

Fathom's Ian Fraser on Rising Market Interest in Albert Lake and Nickel as a Critical Mineral

written by InvestorNews | February 8, 2024

In a recent Investor.Coffee interview conducted by Tracy Weslosky, Ian Fraser, CEO, VP Exploration, and Director of [Fathom Nickel Inc.](#) (CSE: FNI | OTCQB: FNICF) discusses the growing interest from the market in both Fathom and nickel as a critical mineral.

Despite minor delays due to unusual weather conditions, Fathom Nickel is optimistic about their winter exploration program and the [commencement](#) of their drilling schedule. The company has initiated geophysical studies to refine their drilling targets, focusing on areas near the historic Rottenstone mine and the potential for discovering mineralization zones.

Ian also discussed the global nickel market, noting the challenges faced by junior nickel explorers in the latter part of 2023. However, he remains positive about the shift towards nickel sourced from safe jurisdictions, emphasizing the environmental issues associated with laterite nickel deposits. Ian mentioned the growing interest in Fathom Nickel's exploration activities, bolstered by community engagement and investor inquiries. The company aims to continue spreading their story globally, leveraging the momentum from their drilling program to attract further attention. Lastly, Ian confirmed Fathom Nickel's participation in upcoming industry events, including PDAC, highlighting the team's proactive approach to sharing their progress and engaging with the broader mining

community. To access the complete interview, [click here](#)

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About Fathom Nickel Inc.

Fathom is an exploration company that is targeting magmatic nickel sulphide discoveries to support the rapidly growing global electric vehicle market.

The Company now has a portfolio of two high-quality exploration projects located in the prolific Trans Hudson Corridor in Saskatchewan: 1) the **Albert Lake Project**, a 90,000+ hectare project that was host to the historic and past producing Rottenstone deposit (produced high-grade Ni-Cu+PGE, 1965-1969), and 2) the 22,000+ hectare **Gochager Lake Project** that is host to a historic, NI43-101 non-compliant open pit resource consisting of 4.3M tons at 0.295% Ni and 0.081% Cu².

1 – The Saskatchewan Mineral Deposit Index (SMID#0950) Tremblay-Olson Ni-Cu Deposit or Showing.

2 – The Saskatchewan Mineral Deposit Index (SMID#0880) reports drill indicated reserves at the historic Gochager Lake Deposit of 4,262,400 tons grading 0.295% Ni and 0.081% Cu mineable by open pit. Fathom cannot confirm the resource estimate, nor the parameters and methods used to prepare the reserve estimate. The estimate is not considered NI43-101 compliant and further work is required to verify this historical drill indicated reserve.

To know more about Fathom Nickel Inc., [click here](#)

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Fathom Nickel Provides Exploration Update for its 100% Owned Albert Lake

written by InvestorNews | February 8, 2024

Recent geophysical activities saw the conclusion of a time domain electromagnetic (TDEM) survey within the Tremblay-Olson Claims Area, unveiling a robust multi-element-in-soil anomaly. Notable TDEM highlights include a strong conductor around 1,000 meters south-southwest of the historic Rottenstone Mine, indicating a conductive body spanning approximately 450m x 150m located about 300 meters below the surface. This conductor is associated with significant geochemical and gravitational anomalies, hinting at the presence of high-density rocks beneath.

Lynas Surges Ahead with Expansion Plans, Record Production & Solid Quarterly Results Despite Tesla's Rare Earths Comments

written by InvestorNews | February 8, 2024

[Lynas Rare Earths Limited](#) (ASX: LYC) ("Lynas") recently announced some positive news that the Malaysian authorities have advised that their license to import and process lanthanide concentrate is now valid until 1 January 2024, effectively a 6-month extension to get their Malaysian rare earths unit in line with environmental requirements.

Meanwhile, Lynas continues to oppose the Malaysian government's 'new' rules and is working on alternate facilities in Western Australia. Should the Malaysian situation not be resolved then Lynas has a backup plan. The announcement [stated](#):

"The licence variation allows the Lynas Malaysia cracking and leaching plant to continue to operate until 1 January 2024 and will remove the requirement for a shutdown at the Lynas Malaysia plant prior to 1 January 2024."

At the heart of the issue is that the Malaysian authorities say the cracking and leaching plant generates radioactive waste. Lynas argues that they are meeting the conditions as per their original agreement with the Malaysian government. Lynas stated:

“Lynas had applied to the MOSTI Minister for the removal of the conditions which limit operations at the Lynas Malaysia facility as they represent a significant variation from the conditions under which Lynas made the initial decision to invest in Malaysia.”

We will have to wait until January 1, 2024, to see what happens next regarding Lynas operating its cracking and leaching plant in Malaysia.

