CRITICAL MINERALS ASSOCIATION

SEPTEMBER 2021

BREAKFAST CHAT - ESG: TRACK, TRACE & PROVENANCE
SOCIAL MOBILITY FOUNDATION: MINING FOR A GREEN FUTURE
MINVIRO WIN CONSULTANCY OF THE YEAR AWARD
DALRADIAN: STEP FORWARD IN THE PLANNING PROCESS
Welcome to our September Critical Minerals Association monthly newsletter & updates on the critical minerals space.

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This month’s newsletter has been put together by Olimpia Pilch, CMA’s Business Development & Communications Associate!

Kirsty & Jeff

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Got a suggestion? Want to feature in next month's newsletter? Contact olimpia@criticalmineral.org

Want to learn more? Check out our website: https://www.criticalmineral.org/ & follow us on twitter @CMA_Minerals
We are delighted to announce our latest breakfast chat, 'ESG: Track, Trace & Provenance', will be taking place on Tuesday 29th October 2021 at 9:00AM BST. The discussion will centre around the importance of track, trace and provenance of critical minerals in ensuring that the benefits of ESG compliance are kept throughout supply chain.

Our speakers will be:
- Douglas Johnson-Poensgen, CEO & Co-founder of Circulor
- Nathan Dubrich, Head of Sales, Source Certain International
- Additional Speakers TBC

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Jeff Townsend, Co-founder of CMA, was delighted to take part in GBBC's Blockchain Central event alongside the United Nations General Assembly as an official partner of the UN Foundation's Global Goals Week.

The 'Building Trust and Transparency into Our Supply Chain' talk took place on 16th September, Day 1 of the event. The panel also featured Douglas Poenseng-Johnson, CEO & Co-founder of Circulor.

You can watch the session by skipping to 2:44:05 of the recording.

WATCH HERE
CMA took part in the Social Mobility Foundation’s Biology and Chemistry Virtual Placement on 4th August 2021.

CMA founding members, Minviro and SRK Consulting, introduced 69 Year 12 & S5 students to Geoscience.

Read on to discover the relationship between Geoscience / Biology/ Chemistry and how mining and minerals are part of the green energy transition.

**HIGHLIGHTS HERE**

“Mining for a green future completed changed my perspective on the importance of mining. We are so used to mining being demonised in the climate change campaign that we forget how necessary it is. The session also made me want to look into Geology." - Student Feedback

**MORE ON SOCIAL MOBILITY FOUNDATION HERE**
We are proud to announce that our founding member, Minviro, have won the Consultancy of the Year award at Business Green Leaders Awards 2021.

Minviro only launched in 2019, but the judges were hugely impressed by the ambitious company's already impressive client roster and work to help the hard to decarbonise mining and metals industry slash its environmental impact.

MORE HERE

Consultancy of the Year 2021 Winners
Dalradian has welcomed the decision by the Minister for Infrastructure, Nichola Mallon, to refer its application for an environmentally responsible underground gold-silver-copper mine to a public local inquiry (planning inquiry) with the Planning Appeals Commission (PAC). The inquiry is a standard stage toward the end of the planning process for regionally significant projects.

The project will create almost 1,000 jobs, including 350 directly with Dalradian over the 20-year plus lifetime of the mine. The average salary at the mine is estimated at £40,000 per year, nearly twice the NI average. The 18-24 month construction phase will provide a boost of £158m and create 300 jobs. A £15 million training programme will coincide with the construction phase and first year of operations to support local employment.

"Our proposed project will boost the regional economy for a minimum of 20 years and provide a broad range of social and economic benefits in line with local and regional government aims. These include regional rebalancing, sustaining rural communities, creation of good jobs, raising the skills base of the workforce and increased investment."

- Patrick F.N. Anderson, CEO of Dalradian Gold
Britishvolt, the UK’s leading investor in lithium-ion battery cell technologies and associated research and development (R&D), furthers its mission with a new strategic partnership with Circulor.

As part of the new strategic partnership, Circulor will provide Britishvolt with a dynamic living digital building inventory for the factory during the build phase, setting a new global benchmark for sustainable/green construction and manufacturing. In doing so, this will help Britishvolt with its mission to build the world’s most low carbon battery cells.

