



CRITICAL MINERALS ASSOCIATION

MAY 2020

- E-TECH METALS Q&A
- CORNWALL RESOURCES Q&A
- SRK @ RESPONSIBLE RAW MATERIALS
- DARRYN QUAYLE, UK GOV
- NEWS ARCHIVE
- MINVIRO'S GRAPHITE LCA
- WORLD BANK REPORT: MINERALS FOR CLIMATE ACTION
- GHG SCOPE EMISSIONS & MAJOR MINERS



MAY 2020

Welcome to our May Critical Minerals Association monthly update. We've brought together some of May's Critical Minerals news stories and features with our Founding Members.

Read on for:

- Q&A with E-Tech Metals
- Q&A with Cornwall Resources
- SRK @ Responsible Raw Materials Conference
- UK Government, Darryn Quayle, DIT
- News Archive
- World Bank Report: Minerals for Climate Action
- Cornish Lithium Presentations
- World Bank: Graphite
- Minviro's Graphite LCA
- Greenhouse Gas Scope Emissions & Major Miners
- US Rare Earths: Department of Defense/ ORE
- The Future of Geoscience Event

Enjoy!

Kirsty & Jeff

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

*Want to learn more? Check out our website:
<https://www.criticalmineral.org/> & follow us on twitter
[@CMA_Minerals](https://twitter.com/CMA_Minerals)*



Q&A E-Tech Metals 02

Rare Earth Elements

E-Tech Metals is a junior mining company, incorporated in the UK and developing a neodymium (Nd) / praseodymium (Pr) deposit in Namibia.

In this Q&A session we spoke with Managing Director & Founder, Ed Loye about:

- Background of E-Tech Metals
- Importance of Nd/Pr Rare Earth Element (REE) production today
- What makes a viable REE deposit
- How REE companies mitigate environmental impacts, including radioactive waste

Find out more [here](#).





Q&A Cornwall Resources Tin/ Tungsten/ Copper

Our Q&A session with Founding Member Cornwall Resources, Brett Grist & Jeff Harrison includes:

- Cornwall Resources' exploration & opportunities for mining in the UK's South West
- Community engagement & UK environmental standards
- Challenges to mining in the UK & ideas to catalyse the sector's development
- Advantages of further UK mineral exploration

Find out more [here](#).





Raw Materials

On 11-15 May, Responsible Raw Materials hosted their first virtual conference with an impressive 71 speakers from across the industry. Organised by Sarah Gordon and Rose Clarke, Satarla, a conference summary can be found here.

Presenters included SRK Consulting's Chris O'Brien, Insiya Salam & Jane Joughin on GHG emissions, Stakeholder Engagement & ESG Compliance

Chris O' Brien Senior Consultant & Chartered Environmentalist presented on 'Carbon after COVID; adding value in a competitive re-boot' and looked at:

- The new value of transparency in greenhouse gases for the minerals sector & opportunities/ pitfalls in monitoring/ reporting
- The trend towards financial carrot and stick systems driving change through the bottom line.
- Comparison of methodologies used to calculate GHG's (requirements, transparency & verification)

Insiya Salam, Consultant, Social presented on 'The Future is Stakeholder Engagement.' and emerging factors driving the need for change in stakeholder engagement processes to go beyond fulfilling legal requirements.

SRK @Responsible ⁹⁵

Raw Materials

Jane Joughin, Corporate Consultant presented 'The neglected subject of compliance.' The talk looked at the hundreds of compliance obligations incurred in permitting processes and considered how while some mining companies manage compliance proactively, others neglect their compliance obligations due to:

- lack of awareness that obligations have been created
- loss of institutional memory
- lack of prioritisation and/or regulatory enforcement pressure.



Figure 1: Types of compliance obligations covered by the talk (the obligations do vary in nature and materiality in different jurisdictions)

By Jane Joughin, SRK Consulting



UK Government DIT

09

Darryn Quayle

On 27th May, the UK Government's Mining Engineer, Darryn Quayle, spoke with Benchmark Mineral Intelligence on the UK's potential to develop its capabilities in battery metals - lithium, copper, graphite etc.

Darryn's role is to support the mining industry, research and development, reduce mining's environmental impact, and ensure security of supply for EVs. The UK Government is doing lots behind the scenes but this often isn't publicised, making Darryn's insights all the more interesting. Click the link for key takeaways.

Find out more [here](#).

BENCHMARK
MINERAL
INTELLIGENCE

#EVFEST

**IN CONVERSATION
WITH
DARRYN QUAYLE**

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**MINING SPECIALIST
DEPT FOR INTERNATIONAL TRADE
UK GOVERNMENT**



Critical Mineral News

May has been a busy month with many mines restarting production, and reports on critical minerals being published by the World Bank and IEA.