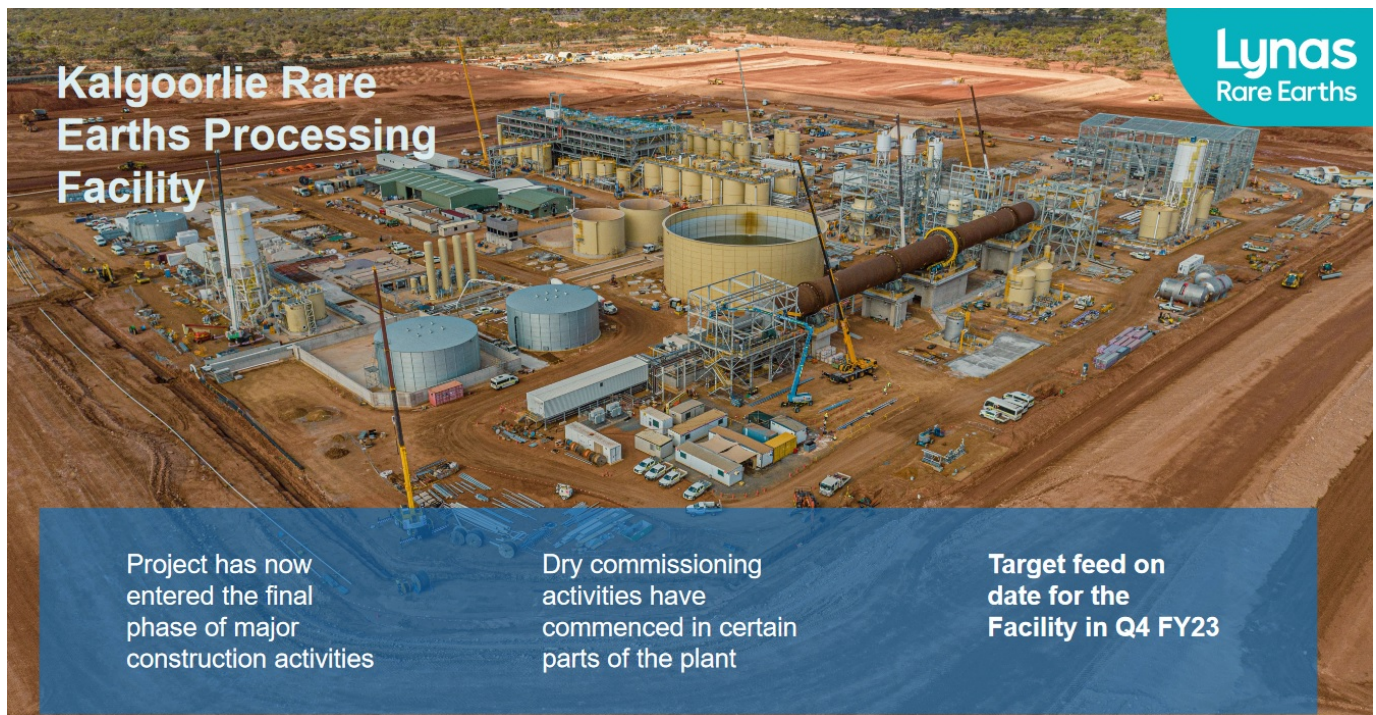
Lynas’ Kalgoorlie Rare Earths Processing Facility is in the final stages of construction, feed to start this quarter (Q4/FY23 – Ending June 30)

Lynas has been rapidly building a backup rare earths processing facility in Kalgoorlie, Western Australia. Lynas [stated](#) that the facility “has now entered the final phase of major construction activities, dry commissioning activities have commenced in certain parts of the plant, target feed on date for the Facility in Q4 FY23.”

Lynas plans to use rare earths carbonate feed from their Mt Weld Mine to feed the new Kalgoorlie rare earths processing facility once complete (noting a ramp-up period applies). The product would then be shipped to Malaysia for final processing.

FIGURE 1: Lynas’ under construction rare earths processing facility in Kalgoorlie

Western Australia



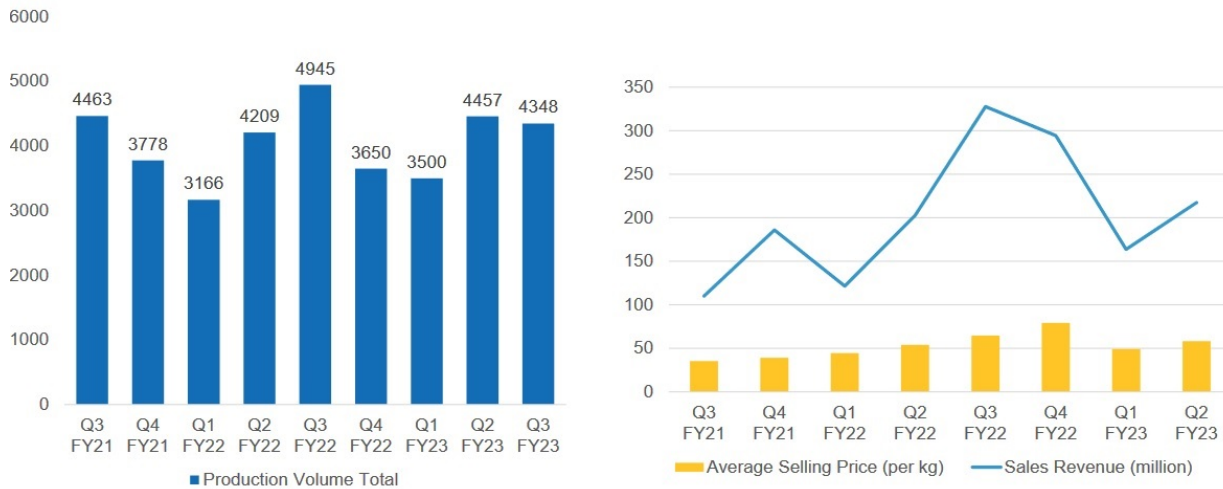
Source: [Lynas company presentation](#)

