

# Neo Performance's Rahim Suleman on being 'the most vertically integrated rare earth magnetics company in the world.'

written by InvestorNews | March 14, 2024

During an engaging interview at PDAC 2024 with [Critical Minerals Institute](#) (CMI) Co-Chairman Jack Lifton, Rahim Suleman, President, CEO, and Director of [Neo Performance Materials Inc.](#) (TSX: NEO), shed light on the company's strategic endeavors and its unique positioning in the rare earth materials sector. Suleman emphasized Neo's role as a pivotal player in the rare earth magnetics market, underlining the critical importance of these materials in driving the energy transition and their explosive demand growth. He highlighted Neo's existing vertical integration in the rare earth magnet sector and its innovative dual supply chain strategy that provides a robust solution to the market's over-reliance on China, which dominates the extraction, processing, and magnet production of rare earth materials. "We are the most vertically integrated rare earth magnetics company in the world," Suleman remarked, illustrating Neo's commitment to mitigating concentration risks and fostering resilience in the supply chain.

Suleman further detailed Neo's significant investments in expanding its operational footprint, particularly mentioning the development of a sintered magnet facility in Estonia, which is poised to serve both the North American and European markets starting in 2025. This ambitious project, heralded as a landmark

move to diversify the global rare earth magnet production landscape, underscores Neo's proactive approach to addressing the critical shortage of rare earth permanent magnet manufacturing capacity outside China. With plans to extend its manufacturing capabilities to North America and ongoing support from the European Union, Neo is strategically positioning itself to meet the burgeoning demand for rare earth magnets essential for electric vehicles and other green technologies. "We're in the process of investing in phase one... but we would immediately follow it with phase two and then immediately follow that and probably even concurrent to that do a large phase in North America as well," Suleman shared, highlighting Neo's comprehensive strategy to fulfill European and American EV Motor OEMs' demand for domestic sourcing of rare earth magnets.

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

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## About Neo Performance Materials Inc.

Neo manufactures the building blocks of many modern technologies that enhance efficiency and sustainability. Neo's advanced industrial materials – magnetic powders and magnets, specialty chemicals, metals, and alloys – are critical to the performance of many everyday products and emerging technologies. Neo's products help to deliver the technologies of tomorrow to consumers today. The business of Neo is organized along three segments: Magnequench, Chemicals & Oxides and Rare Metals. Neo is headquartered in Toronto, Ontario, Canada; with corporate offices in Greenwood Village, Colorado, United States; Singapore; and Beijing, China. Neo has a global platform that includes ten manufacturing facilities located in Canada, China, Estonia, Germany, Thailand, the United

Kingdom, and the United States, as well as one dedicated research and development centre in Singapore.

To learn more about Neo Performance Materials Inc., [click here](#)

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**Tom Drivas Explores the  
Initial Rare Earth Mineral  
Resource Estimate from Appia's  
PCH Ionic Adsorption Clay**

# Project in Brazil

written by InvestorNews | March 14, 2024

In this interview with Tracy Weslosky during PDAC 2024, Tom Drivas, CEO and Director of [Appia Rare Earths & Uranium Corp.](#) (CSE: API | OTCQX: APAAF) discussed the results from the maiden [Mineral Resource Estimate](#) for Appia's PCH Ionic Adsorption Clay Project in Brazil. Announcing a significant 52.8 million tonnes of resource, Tom highlighted the presence of extremely high-grades of rare earths within this resource, showcasing some of the highest TREO (total rare earth oxide) grades globally.

Tom emphasized the project's potential, stating, "We have only explored 1% of the total area... We have 40,000 hectares." Tom also highlighted the project's richness in magnet rare earths like neodymium and praseodymium, essential for producing permanent magnets in high demand. The addition of industry experts like Constantine Karayannopoulos, Jack Lifton and Don Hains, P. Geo to Appia's Advisory Board underscores the project's significance and potential.

Besides the project in Brazil, Appia is also advancing uranium exploration properties around the Athabasca Basin in Saskatchewan and has a significant uranium resource in Ontario at Elliot Lake. Notably, the company is also advancing its Alces Lake project in Saskatchewan, renowned for its high-grade critical rare earths in monazite.

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

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# About Appia Rare Earths & Uranium Corp.

Appia is a publicly traded Canadian company in the rare earth element and uranium sectors. The Company is currently focusing on delineating high-grade critical rare earth elements and gallium on the Alces Lake property, as well as exploring for high-grade uranium in the prolific Athabasca Basin on its Otherside, Loranger, North Wollaston, and Eastside properties. The Company holds the surface rights to exploration for 94,982.39 hectares (234,706.59 acres) in Saskatchewan. The Company also has a 100% interest in 13,008 hectares (32,143 acres), with rare earth elements and uranium deposits over five mineralized zones in the Elliot Lake Camp, Ontario. Lastly, the Company holds the right to acquire up to a 70% interest in the PCH Project (See June 9<sup>th</sup>, 2023 Press Release – Click [HERE](#)) which is 40,963.18 ha. in size and located within the Goiás State of Brazil. (See January 11<sup>th</sup>, 2024 Press Release – [Click HERE](#))

To learn more about Appia Rare Earths & Uranium Corp., [click here](#)

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# **The Critical Minerals Institute Report (01.25.2024): U.S. government bans Pentagon battery purchases from major Chinese companies starting October 2027**

written by Matt Bohlsen | March 14, 2024

Welcome to the January 2024 [Critical Minerals Institute](#) (CMI) report, designed to keep you up to date on all the latest major news across the critical minerals markets. Here is the CMI List of [Critical Minerals](#) or visit the [CMI Library](#).

## **Global macro view**

January 2024 saw a slight rise in U.S. inflation [reported](#) from 3.1%pa in November to 3.4%pa in December 2023. This has led market commentators to suggest the proposed 2024 interest rate [reductions](#) may be pushed out to H2, 2024, or be smaller in nature.

The next U.S. Fed rates announcement is due on January 31, 2024,



and no changes in rates are expected. Year to date, as of January 21, 2024, the [S&P 500](#) is up 2.04%. U.S. GDP looks set to slow in Q4, 2023 ([announcement](#) due 25 January 2024) with [forecasts](#) for 2% annualized growth, which would result in a [2023 GDP](#) of ~2.7%. 2024 U.S. GDP is [forecast](#) to be ~2.2%. The U.S. consumer remains resilient with U.S. employment [very strong](#).

China continues its property led slowdown with 2023 GDP recently [reported at 5.2%](#) annualized. China's December new [home prices fell](#) at the fastest pace in almost 9 years. Despite this the Chinese Central Bank left rates unchanged, defying expectations for a 0.1% cut.

The Russia-Ukraine war continues as does the Hamas-Israel war which last month spread to include the U.S. and UK forces [bombing](#) Iran-backed Houthis over their attacks in the Red Sea. The Middle East is a hotbed ready to explode.

