



CRITICAL MINERALS ASSOCIATION

DECEMBER 2020

CRITICAL MINERALS ASSOCIATION - 2020 OVERVIEW
MINECRAFT INTERVIEW WITH SGU & BGS
LITHIUM SUSTAINABILITY MONITOR - ROSKILL
UK'S 1ST RARE EARTH PROCESSING FACILITY - PENSANA
LITHIUM TECHNOLOGY FOR CORNWALL- MEI



December 2020

Welcome to our December Critical Minerals Association monthly newsletter & updates on the critical minerals space.

Read on for:

- Highlights of 'Critical Minerals Association - Overview of 2020'
- Minecraft interview with SGU & BGS
- Pensana selects location for UK's first rare earth processing facility
- Roskill's Lithium Sustainability Monitor
- MEI: Cutting edge lithium technology for Cornwall
- News Stories
- Jaguar Land Rover: Blockchain for sustainable materials sourcing
- Argus: Rio Tinto targets large-scale scandium production

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

Welcome to 2021!

Kirsty & Jeff

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*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



Critical Minerals Association - 2020 Overview

02

On Tuesday 15th December, CMA hosted a webinar to reflect back on 2020 and summarise the key events and achievements of the association. The discussion featured insights from CMA Industry Members & UK Government with:

- CMA Founders Jeff Townsend & Kirsty Benham
- CMA Honorary Chair Mike Armitage, SRK Consulting
- CMA Working Group Chairs Brett Grist, Cornwall Resources & Ben Lepley, SRK Consulting
- Special Guest: Mark Smith, Mining Sector Manager, UK Government Department of International Trade

HIGHLIGHTS & RECORDING HERE



CRITICAL MINERALS ASSOCIATION 2020 OVERVIEW



CMA Founders: Jeff Townsend & Kirsty Benham

CMA Honorary Chair: Mike Armitage, SRK Consulting

CMA Working Group Chairs: Brett Grist, Cornwall Resources & Ben Lepley, SRK Consulting



Special Guest: UK Government Department of International Trade Mining Sector Manager, Mark Smith

TUESDAY, 15 DEC @ 9AM GMT



Minecraft Interview: SGU & BGS Add-ons

Ben Lepley, CMA Perception of Mining Group Co-Chair, hosted an interview with Pontus Westrin, Geological Survey of Sweden (SGU) and Stephen Thorpe, British Geological Survey (BGS) discussing Minecraft in the real world.

- SGU's BetterGeo add-on makes Minecraft look more like reality by adding new blocks and resources representing rock types, minerals, metals, elements and gemstones.
- BGS's 3D Geological Models show what's actually underground in real UK locations.

LEARN MORE HERE

SGU Geological Survey of Sweden



BETTERGEO





Pensana selects location for UK's first rare earth processing facility

Saltend Chemicals Park in the Humber Local Enterprise Partnership has been selected as the proposed site for the UK's first rare earth processing facility with a view to establishing the world's first fully sustainable magnet metal supply chain.

The Saltend facility would become one of only two major producers outside China of rare earth oxides used in the manufacture of powerful permanent magnets, critical to the burgeoning offshore wind and electric vehicle industries.

[READ ON HERE](#)



Saltend Chemicals Park outside Hull, England.