Lynas achieved record NdPr production in Q3/FY23 (Ending March 31)

In Q3/FY23 Lynas produced [4,348 tonnes](#) of total rare earths oxide and a record [1,725 tonnes](#) of Neodymium-Praseodymium (“NdPr”). This resulted in [A\\$237.1 million](#) of revenue for the quarter. The chart below shows Lynas’ revenue trending slightly higher over the past 2 years on the back of solid production and prices.

FIGURE 2: Lynas’ last 2 years Total Rare Earth Oxides (“TREO”) production volumes and sales revenues

Lynas' performance over the past 2 years



Source: [Company presentation](#)

USA LRE and HRE facilities update

The USA Light Rare Earth (“LRE”) and Heavy Rare Earth (“HRE”) facilities plan to be able to process both light and heavy rare earths.

Lynas has secured a greenfield site in an existing industrial zone in Texas, further progressed the detailed engineering design, and engaged a preferred U.S. Engineering, Procurement, Construction, and Management (“EPCM”) contractor.

Tesla plans to use non-rare earths motors in their next generation vehicle

Lynas CEO, Amanda Lacaze, stated in the [Q3, FY 2023 earnings call](#):

“The neodymium iron boron [NdFe] magnet technology is the most

energy efficient, because it is the lightest motor, and over the life time of the vehicle it gives you the best efficiency... ..and it has the lowest CO2 emissions... ..more are choosing NbFe technology than the alternative... ..today we find that demand still is ahead of our ability to service everyone who would like to buy Lynas NdPr... ..the current (price) softness is very much about internal China dynamics... ..but we at Lynas remain very confident of the long term trend and we know that the Chinese rare earth firms share that confidence. We remain committed to growing to meet the market and that's one of the reasons why our ambitious capital investment plan continues."

Closing remarks

Lynas is very well positioned in 2023 with [A\\$1.12 billion](#) in cash (as of March 31, 2023) and is on target with its expansion plans.

The 6-month Malaysian extension also means that Lynas' rare earths production can continue uninterrupted, at least until January 1, 2024. At that point, the Kalgoorlie facility should hopefully be operating smoothly and ramping up production and offer an alternative should the Malaysia cracking and leaching plant need to be shut down on January 1, 2024.

Lynas Rare Earths trades at a market cap of [A\\$6.82 billion](#) and a PE ratio (TTM) of [12.39](#).

Lithium Royalty's Lithium-focused Royalty Portfolio of Sustainable and ESG "Friendly" Projects

written by InvestorNews | February 8, 2024

In [late February](#), I opined that perhaps we had seen a near-term top for the price of lithium. Hindsight suggests that was a pretty good call. However, that was more of a short-term trading view on lithium as opposed to an overall investing view.

Generally speaking, I still believe that the overall lithium market is reasonably bullish over the next several years barring some sort of technological breakthrough that obsoletes the lithium battery.

In fact, if you believe what the [IEA published](#) on lithium (along with other critical minerals), you'd be very bullish based on the IEA view that the lithium market will see a 33% compound annual growth rate ("CAGR") for the next decade.

Another stat that puts future lithium demand into perspective is the fact that Tesla is targeting the manufacture of 20 million electric vehicles ("EVs") per year by 2030 and in order to produce that many vehicles in a year, Tesla would need more lithium than was produced in the world in 2021.

Assuming lithium prices have now stabilized or perhaps even bottomed before another move higher, the question becomes how best to play lithium going forward.

Lithium Royalty Corp. overview

One option to get more broad-based exposure to the market is the newly listed [Lithium Royalty Corp.](#) (TSX: LIRC).

Lithium Royalty is a lithium-focused royalty company with a globally diversified portfolio of 30 high-grade revenue royalties on mineral properties around the world that supply, or are expected to supply, raw materials to support the electrification of transportation and decarbonization of the global economy.

The Company's portfolio is focused on high-grade and low-cost mineral projects that are primarily located in Australia, Canada, South America, and the United States. Lithium Royalty is a signatory to the United Nations Principles for Responsible Investment.

There are two key takeaways from that corporate description.

- First off, they have focused on “friendly”, stable jurisdictions with 46% (based on acquisition costs) of their projects in North America, 62% comprise OECD nations, and no Russian, Chinese, or African asset exposure. Their non-OECD assets are primarily in Brazil and Argentina, which are both stable enough at present.
- Secondly, the integration of ESG factors and sustainable mining are important considerations in Lithium Royalty's investment analysis and royalty acquisitions. This includes a focus on the use of renewable power in extraction and processing; infrastructure benefits to remote communities; environmental and economic impact on local communities; water use; surface disruption and remediation plans as well as tailings management.

