CMA RELEASES NEW PAPER: A TALENT PIPELINE
WELCOMING OPTIVA RESOURCES TO THE CMA
SOVEREIGN METALS DISCOVERS LARGEST RUTILE
DEPOSIT
CIRCULOR & GERMANY’S BATTERY PASS PROJECT
CMA ATTENDS MMTA ANNUAL CONFERENCE &
GEOLOGICAL SOCIETY’S ENERGY TRANSITION EVENT
RESPONSIBLE RAW MATERIALS 9-13 MAY
Welcome to our April Critical Minerals Association monthly newsletter & updates on the critical minerals space.

Read on for:

- CMA Releases ESG Workshop Paper: A Talent Pipeline
- Church of England Pensions Board Launches ESG-focused Investor Initiative
- CMA at the MMTA Annual Conference: Geopolitics of Critical Minerals
- Canada Announces its First Critical Minerals Strategy
- EU’s Energy Transition Faces Critical Minerals Shortfall
- Australian Universities Get $173m in Funding to Turn Critical Minerals into Products, Services
- Sovereign Metals Discovers Largest Natural Rutile Deposit in Malawi
- Welcoming Optiva Resources to the Association
- UK’s DIT, Pensana Host Mining Trade Mission to Angola
- Circular Part of Germany’s Battery Pass Project
- CMA at The Geological Society’s Energy Transition Discussion
- Less Common Metals Celebrates 30 Years
- Aberdeen Minerals to Conduct Airborne Geophysical Survey
- Responsible Raw Materials 2022 Conference
- Q&A Session: Source Certain International
- Critical Minerals News
- Cornwall Resources: 10-year Extension to Redmoor Licence Granted
- Mkango Completes Initial Sampling & Ground Geophysics at Nkalonje Hill
- Botswana Could Become a Major Player in Battery Manganese
- Cornish Lithium Trials Direct Lithium Extraction from Geothermal Waters
- E-Tech Resources Commits to Sustainability Initiatives
- Graphite Emissions Fuel Search for Solutions Along EV Supply Chain
- Pensana: Update on Results from Coola Exploration Programme
- Mike Armitage: Thirty Not Out
- CMA Call for Student Newsletter Volunteers

Kirsty, Jeff & Olimpia

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Want to learn more? Check out our website & follow us on:

@CMA_Minerals  Critical Minerals Association
Following the publication of its flagship Environmental, Social, Governance (ESG) paper, ‘A Blueprint for Responsible Sourcing of Critical Minerals’, the CMA was pleased to see a number of its recommendations reflected in the UK Government’s Net Zero Strategy.

In early 2022, the CMA organised a series of workshops for the UK Government, to delve into the recommendations, put forward in its ESG paper, in greater depth with wider stakeholders. This workshop series included ‘A Talent Pipeline’ workshop and highlighted the importance of the UK investing in and developing the next generation of geoscientists, engineers, and metallurgists for critical mineral supply chains.

READ ON HERE
The Critical Minerals Association recommends that:

1. Geoscience/ engineering/ metallurgy community represented at the Government industry groups working on green jobs - Green Jobs Taskforce, Cross-Cutting Delivery Group, Trailblazers.

2. Critical minerals and geoscience/ engineering/ metallurgy as part of the programmes Government is organising outlined in the Net Zero Strategy - careers information, teacher training, education programmes.

3. Geoscience/ engineering/ metallurgy education community represented in the development of new green skills for hydrogen, carbon capture usage and storage (CCUS) supply chain roadmap.

4. Include the importance of critical minerals and geoscience/ engineering/ metallurgy in the sustainability and climate change strategy for education.

5. UK Government to support existing geoscience/ engineering/ metallurgy education initiatives through funding opportunities/ integration with Government initiatives in BEIS/ DfE.

6. UK Government to outline the importance of geoscience/ engineering/ metallurgy and critical mineral degree programmes in the Critical Minerals Strategy, and to engage with university leaders to ensure that these courses continue to run, particularly at universities which enable students from lower socio-economic backgrounds to level up.