Circulor will also provide Britishvolt with supply chain traceability for the battery materials from source through to manufacturing. Allowing the company to map the CO2 emissions and other ESG considerations.

READ ON HERE
Tirupati Graphite has completed the installation and commissioning of its first 9,000 tpa flake graphite module at its Vatomina Project in Madagascar.

Shishir Poddar, CEO of Tirupati Graphite, said:

"We are delighted to have completed the commissioning of the first of four modules at Vatomina, which marks the latest in a series of investments to increase production of high-quality graphite from our projects in Madagascar to support world demand and continue the expansion of our production capacity up to 84,000 tpa by 2024.

"This is a commendable achievement for the Company given the procurement and logistics challenges that were faced by the team whose tireless efforts enabled us to successfully execute our plans to upscale the plant capacity to 9,000 tpa and get into production."

READ ON HERE
Chairs of CMA’s public perception of mining group Dr Rebecca Paisley & Ben Lepley interviewed Professor Richard Herrington, Head of Earth Sciences Department, Natural History Museum (NHM).

Richard explains how mining is the solution to our climate crisis and stresses just how essential it is that young people realise that mining is crucial to building a better tomorrow. Metals and minerals underpin our infrastructure. They are in our phones, laptops, cars and are the building blocks of renewable energy technologies.
Mkango Resources Ltd, has announced that the management team of Mkango, as well as leading Malawian geotechnical engineering firm, Geoconsult Limited, and Zutari Limited, a geotechnical engineering firm which is based in South Africa, are on site at the Songwe Hill Rare Earths development project to commence a major geotechnical drilling and pitting program.

The geotechnical test work program will obtain samples from approximately 150 five-metre-deep pits and 22 twenty-metre drill holes and is being undertaken to confirm the soil and ground characteristics of the Songwe Hill project area.

Alexander Lemon, President of Mkango Resources Limited, commented: “This major geotechnical investigation program is currently employing and training over 120 local Malawian skilled and unskilled personnel. We are very proud to be working with leading Malawian companies such as Geoconsult and also Torrent a local Blantyre based plant hire company, promoting Malawian local content and community participation in the ongoing development of this exciting Rare Earths project.”
Tungsten West: Updated JORC Resource

Tungsten West, in collaboration with international mining consultants Mining Plus, have delineated a JORC Resource of 328Mt at 0.12% WO3 and 0.03% Sn at the Hemerdon Project.

This is inclusive of a JORC Reserve of 63.3Mt at 0.18% WO3 and 0.03% Sn; more than double that of the previous operation.

This places Hemerdon as one of the largest CRIRSCO compliant tungsten deposits in the world.

READ ON HERE
Li-Cycle has announced plans to build a new lithium-ion battery recycling facility in Alabama. This will be its fourth commercial lithium-ion battery recycling facility and will be located in Tuscaloosa, AL. Previously, the company had a base plan for three North American facilities, or Spokes. These are planned for Kingston, Ontario; Rochester, New York; and Gilbert, Arizona, with the latter being in advanced execution stages.

The company noted that the southeastern US is emerging as a critical region for the lithium-ion battery supply chain since both battery manufacturers and automotive OEMs have operations in the region. This will lead to the generation of large quantities of battery manufacturing scrap and end-of-life batteries that will need to be recycled.

The company also noted that Univar Solutions will be an anchor battery feed supply customer for the new facility, and this news followed the recent news of the two companies’ onsite partnership to provide waste management solutions for EVs and lithium-ion battery manufacturing.
The Critical Minerals Association (CMA) is delighted to announce the endorsement of Practical Geocommunication, Geologize’s critically acclaimed communication training for geoscientists. Connecting with the public to help them feel invested in our planet is going to be essential in changing behaviour, reaching net zero and encouraging enrolment into the geosciences at university, a subject that will be fundamental in driving the energy transition.

The CMA is proud to stand alongside Geologize in its mission to make geocommunication training an integral part of geoscience education.

FIND THE COURSE HERE
HyProMag successfully extracts rare earths from audio products

The REAP project was established to recycle and repurpose old loudspeaker magnets using a new process for extracting and demagnetising neodymium iron boron (NdFeB) alloy powders.

The patented process was originally developed by the Magnetic Materials Group at the UoB and subsequently licensed to HyProMag.

