the US Army Corps of Engineers not reissue a key water-related permit.

- **Latin America**
  - **Brazil: Horizonte [20.5.22]**
    - Horizonte Minerals has kicked off construction of its Araguaia nickel mine in northern Brazil, which is set to produce 29,000 tonnes of the battery metal a year, mostly destined to supply the stainless steel market.

- **Oceania**
  - **Australia: Estrella Resources [27.5.22]**
    - Resource confirmation drilling has kicked off at Estrella Resources’ 5A nickel mine within the Spargoville Nickel Rights Project, to aid in completion of a Definitive Feasibility Study for the site.
Rare Earth Elements

• North America
  ○ Canada: cheetah Resources [23.5.22]
    ▪ Canada has begun supplying the world with minerals critical to a greener economy with the country’s first rare earth mine delivering concentrated ore.

  ○ USA: American Rare Earths [9.5.22]
    ▪ American Rare Earths confirms major rare earth deposit through maiden drilling at Halleck Creek.

  ○ USA [19.5.22]
    ▪ On the site of a shuttered and bankrupt coal mine near the headwaters of the Potomac River, the state of West Virginia is building a demonstration plant that researchers say could help spur efforts to clean up thousands of miles of waterways contaminated by coal-mining waste.
    ▪ https://www.washingtonpost.com/climate-solutions/2022/05/19/coal-mining-waste-recycling/

• Oceania
  ○ Australia [31.5.22]
    ▪ South Australia becoming the ‘Holy Grail’ of the rare earths space.
Tungsten

- Asia
  - South Korea [9.5.22]
    - South Korea hunts tungsten treasure in race for rare minerals.

- Europe
  - UK: W Resources [25.5.22]
    - Tungsten, tin and gold mining company W Resources on Wednesday announced the delisting of its shares from trading on AIM and said that it would seek a relisting on a stock exchange in future, should circumstances allow.

- Oceania
  - Australia: Group 6 [30.5.22]
    - Group 6 Metals has collaborated with the University of Tasmania on a project expected to benefit the company’s tungsten’s assets on King Island, Tasmania.
Urbix Wants to Supply 30% of US, UK, European EVs by 2030

US-based Urbix, a company that has developed a type of natural anode-grade graphite known as coated spherical purified graphite, announced the opening of an entity in the United Kingdom whose goal will be to supply UK and European-based automakers and battery industries with its products.

“The company will work with UK battery partners to test and validate its CSPG (coated spherical purified graphite),” the media brief states. “Early results and feedback from automakers indicated that Urbix’s drop-in graphite replacement is meeting and surpassing current customer specifications. This has substantial downstream benefits, contributing to EV batteries that are more efficient, possess a longer life cycle and achieve a greater energy density at a lower cost.”

READ ON HERE
For the past 20 years, China has been buying up valuable resources around the world to supply its vast manufacturing industry. More critically still, even where it does not own the mines outright, it has secured deals that mean nearly 80 per cent of the planet’s supply of these crucial raw minerals is sent to China for cleaning up and processing into usable metals. From the Chinese refineries, the metals not needed by China’s own plants are then shipped off to factories in Europe, America and elsewhere.
Inflation has caused a re-think, and a new plan will be out in a few months. Hemerdon is not dead. Make no mistake about that. Yes, inflation has pushed projected power costs up by two and a half times at the famous tungsten development in Devon, and yes diesel prices are up.

So too, for that matter, are ammonium nitrate costs. Ammonium nitrate is a key input for blasting, and by a rough reckoning it’s shot up in price by four times over the past couple of months. Steel and cement costs are also up. So, headaches all round. But Tungsten West PLC did have one thing going for it. Although a feasibility study was in place, and economic models had been constructed over all sorts of aspects of Hemerdon, construction hadn’t actually begun in a meaningful way.
Sovereign Metals Ltd. said that it has received support from investors to raise 15 million Australian dollars ($10.6 million), which will be used towards the Kasiya project in Malawi.

Thematica Future Mobility UCITS Fund, a Luxembourg-based green energy fund, is the cornerstone investor for the fund raising.

"Our focus will now turn to the updated scoping study which is targeted for completion in the coming months and will incorporate the significant Kasiya resource increase announced in April," Managing Director Julian Stephens said.
EnergySource Minerals announced a new round of investment led by Schlumberger New Energy and TechMet Ltd. The Schlumberger New Energy investment includes a strategic partnership to accelerate the deployment of the ILiAD lithium extraction platform and integrate it into the front end of the process used by NeoLith Energy, a Schlumberger New Energy venture. The platform has been piloted at demonstration scale for over 6 years on a variety of real-world brines. Schlumberger will scale up testing at NeoLith Energy's pilot plant in Nevada and deploy it at a global scale.

"As the world projects a significant supply shortage of various critical minerals such as lithium, the time is particularly ripe for our Schlumberger and TechMet partnership," noted Eric Spomer, EnergySource Minerals President and CEO. "Simply put, we have found a way to make battery material production more efficient, economical, and sustainable. We continue to push the envelope to reduce environmental impact, which is really the obligation of the industry."
SRK Consulting's Chris O'Brien discusses how mine operators and investors should approach decarbonisation with Nadav Shemer Shlezinger.

The three part series focuses on:

- Why miners should target net zero earlier than 2050
- Planning for net zero begins early in mine development
- Knowing what is and isn't being reported on emissions

WATCH VIDEOS HERE
This introductory course gives the learner a foundational understanding of Environment, Social, Governance (ESG) practices. The content includes a brief history of sustainability, the circular economy, the global factors driving demand as well as the risks and opportunities of ESG in the mining industry.

Learners explore ESG practices with a holistic approach to gain insight into the complex relationships that develop between these considerations and how they interact with environmental goals, social strategies and geopolitical relationships. Discover these considerations through an ethical standpoint as well as a business and financial perspective.

This course explores concepts that will be useful for those seeking an introductory understanding of ESG and is suitable for beginner to intermediate levels.

MORE INFO HERE
Mining practitioners are well aware of the image crisis facing the industry, with negative effects on communities being a major feeder of the negative perception. The mining industry’s top risks and opportunities fall under the category of social and environmental, with impact to local communities facing the most scrutiny (Mitchell, 2021). For the improvement of both the present and future industry-community interface, responsible communication between exploration geologists and communities is essential. At the first stage of the mining life cycle, exploration geologists can set the scene for responsible and positive community engagement strategies. Although geologists are in an important communication role, they are often not equipped with the skills to start building this fundamental community-company relationship.
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