I've noted as recently as [last week](#) that I strongly believe a premium will start to be placed on sustainable miners with responsibly sourced materials and a low-carbon footprint. Lithium Royalty definitely ticks that box.

Royalty portfolio and upside potential

But ultimately it comes down to whether you can also make money while being responsible. The royalty that excites me the most at present in the Company's portfolio is one that has just transitioned from construction to production.

In all Lithium Royalty now has 3 producing royalties but their 90% interest in a 1.0% Net Smelter Royalty (NSR) in [SIGMA Lithium Corporation's](#) (NASDAQ: SGML | TSXV: SGML) Grota do Cirilo project is about to start generating returns with its inaugural shipment of approximately 15,000 tonnes of spodumene concentrate in May 2023. Sigma is now focused on ramping up to full production capacity for Phase 1 of the project, which is expected by July 2023.

Other assets currently generating income for the company are both in Australia, including [Allkem Limited's](#) (ASX: AKE | TSX: AKE) Mt. Cattlin project with a royalty of A\$1.50 per tonne of ore mined and [Core Lithium Limited's](#) (ASX: CX0) Finniss mine where the Company expects to receive its first royalty payment for its 2.5% Gross Overriding Royalty (GOR) as a result of Q1/2023 sales.

In total, Lithium Royalty has 30 royalties in its portfolio, of which 29 are summarized in the slide below. Additionally, the acquisition pipeline currently has 10 additional royalty targets with the opportunity to deploy over US\$130 million of new capital.

FIGURE 1: Lithium Royalty's Current Portfolio of Royalties

Current Royalty Portfolio

Operator	LRC Royalty (%)	Asset					
		Name	Country	Type	Product	Stage	Report
1 Alkem	AS1.5/1 Treated	Mt. Cattlin	Australia	Hard Rock	Spodumene	Production	FS
2 Core Lithium	2.50% GOR ¹	Finniss	Australia	Hard Rock	Spodumene	Production	DFS
3 Sigma Lithium	1.00% NSR ²	Grota do Cirilo	Brazil	Hard Rock	Spodumene	Construction	FS
4 Zijin Mining	1.00% GOR ³	Tres Quebradas	Argentina	Brine	Carbonate	Construction	FS
5 Ganfeng	0.50% NSR ²	Mariana	Argentina	Brine	Chloride / Carbonate	Construction	PEA
6 Sinova Global ⁴	8.00% - 4.00% GOR ⁴	Horse Creek	Canada	Silica Quartz	Silica Quartz	Construction	FS
7 Sayona Mining	2.50% - 1.50% GOR ^{5,6}	Moblan	Canada	Hard Rock	Spodumene	Development	- ⁹
8 Sayona Mining	2.00% NSR	Tansim	Canada	Hard Rock	Spodumene	Development	IGR
9 Euro Lithium	Various ⁷	Valjevo	Serbia	Clay	Carbonate / Boric Acid	Development	PEA
10 & 11 Winsome Resources	4.00% GOR ⁸ & 1.00% NSR	Cancet	Canada	Hard Rock	Spodumene	Development	IGR
12 & 13 Winsome Resources	4.00% GOR ⁸ & 2.00% NSR	Adina	Canada	Hard Rock	Spodumene	Development	IGR
14 Winsome Resources	4.00% GOR	Sirmac-Clapier	Canada	Hard Rock	Spodumene	Development	IGR
15 Grid Metals	2.00% GOR	Donner Lake	Canada	Hard Rock	Spodumene	Development	- ¹⁰
16 Grid Metals	2.00% GOR	Campus Creek	Canada	Hard Rock	Spodumene	Development	-
17 Lithium Springs	1.50% GOR	Lithium Springs	Australia	Hard Rock	Spodumene	Development	-
18 Noram Lithium	1.00% GOR	Zeus	United States	Clay	Carbonate	Development	PEA
19 Bradda Head	2.00% GOR	Basin E & W / Wikieup	United States	Clay	Hydroxide	Development	MRE
20 ACME Lithium	2.00% GOR	Shatford Lake / Cat-Euclid Lake	Canada	Hard Rock	Spodumene	Development	-
21 Red Dirt	1.00% GOR	Yinnetharra	Australia	Hard Rock	Spodumene	Development	-
22 Morella	1.50% GOR	Malina	Australia	Hard Rock	Spodumene	Development	-
23 Morella	1.25% GOR	Tabba Tabba	Australia	Hard Rock	Spodumene	Development	-
24 Morella	1.25% GOR ⁸	Mt Edon	Australia	Hard Rock	Spodumene	Development	-
25 Green Technology	1.00% GOR	Seymour Lake	Canada	Hard Rock	Spodumene	Development	MRE
26 Green Technology	1.00% GOR	Root Lake	Canada	Hard Rock	Spodumene	Development	-
27 Green Technology	1.00% GOR	Wisa Lake	Canada	Hard Rock	Spodumene	Development	-
28 Larvito	1.00% GOR	Eyre	Australia	Hard Rock	Spodumene	Development	-
29 Anso Lithium	1.25% GOR	Kaustinen / Ilmajoki	Finland	Hard Rock	Spodumene	Development	-

