



# CRITICAL MINERALS ASSOCIATION

# NOVEMBER 2020

CMA @CAMBORNE SCHOOL OF MINES BREAKFAST EVENT  
UK'S GREEN INDUSTRIAL REVOLUTION  
NHM: CAN MINING MAKE THE WORLD A GREENER PLACE?  
UK CIRCULAR ECONOMY CENTRES  
INTERVIEW WITH FARADAY BATTERY CHALLENGE  
HIGHLIGHTS APPG CRITICAL MINERALS EVENT  
THE NEW 'GOLD RUSH' FOR GREEN LITHIUM  
WELCOMING PENSANA & DALRADIAN



# November 2020

01

Welcome to our November Critical Minerals Association monthly newsletter & updates on the critical minerals space. This month's issue is packed! Make sure to check out the news stories on page 12! We're delighted that we're continuing to grow, welcoming Pensana and Dalradian as members this month! Read on for:

- 4 Dec: Camborne's Mining Breakfast: 'UK Government & Mining'
- 3-4 Dec: NHM Event: Can mining make the world a greener place?
- Announcement of UK's Green Industrial Revolution
- Highlights of APPG Critical Minerals Event
- CMA interviewed by Responsible Raw Materials
- Announcement of UK Circular Economy Centres
- Interview with Deputy Director of The Faraday Battery Challenge
- BBC Future Planet: The new 'gold rush' for green lithium
- Welcoming a new member: Pensana
- Welcoming a new member: Dalradian
- News Stories
- Roskill: 'Cobalt, lithium: Mercedes pushes for sustainable supply'
- First Cobalt publishes LCA by Minviro
- Argus: 'Semiconductors Q&A: Next Generation Materials'

This month's newsletter has been put together by **Olimpia Pilch**, CSM MSc Exploration Geology.

Kirsty & Jeff

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NEWSLETTER UNDER  
'CONTACT'**

*Got a suggestion? Want to feature in next month's newsletter? Contact  
[kirsty@criticalmineral.org](mailto:kirsty@criticalmineral.org)*

*Want to learn more? Check out our website: <https://www.criticalmineral.org/> &  
follow us on twitter @CMA\_Minerals*



# CMA Presenting @Camborne's Mining Breakfast: 'UK Government & Mining' 4th Dec @8:30am

02

On Friday 4th December at 8:30am GMT, our very own Kirsty Benham & Jeff Townsend will be presenting at Camborne School of Mines's (CSM) Mining breakfast chat with CSM's Professor Frances Wall.

At the event 'UK Government & Mining', Jeff and Kirsty will discuss the need for Britain to secure a robust critical mineral supply chain for its Industrial Strategy, explain public affairs, and CMA activities to date. Frances Wall will provide an Academic perspective on policy impact from research and the importance of academics engaging with Government across the sector. Hope to see you there!

- Professor Frances Wall, Professor of Applied Mineralogy at [Camborne School of Mines, Exeter University](#)
- Kirsty Benham, Founder of [CMA](#)
- Jeff Townsend, Founder of [CMA](#)

**[REGISTER HERE](#)**



**CSM MINING BREAKFAST CHAT-**

# **UK GOVERNMENT & MINING**

**FRI 4 DEC @ 8:30AM GMT**

With CSM'S Professor Frances Wall & CMA'S Kirsty Benham & Jeff Townsend



# 'Can mining make the world a greener place?'

## NHM Event 3-4 Dec

The CMA is excited to support the upcoming event 'Can Mining make the world a greener place?' on 3-4 December. The Natural History Museum, partnered with the PACIFIC & INFACT projects, will be hosting a two-day online event discussing the growing demand for new technologies and the natural resources needed to create them.

The event will be moderated by Professor Iain Stewart, University of Plymouth & encourage six key discussions:

- Who decides?
- Where can we find metals?
- Can mining be safe and sustainable?
- How to shape future mining?
- Prospects for the circular economy
- Can mining make the world a greener place?

**HEAR OUR FOUNDER JEFF TOWNSEND ON 'CAN MINING MAKE THE WORLD A BETTER PLACE' [HERE](#)**



Join the event on:

**3rd & 4th December**

**TO REGISTER  
[CLICK HERE](#)**





# The UK's Green Industrial Revolution

UK Prime Minister Boris Johnson recently outlined his [Ten Point Plan](#) to eradicate UK's contribution to climate change by 2050. Pledging to mobilise £12 billion of government investment, the plan focuses on:

- Offshore wind powering every home by 2030
- Accelerating transition to electric vehicles - ceasing sales of new petrol and diesel cars and vans by 2030
- Investing in zero-emission public transport of the future.