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

- Copper
- Cobalt
- Graphite
- Lithium
- Nickel
- Tin
- Tungsten
- PGMs
- Manganese
- Rare Earth Elements
- EVs/ Batteries

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

Cobalt

- Global (15.5.20)

- EU cobalt market stabilises as Chinese demand picks up
- <https://www.argusmedia.com/en/news/2105784-eu-cobalt-market-stabilises-as-chinese-demand-picks-up?backToResults=true&selectedMarket=Metals>

- Africa

- DRC (20.5.20)

- Sulphur squeeze spells trouble for Congo's copper, cobalt miners
- <https://www.miningweekly.com/article/sulphur-squeeze-spells-trouble-for-congos-copper-cobalt-miners-2020-05-20>

- DRC (6.5.20)

- Pollution causing birth defects in children of DRC cobalt miners: Lancet study
- <https://www.theguardian.com/global-development/2020/may/06/pollution-causing-birth-defects-in-children-of-drc-cobalt-miners-study>

- North America

- Canada: First Cobalt (4.5.20)

- First Cobalt to produce cobalt sulfate end 2020/early 2021 as North America's only primary producer of the key ingredient for EV batteries
- <https://www.mining.com/first-cobalt-to-produce-battery-grade-cobalt-in-canada-by-year-end/>

- Canada: First Cobalt (18.5.20)

- How does First Cobalt's refinery measure up against its Chinese peers?
- <https://roskill.com/news/cobalt-how-does-first-cobalts-refinery-measure-up-against-its-chinese-peers/>

Copper

- Africa

- Zambia: Glencore (3.5.20)

- Glencore-managed Mopani Copper Mines restarting operations for 90 days
- <https://www.miningweekly.com/article/mopani-copper-mines-restarting-operations-for-90-days-2020-05-03>

- Zambia/ South Africa: Jubilee (7.5.20)

- Jubilee's copper, PGM, chrome operations resume + they've completed the commissioning of cobalt production line
- <https://www.miningweekly.com/article/jubilees-copper-chrome-ops-resume-zambian-zinc-circuit-on-hold-2020-05-07>

- Zambia: African Mining Network (15.5.20)

- African Mining Network Chairperson says Zambian mining industry is resilient despite the impact of Covid-19, volatile commodity prices, lack of FDI and poor, ill-advised government actions
- https://www.miningweekly.com/article/zambia-resilient-despite-challenges-2020-05-15/rep_id:3650

- Zambia: Zambia Chamber of Mines (15.5.20)

- Zambia Chamber of Mines says there remains no incentive for further investment in copper-rich Zambia's mining industry
- https://www.miningweekly.com/article/chamber-paints-bleak-future-2020-05-15/rep_id:3650

Copper

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- Asia

- Indonesia: Freeport/ Grasberg (18.5.20)
 - Freeport cuts workforce at Grasberg mine as coronavirus cases in area rise
 - <https://www.miningweekly.com/article/freeport-cuts-workforce-at-grasberg-mine-as-coronavirus-cases-in-area-rise-2020-05-18>
- Mongolia: Rio Tinto/ Turquoise Hill Resources (15.5.20)
 - Ongoing expansion of the giant Oyu Tolgoi copper-gold-silver mine in Mongolia is expected to cost as much as an additional \$1.8 billion
 - <https://www.mining.com/turquoise-hill-expects-oyu-tolgoi-blowout-to-top-1-8bn/>
- China (20.5.20)
 - According to Fitch Solutions, China's mine development in sub-Saharan Africa likely to slow in the coming quarters, before picking up again in 2021
 - <https://www.miningweekly.com/article/chinas-mine-development-in-sub-saharan-africa-likely-to-slow-2020-05-20>

- Europe

- Spain: Atalaya (7.5.20)
 - Copper miner Atalaya's Proyecto Riotinto environmental permit confirmed
 - <https://www.miningweekly.com/article/atalayas-proyecto-riotinto-enviro-permit-confirmed-2020-05-07>
- Cyprus/ UK: Venus Minerals/ Ariana Resources (13.5.20)
 - Ariana progresses to ~10% shareholding in UK-registered Venus Minerals, which has copper/gold projects in Cyprus.
 - <https://www.miningweekly.com/article/ariana-progresses-to-near-10-shareholding-in-venus-minerals-2020-05-13>

Copper

- Latin America
 - Peru (4.5.20)
 - Peru to gradually ease Covid-19 restrictions on mining sector in May <https://www.miningweekly.com/article/copper-giant-peru-to-gradually-ease-restrictions-on-mining-sector-in-may-2020-05-04>
 - Chile: Antofagasta
 - Head of Antofagasta says the global copper market is headed for a surplus of between 200 000t to 300 000t in 2020 (4.5.20)
 - <https://www.mining.com/bhp-flags-delay-in-spence-copper-mine-expansion/>
 - The board of Antofagasta lowered its 2019 final dividend recommendation, citing Covid-19 uncertainty (19.5.20)
 - <https://www.miningweekly.com/article/antofagasta-lowers-dividend-on-covid-uncertainties-2020-05-19>
 - Chile: Hot Chili (18.5.20)
 - Hot Chili raises A\$8.9m to progress Chilean mining projects
 - <https://finfeed.com/small-caps/mining/hot-chili-raises-89-million-progress-chilean-mining-projects/>
- North America
 - USA (6.5.20)
 - US copper scrap exports fell in March from the same time last year as the spread of Covid-19 in Asia cut into demand from the region.
 - <https://www.argusmedia.com/en/news/2102972-us-copper-scrap-exports-fall-in-march-on-covid19?backToResults=true&selectedMarket=Metals>
 - USA: Freeport McMoRan (25.5.20)
 - Chino Mine in New Mexico extends furloughs, postpones layoff decision
 - <https://www.abqjournal.com/1459359/chino-mine-extends-furloughs-postpones-layoff-decision.html>
 - Canada: Rio Tinto/ Forum Energy Metals (20.5.20)
 - Rio Tinto to start drilling for copper in northern Saskatchewan
 - <https://www.miningweekly.com/article/rio-tinto-to-start-drilling-for-copper-in-northern-saskatchewan-2020-05-20>