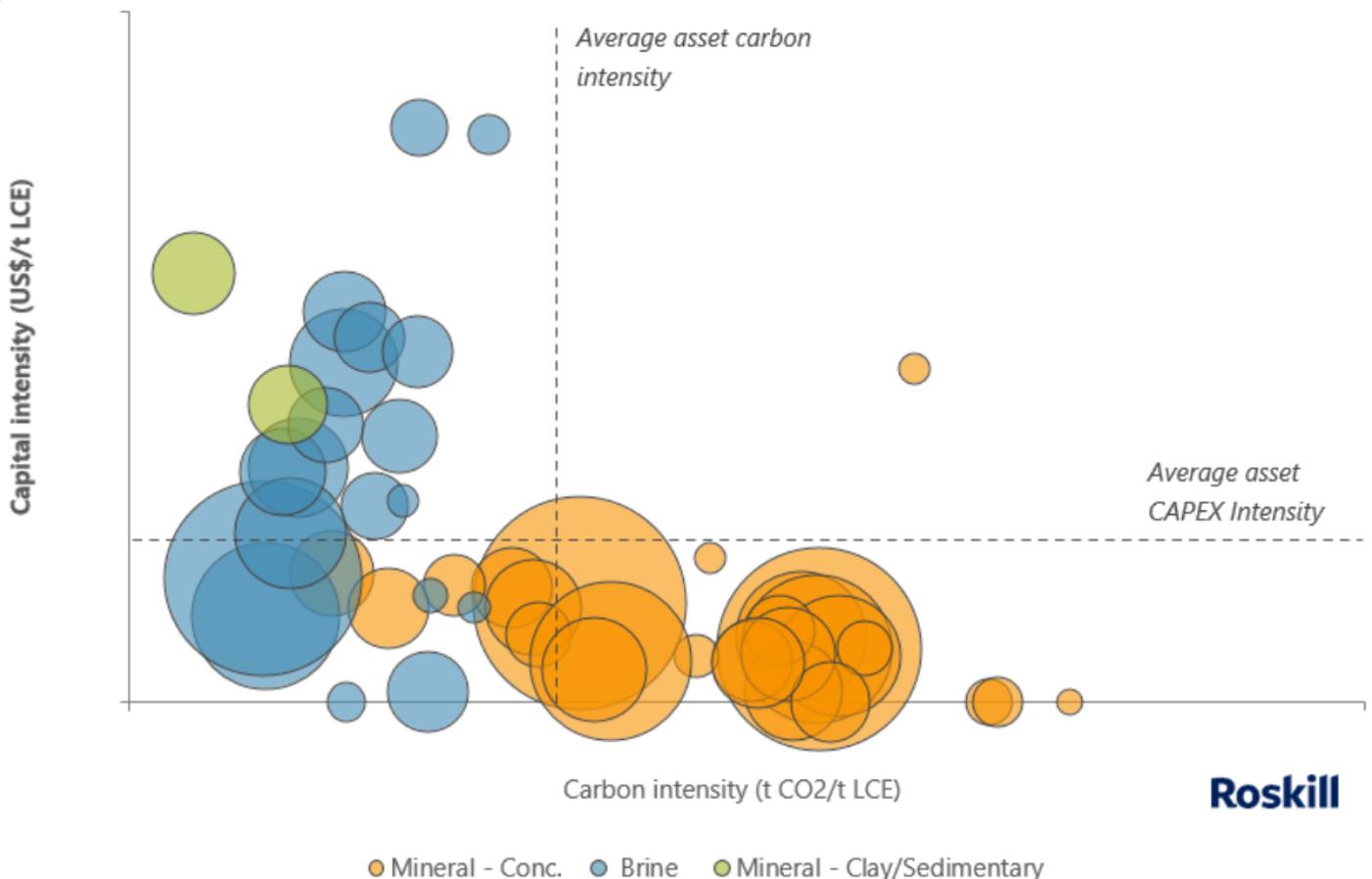
Roskill's Lithium Sustainability Monitor

In early December, Roskill published an outlook on the cost of low-carbon production analysed in Roskill's soon to be published Lithium Sustainability Monitor.

This provides an in-depth account of the sustainability of lithium production on an asset-by-asset basis, both in 2020 and over the next decade.

[READ ON HERE.](#)

[@Roskill_Info](#)



This figure shows the potential landscape of the future lithium upstream sector along with operations, deemed by Roskill to have the potential to come online over the next decade.



MEI: Cutting edge lithium technology for Cornwall

MEI's Barry Wills has been closely following the developments at Cornish Lithium since the announcement of "globally significant" lithium grades in geothermal waters.

Barry Wills reports: "Cornish Lithium said it had acquired a technology licence from Lepidico, which provided it with a metallurgical processing solution for the Trelavour Downs project. The company will now proceed towards bulk metallurgical testing and the construction of a pilot plant using Lepidico's proprietary L-Max[®] and LOH-Max technologies."



[READ ON HERE](#)



MEI
Conferences



Critical Mineral News

The following December news articles from Argus Media, Mining Weekly, Mining.com, Mining Magazine, Reuters, Roskill 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 (11.12.20)
 - Rare earth producers aim to agree global environment standards in 2021
 - <https://www.mining.com/web/rare-earth-producers-aim-to-agree-global-environment-standards-in-2021/>
- Europe (10.12.20)
 - European Commission: Questions and Answers on Sustainable Batteries Regulation
 - https://europa.eu/newsroom/content/questions-and-answers%C2%A0-sustainable-batteries-regulation_de
- North America (8.12.20)
 - SME held a North American critical minerals supply chain symposium on Dec 8th
 - <https://www.srk.com/en/events/strengthening-critical-minerals-supply-chains-in-north-america-the-key-role-of-quebec>
- North America
 - USA (3.12.20)
 - To address the need for materials for energy, electronics, and aerospace applications, the US Department of Energy has adjusted its loan program to give preference to projects related to critical mineral supplies.
 - <https://cen.acs.org/materials/Critical-mineral-supplies-preference-DOE/98/i47>