Nick Mann, operations general manager of HyProMag said the project had broken new ground and identified "a useful and accessible source of end of life magnets that can be collected, extracted and remanufactured on a commercially viable basis."

William Dawes, CEO of Mkango added: "This is a significant milestone for HyProMag, University of Birmingham and European Metal Recycling."
Australia's federal government is setting up a A$2bn ($1.45bn) loan facility to stimulate the development of critical minerals projects in the country.

Prime minister Scott Morrison, who announced the plan after last week's first meeting in Washington of the so-called Quad featuring Australia, the US, India and Japan, said the fund would effectively help fill financing gaps in critical minerals developments to get them off the ground.

Critical minerals include lithium, graphite, vanadium, tungsten, cobalt, manganese, zirconium, scandium, molybdenum, hafnium and rare earths with applications in sectors such as renewable energy, aerospace, defence, automotive and electric vehicles in particular, as well as telecommunications and agriculture technology.

"The commercial dimensions of the critical minerals market mean it is a difficult place to get established," Morrison said. "We want to ensure that Australia's resources producers do get established so they can link up with others in our supply chains in a free and open Indo-Pacific."

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@ArgusMedia
There are many fantastic people, working hard behind the scenes, involved in all aspects of CMA. Each month, we will be bringing new faces into the spotlight!

This month's spotlight goes to Dr Mike Armitage, Corporate Consultant at SRK and CMA's Honorary Chair.

Dr Mike Armitage

Honorary Chair of Critical Minerals Association

BSc (Hons) Mining Geology from Cardiff University and PhD in Resource Estimation from University of Bristol

Corporate Consultant (Resource Geology), SRK Consulting

“The first teacher to really inspire me was my A-Level geology teacher, Terry Cattermole, who had worked on the Copperbelt in Zambia and had many stories to tell and encouraged me to go to Cardiff university to study mining geology. I am sure we all have stories of teachers who have inspired us but without Terry ("Mr Cattermole") I would not have become a geologist. It is also down to him that I have remained involved in teaching throughout my career and why I think it really important that we as an industry provide support to our teachers and hopefully encourage people to join what continues to be a hugely important industry.”
The following September news articles from Argus Media, Mining Weekly, Mining.com, Roskill and others, provide an overview of critical mineral mining for:

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

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

- **Oceania**
  - **Australia [7.9.21]**
    - Western Australia unveils resource strategy.
    - [https://www.miningweekly.com/article/wan-unveils-resources-strategy-2021-09-07](https://www.miningweekly.com/article/wan-unveils-resources-strategy-2021-09-07)
  - **Australia: BHP [8.9.21]**
    - BHP has struck a deal to use artificial intelligence tools developed by KoBold Metals, a start-up backed by a coalition of billionaires including Bill Gates and Jeff Bezos, to look for critical materials used in electric vehicles (EVs) and clean energy technologies.
  - **Australia: Alcoa [27.9.21]**
    - US aluminium producer Alcoa has partnered with Brisbane-based Alumtek Minerals, the developer of a process to extract critical minerals including gallium, vanadium, hafnium and rare earths from mining waste.
Electric Vehicles

• Europe
  ○ UK [10.9.21]
    ▪ England will be first country to require new homes to include EV chargers.
      ▪ [https://electrek.co/2021/09/10/england-will-be-first-country-to-require-new-homes-to-include-ev-chargers/](https://electrek.co/2021/09/10/england-will-be-first-country-to-require-new-homes-to-include-ev-chargers/)
  ○ UK: Rolls-Royce [13.9.21]
    ▪ British brand Rolls-Royce to debut its latest step in automation - a new sustainable MTU hybrid haul truck steering mining towards net-zero emissions.
  ○ UK: Ford [23.9.21]
    ▪ Ford will decide within weeks whether to build its new eTrans system at its site on Merseyside or in Germany, in another big moment for the UK car industry.
  ○ Germany [8.9.21]
    ▪ A new study published in the journal Joule makes the case for a record-breaking lithium metal battery that offers extremely high energy density of 560 watt-hours per kilogram — based on the total weight of the active materials — with remarkably good stability.
      ▪ [https://www.mining.com/german-researchers-develop-record-breaking-lithium-metal-cell/](https://www.mining.com/german-researchers-develop-record-breaking-lithium-metal-cell/)
• North America
  ○ USA: First Cobalt [23.9.21]
    - First Cobalt Corp announces that it commenced drilling at Iron Creek, a wholly-owned cobalt-copper project in Idaho, USA.