Graphite

- Global

- Global synthetic graphite electrode output down on closures and lower steel production (7.5.20)
- <https://roskill.com/news/graphite-global-synthetic-graphite-electrode->

- Africa

- Namibia: Gratomic (6.5.20)

- Gratomic granted Namibia graphite mining licence
- <https://resourceworld.com/gratomic-granted-namibia-graphite-mining-licence/>

- North America

- Canada: Focus Graphite (25.5.20)

- Focus Graphite Completes Definitive Asset Purchase Agreement With Investissement Québec for the Company's 50% Interest in the Kwyjibo Rare Earth Elements Project, Québec
- <https://www.globenewswire.com/news-release/2020/05/25/2038265/0/en/Focus-Graphite-Completes-Definitive-Asset-Purchase-Agreement-With-Investissement-Qu%C3%A9bec-for-the-Company-s-50-Interest-in-the-Kwyjibo-Rare-Earth-Elements-Project-Qu%C3%A9bec.html>

Lithium

- Global (26.5.20)

- Lithium producers must wait as covid slows EV revolution
- <https://www.mining.com/web/lithium-producers-must-wait-as-covid-slows-ev-revolution/>

- Asia

- India - Neometals/ Manikaran Power (5.5.20)

- Neometals partnered with Indian company Manikaran Power to conduct a feasibility study (FS) evaluating a lithium hydroxide refinery in India.
- <https://www.miningweekly.com/article/neometals-launches-downstream-study-in-india-2020-05-05>

- China (18.5.20)

- Lithium: Chinese cathode manufacturers hit hard by coronavirus in Q1
- <https://roskill.com/news/lithium-chinese-cathode-manufacturers-hit-hard-by-coronavirus-in-q1/>

- China: Tianqi Lithium (19.5.20)

- Tianqi Lithium 6% stake up for sale
- <https://www.mining.com/tianqi-lithium-selling-stake-to-shore-up-finances/>

- Europe

- UK - AMTE Power/ Britishvolt (20.5.20)

- UK battery cell developers AMTE Power and Britishvolt have signed an initial agreement to collaborate on building a lithium-ion battery cell Gigafactory to supply EV and energy storage markets.
- <https://www.argusmedia.com/en/news/2107136-lithium-battery-makers-plan-new-round-of-plant-projects?backToResults=true&selectedMarket=Metals>

Lithium

- Oceania

- Australia - AVZ Minerals/ Yibin Tianyi (4.5.20)

- Lithium developer AVZ Minerals will raise A\$10.6-million through a share placement to China's Yibin Tianyi Lithium Industry, which will take a 9% stake in the Australian firm.
 - <https://www.miningweekly.com/article/avz-welcomes-new-chinese-shareholder-2020-05-04>

- Australia: Core Lithium (21.5.20)

- Australian miner Core Lithium signed initial supply agreement with Geneva-based trading firm Transamine for Finniss project
 - <https://www.mining.com/web/core-lithium-gets-europe-supply-deal-for-finniss-project/>

- North America

- USA: Albemarle (7.5.20)

- Albemarle, the world's largest producer of lithium for electric vehicle batteries, cut its 2020 budget and pulled its annual forecast
 - <https://www.miningweekly.com/article/albemarle-pulls-2020-forecast-cuts-budget-due-to-coronavirus-2020-05-07>
 - Albemarle interested in buying all or part of Tianqi Lithium's controlling stake in Australia's Greenbushes, the world's largest lithium mine.
 - <https://www.miningweekly.com/article/albemarle-says-interested-in-tianqis-stake-in-greenbushes-lithium-mine-2020-05-07>

- USA: Cypress Development (21.5.20)

- Cypress releases positive PFS for Nevada lithium project
 - <https://www.mining.com/cypress-releases-positive-pfs-for-clayton-valley-in-nevada/>

Nickel

- Africa

- Botswana: Kavango (13.5.20)

- Kavango Resources has announced the next stages of exploration in the Kalahari Suture Zone (KSZ)
- <https://www.miningweekly.com/article/kavango-to-move-to-next-stage-of-exploration-at-ksz-2020-05-13>

- Asia

- China: Shanghai Futures Exchange (18.5.20)

- Briquettes to be deliverable against nickel futures contracts in China
- <https://roskill.com/news/nickel-nickel-sulphate-briquettes-to-be-deliverable-against-nickel-futures-contracts-in-china/>

- Indonesia: Nickel Mines (19.5.20)

- Nickel Mines has launched A\$231-million equity raise
- <https://www.miningweekly.com/article/nickel-mines-in-a231m-equity-deal-2020-05-19>

- North America

- Canada: CanAlaska/ Fjordland (5.5.20)

- Fjordland to acquire majority stake in CanAlaska's nickel project
- <https://www.mining.com/fjordland-to-acquire-majority-stake-in-canalaskas-north-thompson-nickel-project/>

- Canada: Panoramic/ Clean Air Metals (15.5.20)