7. UK Government to help remove financial barriers in university courses for lower socio-economic background students by extending postgraduate loans to cover the full costs of tuition and providing bursaries to support to cover costs of fieldwork and equipment.

8. The UK Critical Minerals strategy, and UK Government, should clearly explain the connection between critical minerals with climate change and outline its commitment to supporting responsible supply chains.

9. The UK should create graduate programmes specialising in critical minerals and commercialising innovations.

10. Geoscience/ engineering/ metallurgy education community represented in DfE discussions on geography/ science curriculum development meetings.

11. UK Government to help provide funding for the Geoscience Summer School to continue training geology teachers.

READ FULL PAPER HERE
The Church of England Pensions Board (CEPB) has launched ‘Mining 2030’, a year-long global initiative aimed at defining an investor agenda to be achieved by the mining sector by 2030.

The agenda will focus on systemic issues that could impact the mining sector’s social license to operate and disrupt the role mining must play in the low-carbon transition. Many low-carbon solutions are mineral-intensive and will require increased output from mines for the world to reach net-zero greenhouse gas emissions.

An initial series of investor-led roundtables will address eight systemic issues: resources for the transition, deep sea mining, biodiversity and land use, mine waste (tailings) and site closure, climate change, automation and future workforce, indigenous rights, and artisanal mining and child labour. The first roundtable on ‘Critical Mineral Supply Chains’ was held on 28 March 2022.
Huge thanks to the MMTA and Metal Events for inviting Jeff Townsend and Olimpia Pilch to attend the annual conference in Sheffield! It has been a pleasure to network with the industry at the historic Cutler’s Hall.

Following fantastic industry insights and great panel discussions, Jeff presented an outlook on the geopolitics of creating an alternative critical minerals supply chain driven by responsible sourcing.
The Government of Canada has announced that through Budget 2022: ‘A Plan to Grow Our Economy and Make Life More Affordable’, it is making targeted and responsible investments to create good jobs, fight climate change, and build a stronger economic future for all Canadians.

The country’s Minister of Transport, the Honourable Omar Alghabra, announced investments to enhance the Canadian mining industry’s ability to provide the minerals and metals required to reach net-zero emissions by 2050.

In total, Budget 2022 proposes to provide up to CAN$3.8 billion in support over eight years, starting in 2022 – 2023, to implement Canada’s first critical minerals strategy. The Budget would:

- Commit CAN$80 million to public geoscience and exploration programs to help find the next generation of critical minerals deposits.
- Dedicates CAN$1.5 billion for new infrastructure investments to unlock new mineral projects in critical regions, such as the Ring of Fire.
- Allocate CAN$1.5 billion to invest in new critical minerals projects, with a priority focus on mineral processing, materials manufacturing and recycling for key mineral and metal products in the battery and rare earths elements supply chain.
Australia’s Curtin University is set to receive a share of more than A$242 million ($173m) in federal government funding to lead the development of the Resources Technology and Critical Minerals Trailblazer hub.

The facility is being built together with the University of Queensland, James Cook University, and 33 company partners across Australia involved in value chains requiring lithium, nickel, cobalt, vanadium and hydrogen resources. The goal is to turn research outputs into breakthrough services, products and businesses.

“This investment will turbocharge Australia’s critical minerals industry and backs in the State’s status as an economic powerhouse for the whole country,” Prime Minister Scott Morrison said in a media statement.

READ ON HERE
For the EU to achieve its Green Deal pledge of reaching climate neutrality by 2050, the bloc will need 35 times more lithium and between seven and 26 times more rare earth minerals than it uses today, according to a recent study from Belgium’s Katholieke Universiteit (KU Leuven).

The energy transition will also require 10–15% more annual supplies of zinc than the region uses today, 30% more aluminium, 35% more copper, 45% more silicon, 100% more nickel and 330% more cobalt – all essential resources for the production of electric vehicles and batteries, wind, solar and hydrogen technologies, and grid infrastructure.