The announcement has been welcomed by environmental groups, but a question still remains: how sustainable is the Green Industrial Revolution?

Barry Wills, MEI explores the challenges that lie ahead:

*"The West is more dependent than ever on China for the importation of critical minerals and rare earth elements, and China has repeatedly threatened to stop exporting these minerals, so 'home-grown' supplies are going to be essential in future."*

[READ ON HERE](#)





# APPG Critical Minerals Event: 'Global Industry Standard on Tailings Management'

05

If you missed the APPG Critical Minerals Event in support of the recent launch of the ['Global Industry Standard on Tailings Management,'](#) you can watch the recording below!

The discussion focused on the UK's role in the oversight of mining safety standards and "a responsibility to ensure overseas operations don't fall prey to negligence or bad practice."

*Steve Double MP, Chair of the APPG Critical Minerals: "I hope that the UK will continue to lead in transforming mining to be safer, more environmental and a force for good. The APPG will continue to work to raise awareness in government on these key issues."*

**[HIGHLIGHTS & RECORDING HERE](#)**  
**[READ THE STANDARDS HERE](#)**



**APPG CRITICAL  
MINERALS VIRTUAL  
EVENT - GLOBAL  
TAILINGS REVIEW**

**Moderated by: Lord Bishop of Birmingham**

**Introduction by: Steve Double MP, Chair APPG Critical Minerals**

**Adam Matthews, Church of England Pensions Board  
Aidan Davy, International Council on Mining & Metals  
Antonia Mihaylova, Global Tailings Review  
Lucas Brown, The Foreign, Commonwealth & Development Office**

**MON 9 NOVEMBER @ 13:00 -14:00 GMT**





# CMA Interviewed by Responsible Raw Materials

Sarah Gordon, Founder @Satarla & Organiser of Responsible Raw Materials recently interviewed our very own Kirsty Benham & Jeff Townsend, and Aldo Pennini who is Chairing CMA's Working Group on ESG Standards. Click below to watch ["Critical Minerals Association Interview: who, what and why?"](#)

Responsible Raw Materials, run by Sarah Gordon and Rose Clarke, are working towards **enabling responsible extraction and use of natural resources.**

## [WATCH THE INTERVIEW HERE.](#)



[@RawResponsible](#)

Critical Minerals Association Interview: who, what and why?



Watch later





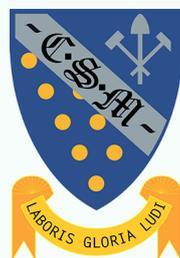
# Announcement of £22.5m UK Circular Economy Centres

Five new centres were announced in early November as part of a £22.5 million UK Research and Innovation (UKRI) investment. They will explore how reusing waste materials in the textiles, construction, chemical and metal industries could deliver huge environmental benefits and boost the UK economy.

The **Interdisciplinary Circular Economy Centre in Technology Metals**, led by the University of Exeter, will explore how to create a circular economy for the technology metals such as cobalt, lithium and rare earths.

Researchers at CSM, led by Frances Wall, will be leading a pioneering government funded multi-disciplinary, project designed to revolutionise how crucial metals are extracted, used and reused in clean and digital technologies across the UK.

**[READ ON HERE.](#)**





# Interview with Jacqui Murray, Faraday Battery Challenge, Innovate UK

The Critical Minerals Association's 'Perception of Mining Working Group' Co-Chairs, Lucy Crane, Cornish Lithium & Ben Lepley, SRK Consulting interviewed [Jacqui Murray, Deputy Director of the Faraday Battery Challenge](#).

*"We've got to look at things through reality and not rely on our perceptions. When we look at mining, we will always have to mine raw materials until we get to a purely circular economy - and that's not going to happen, so we have to work on continual improvements."*



## [WATCH THE INTERVIEW HERE](#)





# BBC Future Planet: The new 'gold rush' for green lithium

BBC's Future Planet's latest article: 'The new 'gold rush' for green lithium' features Cornish Lithium Limited & Minviro and explores the environmental impact of different methods of lithium extraction and production.