¹ Initially assessed at 1.18% of gross revenues. Once Core Lithium achieves certain milestones and LRC makes a contingent payment, each of which is anticipated to occur no later than June 2023, the royalty rate will increase to 2.5%.
² Altius Minerals Corporation has a 10% indirect interest in this royalty.
³ Pilot production at the Horse Creek quarry took place in the third quarter of 2021. Commercial production is anticipated to commence in 2023.
⁴ 8.0% of annual gross revenues up to \$49M and 4.0% on any portion of annual gross revenues in excess of \$49M.
⁵ 2.5% of gross revenues for the first 10 Mtpa and 1.5% of gross revenue for any tonnes of ore produced thereafter.
⁶ Royalty is payable only on production attributable to the ownership interest of the royalty payor in the relevant property, which ownership interest is less than 100%.
⁷ See detailed description in the prospectus.
⁸ Certain tenements comprising the property are assessed at 3.0% of quarterly gross revenues.
⁹ While Moblan has a historical technical report, it is currently in the process of preparing a new and updated Preliminary Feasibility Study, with a Definitive Feasibility Study to follow.
¹⁰ Grid Metals has indicated that Mineral Resources declared at Donner Lake are historical in nature and not NI 43-101 compliant. The historical resource estimate is not considered as a current Mineral Resource estimate. A qualified person has not done sufficient work to classify the historical estimate as a current Mineral Resource or Mineral Reserve.

Source: Lithium Royalty [Corporate Presentation](#)

Final thoughts

Given the Company just reorganized into the publicly traded entity we have today, my numbers could be a little off. My math suggests the Company finished 2022 with US\$35 million in cash, raised a net amount of C\$100 million as part of the go-public transaction, and acquired its 30th royalty position (not included in the above table) for US\$1.8 million. Using today's exchange rate that puts cash available to pursue additional royalties at roughly US\$108 million.

There are currently just over 55 million shares outstanding which puts Lithium Royalty's market cap at C\$818 million (US\$604 million).

Russell Fryer of Critical Metals Plc Discusses Mining and Exploring for Critical Minerals in Africa

written by InvestorNews | February 8, 2024

In this InvestorIntel interview during PDAC 2023, Tracy Weslosky talks with Russell Fryer, Executive Director of [Critical Metals PLC](#) (LSE: CRTM) about the critical mineral sector, specifically in the Democratic Republic of Congo ("DRC") and Africa.

Russell addresses some misconceptions about operating mines in the DRC and how the DRC government is openly trying to attract Western capital to come in and compete with Asian investors.

He also talks about the investment opportunities in sub-Saharan Africa, including South Africa, Rwanda, Tanzania, and Zimbabwe. Russell also discusses the positive change in the UK government in attracting critical mineral supplies from African countries.

To access the full InvestorIntel interview, [click here](#).

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About Critical Metals Plc

Critical Metals Plc has acquired a controlling 100% stake in Madini Occidental Limited, which holds an indirect 70% interest in the Molulu copper/cobalt project, an ex-producing, medium-scale asset in the Katangan Copperbelt in

the Democratic Republic of Congo. In line with its investment strategy of focusing primarily on known deposits, targeting projects with low entry costs and the potential to generate short-term cash flow; the Company brought the Molulu Project into production in January.

The Company will continue to identify future assets that are in line with its stated acquisition objective of low CAPEX and OPEX projects with near-term production, concentrating on minerals that are perceived to have strategic importance to future economic growth and generate significant value for shareholders.

To know more about Critical Metals Plc, [click here](#).

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If you have any questions surrounding the content of this interview, please contact us at +1 416 792 8228 and/or email us direct at info@investorintel.com.

Leading Producers and Junior Miners Who Benefit as EV Boom Drives Cobalt Demand

written by Matt Bohlsen | February 8, 2024

Cobalt is a key component of the lithium-ion ("Li-ion") battery used in electronics and many types of electric vehicles ("EVs"). The EV boom is causing cobalt demand to surge higher.

In 2021, the International Energy Agency [forecasted](#) that cobalt demand could grow between **6x to 21x** from 2020 to 2040 depending upon various scenarios. The main driver is the forecast surge in sales of EVs. Our Trend Investing [forecast](#) is for a **5.7x** increase from 2020 to 2037. The reason it is lower than the IEA

is due to the emergence of lithium-iron-phosphate (“LFP”) batteries which do not use cobalt. Nonetheless, a 5.7x increase is still very significant, especially when we consider that cobalt has the most difficult supply chain of all EV metals.

The cobalt market is currently quite balanced with a mild surplus as demand from electronics remains weak; however, Trend Investing forecasts that by 2027 onwards this will become a growing deficit, assuming EVs sales continue to grow strongly.

As a result of the above, the cobalt price ([US\\$15.20/lb](#)) and many of the cobalt miner’s stock prices are depressed allowing a more attractive entry point for long-term investors into the sector.