Europe faces critical shortfalls in the next 15 years without more mined and refined metals supplying its clean energy system. Progressive steps will be needed to develop a long-term circular economy that avoids a repeat of Europe’s current fossil fuel dependency, states KU Leuven’s Metals for Clean Energy study, commissioned by Eurometaux, Europe’s association of metal producers.

READ ON HERE
If carried out responsibly, mining can act as a core enabler for the 'just transition' - yet at COP26, mining was hardly addressed.

This week-long event aims to bring together a range of stakeholders across the raw materials space to showcase what the industry needs to do, change, and share, to ensure that mining fills its full potential. We will hear the challenges and opportunities presented by providing the necessary materials for the green transition, as well as acting as a vehicle for social and environmental progress.

MORE INFO HERE
We are delighted to welcome our latest member, Optiva Resources, to the association!

Optiva is a junior exploration company focusing on licenses in the Marela area in the Republic of Guinea. Optiva are looking to carry out further exploration on a titanium, vanadium, iron, and nickel rich ultramafic anomaly in Guinea.

Welcome on board!
The UK Government Department of International Trade (DIT) and London-based Pensana Rare Earths hosted the UK’s first-ever mining trade mission to Angola last week.

More than 40 people participated in the mission, including delegates from the DIT, foreign dignitaries including the Ambassador of Norway and the Ambassador of the UK, miners Rio Tinto and Anglo American, and representatives of the Angolan Ministry of Mineral Resources and Petroleum.

CMA Webinar - Breaking Ground: The Diversification of the Angolan Mining Sector

WATCH RECORDING & READ ON HERE
Kirsty Benham and Olimpia Pilch from the Critical Minerals Association were delighted to attend the two-day conference, 'Energy Transition Discussion Meeting: What does geoscience need to do now for a sustainable transition to net zero', organised by the Geological Society and Responsible Raw Materials.

It was fantastic to see the geoscience community brought together to discuss how we can collectively communicate with policymakers and civil society on the importance of critical minerals and the concept of a geological net zero.

We were delighted to see our members TechMet, SRK Consulting, Pensana, Cornish Lithium, Wood Mackenzie and Cornish Metals taking part in these crucial discussions.

WATCH THE TALKS HERE
Germany’s Federal Ministry for Economic Affairs and Climate Action formally announced today its “Battery Pass” project and its eleven consortium members, including Circulor, the leading supply chain traceability provider, as the project’s technology implementor. The announcement marks the beginning of a three-year, German-funded R&D project to develop core data specifications and technical standards for a “passport”, as well as a standardized dataspace to manage batteries that are manufactured or placed into service in the European Union.

Circulor will lead one of the project’s five work packages – the “Battery Pass Demonstrator” work package – using content and technical standards to simulate data flows and system transactions.

“Circulor is thrilled to be part of this one-of-a-kind consortium. Batteries are valuable assets and giving them an identity will be key to achieving circular economies that deliver resource security and lower emissions,” says Circulor CEO and Founder Douglas Johnson-Poensgen. “We are excited to contribute our know-how to building this battery passport demonstrator.”
Over the last 30 years, Less Common Metals has regularly hit the headlines with its expertise in the rare earth industry. Today, LCM is the only company in the western world commercially producing the highly specialised strip cast alloys needed for the production of the highest performance neodymium iron boron magnets. Furthermore, LCM’s expertise in commercial production of neodymium metal and neodymium praseodymium alloy is unique in the western world.

LCM is constantly searching for a secure and stable supply chain thus is involved in various key projects and associations. In addition, the team has worked tirelessly to achieve the accreditations ISO 9001 and ISO 14001 with a full environmental permit for activities.
With an updated mineral resource estimate (MRE), rutile and graphite miner Sovereign Metals reports that its Malawi-based Kasiya deposit has become the largest in the world with 1.8-billion tonnes of indicated and inferred resource at 1.01% rutile, which is more than double the contained rutile as its nearest rutile peer, Sierra Rutile.