• Oceania
  ○ Australia: Cobalt Blue [21.9.21]
    - Cobalt Blue adopts global litmus test for responsible cobalt production.

  ○ Australia [23.9.21]
    - Although the Democratic Republic of Congo (DRC) will remain the leading producer of cobalt in the coming years, investments are likely to shift to Australia, which is seen as a “bright spot” for miners and offtakers seeking to avoid human rights and environmental risks associated with cobalt mining in the DRC.
Copper

• Global [8.9.21]
  - Can copper turn greener?
  - https://www.mining-journal.com/partners/partner-content/1417179/can-copper-turn-greener

• Europe
  ○ Sweden: Copperstone Resources [22.9.21]
    - Copperstone Resources announced revised and enlarged ambitions for the reopening of the Viscaricia copper mine in Kiruna, northern Sweden. The estimate for yearly milled-rate production is now 3 million tons annually, compared to earlier assumptions of 2 million tons. That will be enough to produce 30,000 tons of copper per year.

  ○ UK: Cornish Metals [23.9.21]
    - Cornish Metals has added a second drilling rig at its copper, tin and zinc mine at United Downs as the company reveals it raised £8.2m for the project by selling shares.
    - https://www.business-live.co.uk/economic-development/cornish-metals-adds-second-rig-21650890
Graphite

• Africa
  ○ Tanzania: Armadale Capital [7.9.21]
    ▪ Armadale Capital has announced the formal confirmation and receipt of the mining licence for its 100%-owned Mahenge Graphite Project in south-east Tanzania from the Tanzanian Ministry of Energy and Minerals.

• Europe
  ○ Sweden: Talga [23.9.21]
    ▪ Talga has started trial mining at its Vittangi graphite project in north Sweden.

• North America
  ○ Canada: Nouveau Monde [23.9.21]
    ▪ Nouveau Monde Graphite Provides Update on the Deployment of its Fully Financed Phase-1 LiB Anode Material Project.
Lithium

• Asia
  ○ Thailand: Pan Asia Metals [1.9.21]
    - Australian mining company is seeking to explore for geothermal lithium at geothermal fields in Southern Thailand.

• Europe
  ○ Serbia: Rio Tinto [13.9.21]
    - Several thousand protestors streamed into Belgrade on Saturday, 11 September, demanding a halt to development at the proposed Jadar lithium project, currently being developed by Rio Tinto.

• Latin America
  ○ Argentina [14.9.21]
    - In Argentina’s remote northern Salta province, the silence of the desert landscape is broken only by the hum of machinery pumping salt-water brine to extract lithium, a sign of accelerating efforts to ride the global electric vehicle boom.
Manganese

• Africa
  ○ Botswana: Giyani Metals [20.9.21]
    ▪ Giyani Metals Corporation has provided updates on the various exploration programmes it has under way at the southern extensions of the K.Hill project, as well as the Otse and Lobatse manganese prospects, in Botswana.

• Latin America
  ○ Guyana: Guyana Manganese [22.9.21]
    ▪ Having found that there was no proper monitoring system in place at the breached reservoir owned by Guyana Manganese in Matthews Ridge, the Environmental Protection Agency has warned that the deficiency must be addressed.

• Oceania
  ○ Australia: Element 25 [14.9.21]
    ▪ Manganese producer, Element 25 has scored an eight-year “innovation patent” for its cutting-edge extraction technology used to separate manganese from concentrate produced at its 100 per cent owned Butcherbird mining and beneficiation operation north of Meekatharra in Western Australia.
Global [17.9.21]
- Global nickel mine production is expected to grow by 6.8% to reach 2,427.4kt in 2021, after registering an estimated 4.2% decline to 2,272kt last year owing to covid-related lockdowns and restrictions.