Trend Investing vs IEA demand forecast for EV metals

Trend Investing v IEA demand forecast for EV metals ([Trend Investing](#)) ([IEA](#))

Increase in metal demand 2020 to 2037 (100% EV and sustainable energy world)			
	Trend Investing (f) to 2037		IEA (f) to 2040
Lithium demand	35		13 --42
Cobalt demand	5.7		6--21
Nickel demand	2.8		7--19
Manganese demand	1.7		3--8
Flake Graphite demand	17		8--25
NdPr demand	5.9		3--7
Copper demand	2.3		2--3

Sources: [IEA](#) and [Trend Investing](#)

The leading cobalt miners in 2023

Glencore PLC (LSE: GLEN | OTC: GLCNF | HK: 805) is the leading global producer of cobalt with production of 43,800t in 2022. Most of this production came from the Democratic Republic of the Congo ("DRC"). In 2023, Glencore's guidance is for the production of 38,000t of cobalt plus or minus 5,000t. On the plus end, this would lead to the production of 43,000t in 2023 or slightly lower than the production in 2022.

From the Mutanda and Katanga mines in the DRC, Glencore has the potential to increase cobalt supply to approximately 57,000 tonnes-per-annum ("tpa") if market conditions suit. They also produce about 3,000tpa from their Murrin Murrin operation in Australia. Given total global cobalt supply was approximately 200,000t in 2022 it means that Glencore is a critical player in the market and can influence pricing by altering its supply. Glencore has agreed to supply General Motors Co. (NYSE: GM) with cobalt from its Murrin Murrin operation in Australia.

CMOC Group Limited (HKSE: 3993 | SHE: 603993 | OTC: CMCLF) (formerly China Molybdenum) is the second largest global producer of cobalt producing 18,501t in 2021 from their Tenke Fungurume mine in the DRC. For the first 3 quarters of 2022, CMOC's cobalt production stood at 15,300t. However, 2022 has seen a dispute with the DRC's Gecamines which has resulted in exports being suspended since July 2022. On a more positive note, CMOC announced in January 2023 that mining from their other DRC mine (KFM copper-cobalt mine) had begun.

Zhejiang Huayou Cobalt (SHA: 603799) is the third largest global cobalt producer at around 20,000tpa. They also rely on mines in the DRC. Huayou Cobalt agreed to supply cobalt to Tesla, Inc. (NASDAQ: TSLA) from July 1, 2022 until 2025.

Other cobalt producers

Other global cobalt producers include **Eurasian Natural Resources Corp. (private)**, **GEM Co Ltd. (SHE: 002340)**, **Jinchuan Group International Resources (HK: 2362)**, **Shalina Resources subsidiary Chemaf**, and several other smaller cobalt producers such as **Vale SA (NYSE: VALE)**, **Norilsk Nickel**, **Sumitomo Metal Mining Co. (TYO: 5713)**, **Sherritt International Corporation (TSX: S | OTC: SHERF)**, **Korea Resources Corporation**, **Umicore SA (Brussels: UMI | OTC: UMICY)**, and [Nickel 28 Capital Corp. \(TSXV: NKL\)](#).

Junior cobalt miners

The most advanced junior cobalt miners are **Jervois Global Limited (ASX: JRV | TSXV: JRV | OTCQX: JRVMF)** and **Electra Battery Materials Corporation (NASDAQ: ELBM | TSXV: ELBM)**. Jervois aims to commence commercial concentrate production by the end of Q1/2023 from their Idaho Cobalt Operations in the USA. Jervois also now owns the Kokkola producing refinery in Finland and plans to have a second refinery in Brazil up and running [by the end of Q1/2024](#).

Electra targets to have their Ontario cobalt refinery (North America's first cobalt sulphate refinery) operational with ore feed from Glencore by the [Spring of 2023](#). They are also working on battery recycling and own the [Iron Creek Cobalt-Copper Project](#) in Idaho, USA.

Closing remarks

The cobalt market is quite small and is dominated by supply from the DRC, making it a rather risky market from a supply chain point of view. The current slowdown in electronics (smartphones, PCs) sales has temporarily hurt cobalt demand. Looking ahead

this should recover and as electric car sales grow the demand for cobalt rises dramatically. It is looking like a fairly tight market from now to 2027, but from 2027 onwards the world will need multiple new junior cobalt miners to meet supply.

Jack Lifton of the CMI Provides an Update on the Critical Minerals Supply & Demand Situation in the EV Industry

written by InvestorNews | February 8, 2024

In this InvestorIntel interview, Tracy Weslosky talks to [Critical Minerals Institute](#)'s Chairman Jack Lifton about "an existential crisis for the North American automotive industry." Speaking about the upcoming [Critical Minerals Summit](#) (#CMS2023) to be held from June 14 to 15 at the National Club in Toronto, Canada, Jack says that the summit will focus on the current supply and demand situation of critical minerals for the electric vehicle industry. He adds, "This is one not to miss."

Jack also discusses [Energy Fuels Inc.](#)'s (NYSE American: UUUU | TSX: EFR) recent [acquisition](#) of a rare earth and heavy mineral project in Brazil and he provides an update on Lynas Rare Earths Ltd.'s (ASX: LYC) rare earths processing plant in Malaysia.