Natural rutile is a scarce commodity, with no other known large, rutile-dominant deposits being discovered in over half a century, Sovereign states.

The miner notes that current sources of natural rutile are in decline as several operations’ reserves are depleting concurrently with declining ore grades. These include Iluka Resources’ Sierra Leone-based Sierra Rutile mine and Base Resources’ Kenya-based Kwale operation.

The latest MRE reveals broad zones of very high-grade rutile which occur contiguously across a very large area of over 180 km2. Rutile mineralisation lies in laterally extensive, near-surface, flat blanket-style bodies in areas where the weathering profile is preserved and not significantly eroded.
Strategic Minerals' 100% owned subsidiary Cornwall Resources has signed a 10-year extension to its existing Redmoor exploration licence agreement, securing its footprint in the region and adding “long term confidence” to the tenure of the project.

The original Redmoor exploration licence, which provides the rights to explore over the entire area, was due to expire in 2027, this has now been extended to 18 October 2037, it reported.

READ ON HERE
In our latest Q&A session, we caught up with Cameron Scadding, Managing Director at Source Certain International.

Source Certain is a Western Australian science technology company that offers a range of innovative science-based solutions to international clients. Their portfolio includes supply chain integrity services, which are underpinned by scientific provenance technology, research and education programs, geo-exploration services, forensic services to law enforcement and foundational analytical services for a wide range of products within industries like agriculture, food, and mining.

READ ON HERE
The following April 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
- Tin
- Titanium
- Tungsten

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

• North America
  ○ Greenland [21.4.22]
    ▪ Jeff Bezos, Bill Gates, and other masters of the universe are betting big on Greenland as mining in the Congo gets too dirty for even Elon Musk.
  ○ USA: Tesla [22.4.22]
    ▪ Tesla confirmed that nearly half of all its vehicles produced last quarter are already using cobalt-free iron-phosphate (LFP) batteries.
    ▪ https://electrek.co/2022/04/22/tesla-using-cobalt-free-lfp-batteries-in-half-new-cars-produced/

• Oceania
  ○ Australia: Glencore [12.4.22]
    ▪ General Motors said it would buy cobalt from miner Glencore to use in its electric vehicles (EVs), as automakers around the world scramble to stock up on the critical raw material amid supply chain disruptions.
  ○ Australia: Cobalt Blue [28.4.22]
    ▪ Cobalt Blue Holdings has as been awarded A$15 million by the Australian Government, subject to conditions, for the Broken Hill Cobalt Project (BHCP), as part of the Critical Minerals Accelerator Initiative (CMAI).
Copper

- **Africa**
  - **Botswana: GNRI [26.4.22]**
    - Private equity firm GNRI is considering options for its $1.5 billion Khoemacau copper mine in Botswana including a possible sale, people familiar with the matter said.
  - **Zambia: Moxico Resources [7.4.22]**
    - UK-based mining company Moxico Resources is planning to expand its majority-owned Mimbula copper mine in Zambia with a $100m investment, reported Reuters citing UK Minister for Africa Vicky Ford.

- **Latin America**
  - **Chile: Teck [26.4.22]**
    - Australia’s Golden Rim Resources has executed an option and joint venture agreement with Teck Resources, Canada’s largest diversified miner, to develop the Loreto copper project in Chile.
  - **Peru: Southern Copper [20.4.22]**
    - Peru will declare a state of emergency near Southern Copper Corp’s Cuajone mine, the country’s prime minister said on Wednesday, as protests hit top mines in the Andean nation, halting 20% of national copper output.
Graphite

• Africa
  ○ Namibia: Gratomic [25.4.22]
    ▪ Multinational graphite supplier Gratomic has produced its first batch of processed graphite at its Aukam plant in Namibia.
  ○ Madagascar: NextSource [29.4.22]
    ▪ Construction work crews have mobilised to the Molo graphite mine site, in Madagascar, starting civils and earthworks in preparation for the delivery and installation of the processing plant.