Asia
- Indonesia: Vale Indonesia [8.9.21]
  - Indonesian nickel miner PT Vale Indonesia said it aims to start construction at its Pomalaa project next year to produce material used in batteries for electric vehicles, executives said on Wednesday.
  - https://www.mining.com/web/vale-indonesia-eyes-2026-completion-for-nickel-hpal-plant/

North America
- Canada [13.9.21]
  - Miners race for nickel as electric car revolution looms.
  - https://www.ft.com/content/165d6ba8-f044-4601-9caf-1d1369ec4c09
Tin

• Asia
  ○ Namibia: AfriTin [21.9.21]
    ▪ AfriTin Mining has entered into a £4.5-million five-year loan agreement with Standard Bank Namibia, to fund the Phase 1 expansion of its processing plant at the Uis tin mine.

• Europe
  ○ UK: LME [7.9.21]
    ▪ LME recognises ITA Tin Code standard to demonstrate responsibly sourced tin.
  ○ UK: LME [23.9.21]
    ▪ Tin pushes towards record highs as supply tightens.

• North America
  ○ USA [16.9.21]
    ▪ From the advancements of technology during the Bronze Age to the computers and telecommunication systems of today's Big Data Era, tin has been critical to human progress for at least 5,500 years.
    ▪ [https://www.miningnewsnorth.com/story/2021/09/16/critical-minerals-alliances/tin-has-been-critical-for-5500-years/6988.html](https://www.miningnewsnorth.com/story/2021/09/16/critical-minerals-alliances/tin-has-been-critical-for-5500-years/6988.html)
Tungsten

• Europe
  ○ UK: Tungsten West [1.9.21]
    ▪ GRS teams up with Tungsten West to use mine waste as sustainable aggregate.

• North America
  ○ Canada: Great Atlantic Resources [23.9.21]
    ▪ Great Atlantic Resources announced it has begun the 2021 exploration program at its 100% owned 2,950 Hectare, South Quarry Tungsten Property, located in east-central Newfoundland.

• Canada: Apex Resources [14.9.21]
  ▪ Apex Resources Files Updated Resource Estimate on its Jersey Emerald Tungsten Project.
Rare Earth Elements

• Africa
  ○ Namibia: Namibia Critical Metals [20.9.21]
    ▪ Namibia Critical Metals announced an update on the development of the Lofdal Heavy Rare Earth project.

• South Africa: Rainbow [20.9.21]
  ▪ Rainbow Rare Earths enters into rare earths separation technology agreement.

• Asia
  ○ Japan: Nissan [3.9.21]
    ▪ Japan’s Nissan Motor Co has developed a new technology to halve the cost of recycling rare earths used in magnet motors for electric vehicles.

• North America
  ○ Greenland: Hudson Resources [23.9.21]
    ▪ Hudson Resources has announced the results of independent metallurgical testwork conducted on the high-grade Nukittooq niobium/tantalum project, in Greenland.
    ▪ https://www.miningweekly.com/article/hudson-achieves-553-niobium-concentrate-from-nukittooq-2021-09-23
Controversy over the recent sale of Welsh semiconductor foundry Newport Wafer Fab (NWF) to one of its customers — Dutch chipmaker Nexperia, owned by Chinese technology group Wingtech — has raised questions about how best to protect and develop the UK’s semiconductor industry, with some onlookers warning that any legislative tools may fall short without an overarching plan for moving the sector forward.

The sale was completed in July but was swiftly followed by protests from senior political figures who questioned the advisability of selling a UK semiconductor asset to a Chinese-controlled entity. Prime minister Boris Johnson on 7 July instructed the UK’s national security adviser, Stephen Lovegrove, to review the transaction, with a report due to be released in the near future. Meanwhile, UK businessman Ron Black has put together a consortium to offer a rival bid should the government intervene. Legislation designed to protect critical infrastructure and technology from external threats — the National Security and Investment Bill — will come into force on 4 January 2022, effectively providing a legal route to invoke a retrospective mandate to freeze the sale.
The Minviro team, alongside co-authors from University of Exeter, British Geological Survey, and Geological Survey of Finland (GTK), are excited to share their brand new review paper published in Nature Reviews Earth & Environment.

The paper proposes an integrated life cycle assessment (LCA) and geometallurgical approach to optimise the technical performance and reduce the environmental impact of raw material extraction.

Life cycle assessments are an effective way of understanding the system-wide impacts associated with material production, from ore in the ground to a refined chemical product ready to be used in advanced technologies such as batteries.