*"All the clean technologies that we need to combat climate change - whether that's wind turbines, solar panels or batteries, they're all really, really mineral intensive"* - Lucy Crane, Cornish Lithium

[\*\*CLICK HERE FOR THE STORY\*\*](#)



## The new 'gold rush' for green lithium

Lithium is crucial for the transition to renewables, but mining it has been environmentally costly. Now a more sustainable source of lithium has been found deep beneath our feet.



# Welcoming CMA's Newest Member: Pensana

The Critical Minerals Association is delighted to welcome our newest member – [Pensana!](#)

Pensana Rare Earths Plc is a LSE listed company which is looking to help establish the world's first fully sustainable mine to magnet supply chain by constructing a rare earth processing facility in the UK.

The location of the proposed separation facility in one of three post Brexit Freeports will be announced shortly. The separation facility will be the one the world's largest suppliers of **neodymium and praseodymium (NdPr)** at a time of burgeoning demand from the electric vehicle and offshore wind industries.

The UK facility will be supplied with a mixed rare earth sulphate from the Company's Longonjo project, one of the world's largest magnet metal rare earth deposits, located in infrastructure rich Angola.

Welcome to the Group!





# Welcoming CMA's Newest Member: Dalradian

The Critical Minerals Association is delighted to welcome our newest member – [Dalradian!](#)

Dalradian is a mineral exploration and development company, working on the Curraghinalt gold-silver-copper deposit in county Tyrone, Northern Ireland, since late 2009. Dalradian has designed an environmentally responsible project using best available technology to meet or exceed strict regulatory standards.

In 2017 the company submitted a planning application to develop a long-term, carbon-neutral underground mine at Curraghinalt – the planning process is ongoing.

According to the [World Bank](#), the world will need a similar amount of copper in the next 25 years (550 m/t) as the last 5000 years has produced!

Welcome to the Group!

An aerial photograph of a rural landscape in Northern Ireland, showing green fields, a farm building, and a road. The image is used as a background for the Dalradian Gold logo.

**DALRADIAN**  
GOLD



# Critical Mineral News

The following November news articles from Mining Weekly, Mining.com, Reuters, Roskill, Argus Media, and others, provides an overview of critical mineral mining for:

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

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

# Critical Minerals

- Global (11.11.20)
  - Deep-sea mineral platform launches for mining dialogue
  - <https://www.mining.com/deep-sea-mineral-platform-launches-for-mining-dialogue/>
- Asia & Oceania (20.11.20)
  - 'The Association of Southeast Asian Nations (ASEAN), along with China, Japan, South Korea, Australia and New Zealand, sign a Regional Comprehensive Economic Partnership agreement'
  - <https://roskill.com/news/macroeconomics-rcep-agreement-creates-trade-tensions-and-partnerships/>
- Oceania
  - Australia (8.11.20)
    - Australia tells the world it is open for business when it comes to critical minerals
    - <https://www.mining.com/australia-tells-the-world-it-is-open-for-business-when-it-comes-to-critical-minerals/>
  - Australia (6.11.20)
    - Critical materials: Australia releases updated critical minerals list
    - <https://roskill.com/news/critical-materials-australia-releases-updated-critical-minerals-list/>
- North America
  - Canada & USA (10.11.20)
    - Canada's Search Minerals and USA Rare Earth join to advance critical minerals development
    - <https://www.mining.com/search-and-usa-rare-earth-join-to-advance-critical-minerals-development/>

# Cobalt

- Africa

- DRC: Trafigura (23.11.20)

- Commodities trader Trafigura inks cobalt deal with DRC artisanal miners
    - <https://www.mining.com/trafigura-inks-cobalt-deal-with-drc-artisanal-miners/>

- Asia

- China: China Molybdenum (28.10.20)

- China Molybdenum boosts Q3 cobalt output by 21%
    - <https://www.mining.com/web/china-moly-boosts-q3-cobalt-output-by-21/>

- North America

- Canada: First Cobalt (10.11.20)

- First Cobalt to finalize new supply deal with Glencore
    - <https://www.mining.com/first-cobalt-to-finalize-new-supply-deal-with-glencore/>

- Canada: Giga Metals (6.11.20)

- Nickel, cobalt: Giga Metals announces 37-year mine life operation for Turnagain
    - <https://roskill.com/news/nickel-cobalt-giga-metals-announces-37-year-mine-life-operation-for-turnagain/>

- Oceania

- Australia: Fitch (13.11.20)