• North America
  ○ USA: Syrah Resources [19.4.22]
    ▪ Australian graphite producer Syrah Resources is set to receive US$107 million from the US Department of Energy for its Vidalia active anode material venture in Louisiana.
  ○ USA: Westwater Resources [20.4.22]
    ▪ Colorado-based Westwater Resources and subsidiary Alabama Graphite have broken ground on their graphite processing plant. The US$20 million Alabama plant will process graphite into battery-grade graphite for use in electric vehicles and other products. EVs require an average of about 175 to 200 pounds of graphite per vehicle.
Lithium

• **Global [11.4.22]**
  - Electric vehicle targets ‘impossible’ without changes to lithium pipeline. West has been ‘slow’ to challenge China’s dominance of supply chains, says Australian producer.
    - [https://www.ft.com/content/7beef24f-29a2-4683-8b30-b076528416c1](https://www.ft.com/content/7beef24f-29a2-4683-8b30-b076528416c1)

• **Europe**
  - **UK: Tees Valley Lithium [27.4.22]**
    - The UK’s first lithium hydroxide plant on Teesside could generate gross revenues of £49.2bn and supply 15% of the demand for the UK and EU's electric vehicle manufacturing needs.
    - [https://www.business-live.co.uk/manufacturing/teeside-lithium-hydroxide-plant-could-23796137](https://www.business-live.co.uk/manufacturing/teeside-lithium-hydroxide-plant-could-23796137)

• **Latin America**
  - **Mexico [21.4.22]**
    - Mexico has officially nationalized its lithium industry after the Senate approved by 87 votes in favour, 20 against and 16 abstentions the mining reform proposed by President Andrés Manuel López Obrador.

• **Oceania**
  - **Australia: Pilbara [28.4.22]**
    - The highest bid for lithium at an online sale surged by 140% in just six months, an indication the stampede for supplies of the main ingredient used in electric vehicle batteries could get even more intense.
    - [https://www.mining.com/web/top-bid-for-lithium-up-140-after-musks-insane-levels-call/](https://www.mining.com/web/top-bid-for-lithium-up-140-after-musks-insane-levels-call/)
Manganese

• Africa
  ○ Botswana: Giyani Metals [26.4.22]
    - Giyani Metals, developer of the K.Hill manganese oxide project, in Botswana, has announced the handover of the process flowsheet for the project.

• Asia
  ○ Japan: Tohoku University [11.4.22]
    - New research out of Japan’s Tohoku University and Rigaku Corporation could lead to a more efficient reuse of industrial waste heat by employing a manganese-rich compound.

• Latin America
  ○ Brazil: Vale [6.4.22]
    - Brazil’s Vale has agreed to sell its manganese and iron ore mines in central Brazil, with an enterprise value of about $1.2 billion, to holding company J&F Investimentos, it said in a securities filing on Wednesday.
Nickel

• Africa
  ○ Zimbabwe: Trafigura [29.4.22]
    ▪ Trafigura and Zimbabwe’s government have discussed a deal that would give the commodities trader control over output from some of the nation’s biggest mines as repayment for debts, documents seen by Bloomberg show.

• Asia
  ○ Indonesia: Sumitomo [25.4.22]
    ▪ Japan’s Sumitomo Metal Mining (SMM) said on Monday it has decided to discontinue a long-running feasibility study on an Indonesian nickel processing plant project because of a disagreement with its partner PT Vale Indonesia.

• Europe
  ○ UK: LME [27.4.22]
    ▪ London Metal Exchange Chief Executive Officer Matthew Chamberlain will stay in his role after all instead of leaving to run a crypto startup, as the bourse deals with the ongoing fallout from March’s nickel crisis.
Rare Earth Elements

• Asia
  ○ Malaysia: Lynas [28.4.22]
    - Lynas Corp the world’s only processor of rare earths outside China, sees growth in demand for the metals used in everything from cars to missiles rapidly outpacing production and expects to spell out expansion plans in the next six months.