Cobalt

- Europe

- Finland: FinnCobalt (16.12.20)

- Swedish nickel, cobalt, copper producer Eurobattery Minerals has reported that a Finnish producer it plans to acquire, FinnCobalt, has secured a €630,000 (US\$770,000) development grant for the Hautalampi cobalt-nickel mine and processing plant in eastern Finland.
 - <https://www.miningmagazine.com/sustainability/news/1401458/finnish-cobalt-project-wins-eu-funding>

- North America

- Canada: First Cobalt (16.12.20)

- First Cobalt Corp. announced that it has secured C\$10 million in government loans and grants, allowing the company to accelerate the startup and expansion of its cobalt refinery in Ontario.
 - <https://www.mining.com/first-cobalt-secures-public-funding-for-refinery/>

- Canada: Canada Nickel Company (15.12.20)

- Canada Nickel Company and the Matachewan and Mattagami First Nations signed a memorandum of understanding (MOU) in relation to exploration and development operations at the Crawford nickel-cobalt sulphide project in Ontario, Canada.
 - <https://www.mining.com/canada-nickel-ontario-first-nations-sign-deal-to-advance-crawford-nickel-cobalt-project/>

Copper

- Asia

- Mongolia: Xandu Mines (7.12.20)
 - Copper-Gold Mineralisation Expands at Kharmagtai project, South Gobi, Mongolia.
 - <https://finance.yahoo.com/news/copper-gold-mineralisation-expands-kharmagtai-234600811.html>

- Africa

- Morocco: Altus Strategies (10.12.20)
 - Further Copper and Silver Discoveries at Agdz Project, Morocco. Including a new 450m long zone at Makarn North Prospect with grades up to 3.50 % Cu and 308 g/t Ag.
 - <https://finance.yahoo.com/news/further-copper-silver-discoveries-agdz-120000381.html>
- DRC: China Molybdenum (13.12.20)
 - China Moly buys 95% of DRC copper-cobalt mine from Freeport for \$550m.
 - <https://www.mining.com/web/china-moly-buys-95-of-drc-copper-cobalt-mine-from-freeport-for-550m/>

- North America

- USA: Taseko Mines (9.12.20)
 - Taseko Mines has received the Aquifer protection permit (APP) for its Florence Copper project. The permit was granted by the Arizona Department of Environmental Quality (ADEQ).
 - <https://www.northernminer.com/fast-news/tasekos-florence-copper-granted-aquifer-protection-permit/1003825860/>

Lithium

- Asia

- China: Glencore (3.12.20)

- Glencore has extended its supply agreement with battery maker GEM Co. allowing the Chinese company to secure supply of the crucial metal until the end of the decade.
 - <https://www.mining.com/web/china-inc-extends-cobalt-grip-with-bigger-glencore-deal/>

- Europe

- Serbia: Rio Tinto (10.12.20)

- Rio Tinto reports maiden lithium reserve of 16.6-million tonnes, grading 1.18% lithium oxide and 13.4% boron trioxide at its Jadar project in Serbia.
 - <https://www.miningweekly.com/article/rio-reports-maiden-reserve-in-serbia-2020-12-10>

- North America

- USA: Lithium Americas (4.12.20)

- Lithium Americas has moved closer towards production at its Thacker Pass project in Nevada following the release of the project's final environmental impact statement (EIS) by the US government.
 - <https://www.mining.com/lithium-americas-thacker-pass-moves-closer-to-production/>

- USA: Standard Lithium (4.12.20)

- Standard Lithium announced that it has completed the start-to-finish proof of concept of its lithium processing technology producing "better-than-battery-quality" lithium carbonate final product.
 - <https://www.mining.com/standard-lithium-makes-better-than-battery-quality-lithium-carbonate/>

Graphite

- North America
 - Canada: Nouveau Monde Graphite (30.11.20)
 - Nouveau Monde Graphite has committed to using all-electrical equipment and vehicles at its Matawinie graphite project in Quebec.
 - <https://www.mining.com/nouveau-monde-graphite-commits-to-all-electric-fleet-at-canadian-mine-site/>