READ THE PAPER HERE
The vanadium pentoxide (V2O5) price has posted a stellar performance since the beginning of 2021, with an 80% increase to US$9.6/lb. However, over the past few weeks, prices declined by about 5%. What will do the market in the last four months of the year and what are the key determinant factors?

With the year 2020 impacted by the COVID pandemic, V2O5 prices averaged US$5.9/lb, because of falling steel production and consumption in the world ex-China, mitigated by a record steel output in China with demand primarily driven by infrastructure. With vaccination programmes being gradually implemented, markets started to anticipate a global recovery in 2021.

During the first seven months of the year, global steel production rose 12.4% y-o-y, with China’s steel output increasing 8.0% y-o-y and the rest of the world 18.5% y-o-y. Unsurprisingly, vanadium demand followed. Low inventories were also rebuilt, adding to the pent-up demand. Meanwhile, vanadium supply is expected to increase only moderately in 2021, and mostly coming from some Chinese slag producers.

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@Roskill_Info
Light and energy-dense, lithium is the critical ingredient in batteries and, as such, underpins the global energy transition from fossil fuels to electricity.

Lithium allows us to store renewable energy to use when it is dark or cold and there is no wind to turn turbines. Lithium lights up our digital world too, with its batteries for laptops and mobile phones. Above all, bigger lithium batteries power humanity’s ever-growing fleets of the electric vehicles (EVs) that are replacing petrol and diesel models, sales of which will be outlawed in the UK from 2030.

It is an energy transition on a scale the world has never seen before.
Reimagining Applied Geoscience for the Energy Transition

Our 2030 world will need more access to affordable and reliable energy (not less), significantly expanded renewable energy systems, new investments in infrastructure and a whole suite of upgraded technologies to supply modern, efficient and sustainable energy services for all – in developing countries as well as in mature economies.

All of this will require new Earth resources and, most importantly, more intelligent and more sustainable ways of using those resources, including a lot more recycling. The exploitation mindset must be replaced by a sustainability mindset – where (paraphrasing complementary definitions of sustainability from the fields of environmental science, sociology and ecology) sustainable means without significant harm to the environment, including the atmosphere and climate system, and without damaging the long-term ecological balance, for future generations of humans and for other species. Quite a challenge!

READ ON HERE
The New Great Game

Securing critical minerals today for a clean energy system tomorrow

Executive Summary

Under the Paris Climate Agreement (also known as CoP21), 190 countries and the EU have committed themselves to limit global warming through the reduction of greenhouse gas (GHG) emissions.

The energy sector is responsible for producing roughly 75% of the world’s GHG emissions, making it the forefront of the battle against global warming. There is, therefore, tremendous pressure on both energy producers and energy consumers to increase the use of renewable energy and other clean technology in the energy mix. By 2050 more than 60% of the installed power capacity is predicted to come from solar pv plants, wind farms, hydropower plants and large-scale batteries.
WHAT IS MINING
AN INTRODUCTION TO THE MINING VALUE CHAIN

Responsible Raw Materials co-founders Sarah Gordon and Rose Clarke are proud to have worked with Edumine to co-author their new on-demand course 'What is Mining: an introduction to the mining value chain'. The course gives an overview of mining value chain, and introduces important trends and topics such as water stewardship, Social Licence to Operate, and ESG in mining!

This course is for anyone who is interested in the mining sector and would like a broad overview of the mining value chain without the technical details.

ABOUT
DURATION | 4 HRS
ACCESS | 90 DAYS
FORMAT | ON-DEMAND
LEVEL | INTRODUCTORY
PRICE | $249

FIND OUT MORE HERE
Launched in early 2021, Deep Digital Cornwall is a £4.2 million project that provides SMEs based in Cornwall and Isles of Scilly with access to research skills, knowledge, innovation expertise, new datasets and state-of-the-art immersive technology facilities for 3D and 4D data visualisation.

The project team is led by the University of Exeter (Camborne School of Mines and the Institute for Data Science and Artificial Intelligence) with delivery partners Cornish Lithium, Cornwall Resources and the South West Centre of Excellence in Satellite Applications.
Interested in a career in mining? Don't miss Geological Society's Virtual Career Days!

Day 3 - 15 October | 11:45 - 16:00 GMT

- Mineral exploration, quarrying, mining commodities
- Academia & Postgrad pathways & GSL Publishing Overview
- GIS & remote sensing
- Further career options

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