• Europe
  ○ Germany: Schaeffler [20.4.22]
    - German auto parts supplier Schaeffler has signed a raw materials deal to ensure the supply of rare earth magnets from Europe for its burgeoning electric vehicle (EV) motor business, an executive told Reuters.

  ○ UK [29.4.22]
    - Deep-sea gold rush’ for rare metals could cause irreversible harm.

• North America
  ○ USA: Energy Fuels [13.4.22]
    - Energy Fuels made three commercial shipments of uranium, vanadium and rare earth elements (REE) through its Utah-based White Mesa mill last week, a feat which the company described as rare and one that depicts its ability to become a “clean energy and critical mineral hub” in the United States.
Tin

- Africa
  - Mauritius: Alphamin [20.4.22]
    - Mauritius-based tin mining firm Alphamin Resources has launched a potential sale of the company to capitalise on surging metal prices, reported Bloomberg News citing people with knowledge of the matter.

- Europe
  - UK: Tungsten West [21.4.22]
    - Plans to reopen a tungsten mine near Plymouth have been put on hold due to rising costs and tungsten's current market value.
    - https://www.bbc.co.uk/news/uk-england-devon-61183804

  - UK: Cornish Tin [27.4.22]
    - Members of a Cornish community raised their concerns about exploratory tin mining in their area at a public meeting at the weekend. A company called Cornish Tin Ltd has started the first phase of drilling on what is expected to be 26 sites in the area.

- Oceania
  - Australia: TinOne [27.4.22]
    - TinOne Resources Commences Drilling at Great Pyramid Tin Project in northeastern Tasmania, Australia.
Titanium

• Europe
  ○ France: Airbus [12.4.22]
    ▪ Airbus SE defended its decision to keep importing Russian titanium, contending sanctions would hurt aerospace manufacturers who depend on the lightweight metal and wouldn’t deter Vladimir Putin after his invasion of Ukraine.
    ▪ https://www.mining.com/web/airbus-defends-russian-titanium-use-urges-against-sanctions/

• Oceania
  ○ Australia: Iluka [26.4.22]
    ▪ Iluka Resources said the first-quarter output of its core mineral sands products -zircon, rutile and synthetic rutile- was weaker than the three months immediately prior, but higher than the same period a year ago. Here are some remarks from its quarterly operations review.

Tungsten

• Asia
  ○ Vietnam [25.4.22]
    ▪ Global industrial manufacturers are pursuing the tungsten supply chain from Vietnam, seeing that a Vietnamese company has gradually emerged as the leading integrated supplier of advanced high-tech global materials.
Aberdeen Minerals Limited has appointed SkyTEM Surveys Aps as the lead contractor to conduct the first modern airborne geophysical survey in North East Scotland.

This cutting-edge survey will provide new data to identify possible locations of copper, nickel, and cobalt bearing sulphide mineralization in the underexplored mafic-ultramafic intrusive geology.

This survey will be conducted in May and June and will help to identify prospective sites for follow-up ground investigation.

READ ON HERE
Mkango Resources has provided an update on the exploration programme at the Nkalonje Hill Rare Earths Project, 14 km from Mkango’s Songwe Hill Rare Earths development project. Mapping, sampling and ground geophysical data were obtained at Nkalonje in Q4 2021, following up on encouraging historical regional geophysical data.

Highlights:

- Assays of carbonatite dyke samples returned grades of up to 5.92% TREO (Total Rare Earth oxides) median of 2.96%.
- Mapping and geophysics results confirm that the major geological features of Nkalonje Hill (“Nkalonje”) are those of an alkali silicate-carbonatite intrusive complex, similar to Songwe Hill.
- Geophysics has identified a primary shallow drilling target beneath exposed mineralised dykes and a secondary deeper drilling target.
Botswana Could Become a Major Player in Battery Manganese

As it turns out, Botswana is home to multiple high-grade deposits of manganese that is perfectly suited for use in batteries and electronics. A cluster of these deposits was recently discovered by Canadian exploration company Giyani Metals. Known collectively as the K.Hill project, the deposits are ideally situated, close to both land and maritime infrastructure within Botswana's Kanye Basin.