Manganese

- Global (1.12.20)
 - Technavio has announced its latest market research report focusing on Global Industry Analysis, Size, Share, Growth, Trends, and Forecast 2020 - 2024.
 - <https://www.businesswire.com/news/home/20201201005634/en/Manganese-Mining-Market---Global-Industry-Analysis-Size-Share-Growth-Trends-and-Forecast-2020---2024-Technavio>
- Oceania
 - Australia: Element 25 (9.12.20)
 - Element 25, has struck an offtake agreement to sell half the manganese ore produced under a proposed stage two expansion of its Butcherbird project development in WA's southern Pilbara region.
 - <https://thewest.com.au/business/public-companies/element-25-ties-up-more-butcherbird-manganese-offtake-c-1737389>

Nickel

- Global (10.12.20)

- Nickel prices rose on Thursday above \$17,000 a tonne for the first time since October 2019, powered by expectations of strong demand from Chinese steel mills and falling stockpiles in Chinese exchange warehouses.
- <https://uk.reuters.com/article/global-metals/metals-nickel-rises-to-highest-since-october-2019-on-steel-boom-idUKL1N2IQ0VU>

- Europe

- UK (4.12.20)

- Scientists in the UK looked into the effects of exposure to ambient atmosphere could have on nickel-manganese-cobalt cathodes for lithium-ion batteries. The group found that the nickel-rich cathodes currently gaining market share are especially vulnerable, and can suffer irreversible power loss upon exposure to moisture in the air.
- <https://www.pv-magazine.com/2020/12/04/investigating-moisture-in-nickel-rich-batteries/>

- Oceania

- Indonesia: Ningbo Lygend (7.12.20)

- Chinese mining firm Ningbo Lygend has resumed construction at its nickel-cobalt production project located on Indonesia's Obi island, after halting work since March because of the Covid-19 pandemic.
- <https://www.argusmedia.com/en/news/2166484-chinas-lygend-resumes-obi-nico-project-construction>

- New Caledonia: Vale (10.12.20)

- Authorities on the Pacific island of New Caledonia suspended international flight services on Thursday amid unrest over plans by Brazilian mining company Vale to exit its operations there.
- <https://asia.nikkei.com/Business/Materials/Vale-s-move-to-exit-New-Caledonia-nickel-mine-heightens-unrest>

Tin

- Global (10.12.20)
 - Bigger things predicted for tiny tin market: Andy Home
 - <https://www.reuters.com/article/metals-tin-ahome/column-bigger-things-predicted-for-tiny-tin-market-andy-home-idUSL8N2IP39G>
- North America
 - Canada: EnviroLeach (1.12.20)
 - EnviroLeach announced a new technological advancement that allows cost-effective extraction of tin from end-of-life printed circuit board assemblies (PCBAs).
 - <https://www.internationaltin.org/enviroleach-recovers-tin-from-ewaste/>

Tungsten

- Asia
 - South Korea: Almonty Industries (10.12.20)
 - Plansee Group, Reutte, Austria, is working with Almonty Industries, a global mining company headquartered in Toronto, Ontario, Canada, to drive the reactivation of the Sangdong tungsten mine in South Korea.
 - <https://www.pm-review.com/gtp-and-almonty-industries-drive-reactivation-of-sangdong-tungsten-mine/>
- Europe
 - Spain: Rafaella Resources (2.12.20)
 - Rafaella Resources has released a prefeasibility study for its proposed, low-cost Santa Comba tungsten mine in Spain that it says delivers “exceptional economics”.
 - <https://www.miningnews.net/feasibility/news/1400453/rapid-payback-for-rafaella%E2%80%99s-tin-tungsten-development>

Rare Earth Elements

- Asia

- China (2.12.20)

- BMO Capital Markets says that a surge in the price of Chinese rare earth metals in November is a reflection of the geopolitical tensions between that country and the developed world.
 - <https://www.northernminer.com/news/chinese-rare-earth-metals-surge-in-price/1003825605/>

- Africa

- Malawi: Mkango Resources (3.12.20)

- Mkango Resources' Malawian subsidiary has completed an extensive hand-auger drilling and soil sampling programme to identify rutile prospects within the Mchinji licence, in Malawi. The samples have been transported to specialist assay laboratory Scientific Services in Cape Town.
 - <https://www.miningweekly.com/article/mkango-sends-rare-earths-samples-for-testwork-2020-12-03>

- North America

- USA: Arcadia Minerals (4.12.20)

- Arcadia seeks JV partners or buyers for Wyoming prospect viable for open pit mining, with more than 33-million delineated tons that can be dry, wet or magnetically separated.
 - <https://www.miningweekly.com/article/arcadia-seeks-jv-partners-or-buyers-for-wyoming-prospect-2020-12-04>

- USA: Energy Fuels (15.12.20)

- NewsEnergy Fuels to begin rare earths processing in 2021
 - <https://www.mining-technology.com/news/energy-fuels-rare-earths-processing/>



Jaguar Land Rover: blockchain for sustainable materials sourcing

Edie's Sarah George writes:

"Jaguar Land Rover's (JLR) venture capital and mobility services arm has invested in a blockchain technology scale-up that will help it to make supply chains for battery materials more sustainable.