- Nickel miner Panoramic Resources has completed the sale of its Thunder Bay North project, in Canada, to Clean Air Metals
- <https://www.miningweekly.com/article/panoramic-completes-canadian-project-sale-2020-05-15>

- Oceania

- Australia: First Quantum Minerals (1.5.20)

- First Quantum Minerals (FQM) has continued operational readiness work at its Ravensthorpe nickel/cobalt operation in Western Australia
- <https://roskill.com/news/nickel-nickel-sulphate-fqm-braced-for-ravensthorpe-restart/>

Tin

- Asia

- China (1.5.20)

- The tin industry in China is beginning to recover from the COVID-19 outbreak, with imports of tin concentrate returning to normal levels.
 - <https://www.internationaltin.org/covid-19-china-tin-industry-recovery/>

- China: Yunnan (1.5.20)

- Tin, copper: Yunnan embarks on 800kt metal stockpiling drive
 - <https://roskill.com/news/tin-copper-yunnan-embarks-on-800kt-metal-stockpiling-drive/>

- Indonesia: Indonesian Tin Exporters Association (AETI) (26.5.20)

- Indonesian Tin Exporters Association expects Indonesian Tin output to rise in spite of COVID-19 cuts
 - <https://roskill.com/news/tin-aeti-expects-indonesian-output-to-rise-in-spite-of-covid-19-cuts/>

- Europe

- Belgium/ Spain - Metallo/ Aurubis (5.5.20)

- The EU has approved a deal for Aurubis, the world's largest copper recycler, to acquire Metallo Group.
 - <https://www.internationaltin.org/aurubis-metallo-merger-approved/>

- Spain - Elementos (11.5.20)

- Elementos reveals low CAPEX plan for Oropesa
 - <https://www.internationaltin.org/elementos-reveals-low-capex-plan-for-oropesa/>

- Oceania

- Australia - Consolidated Tin (13.5.20)

- Consolidated Tin restarts operations after Covid-19
 - <https://www.miningweekly.com/article/consolidated-tin-restarts-operations-2020-05-13>

Tungsten

- Asia

- Uzbekistan/ Kazakhstan (7.5.20)

- Commonwealth of Independent State countries are forging ahead with new tungsten mine development projects
- <https://roskill.com/news/tungsten-cis-countries-emerge-as-focus-of-new-projects/>

- Vietnam: Masan Resources (7.5.20)

- Tungsten, fluorspar: Vietnamese metal and chemical producer Masan Resources hit by falling prices
- <https://roskill.com/news/tungsten-fluorspar-masan-resources-hit-by-falling-prices/>

- China: Yunnan (8.5.20)

- China's Yunnan government allocates 1H tungsten mining quotas
- <https://www.argusmedia.com/en/news/2103695-chinas-yunnan-allocates-1h-tungsten-mining-quotas>
backToResults=true&selectedMarket=Metals

- China: Sandvik/ Xiamen Tungsten (18.5.20)

- Swedish-headquartered cemented carbide tools maker Sandvik Machining Solutions is to sell its 10% stake in Xiamen Golden Egret Special Alloy (GESAC) to majority owner Xiamen Tungsten.
- <https://roskill.com/news/tungsten-sandvik-sells-stake-in-chinese-jv-gesac/>

PGMs

- Global

- Platinum prices rise to two-month high - Johnson Matthey (20.5.20)
 - <https://www.argusmedia.com/en/news/2107182-platinum-prices-rise-to-twomonth-high?backToResults=true&selectedMarket=Metals>
- World Platinum Investment Council (6.5.20)
 - World Platinum Investment Council (WPIC) reports that American Eagle platinum bullion coin demand has reached its highest level in 21 years.
 - https://www.miningweekly.com/article/demand-soars-for-us-platinum-coins-2020-05-06/rep_id:3650
- World Platinum Investment Council (18.5.20)
 - According to the World Platinum Investment Council, the Covid-19 impact on platinum market is less than expected
 - https://www.miningweekly.com/article/covid-19-impact-on-platinum-market-less-than-expected-wpic-2020-05-17/rep_id:3650

- Africa

- South Africa: Eastern Platinum (4.5.20)
 - Eastplats resumes Crocodile River tailings operation, to publish results later
 - <https://www.miningweekly.com/article/eastplats-resumes-crocodile-river-tailings-operation-to-publish-results-later-2020-05-04>

Manganese

- Africa

- South Africa: Tshipi (1.5.20)

- Tshipi mine receives green light to return to full operation
 - <https://roskill.com/news/manganese-tshipi-mine-receives-green-light-to-return-to-full-operation/>

- Namibia: Premier African Minerals (25.5.20)

- Premier African Minerals reaffirmed basis for proposed purchase of a further 7% in MN Holdings (MNH), the owner and operator of the Otjozondou manganese mining project in Namibia
 - <https://m.miningweekly.com/article/premier-reaffirms-basis-of-further-purchase-in-mn-holdings-2020-05-26>

- Oceania

- Australia: Lithium Australia (22.5.20)

- Lithium Australia is assessing the use of zinc and manganese, obtained from recycled alkaline batteries, as micro-nutrient supplements in fertilisers
 - <https://smallcaps.com.au/lithium-australia-boost-crop-fertilisers-via-recycled-batteries/>

Rare Earth Elements

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- Africa

- Angola: Pensana (4.5.20)