He goes on to provide an update on the current lithium market

and how automakers like General Motors are investing in lithium companies to support their electric vehicle production and Piedmont Lithium (NASDAQ: PLL | ASX: PLL) just signed a purchase order and \$75 million equity deal with LG Chem, Ltd. (K0SE: A051910).

To access the full episode, [click here](#)

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About The Critical Minerals Institute

The [Critical Mineral Institute](#) (CMI) is an international organization for companies and professionals focused on battery materials, technology metals, defense metals, ESG technologies and practices, the general EV market, and the use of critical minerals for energy and alternative energy production. Offering an online site that features job opportunities that range from consulting roles to Advisory Board positions, the CMI offers a wide range of B2B service solutions. Also offering online and in-person events, the CMI is designed for education, collaboration, and to provide professional opportunities to meet the critical minerals supply chain challenges.

Vertical Integration is all the Rage in the EV Industry,

is Musk the New Ford?

written by InvestorNews | February 8, 2024

Last week, Bloomberg news [reported](#) that [Tesla, Inc.](#) (NASDAQ: TSLA) was in talks to buy [Sigma Lithium Corporation](#) (TSXV: SGML | NASDAQ: SGML), a company that is focused its 100%-owned Grota do Cirilo project, a large hard-rock lithium deposit in Brazil with lithium production aiming for 2024.

The stock price of Sigma Lithium was up 16% after the news was released and is up almost 250% over the past year in lockstep with other lithium miners. Electric vehicle (“EV”) manufacturers want to lock up lithium supplies as the metal increases since it is a key component in EV batteries and there are worries that demand will soon outstrip supply.

Neither Telsa nor Sigma Lithium released any news release on the subject nor provided any comment to the media. Tesla, led by Elon Musk, is looking at various options to secure its lithium sources, including potentially its own mining and refining.

Previously to fund its exploration and development, Sigma Lithium had signed a funding and 6-year offtake agreement with [Mitsui & Co., Ltd.](#) (TSE: 8031) of Japan and also signed a six-year lithium offtake agreement with Korean-based [LG Energy Solution](#) (KOSE: A373220).

In the past, Tesla signed [contracts for lithium](#) with Ganfeng Lithium Group Co. (SZSE: 002460), one of the largest lithium suppliers in the world, and [more recently](#), [Liontown Resources Limited](#) (ASX: LTR), an Australian miner.

Is Elon Musk the New Henry Ford?

The reappearance of Henry Ford-style vertical integration in car manufacturing marks a big 180-degree turn from the late 1990s when outsourcing to sub-contractors began.

In the early 1900s (over 100 years ago!), Henry Ford had a keen interest in acquiring and controlling the sources of raw materials for his company to achieve manufacturing self-sufficiency for his automobile operations. By achieving vertical integration, a business strategy in which a company controls all aspects of production, from raw materials to finished products, Henry Ford believed he would ensure a reliable supply chain and potentially reduce costs.

To achieve this desire, Henry Ford bought vast tracts of timberland and built sawmills in Michigan to control the wood required in his vehicles but also used to create shipping containers and for heating his factories. Henry Ford had a strong interest in controlling other sources of raw materials for his company, such as iron ore for steel production, a key component of automobiles, and also coal for his factories.

But Henry Ford also went further afield as he sought to secure a reliable source of rubber for his company. In the mid-1920s, he purchased a large tract of land in the Brazilian Amazon rainforest and established a rubber plantation and community called Fordlandia. Unfortunately, it was abandoned in the late 1930s due to challenges with the workers and the physical environment.

The New Vertical Integration Trend

Continues...

Not to be outdone by Tesla, earlier this month, [General Motors Co.](#) (NYSE: GM) announced the closing of the initial tranche, [a \\$320 million investment](#), of a previously announced \$650 million investment and offtake agreement with [Lithium Americas Corp.](#) (TSX: LAC | NYSE: LAC). Lithium Americas is advancing the Caucharí-Olaroz lithium project in Argentina towards first production and is also developing the Thacker Pass lithium project in Nevada which is advancing towards construction.

Last year, [Rio Tinto Group](#) (NYSE: RIO | LSE: RIO) and the [Ford Motor Company](#) (NYSE: F) signed [an agreement](#) whereby Rio Tinto would supply Ford with materials including lithium, low-carbon aluminum, and copper and Ford would become the initial customer for Rio Tinto's Rincon lithium project in Argentina.

It's also happening with the smaller technology components in EV batteries. In June 2022, [Nano One Materials Corp.](#) (TSX: NANO), a company with patented processes for the low-cost, low-environmental footprint production of high-performance cathode materials used in lithium-ion batteries, [announced](#) a strategic US\$10 million equity investment and collaboration agreement with Rio Tinto. The two companies entered into an agreement under which they would work together to support the acceleration of the commercialization of Nano One's patented cathode technology.