Called Circular, the blockchain platform uses a combination of GPS, biometrics and QR codes to create a tamper-proof trail of audit for raw materials. The platform tracks compliance with environmental and social regulation and company pledges in these fields, while also calculating the carbon footprint of the materials. In JLR's case, the technology will be embedded in supply chains for the metals and minerals used to manufacture electric vehicle (EV) batteries, including cobalt."

[READ ON HERE](#)





Rio Tinto targets large-scale scandium production

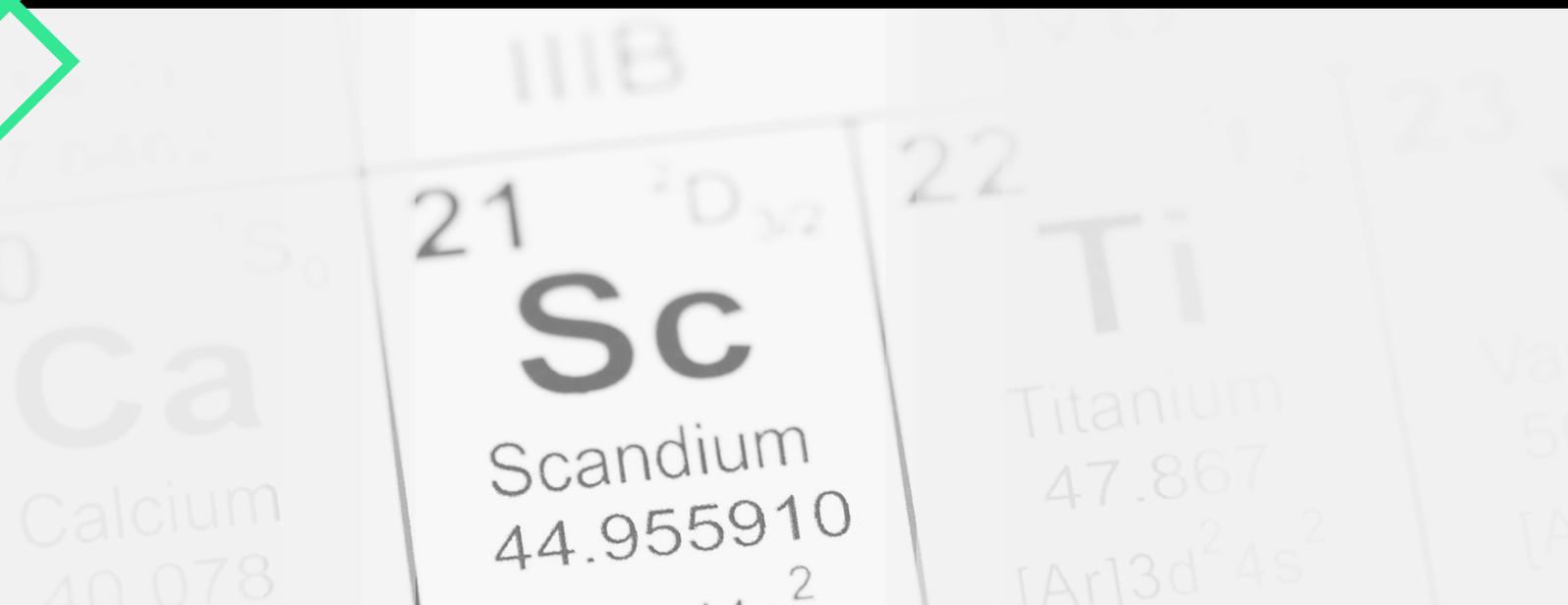
Argus Media recently published an insightful article highlighting Rio Tinto's move towards becoming the world's first large producer of critical metal scandium from North America.

Scandium applications:

- sporting equipment
- high-intensity lighting
- ceramics
- photonics (lasers)
- aerospace industry
- next generation communication networks

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www.criticalmineral.org

Twitter: @CMA_Minerals

Linkedin: Critical Minerals Association

Contact: kirsty@criticalmineral.org

Company number 12419306