- Pensana secures more rare earth-prospective ground in Angola
- <https://www.miningweekly.com/article/pensana-secures-more-rare-earth-prospective-ground-in-angola-2020-05-04>

- North America

- Canada: Vital Metals (5.5.20)

- Vital Metals granted government approvals to start mining operations at the North T Zone at its Nechalacho rare earths project, in Canada
- <https://www.miningweekly.com/article/vitals-canadian-project-a-step-closer-2020-05-05>

- USA: New Purdue Technologies (6.5.20)

- New Purdue technologies to extract, purify critical rare earth metals could be a 'game changer' to advance, protect vital electronics
- <https://www.purdue.edu/newsroom/releases/2020/Q2/new-purdue-technologies-to-extract,-purify-critical-rare-earth-metals-could-be-a-game-changer-to-advance,-protect-vital-electronics.html>

- USA (18.5.20)

- American Government takes Disruptive Steps through the ORE Act to end Chinese Control of Rare Earths (including Scandium), Cobalt, Graphite, Lithium and Manganese
- <https://investorintel.com/market-analysis/market-analysis-intel/american-government-takes-disruptive-steps-ore-act-end-chinese-control-rare-earth-including-scandium-cobalt-graphite-lithium-manganese/>

- USA: USA Rare Earths (26.5.20)

- USA Rare Earth finishes Phase 1 testing for Texas project
- <https://www.mining.com/usa-rare-earth-finishes-phase-1-testing-for-texas-project/>

Rare Earth Elements

- Asia

- Malaysia: Lynas

- Lynas restarts Malaysian plant post Covid-19 (4.5.20)
- <https://www.miningweekly.com/article/lynas-restarts-malaysian-plant-2020-05-04>
- Covid-19 has increased appetite for alternatives to Chinese rare earths supply chains, according to Lynas (20.5.20)
- <https://www.argusmedia.com/en/news/2106915-covid19-raises-appetite-for-re-supply-alternatives?backToResults=true&selectedMarket=Metals>

- China: Sichuan Province (7.5.20)

- China's Sichuan allocates 1H rare earths quotas
- <https://www.argusmedia.com/en/news/2103199-chinas-sichuan-allocates-1h-rare-earth-quotas?backToResults=true&selectedMarket=Metals>

- China (8.5.20)

- China's rare earth exports fell by 77pc in April after a sharp increase in March, amid weaker international demand from the Covid-19 pandemic
- <https://www.argusmedia.com/en/news/2103686-chinas-rare-earth-exports-drop-in-april?backToResults=true&selectedMarket=Metals>

- China/ USA (12.5.20)

- China to remove import tariff on US rare earth ores
- <https://www.argusmedia.com/en/news/2104418-china-to-remove-import-tariff-on-us-rare-earth-ores?backToResults=true&selectedMarket=Metals>

- China (18.5.20)

- A rise in bid prices from major rare earth firms and expectations of a national stockpiling drive have pushed up China's dysprosium and terbium prices
- <https://www.argusmedia.com/en/news/2106178-chinas-dy-tb-rise-on-high-bids-possible-stockpiling?backToResults=true&selectedMarket=Metals>

EVs/ Batteries

- Korea: Korea Institute of Science and Technology (3.5.20)
 - Scientists develop stretchable lithium-ion battery
 - <https://www.mining.com/scientists-develop-stretchable-lithium-ion-battery/>
- USA: American Manganese (4.5.20)
 - American Manganese needs \$12m to build battery metals recycle plant
 - <https://www.mining.com/american-manganese-needs-12m-to-build-battery-metals-recycle-plant/>
- UK (5.5.20)
 - One in three cars sold in UK now electric
 - <https://www.mining.com/lithium-price-one-in-three-cars-sold-in-uk-now-electric/>
- USA: Electric Applications (6.5.20)
 - Researchers eye intelligent battery management system for better cycle life
 - <https://www.mining.com/researchers-look-into-intelligent-battery-management-system-to-improve-cycle-life/>
- Korea: SK Innovation (7.5.20)
 - Korea's SK cuts battery forecast on Covid-19 slowdown
 - <https://www.argusmedia.com/en/news/2103165-koreas-sk-cuts-battery-forecast-on-covid19-slowdown?backToResults=true&selectedMarket=Metals>
- China
 - Higher demand boosts China's battery material output (11.5.20)
 - <https://www.argusmedia.com/en/news/2103958-higher-demand-boosts-chinas-battery-material-output?backToResults=true&selectedMarket=Metals>
 - China introduces compulsory EV safety standards (18.5.20)
 - <https://www.argusmedia.com/en/news/2106103-china-introduces-compulsory-ev-safety-standards?backToResults=true&selectedMarket=Metals>
- Korea: Posco (18.5.20)
 - Korea's Posco completes cathode material expansion
 - <https://www.argusmedia.com/en/news/2106084-koreas-posco-completes-cathode-material-expansion?backToResults=true&selectedMarket=Metals>