- Australia's cobalt mining sector will experience positive growth in 2020, as the mining sub-sector emerges unscathed from the covid-19 pandemic, according to Fitch Solutions' latest industry report
    - <https://www.mining.com/australia-cobalt-sector-set-for-long-term-growth-report/>

# Copper

- Global (24.11.20)
  - Speculative heat keeps copper market bubbling
  - <https://www.mining.com/web/speculative-heat-keeps-copper-market-bubbling/>
- Latin America
  - Chile (9.11.20)
    - Chilean mine group warns pending glacier bill could shut down deposits
    - <https://www.mining.com/web/chilean-mine-group-warns-pending-glacier-bill-could-shut-down-deposits/>
  - Chile (23.11.20)
    - Chile's Cochilco sees 2020 copper production and price rising
    - <https://uk.reuters.com/article/idUKL1N2I90Z3>
  - Ecuador: Codelco (23.11.20)
    - Codelco seeks 'friendly talks' with Ecuador on Llurimagua copper project
    - <https://www.mining.com/web/codelco-seeks-friendly-talks-with-ecuador-on-llurimagua-copper-project/>
- Latin America & Oceania (2.11.20)
  - Mining giant BHP signs up for responsible copper production framework
  - <https://uk.reuters.com/article/idUKKBN27I091>
- North America
  - USA (24.11.20)
    - New material 'mines' copper from toxic wastewater
    - <https://phys.org/news/2020-11-material-copper-toxic-wastewater.html>

# Lithium

- Latin America

- Chile: Coldeco (6.11.20)

- Codelco to search for lithium at Chile's second-largest salt flat
    - <https://www.mining.com/codelco-to-search-for-lithium-at-chiles-second-largest-salt-flat/>

- Oceania & Latin America

- Australia & Chile: Albemarle (5.11.20)

- Albemarle moves ahead with expansions despite lithium market weakness
    - <https://www.mining.com/albemarle-ahead-with-expansions-despite-lithium-market-weakness/>

- Oceania

- Australia: Lithium Australia (12.11.20)

- Lithium Australia tests battery metals on wheat crops
    - <https://www.mining.com/lithium-australia-tests-battery-metals-on-wheat-crops/>

- North America

- Mexico: Bacanora Minerals (13.11.20)

- Gangfeng ups stake in Sonora lithium project
    - <https://www.mining.com/gangfeng-ups-stake-in-sonora-lithium-project/>

- USA: Ionic Minerals (2.11.20)

- Iconic Minerals encouraged by geochemical analysis at Nevada lithium project
    - <https://www.mining.com/iconic-minerals-encouraged-by-geochemical-analysis-at-bonnie-claire-lithium-project/>

- USA: Spearmint Resources (5.11.20)

- Visual clay in each hole drilled at Clayton Valley lithium prospects
    - <https://www.mining.com/spearmint-finds-visual-clay-in-each-hole-drilled-at-clayton-valley-lithium-prospects/>

# Graphite

- Asia

- China: Haida New Energy Material (30.10.20)

- Graphite: Haida New Energy Material to begin coated spherical graphite production
    - <https://roskill.com/news/graphite-haida-new-energy-material-to-begin-coated-spherical-graphite-production/>

- China (20.11.20)

- Graphite, magnesium compounds: Chinese refractories see year-to-date fall but Q3 recovery
    - <https://roskill.com/news/graphite-magnesium-compounds-chinese-refractories-see-year-to-date-fall-but-q3-recovery/>

- Europe

- Nouveau Monde Graphite (6.11.20)

- Demand for battery anode material drives Nouveau Monde Graphite to Europe
    - <https://www.mining.com/increased-demand-for-battery-anode-material-drives-canadas-nouveau-monde-to-europe/>

- UK: Talga Resources(5.11.20)

- Talga Resources receives \$1.2m from UK to conduct anode refinery study
    - <https://www.mining.com/talga-receives-1-2m-from-the-uk-government-to-conduct-anode-refinery-study/>

- UK: First Graphene (5.11.20)

- First Graphene awarded grant by Innovate UK under the UK's Sustainable Innovation Fund to progress an innovative route to green hydrogen and battery grade materials.
    - <https://www.miningweekly.com/article/uk-funding-first-graphene-hydrogen-studies-2020-11-05>