Giyani is currently completing a feasibility study over the K.Hill project to produce around 120,000 tonnes per annum of high purity manganese sulphate for the EV battery market. With demand for high purity manganese sulphate expected to rise tenfold by the end of the decade, and 90 per cent of current supply coming from China, new entrants such as Giyani are in high demand for major automotive companies looking to diversify their supply chains and lock in sustainably produced raw materials.
We are proud to announce that with the start of this year, E-Tech’s CEO, Elbert Loois, has been elected to co-chair the International Supply Chains committee of the CMA, as its Scientific Officer, Ed Loye, has been invited to join the REIA’s ESG committee as a Board Member.

E-Tech Resources, an exploration company with its Eureka rare earths project in Namibia, has joined the ranks of the global Rare Earths Industry Association (REIA), the Critical Minerals Association (CMA) and the European Raw Materials Alliance (ERMA), which all stand for secure and sustainable materials sourcing for hi-tech value chains.

Also, E-Tech have formally installed a Sustainability Advisory Board to guide the development and execution of its ESG Strategy.

READ ON HERE
Cornish Lithium Trials
Direct Lithium Extraction from Geothermal Waters

At the end of March, Cornish Lithium commissioned the UK’s first direct lithium extraction pilot plant, as the company pushes to produce an element that is critical to the clean energy transition. There are also plans to provide geothermal heat from the water to local industries. We caught up with members of the development team to discuss the project in more detail, including their expectations that the production process will provide significant benefits over traditional lithium extraction techniques.

Cornish Lithium’s goal is to drill a series of wells across Cornwall to pump out natural lithium-rich geothermal waters found around 2 km beneath the surface of the Earth. Modular process plants built alongside these wells will recover the lithium through a technique called direct lithium extraction (DLE) that promises faster recovery speeds, smaller industrial facilities and less energy use than traditional techniques.

READ ON HERE
"Graphite is a very energy-intensive production process, whether that's natural or synthetic," said Robert Pell, co-founder and CEO of Minviro, a U.K. consultancy firm that conducts life cycle assessments for graphite and other mineral companies. "That impact was quite significantly underestimated historically."

Graphite production is concentrated in China, which mines 69% of the world's graphite and produces 100% of spherical graphite, or battery-grade anode material, according to Benchmark Mineral Intelligence.

"There's a reason why the energy-intensive graphitization process sits there: The energy is cheap because it's coal-dominant," Pell said. "When you look at that in the context of where that material is going, for the low-carbon transition, there's obviously a contradiction there."
Pensana announced the following update on the results from the exploration programme undertaken on the Coola licence, located 16 kilometres north of the Company’s state-of-the-art Longonjo rare earth project in Angola.

Having identified highly anomalous technology metals including rare earths, scandium and fluorite in soils surrounding the 7 500km2 Coola project in 2020, field exploration activities resumed in Q3 2021, and a range of very encouraging results has been reported from the Coola carbonatite and the recently identified Sulima West.

Exploration Manager, Grant Hayward, commented: “We are extremely encouraged by the initial results from both Coola and Sulima West and are eager for the field season to commence to follow up on these exciting targets. Whilst it is early stage, these are very large structures reporting grades which are in some cases higher than those for Longonjo.

There are several radiometric anomalies and ring structures still to be evaluated, and we very much look forward to further exploration in 2022 with the easing of Covid related travel restrictions.”
"As I write this article I am coming towards the end of 30 years of resource estimation and reporting with SRK. When I joined the available software was 2D based and the interpolation process took a long, long time and was mainly done overnight so as not to tie up a machine all day.

Many estimates were still being done using graph paper, colouring pencils and transparency. Hard copy sections and plans were the basis of almost all geological models. While most exploration programmes and new mines were computerised, most mines still operated a paper system and while geostatistics had been “invented” most estimates were still being done using classical methods."

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Student Volunteer Opportunity

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