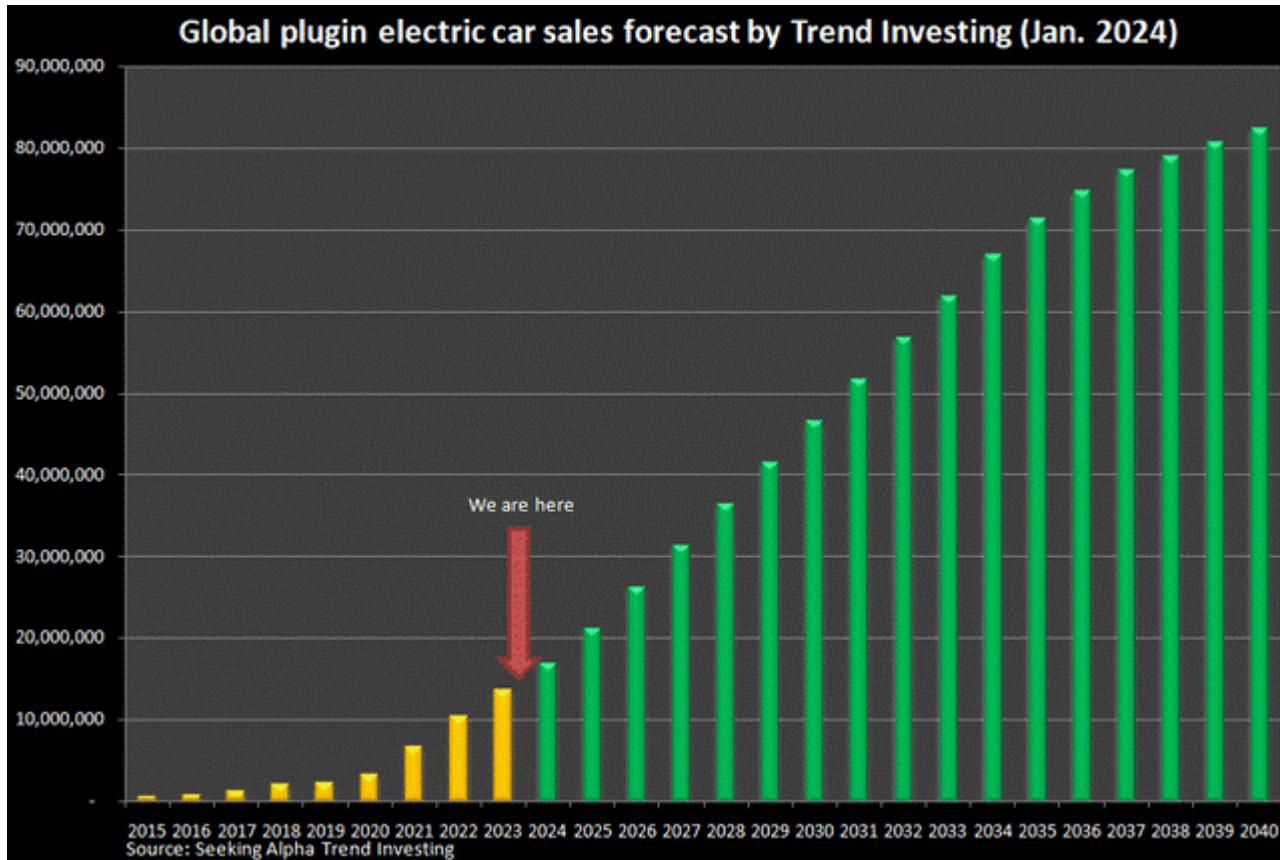
## Global plugin electric vehicle ("EV") update

December 2023 saw the usual seasonal upswing in global plugin electric car sales reaching a record [~1.5 million](#). China led the way with a stellar result of [1.191 million units](#), up [46% YoY](#).

Global plugin electric car sales ended 2023 at [13.6 million units](#) (~16% market share), for a growth rate of [31% YoY](#) (a significant slowdown from the ~60% growth rate in 2022).

- Trend Investing [forecast](#) for 2024 is 17 million units (20% market share), for a growth rate of 25% YoY.
- BloombergNEF [forecast](#) for 2024 is 16.7 million units (~20% market share), for a growth rate of 21% YoY.

We are still at the very early stage of the EV boom.



Trend Investing's global plugin electric car sales forecast to 2024 (green bars)

In early January, news was released that [a record](#) 1.2 million EVs were sold in the U.S. in 2023, according to estimates from Kelley Blue Book. The report noted that U.S. market share [reached 7.6%](#) in 2023 and that 55% of EV sales were attributable to Tesla (NASDAQ: TSLA).

The UK announced that their Zero Emission Vehicle (ZEV) [mandate](#) to increase electric car sales has become law. Key rules include:

- **"ZEV Mandate demands makers up share of electric car sales to 22% in 2024.**
- Electric vehicles currently make up around just 18% of all registrations in the UK.
- **Mandate thresholds rise annually to an 80% share in 2030 –**

**and 100% by 2035.**

- Failure to meet the ZEV mandate sales targets can result in huge fines for auto makers of £15,000 per model below the required threshold.”

## **EV battery news**

The U.S. government continues to tighten the screws towards developing their own EV supply chain independent of Foreign Entities Of Concern (“FEOC”). On January 20 Bloomberg [reported](#): “US to ban Pentagon battery purchases from China’s CATL, BYD”. The ban will commence from October 2027 and include 4 other Chinese battery makers (Envision Energy Ltd., EVE Energy Co., Gotion High Tech Co., and Hithium Energy Storage Technology Co).

## **Global critical minerals update**

There is an enormous amount of doom and gloom surrounding the EV and battery metals sector as we commence 2024. A key theme in recent months has been very depressed prices for many of the critical minerals, especially those related to the EV segment. A combination of the slowing EV growth rate in 2023 from ~60% in 2022 to ~31% in 2023, combined with an excess of battery inventory from 2022 and new EV metals supply has left most EV metal markets in surplus with prices collapsing.

MarketsCommodities

# Battery Metal Price Plunge Is Closing Mines and Stalling Deals

■ Prices for lithium, nickel and cobalt have tumbled from peaks

Source: [Bloomberg article, January 10, 2024](#)