# Nickel

- Africa

- Madagascar: Sumitomo (13.11.20)
  - Nickel, cobalt: Sumitomo sets date for Ambatovy revival
  - <https://roskill.com/news/nickel-cobalt-sumitomo-sets-date-for-ambatovy-revival/>

- Europe

- Finland: (10.11.20)
  - Rio Tinto, Bluejay to jointly explore for nickel in Finland
  - <https://www.mining.com/rio-tinto-bluejay-to-jointly-explore-nickel-project-in-finland/>

- North America

- Canada: Rio Tinto (10.11.20)
  - ALX Resources, Rio Tinto optimistic with preliminary results from Firebird nickel project
  - <https://www.mining.com/alx-rio-tinto-optimistic-with-preliminary-results-from-firebird-nickel-project/>

- Oceania

- New Caledonia: Vale (13.11.20)
  - Nickel: Vale in new exclusive negotiations over VNC sale
  - <https://roskill.com/news/nickel-vale-in-new-exclusive-negotiations-over-vnc-sale/>
- Indonesia: Lygend Resources (6.11.20)
  - Nickel: Lygend confirms six-month delay to Indonesian HPAL project
  - <https://roskill.com/news/nickel-lygend-confirms-six-month-delay-to-indonesian-hpal-project/>

# Tin

- Europe
  - Turkey: Fırat University (26.11.20)
    - Research by a team from Fırat University, Turkey has shown that tin coated copper can generate electricity from algae
    - <https://www.internationaltin.org/tin-makes-electricity-from-algae/>

# Tungsten

- Asia
  - China: MolyChina (13.11.20)
    - Tungsten, molybdenum: Notes from the 10th annual MolyChina conference
    - <https://roskill.com/news/tungsten-molybdenum-notes-from-the-10th-annual-molychina-conference/>
  - Masan High-tech (13.11.20)
    - Tungsten: Masan High-Tech agrees strategic alliance with Mitsubishi Materials
    - <https://roskill.com/news/tungsten-masan-high-tech-agrees-strategic-alliance-with-mitsubishi-materials/>

# Manganese

- Asia
  - China: JCHX (21.11.20)
    - China's JCHX signs mine design contract for Mukulu manganese operation in South Africa
    - <https://im-mining.com/2020/11/21/chinas-jchx-signs-mine-design-contract-mukulu-manganese-operation-south-africa/>

# Rare Earth Elements

- Africa

- Tanzania: Peak Resources (5.11.20)

- Tanzania finalising permit for its first rare-earth metals mine to Australian company Peak Resources
    - <https://www.miningweekly.com/article/tanzania-finalizing-permit-for-its-first-rare-earth-metals-mine-2020-11-05>

- South Africa: Rainbow Rare Earths (3.11.20)

- Rainbow Rare Earths & Bosveld Phosphates to co-develop South African rare earths project
    - <https://www.miningweekly.com/article/rainbow-bosveld-to-co-develop-south-african-rare-earth-projects-2020-11-03>

- Europe

- UK: Less Common Metals (10.11.20)

- Less Common Metals has been awarded funding by Innovate UK to conduct a feasibility study to identify the requirements for establishing a fully-integrated supply chain for rare earth permanent magnet production in the UK
    - <https://www.argusmedia.com/en/news/2158412-lcm-to-assess-potential-for-uk-re-magnet-supply-chain>

- North America

- USA: Energy Fuels (10.11.20)

- Energy Fuels produces REE concentrate at White Mesa
    - <https://www.miningweekly.com/article/energy-fuels-produces-ree-concentrate-at-white-mesa-2020-11-04>



# Cobalt, lithium: Mercedes pushes for sustainable supply

Mercedes recently announced a transition towards responsible sourcing initiatives (RSIs) of its cobalt and lithium supply chains. The initiative is aimed at improving the sustainability of its battery manufacturing process.

Mercedes will only source cobalt and lithium from sources compliant to the Initiative for Responsible Mining Assurance (IRMA). A "Standard for Responsible Mining" framework focusing on assessing a project according to: business integrity, planning for positive legacies, social responsibility and, environmental responsibility.