Also in June of last year, [NEO Battery Materials Ltd.](#) (TSXV: NBM | OTCQB: NBMFF) announced a [C\\$3 million strategic investment](#) from Automobile & PCB Inc. (KOSE: A015260) into its Korean subsidiary for the first phase of its commercial plant project. NEO focuses on producing silicon anode materials for lithium-ion batteries through its proprietary single-step nanocoating process.

Final Thoughts

Ford's attempts to control raw materials were not always successful, and he faced challenges such as labor disputes, market fluctuations, and supply chain issues.

Nonetheless, his focus on vertical integration and self-sufficiency had an impact on the American manufacturing industry.

Perhaps what is old is new again.

The Great Wall of China and the Critical Minerals Shortage

written by Peter Clausi | February 8, 2024

There are some facts that we just know are true. Lewis Carroll wrote *Alice in Wonderland*. You can see the Great Wall of China from space. The Earth rotates around the sun. And we're suffering from a critical minerals shortage.

Except none of these 'facts' is true. Lewis Carroll wrote *Alice's Adventures in Wonderland* and *Alice Through the Looking Glass*, but never did he pen *Alice in Wonderland*. As for the visibility of the Great Wall, NASA disproved that 'fact' in 2004 with a photo from the International Space Station. The Earth actually rotates around the centre of our solar system's mass, not the sun. And no, there is currently no critical minerals shortage.

The thesis for the critical minerals shortage is this. The world

is facing a climate change disaster (agreed, and part of the cause is anthropomorphic). Humans need to change the things we can change to mitigate that disaster (again, agreed). Migrating away from fossil fuels is part of that mitigation (again, agreed). Migrating to Green Energy is the only rational solution (partly agreed). Green Energy needs lithium, cobalt, our friends 59 and 60 on the periodic table, uranium, zinc, cesium and others. There aren't enough of those critical minerals to enable the Green Economy, so therefore we are suffering from a shortage of them.

Until recently that seemed like a self-evident truth. Then I listened to Dr. Jon Hykawy. He and I were on a panel together recently at the [Critical Minerals Institute](#) Summit in Toronto. Dr. Hykawy's thinking is that there are no budgets, no hard targets, no actual real-life numbers from mining companies or governments for the production and consumption of items like EVs and other rechargeables. There are thoughts from brokerage firms (and we've seen from their predictions for the cannabis industry how accurate those thoughts can be), and there are thoughts / corporate presentations from explorers for critical minerals. There are government vague statements of goodwill and targets twenty years out, but there are no hard numbers. There is no actual data.

Instead, we get [prognostications](#) like, "By the year 2035 the world will need..."

If there is no data, how do we know if there is a shortage of critical minerals? Perhaps we're actually in a surplus situation. Perhaps the supply and needs are balanced.

Pretend I'm building a house. We all know there is a shortage of lumber, right? So how will I build the house without lumber? If I need 800 2x4's, and there is a shortage at the local DIY shop,

what do I do? I search other shops. I drive around. I put in orders at various stores for delivery to the job site. If I have to I'll make my own 2x4s. There is no shortage of lumber – I just have to work harder to get what I need. The bottleneck is in the supply chain, not in the lack of lumber.

Maybe the critical minerals 'shortage' is similar. As Mark Chalmers from [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR often says, "Rare earths aren't that rare." There are a multitude of rare earth and other critical mineral deposits around the world. Any geologist with any experience can point to good deposits of critical minerals, begging for further work and exploitation. I'm only a lawyer and I can think of 5 critical mineral deposits in Canada deserving of advanced geologic work. Why doesn't that work get done?

Because it's not the deposits that are in shortage. What the world lacks is the processing capabilities to exploit those deposits. The world lacks enough metallurgists to work them all. We lack engineers and chemists who can figure out a way to economically separate the good stuff from the host rock to create saleable product.

The world doesn't have a critical mineral shortage. The world has a critical mineral processing shortage.

I applaud the North American approach, albeit recent, to defend its mining assets from 'bad actors'. Those assets are available to be developed domestically, with their output to be consumed by the domestic supply chain. What we need now is investment into mining schools for more and better highly [skilled talent](#). We need investment into new research, knowing full well some research will result in successful new processes and some will not. That's the nature of science. We need the mining assets working together to create processing facilities to eliminate

the bottleneck of a lack of technology, not in competition. We need true leadership on these complex issues, from government and First Nations and mining companies, all working together for the benefit of all.

And with advances in processing technologies, some of what we think today may be in shortage in 20 years will actually be in surplus or not be needed at all. The need for lithium in the electrolyte may be reduced or even replaced by a much more accessible element.

You can't see the Great Wall of China from space and the world does not have a shortage of critical minerals. The world has a shortage of critical minerals processing capabilities. Let's not have governments waste money asking the wrong question or even worse believing the wrong fact.

Why Washington sees the Congo as a solution for the looming critical minerals disaster

written by Melissa (Mel) Sanderson | February 8, 2024

The December 13, 2022 US-DRC-Zambia Memorandum of Understanding recently published is unfortunately another example of the US desperately trying to solve the looming disaster confronting the electric vehicle, green energy and defense industries caused by a current and growing global shortage of vital inputs such as lithium and rare earths