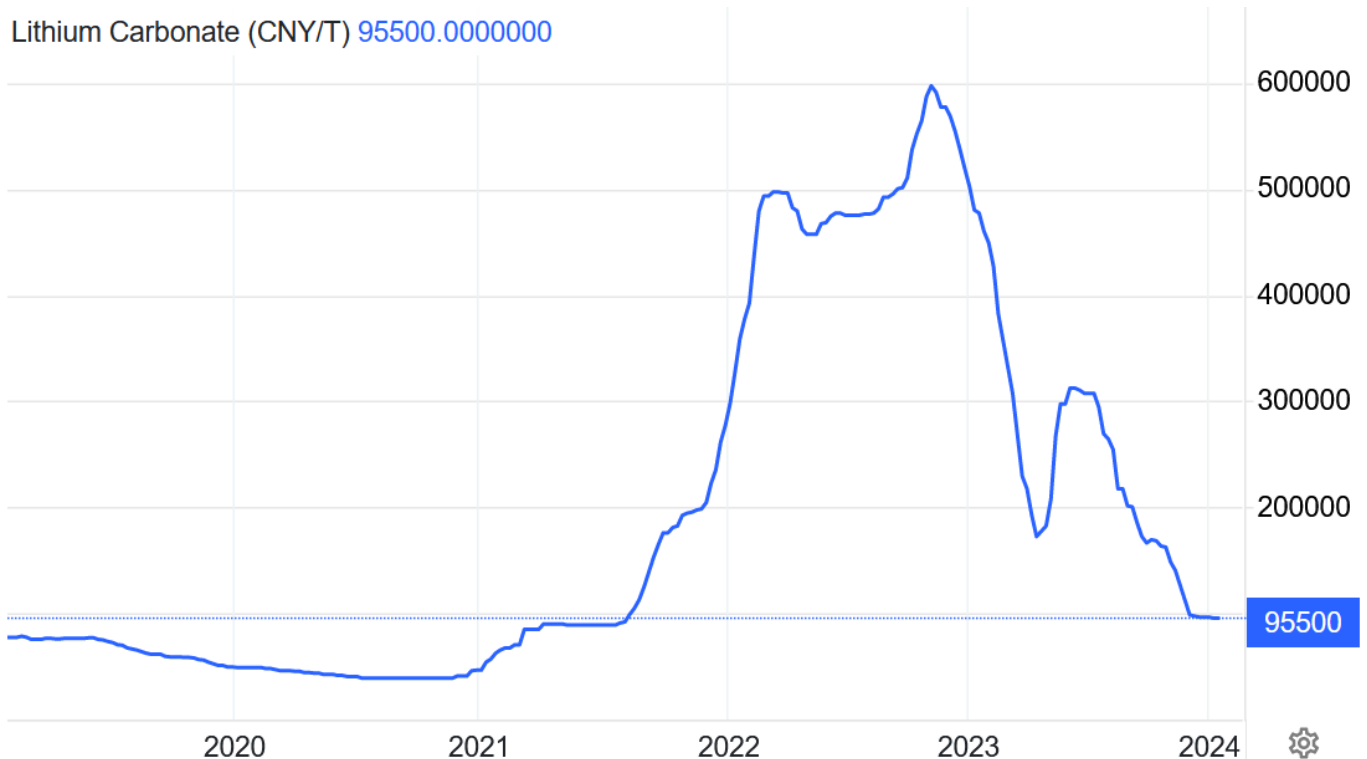
## Lithium

China lithium carbonate [spot prices were flat](#) the past month, with the price now at [CNY 95,500/t](#) (USD 13,275/t). After an [~80%](#) fall from the high, lithium prices appear to have finally stabilized. This is logical given that prices are now at or below the marginal cost of production, especially for the higher cost China lepidolite producers.

Industry participants have been calling for a price bottom in recent months, with China Futures Co. analyst, Zhang Weixin, forecasting lithium prices to bottom out between [CNY 80-90,000/t](#) and average CNY 100,000/t in 2024.

The other key recent trend in the lithium sector has been several announcements from lithium producers either stopping production or reducing their expansion plans. Core Lithium (ASX: CX0) announced on January 5, 2024 it will [temporarily suspend](#) mining operations. Then on January 17, 2024, Albemarle Corporation (NYSE: ALB) [announced](#) “actions to preserve growth, reduce costs, and optimize cash flow”. This includes deferring plans to build a fourth lithium hydroxide processing train at their Kemerton LiOH facility.

**The China lithium carbonate spot price has stabilized near the marginal cost of production**



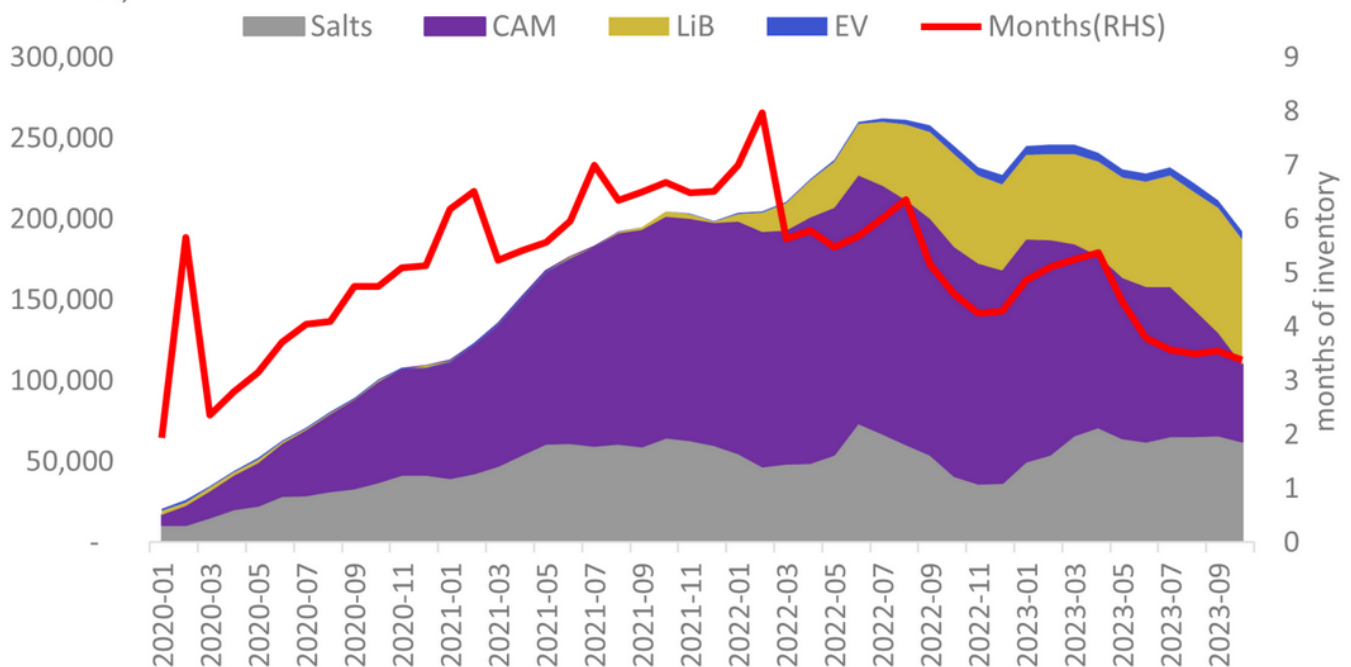
Source: [Trading Economics](#)

On the topic of when we might see some recovery in lithium prices. On January 19 Fastmarkets put out a report [stating](#): “...We expect orders to start flowing upstream again either towards the end of the first quarter or early in the second quarter.” If this proves correct and EV demand remains solid, then we could expect some lithium price recovery late Q1, early Q2, 2024.

**Fastmarkets reports China lithium inventory levels are now back to the pre-boom levels with ~3 months of supply (red line)**

## Implied inventory on the way back to normalized level

Implied lithium inventory within China's supply chain  
tonnes, LCE



Source: [Fastmarkets](#)

## Magnet Rare Earths

Neodymium spot prices fell again the past month to [CNY 505,500/t](#). Prices peaked in February 2022 at CNY 1,506,530 and have been trending lower ever since then.

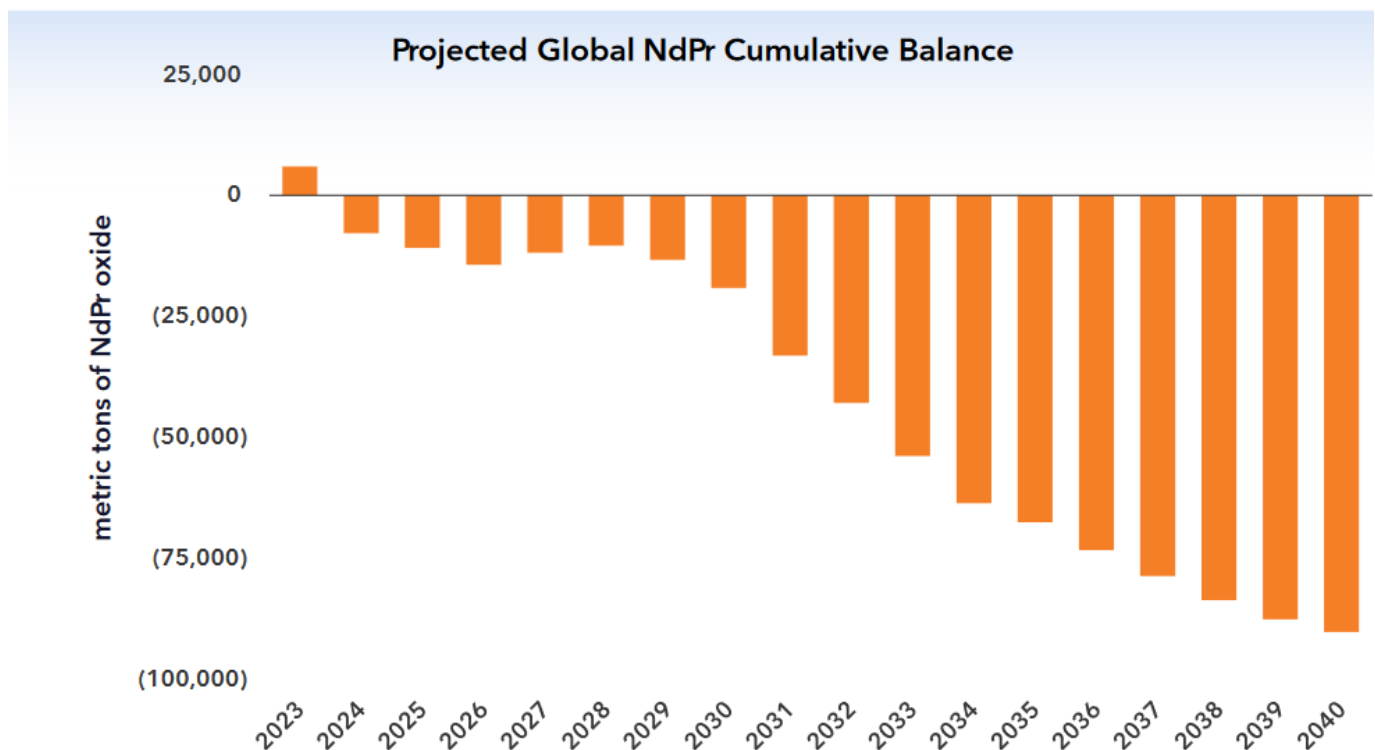
As discussed in a recent [InvestorNews article](#), the consensus of industry experts is for 2024 to be a consolidation year. The article states: "2024 should see a year of consolidation for the rare earths sector as some experts are telling me. Some [forecasts](#) are for NdPr supply deficit to begin as early as 2024; however, this will largely depend on China demand, the global economy, EV sales, and new NdPr supply hitting the market."