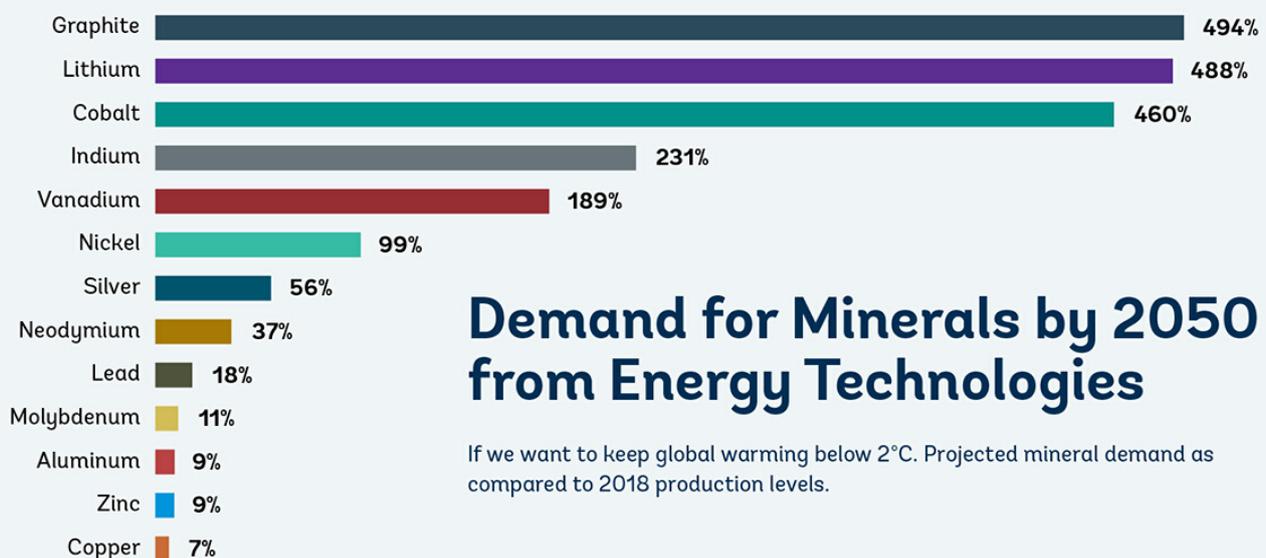
World Bank Report: Minerals for Climate Action

In May, the World Bank published its report: 'Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition'

'The production of minerals, such as graphite, lithium and cobalt, could increase by nearly 500% by 2050, to meet the growing demand for clean energy technologies. It estimates that over 3 billion tons of minerals and metals will be needed to deploy wind, solar and geothermal power, as well as energy storage, required for achieving a below 2°C future.'

Note - the graph shows 2050 annual demand from energy technologies as % of 2018 production."Though demand for some base minerals, like aluminum and copper, appears to be smaller in % terms, their absolute production figures are significant, 103 million tons and 29 million tons by 2050"

Read the report [here](#).





Cornish Lithium

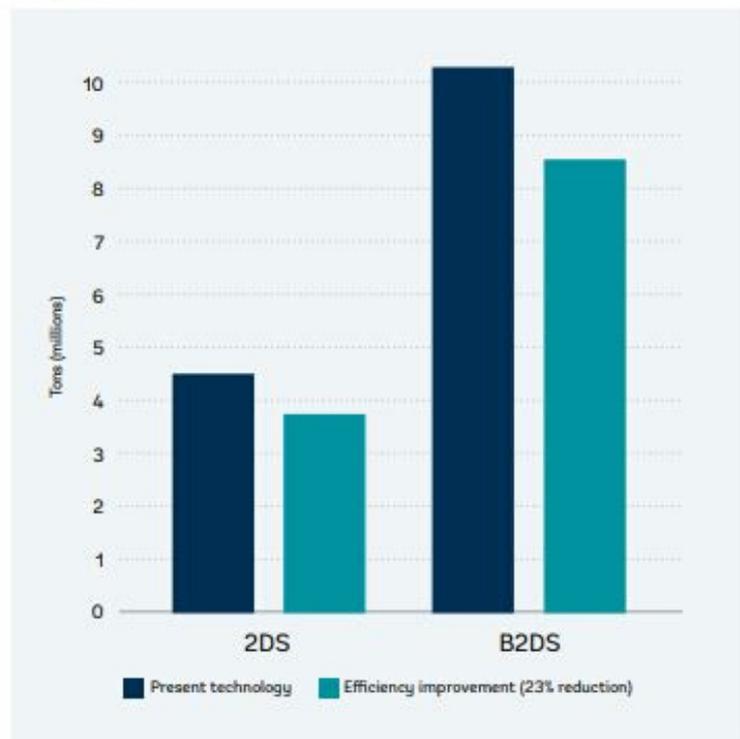
The World Bank Group report predicts that lithium demand will increase by 488% by 2050 compared to 2018. Find out more about Cornish Lithium's project in the following presentations.

@Cornwall & Isles of Scilly LEP: Jeremy Wrathall, Founder and CEO of Cornish Lithium, discusses the vital role Cornwall's natural resources can play in the transition to a low carbon future as the centre of innovation and battery materials hub for the UK.

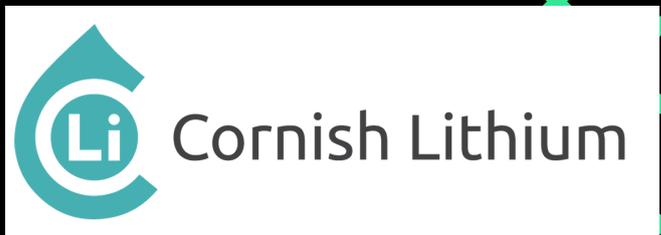
@Responsible Raw Materials Conference: Lucy Crane, Senior Geologist at Cornish Lithium presents the challenges and opportunities of establishing a secure domestic supply of lithium in the UK - based on research from the Faraday Battery Challenge funded 'Lithium 4 UK' project.