**Roskill**

*"A good framework should give appropriate weighting to environmental, social and governance factors. Whichever framework(s) become adapted as industry standard, they must be capable of providing a holistic insight into the ESG issues facing a supply chain. The pressure to adopt these standards will originate from downstream parties such as Mercedes, VW and other automotive and battery manufacturers."*

*- Dominic Wells*

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# Minviro: First Cobalt Publishes LCA

First Cobalt have released a Life Cycle Assessment (LCA), prepared by Minviro, for their Ontario-based refinery. The highlights include:

- "Impact of producing cobalt sulfate at First Cobalt's Canadian refinery rather than through the existing supply chain is the equivalent of taking more than 9,000 combustion engines off the road every year.
- In First Cobalt's production process, the carbon footprint generated through the production of one kilogram of cobalt sulfate is 1.58 kg CO<sub>2</sub> eq compared to 3.25 kg CO<sub>2</sub> eq for a benchmark refinery in Tongxiang, China.
- First Cobalt Refinery has a lower environmental impact in four of six impact categories measured, is equal in one category and is slightly below in a final impact category."

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# Argus: Next Generation Materials

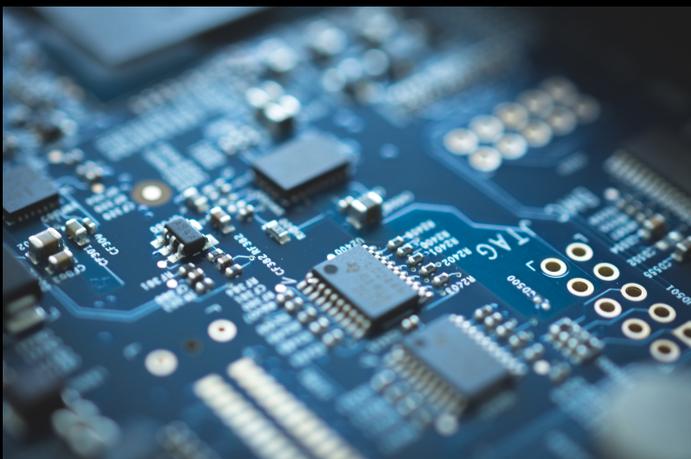
Argus Media recently published an insightful 'Semiconductor Q&A: Next generation materials' article focusing on the growth of the global semiconductor industry which now accounts for a quarter of global GDP.

## Article highlights:

- Exponential growth of industry
- UK government investment in compound semiconductors
- Supply chains
- Future outlooks

*"I am optimistic that support for innovation can enable us to solve societal challenges and create sustainable economic prosperity. I'm particularly keen to see the application of compound semiconductors deliver technologies for net zero emissions and future telecom networks, with that economic value captured in the UK."*

- Caroline Messecar



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# Equality, Diversity & Inclusion Conference

## 14-16 Dec

On 14-16 Dec, the Irish Centre for Research in Applied Geosciences has organised an [online conference on equality, diversity, and inclusion.](#) Speakers include Satarla's Sarah Gordon & Cornish Lithium's Lucy Crane.

Session 1 (12:00 - 13:30 GMT): Where we have come from and how we can come together to make geoscience more accessible.

Session 2 (15.00 - 17:00 GMT): Specific challenges and barriers to access that many groups experience.

Session 3 (12.00 - 14:00 GMT): What is being done to promote inclusion and remove barriers

# REGISTER [HERE](#)



## The EDIG Conference

Equality, Diversity, & Inclusion in Geoscience  
14<sup>th</sup> - 16<sup>th</sup> of December 2020

### Monday 14<sup>th</sup>

Ice breaker:  
Details to be confirmed.

For updates visit:  
[icrag-centre.org/edig](http://icrag-centre.org/edig)  
[#EDIGconference2020](https://twitter.com/EDIGconference2020)  
A time to listen, learn,  
and act

### Tuesday 15<sup>th</sup>

Session 1 (12.00 pm GMT)  
- **EDIG survey results.**  
- Where have we come from?  
- How can we work together to make geoscience more accessible?

Session 2 (3.00 pm GMT)  
- Specific challenges and barriers to access that many groups experience.

### Wednesday 16<sup>th</sup>

Session 3 (12.00 pm GMT)  
- What's being done to promote inclusion & remove barriers?  
- Challenges faced by early career geoscientists.  
- How can we improve retention?

Workshop on Unconscious Bias (3 pm GMT)  
Unconscious bias training run by DiverseMatters ([diversematters.org](http://diversematters.org)). Co-sponsored by the IGI and iCRAG.

Supported by:





# Thanks to our supporters!



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Cornish Lithium

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Technical Critical Minerals

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RESOURCES

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**SATARLA**  
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**PENSANA**  
RARE EARTHS



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