One interesting [news item](#) that emerged in January was of Rainbow Rare Earths Limited (LSE: RBW) ("Rainbow") and their Phalaborwa Project in South Africa. The key aspect being that the Project

[consists of gypsum](#) waste piles that contain large quantities of the magnet rare earths. Rainbow CEO Bennett [stated](#): “We’ve got no mining cost, no crushing, no milling, no flotation. I saw the advantages to lead to a low capital intensity and low operating cost environment project.” Rainbow targets first production for 2026.

**Some analysts are forecasting deficits ahead for NdPr rare earths driven by strong EV and wind energy demand**

## A precarious supply-demand imbalance looms



Source: [MP Materials courtesy Adamas Intelligence](#)

## Cobalt, Graphite, Nickel, Manganese and other critical minerals

**Cobalt** prices (currently at [US\\$12.90/lb](#)) were flat the past month and remain at very depressed levels. The cobalt market is



suffering from excess cobalt supply from the DRC which combined with a global slowdown in demand has led to cobalt prices dropping by almost 2/3 since their April 2022 peak. With LFP batteries gaining in popularity (no cobalt required) and a weak global consumer electronics market, there appears to be no short term turnaround for cobalt. Leading cobalt producer Glencore PLC (LSE: GLEN | OTC: GLCNF) has been stockpiling their excess material. At current prices, there is limited incentive for western producers to expand or enter the market.

### **Cobalt has lost two-thirds of its value since a recent peak in 2022**



Source: [Trading Economics](#)

**Flake graphite** prices remain very weak with prices near the marginal cost of production and [down ~2%](#) over the past month.

A January 2024 Bloomberg [report](#) noted that natural flake graphite shipments slumped 91% in December from November 2023. Of course, sales surged prior to the Chinese export license permits being implemented in December 2023. December exports



were 3,973 tons compared to the past monthly average of ~17,000t, so still a very significant fall.

Despite the spate of recent bad news, graphite is one of the EV metals with the largest demand profiles ahead this decade. Several groups are forecasting deficits ahead this decade starting from 2024/25 for the various types of graphite including flake, spherical, and synthetic. You can read more on the graphite outlook [here](#).

**Nickel** prices fell again last month to [USD 15,799/t](#). The [1 year outlook for nickel](#) remains poor due to oversupply concerns from Indonesia. As a result of low nickel prices we saw [the collapse](#) of Panoramic Resources (ASX: PAN) in December and then on January 22, 2024, it was [reported](#) that BHP Group (ASX: BHP | NYSE: BHP) plans “to put parts of Kambalda nickel concentrator in Australia on care and maintenance” from mid-2024. This was caused by Wyloo Metals, which supplies ore to the plant, announcing a pause in mining operations due to low nickel prices.

**Manganese** prices were flat the past month and are now at [CNY 29.25/MTU](#).

**Uranium** prices have been the exception to the rule the past year as they continue to rise, now at [US\\$106/lb](#).

**Uranium 5 year price chart**



Source: [Trading Economics](https://tradingeconomics.com/uranium-price)

## Conclusion

The biggest trend that looks to be emerging in Q1, 2024 for the EV metals sector is a negative supply response from producers. Producers are cutting CapEx, scaling back expansion, and in some cases reducing or stopping production. Expect to see a lot more of this in H1, 2024.

They say “the cure for low prices is low prices”. Well that’s exactly where we are now in the cycle. The next 3-6 months is likely to see the washout phase, where many miners collapse, reduce production or put their mine into care and maintenance. There is no point running a mine and selling a limited resource and making no profit. I will end with three well known sayings:

- “Bear markets are the author of bull markets”
- “*Bull markets are born on pessimism, grown on skepticism, mature on optimism, and die on euphoria.*”

- “You have suffered through the pain, now hang around for the gain.”

Given the EV metals markets have been in a bear market for the past 15-18 months the end is near, and we should expect some recovery during H2, 2024, assuming EV sales can grow at a reasonable rate.

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# **Technology Metals Report (01.19.2024): Rainbow Rare Earths Discovery, Middle East Critical Minerals Chess Play, and ANSTO Invests in Critical Minerals Research**

written by Tracy Weslosky | March 14, 2024

Key highlights in this Technology Metals Report include significant developments such as Rainbow Rare Earths Limited's discovery in South Africa, China's unveiling of the new heavy rare earth mineral Bayanoboite-Y, and the Australian Nuclear Science and Technology Organisation (ANSTO)'s \$13.9 million funding for critical minerals research.

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# **Will the magnet rare earths prices rise in 2024?**

written by Matt Bohlsen | March 14, 2024

Today we take a look at the magnetic rare earths sector and two leading rare earth companies and what we can expect in 2024 and beyond.

## **The magnet rare earths prices have fallen in 2022 and 2023**

The magnet rare earths sector was hit hard in 2023 with China's Neodymium (Nd), Praseodymium (Pr), and Dysprosium (Dy) prices falling as the global economy and EV demand slowed.

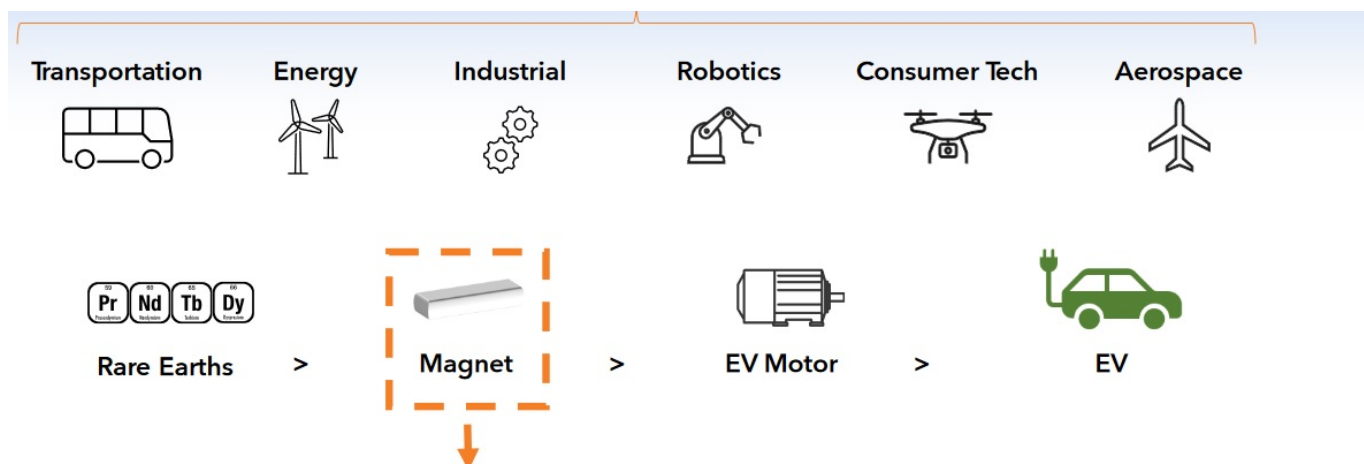
**Neodymium prices came crashing down in 2022 and 2023 as demand slowed after the 2021 growth rate boom in EV sales – Now at CNY 530,000/t**