See Founder & CEO Jeremy Wrathall [here](#) and Senior Geologist, Lucy Crane [here](#).

Figure 3.22 Cumulative Demand for Lithium from Energy Storage Under Present Technology and Material Use Reduction Through 2050 Under 2DS, B2DS



Note: 2DS = 2-degree scenario, B2DS = beyond 2-degree scenario.



World Bank Report May 2020, Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition

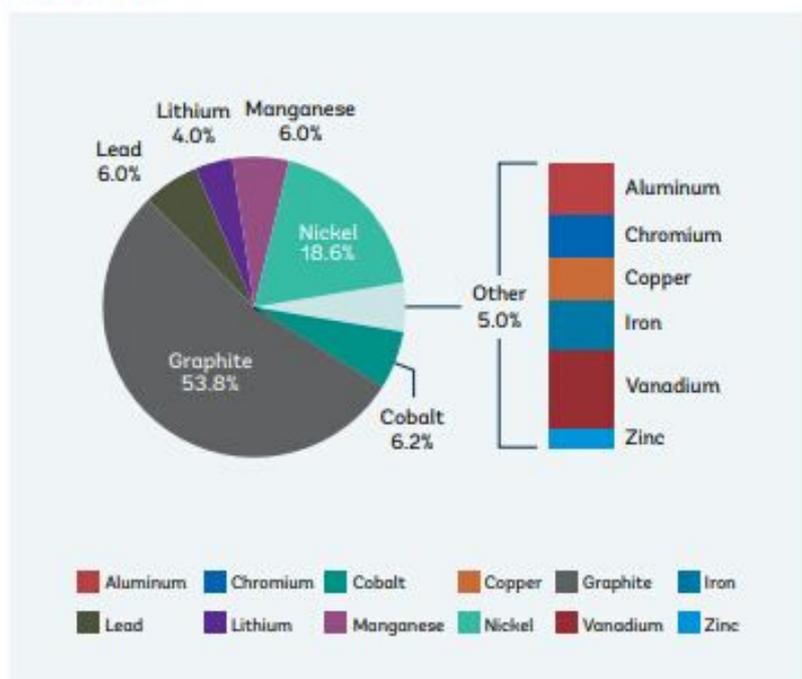
World Bank: Graphite

The recent World Bank Group report, 'Minerals for Climate Action' highlights graphite as a major critical material for energy storage. Roskill says *"While lithium often steals the limelight because of its role in lithium-ion batteries, large quantities of graphite are also required in the anodes of these batteries, which are vital in the booming applications of EVs and stationary storage."*

The World Bank report predicts graphite to account for 54% of all mineral demand from energy storage through to 2050. Large quantities of graphite are also required in the anodes of these batteries, which are vital in the booming applications of EVs and stationary storage. In addition, the processing of natural graphite into spherical graphite, for lithium-ion batteries, takes place solely in China, where environmental laws are laxer, although tightening.

Read about graphite from Roskill [here](#).

Figure 3.19 Share of Mineral Demand from Energy Storage Under IEA 2DS Through 2050



Note: 2DS = 2-degree scenario, IEA = International Energy Agency.

World Bank Report
May 2020, Minerals
for Climate Action:
The Mineral Intensity
of the Clean Energy
Transition

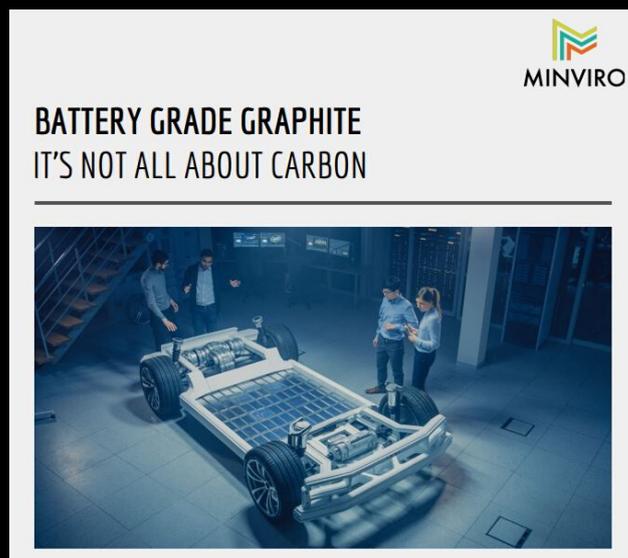


Minviro's Graphite Life Cycle Analysis

Graphite is an essential material within EV batteries. Despite this we do not have good quality data to represent the environmental impacts associated with synthetic or natural graphite production, let alone data for different regional and technological production routes.

To ensure a fair comparison across this single product category, such as battery-quality graphite material, the industry needs clarity and consistency with implementing Life Cycle Assessments (LCAs). To improve this situation, Minviro is creating an LCA product rule to facilitate responsible sourcing strategies for OEMs, battery manufacturers, and other graphite buyers. Minviro is currently working with industry stakeholders to develop the graphite LCA product rule, and invite those interested to reach out to discuss it at info@minviro.com.