Source: [Trading Economics](#)

Global plugin electric car sales [grew by 108%](#) in 2021 causing a huge spike in EV metal prices. Then in 2022, the growth rate slowed to 56% at a time when supply of most EV metals surged. Finally in 2023, the growth rate slowed further to an estimated 28%, resulting in further price decline for the magnet metals such as neodymium.

**Demand for the magnet rare earths in electric motors is driven by multiple sources with electric vehicle sales being a key driver. (90% of EV motors use rare earth magnets)**



**Rare earths present a single point-of-failure threat to industries that drive prosperity and security.**



Source: [MP Materials company presentation](#)

## Will the magnet rare earths prices rise in 2024?

The answer to this question will largely depend on recovery in China and the global economy driving increased demand for EVs, wind turbines, and other magnets used in various industrial applications. Given the most recent trend globally has been towards future interest rate decreases (notably in the USA and China), it bodes well for a recovering consumer and hence demand. This may take a good part of 2024 to flow through with excess inventories across many sectors still needing to be worked off. If we get a strong pickup in EV demand (>40% YoY increase) in 2024, then the magnet rare earths sector woes could soon disappear.

China's December 2023 EV sales give some hope as they jumped to a record [945,000 units](#), achieving a superb 47% YoY growth rate.

# Lynas Rare Earths Ltd. (ASX: LYC) ("Lynas") update

The big recent Lynas news ([announced December 7, 2023](#)) is that the first feed of material from the Mt Weld Mine has been introduced into the new Kalgoorlie Rare Earths Processing Facility in Western Australia, leading to first production and ramp-up of the Facility. A great achievement for Lynas, especially given that the Kalgoorlie Rare Earths Processing Facility is Australia's first value-added rare earths processing facility. Lynas [stated](#):

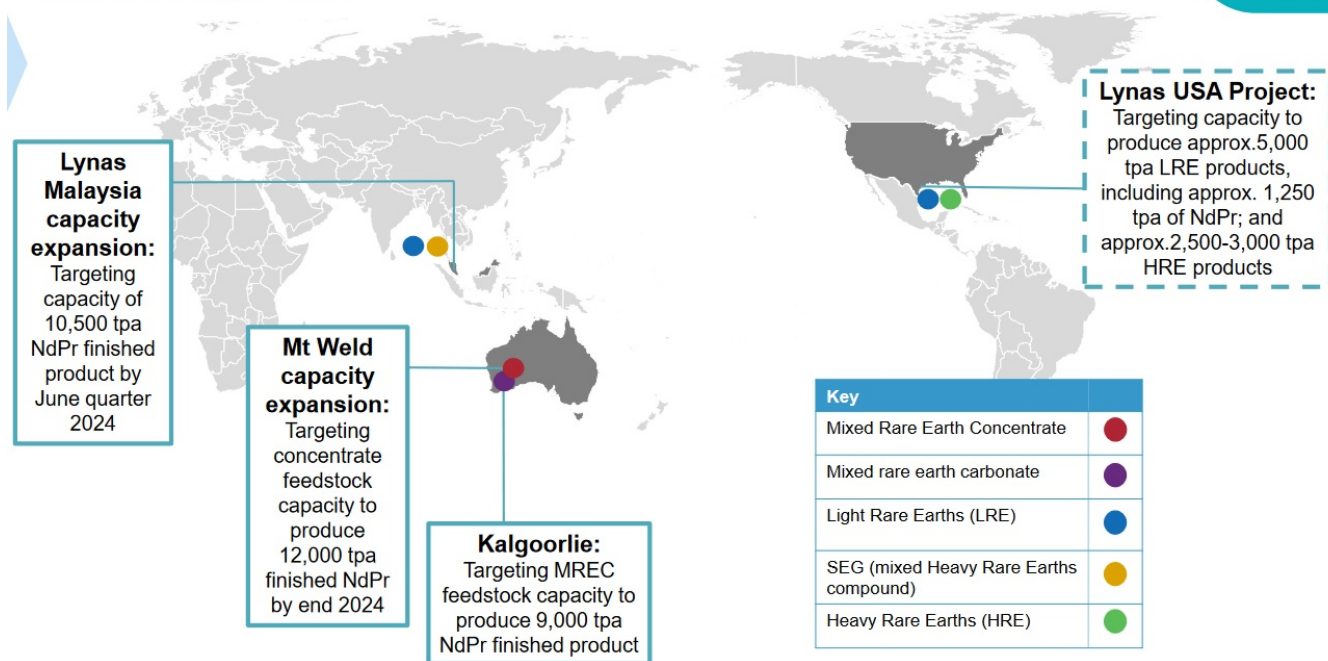
*The Lynas Malaysia plant is currently shutdown as works to increase downstream processing capacity are completed. Production will recommence in January 2024. Mixed Rare Earth Carbonate (MREC) from the Kalgoorlie Rare Earth Processing Facility will be progressively introduced to the Lynas Malaysia plant commencing late in the March quarter and increasing as the controlled ramp up of the Kalgoorlie facility is progressed...."*

Once their expansions are completed, Lynas intend to increase their production capacity to [10,500tpa NdPr](#) (Neodymium-Praseodymium). Lynas produced [6,142t of NdPr](#) in FY 2023.

2024 will see the Mt Weld Mine expansion and further work on Lynas' US Rare Earths Processing Facility Project targeted to be operational by [July 2025 – June 2026](#).

**Lynas is expanding its rare earths mining and processing capabilities through to 2025/26**

## Growing scale and increasing capacity to meet forecast demand growth



23

Source: [Lynas company presentation](#)

## MP Materials Corp. (NYSE: MP) (“MP Materials”) update

MP Materials owns and operates the Mountain Pass Rare Earth Mine and Processing Facility in California, USA. In the past MP Materials had to ship their concentrate to China for processing; however, they have a target to bring this back to the USA.

Their target is to grow their mine output by 50% over the next four years and to build separation capacity in the USA with annual production of 6,000 tpa NdPr oxide. The third stage of their plan is to build a greenfield production facility in Texas targeting ~1,000tpa of finished NdFeB (Neodymium Iron Boron) magnets. They already have General Motors (NYSE: GM) as a foundational customer.

**MP Materials is working towards Stage II and Stage III of their plan to bring rare earths processing and magnets production to**



## the USA



### Stage I: Concentrate Production

- Largest ex-China producer
- ~15% global market share in 2022
- "Upstream 60K" strategy to grow output 50% over the next four years

### Stage II: RE Separations

- Separation, refining and finishing capabilities to convert RE concentrate into separated REOs
- >6k mt NdPr oxide annual production target
- Lanthanum, Cerium and SEG+ production

### Stage III: RE Magnets

- Greenfield production facility in Texas targeting ~1k mtpa of finished NdFeB magnets
- General Motors as foundational customer
- To deliver intermediate product ahead of magnet completion
- Buy, build and/or JV

Source: [MP Materials company presentation](#)

## Closing remarks

2024 should see a year of consolidation for the rare earths sector as some experts are telling me. Some [forecasts](#) are for NdPr supply deficit to begin as early as 2024; however, this will largely depend on China demand, the global economy, EV sales, and new NdPr supply hitting the market.

The two Western magnet rare earths leaders Lynas and MP Materials (and some other key players) are progressing their plans to further build a western supply chain and should be largely complete within the next 2-4 years if it goes to plan. This all supports the building of an end-to-end Western rare earths and magnets sector this decade. Stay tuned.

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# Rare earths company stock price has had a 'meteoric' rise of over 21x the past 15 months

written by InvestorNews | March 14, 2024

Tier one mining projects that can be advanced rapidly towards production in a friendly location are typically well rewarded by the stock market. We saw this recently in the lithium space with the success of Sigma Lithium Corporation (NASDAQ: SGML | TSXV: SGML) in Brazil. Today's company is in a similar location in Brazil and has a potential tier-one rare earths project. The market has recognized this with the stock price up over 21x in the past 15 months.

**Meteoric Resources (ASX: MEI) stock price chart showing a rise from A\$0.012 to A\$0.262 in 15 months**



Source: [Yahoo Finance](#)

## Meteoric Resources NL

[Meteoric Resources NL](#) (ASX: MEI) [state that](#) they have “the world’s highest grade ionic adsorption clay REE deposit”. Their potential tier-one Caldeira Project is located in the Minas Gerais State of Brazil.

The Caldeira Project drilling has achieved strong rare earth element (“REE”) grades over wide continuous intercepts from surface. The Project remains open at depth with very significant potential exploration upside.

Meteoric Resources [state](#):

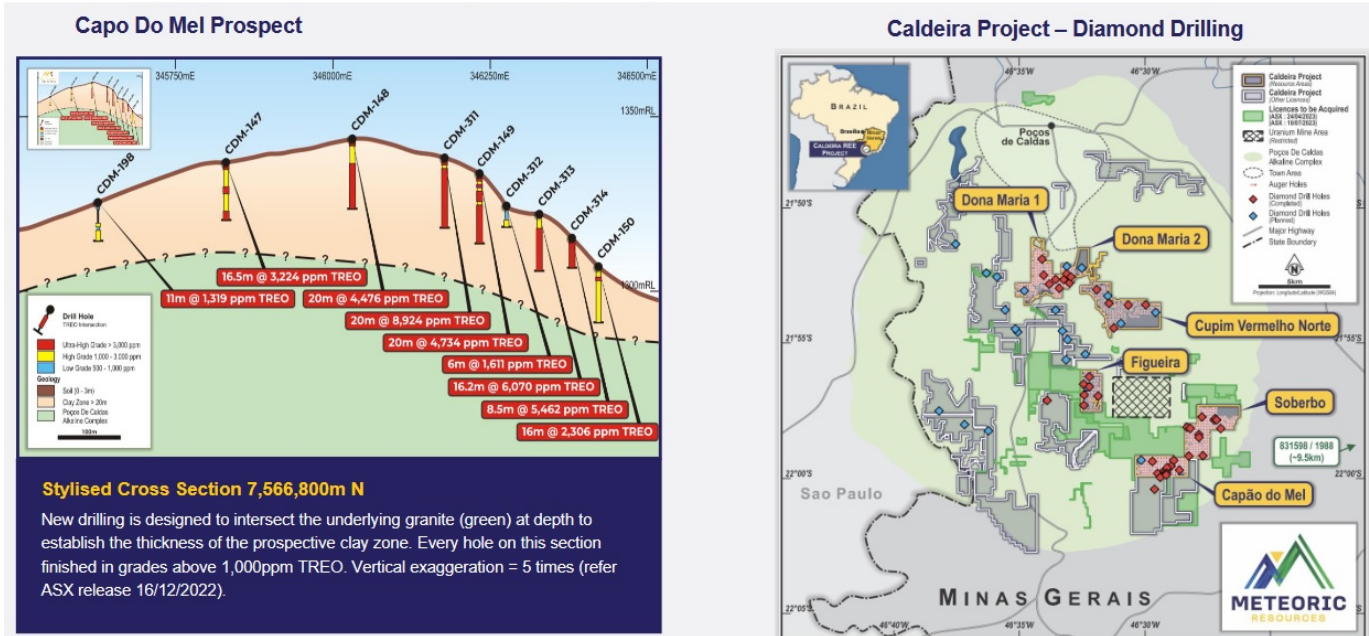
*“At Caldeira, REE mineralisation commences from surface. The average drill depth used in the MRE is 6.9m and 85% of all holes finish in TREO grades above 1,000 ppm – the Caldeira deposit remains completely open at depth.”*

Another positive is that the Capo Do Mel Prospect has a very high-grade portion which would be amenable for a high-grade starter pit.

**The Caldeira Project in Minas Gerais, Brazil – Capo Do Mel Prospect showing strong drill results from near surface + location map**

## CALDEIRA GRADES, DRILLING INTERCEPTS AND PEERS

Outstanding grades, wide continuous intercepts and open at depth



Source: [Meteoric Resources company presentation](#)

The Caldeira Project has a **Maiden JORC Mineral Resource Estimate ("MRE") of 409Mt @ 2,626 ppm TREO Inferred** at a 1000ppm cut off; or at a 2000ppm TREO cut-off, the MRE is 271Mt @ 3,146ppm TREO. That makes it a large size and good grade ionic clay rare earths resource.

The TREO identified across the Caldeira Project represents an enriched basket of both light and heavy rare earth elements. Importantly it contains several valuable magnet rare earths including Neodymium ("Nd"), Praseodymium ("Pr"), and Dysprosium ("Dy").

**The Caldeira Project Maiden Inferred Resource estimate showing the magnet rare earths including Nd, Pr, and Dy**

## CALDEIRA PROJECT MAIDEN RESOURCES – 409Mt @ 2626 ppm TREO

World's Highest Grade Ionic Adsorption Clay REE Deposit (ASX 1/5/2023)

Licence	JORC	Tonnes	TREO	Pr <sub>6</sub> O <sub>11</sub>	Nd <sub>2</sub> O <sub>3</sub>	Tb <sub>2</sub> O <sub>3</sub>	Dy <sub>2</sub> O <sub>3</sub>	MREO	MREO/TREO
	Category	Mt	ppm	ppm	ppm	ppm	ppm	ppm	(%)
Capão do Mel	Inferred	68	2,692	148	399	4	22	572	21.3%
CVN	Inferred	104	2,485	152	472	5	26	655	26.4%
Dona Maria 1 & 2	Inferred	94	2,320	135	404	5	25	569	24.5%
Figueira	Inferred	50	2,811	135	377	5	26	542	19.3%
Soberbo	Inferred	92	2,948	190	537	6	27	759	25.8%
<b>Total</b>	<b>Inferred</b>	<b>409</b>	<b>2,626</b>	<b>154</b>	<b>447</b>	<b>5</b>	<b>25</b>	<b>631</b>	<b>24.0%</b>

Source: [Meteoric Resources investor presentation](#)

## Project metallurgical test work, permitting, access, and infrastructure

Metallurgical test work [has produced](#) a 25.5% magnet rare earth element concentrate. Furthermore, test work to date has achieved [excellent recoveries](#) including: Nd and Pr above 70%, Tb 60-70%, and Dy 50-60%.

To help fast-track development (including permitting) Meteoric Resources has entered into a non-binding Cooperation Agreement with the State Economic Department (Invest Minas) and the State Government of Minas Gerais.

The focus for an initial rare earth element mining operations and processing facility is on the southern licenses of Figueira, Capado Mel, and Soberbo.

The proposed Project plant site location has [all-weather road](#)

[access](#) and access to power and water abstraction points.