Check out
Minviro's
'Battery Grade
Graphite - It's
not all about
Carbon' [here](#).



Watch Minviro's Laurens Tijsseling on June 11th @ 11am BST - 'Towards a sustainable supply of metals and minerals: using Life Cycle Analysis for mining project Impact Assessment'





Greenhouse Gas Scope Emissions & Major Miners ²⁷

RIO TINTO (7.5.20) - ~63% of shareholders voted against the resolution to adopt scope 3 emission targets

https://www.miningweekly.com/article/rio-tinto-dodges-climate-reporting-fire-but-issue-unlikely-to-go-away-2020-05-07/rep_id:3650

VALE (13.5.20) - Vale will be tackling Scope 1 and 2 emissions with \$2+ billion investment

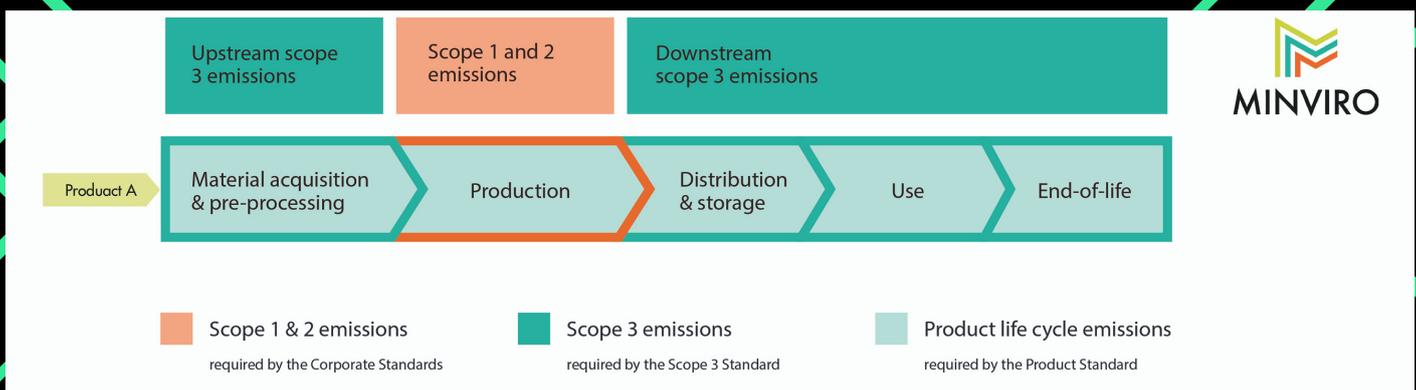
<https://im-mining.com/2020/05/13/vale-tackle-scope-1-2-emissions-plus-2-billion-investment/>

GLENCORE (14.5.20) - Glencore beats emissions target, reducing its scope 1 and 2 emissions by 9.7% by the end of 2019 from 2016

https://www.miningweekly.com/article/glencore-beats-emissions-target-sets-out-to-deliver-safety-step-change-2020-05-14/rep_id:3650

MINERS FREEPORT & GRUPO MEXICO (4.5.20) - According to Transition Pathway Initiative, they are the only major miners aligned with limiting climate change to 2 °C below pre-industrial levels

<https://www.miningweekly.com/article/big-miners-battle-with-limiting-climate-change---tpi-2020-05-04>



Minviro Graphic shows the relationship between the corporate Scope 1,2,3, emissions and the product life cycle emissions.



US Rare Earths: Department of Defense, Lynas/ MP Materials, ORE

US Government agencies and officials have been looking into US rare earth supply with 2 major stories dominating headlines.

The US Department of Defense (DoD) selected Lynas and MP materials to undertake US-based heavy rare earth production - before putting this on hold - see Roskill's David Merriman's May 1st analysis [here](#).

Meanwhile, Texan Senator Ted Cruz introduced the Onshoring Rare Earths Act (ORE) to end Chinese control over the US supply chain of critical battery materials, reported by Investorintel [here](#).

Read about the halted DoD decision in Caroline Messecar's 22 May article [here](#)

&

Roskill's view on the US ORE Act [here](#).



APPG Critical Minerals Vice-Chair, Alexander Stafford MP

Alexander Stafford, MP for Rother Valley and Vice-Chair of the APPG Critical Minerals says: "Government will push for green coronavirus recovery," and according to the Guardian, "Alexander believes that the Conservative party can avoid mistakes made in mine closures of Thatcher era."



Read the Guardian article [here](#).

Hear more from Alexander at this IPPR Environmental Justice Commission virtual panel 'Securing a green recovery from Covid-19' on June 11th at 4:30pm BST.

Alexander will be joined by Ed Miliband and Baroness Brown - [sign up here](#).



Future of Geoscience

The Geological Society & Tom Backhouse are hosting an event on 'The Future of Geoscience' featuring Cornish Lithium's Lucy Crane on June 10th. Register [here](#).

The Future of Geoscience

A virtual summit

Session 1: Perception of Geoscience in Society
Keynote Speaker - **Lucy Crane**

Session 2: Perception of Geoscience in Business
Keynote Speaker - **Tom Backhouse**

Session 3: The Decline of Geoscience Students
Keynote Speaker - **Professor Iain Stewart**

10 June 2020, 9:00 to 12:15
www.geolsoc.org.uk/FutureGeoSummit
#Futuregeo

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