## Catalysts and next steps for Meteoric Resources

Near-term catalysts include further drilling results and an updated resource estimate with infill drilling to improve the Resource from Inferred to M&I. Economic studies including a Scoping Study ([H1, 2024](#)) and then a Feasibility Study ([mid-2025](#)) to follow. Concurrent work on an environmental impact study and permitting will also be occurring in 2024 and 2025 (details [here](#) on page 15). There will also be engineering and other work to develop a ~5Mtpa processing facility.

## Closing remarks

Meteoric Resources is still in the relatively early stages but already has a potential tier-one global rare earths ionic clay resource suitable to a simple open pit operation. Being in Minas Gerais Brazil the Project has every chance to move forward at rapid speed. The processing side for the Project appears to be a simple flow sheet with no need for drilling/blasting, no waste dumps, and no tailings required.

Meteoric Resources trades on a market cap of [A\\$521 million](#) with the stock having had a 'meteoric' rise the past 15 months ([up over 21x](#)). One to watch closely in 2024.

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# The Critical Minerals Institute Report (12.27.2023): Politics Driving Marketable Commodities into 2024

written by Matt Bohlsen | March 14, 2024

Welcome to the December 2023 [Critical Minerals Institute](#) (“CMI”) report, designed to keep you up to date on all the latest major news across the critical minerals markets. Here is the [CMI List](#) of Critical Minerals or click here to visit the [CMI Library](#).

## Global macro view

December 2023 saw a further fall in U.S. inflation from 3.2%pa in October to [3.1%pa](#) in November. As expected the U.S. Fed left interest rates unchanged at their December meeting. Even more significant was the Fed indicated that there are potentially [‘3 interest rate cuts coming’](#) in 2024. This was an early Christmas present for U.S. equity markets which continued their recent rally. Year to date, as of December 26, 2023, the S&P 500 is up 25.75% and the NASDAQ is up an amazing 43.25%. Of course, this follows heavy falls in 2022.

In late December China signaled a possible early 2024 interest rate cut when they [reduced](#) bank deposit rates. As a result China 30 year government bond yields hit their lowest level since 2005. All of this [recent support](#) for China’s economy and property market looks likely to set up a potential China recovery story in 2024. If China starts to recover in 2024 it would be a positive for commodity markets including the critical minerals.

The Russia-Ukraine war drags on through the European winter. There are some very [early signs](#) that both sides may be willing to end the war in 2024. We will see. Meanwhile, the Hamas-Israel war has been contained for now. We can only hope for peace in 2024.

## Global plugin electric vehicle (“EV”) update

Global plugin electric car sales were [1,279,000](#) in October 2023 (the second-best month ever), up 37% YoY. November global sales reached [1.4 million](#). December should be even better. CPCA expects China’s NEV (New Energy Vehicle) retail sales in December 2023 to reach a record [940,000 units](#) (41.4% market share), up 46.6% YoY. That should mean December global EV sales will be around 1.5 million.

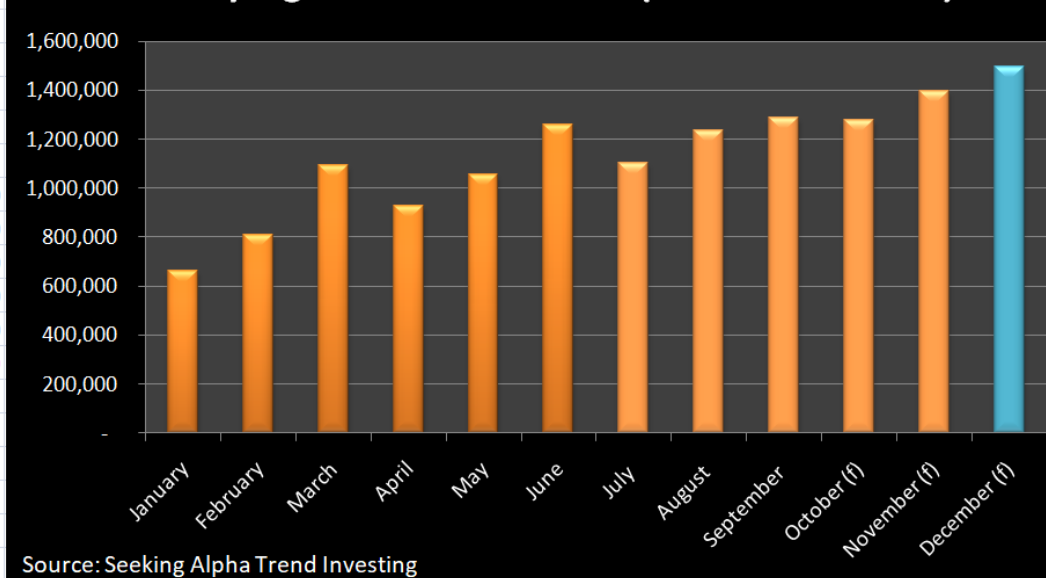
This means that 2023 global plugin electric car sales should end up close to 13.6 million (~17% market share), for a growth rate of ~29% YoY (a significant slowdown from the 56% growth rate in 2022).



## 2023 Global plugin electric car sales (actual + forecast)

Month	Sales
January	662,000
February	812,000
March	1,097,000
April	928,000
May	1,057,000
June	1,260,000
July	1,104,000
August	1,238,000
September	1,291,000
October (f)	1,279,000
November (f)	1,400,000
December (f)	1,500,000
	13,628,000
H1 sales	5,816,000

## 2023 Global plugin electric car sales (actual & forecast)



In other EV related news, in December Germany announced an abrupt [ending](#) to their EV subsidy. The subsidy was originally intended to apply until the end of 2024.

We also heard news that the U.S. is considering [raising tariffs](#) on Chinese EVs and Chinese solar products. The White House plans to complete a tariff review in early 2024. Chinese EVs entering the USA already have a [25% tariff](#). This follows the [EU's](#) probe into China subsidies for EVs. All of this has come about due to the fact that about 60% of all global plugin EV sales are in China and the fact that China completely dominates the EV market and EV supply chain. This is now leading to a flood of compelling Chinese electric cars being exported to global markets where Western manufacturers (excluding [Tesla Inc.](#) (NASDAQ: TSLA)) are struggling to compete with China.

Finally, in December it was announced that Canada will require all new cars and trucks to be zero-emissions vehicles by 2035. The Canadian government [stated](#): "The Standard will ensure that Canada can achieve a national target of 100 percent zero-emission vehicle sales by 2035. Interim targets of at least 20 percent of all sales by 2026, and at least 60 percent by 2030."

# Global critical minerals update

In December we got a key U.S. political announcement that will impact EV sales and critical minerals demand in 2024 and beyond.

## U.S. Foreign Entity of Concern (“FEOC”) proposal

The U.S. DoE releases proposed interpretive guidance on Foreign Entity of Concern (“FEOC”) rules. FEOC’s include China, Russia, North Korea, and Iran. Key proposals include:

- Beginning 2024, companies that have >25% ownership or control by a FEOC will not be eligible for tax credits available under the Inflation Reduction Act (IRA).
- Beginning in 2024, an eligible clean vehicle (for IRA credits) may not contain any battery components that are manufactured or assembled by a FEOC.
- Beginning in 2025, an eligible clean vehicle may not contain any critical minerals that were extracted, processed, or recycled by a FEOC.

These rules are quite strict and it is looking like the majority of EVs sold in the USA will not qualify in 2024 and hence not receive the subsidy of up to US\$7,000 per vehicle. For example, the Tesla Model 3 and Model Y base range EVs use Chinese made LFP batteries, making them both ineligible to meet the FEOC rules. Things will only get harder in 2025. Of course, this is designed to motivate auto and battery OEMs to hurry up and build a new western battery supply chain, independent of FEOC.

The FEOC proposal follows last month’s news of new guidelines for the EU Critical Raw Materials Act (“CRMA”) as discussed [here](#). A key ruling was that ***“not more than 65% of the Union’s***

*consumption of each strategic raw material comes from a single third county."*

**U.S. proposal to create a 'Resilient Resource Reserve' for key critical minerals**

As [reported](#) in December, the U.S. select committee has recommended the creation of a critical mineral reserve to protect domestic industry. The Fastmarkets report [stated](#):

*"The adoption of such a reserve is intended to "insulate American producers from price volatility and (the People's Republic of China's) weaponization of its dominance in critical mineral supply chain. Such a reserve would be used to sustain the price of a critical mineral when prices fall below a certain threshold and would be replenished through contribution from companies when prices are "significantly" higher"...The fund would target critical metals where there is high price volatility, low US domestic production and import dependence on China. **Cobalt, manganese, light and heavy rare earths, vanadium, gallium, graphite, germanium and boron** are critical minerals that fall under that category, according to the report..."*

**Note: Bold emphasis by the author.**

## **Lithium**

China lithium carbonate spot prices [fell again](#) in December 2023, with the price now at [CNY 96,500/t](#) (USD 13,505/t) and [down 82%](#) over the past year. Prices are now below the marginal cost of production, meaning a bottom should be found very soon (assuming EV sales hold up in 2024).

Industry participants are increasingly calling a likely bottom. For example, China Futures Co. analyst, Zhang Weixin, forecasts China's lithium carbonate spot to bottom out between [CNY 80-](#)

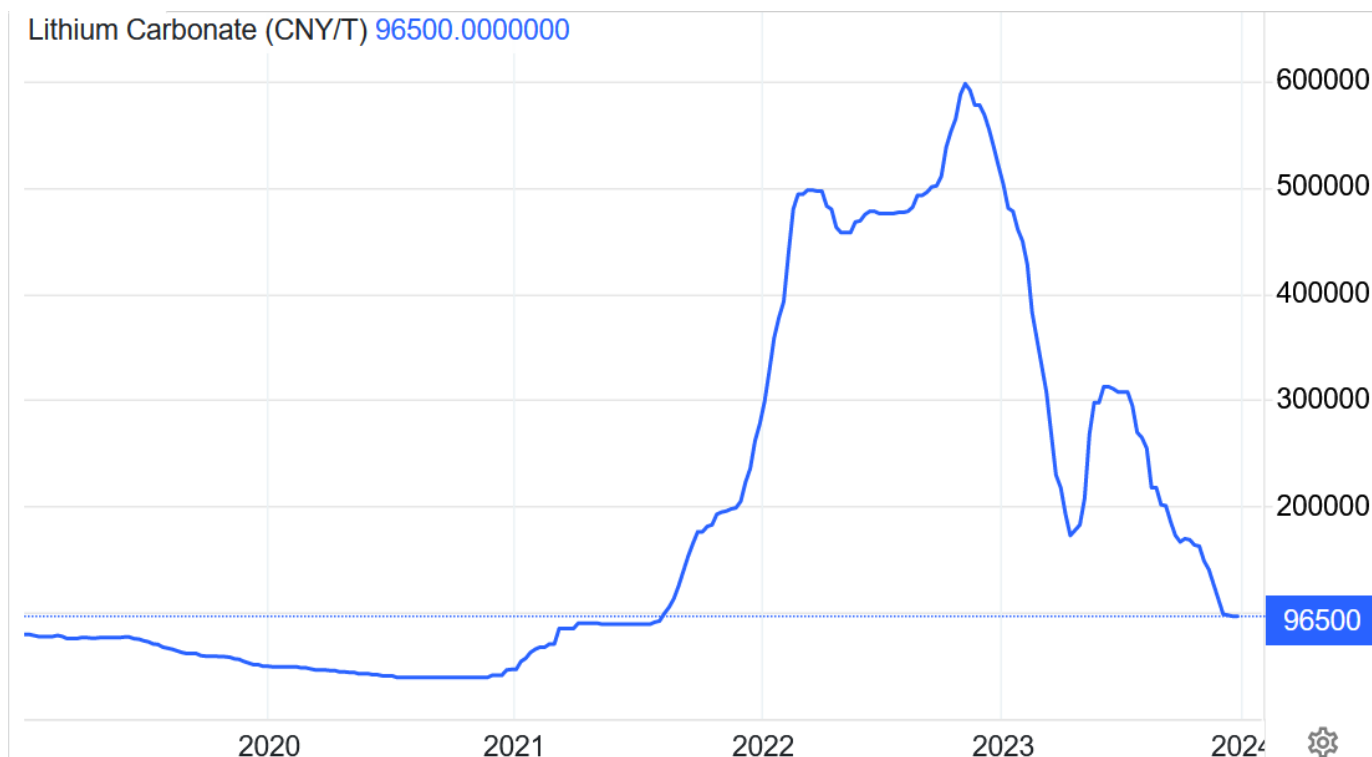
[90,000/t](#) (US\$11,200-US\$12,600/t). Goldman Sachs is a little more bearish with a 1 year price target for China's spot lithium carbonate of [US\\$11,000/t](#).

The negative price action has not deterred SQM and Gina Reinhart's Hancock Prospecting (private) who recently increased their bid to A\$3.70 per share to [takeover](#) Australia's Azure Minerals Limited (ASX: AZS).

In December we saw shareholders approve the Allkem Limited (ASX: AKE | TSX: AKE) – Livent Corporation (NYSE: LTHM) '[merger of equals](#)' which is now expected to close by January 4, 2024. The new company is to be known as Arcadian Lithium PLC (NYSE: ALTM | ASX: LTM).

Finally, in December we got news that free markets supporter Javei Milei [was elected](#) as the new Argentina President. This is good news for those companies with mining projects in Argentina, of which there are many lithium projects under development.

**The lithium carbonate spot price collapsed in 2023 and is now below the marginal cost of production and expected to form a bottom very soon**



Source: [Trading Economics](#)

## Magnet Rare Earths

Neodymium prices fell in December to [CNY 560,000/t](#) almost 1/3 the price of the February 2022 peak. The [one year outlook](#) remains quite weak; however, this will largely depend on how China's economy performs in 2024. A strong pickup in EV sales in 2024 could quickly change the market dynamics.

The big news in December in the rare earths market this month was China's announcement to ban the export of [rare earth processing technology](#). As discussed in an [InvestorNews article](#), Western companies have been efficiently separating rare earths for some time, so this ban has minimal implications. CMI Co-Chair and rare earths expert, Jack Lifton, [states](#): "Solvent extraction separation is a long-established practice everywhere. The issue is the production of rare earth metals and alloys and from them of rare earth permanent magnets. This is where China's massive lead in manufacturing technology may be insurmountable. Time will tell."

Of course, the trend for Western auto OEMs is concerning, especially following China's recent introduction of export [license permits](#) on graphite products (including synthetic graphite, flake graphite, and spherical graphite).

## **Cobalt, Graphite, Nickel, Manganese, and other critical minerals**

**Cobalt** prices (currently at [US\\$12.91/lb](#)) were lower the past month and continue to be very depressed. China's slowdown and the [slowdown](#) in global electronics sales have suppressed cobalt demand at the same time as new supply from the DRC and Indonesia has risen.

One glimmer of hope for the Western cobalt producers is that the U.S. government announced in December the creation of a critical mineral 'Resilient Resource Reserve' (as discussed above).

**Flake graphite** [prices](#) also remain very weak with prices near the marginal cost of production. Following the introduction of Chinese export license permits in December 2023 there has been some increased signs of buying activity and a slight graphite [price improvement](#). However, the main concern for flake and spherical graphite is that lower energy input costs in China have lowered the cost of producing synthetic graphite, thereby dampening demand for flake and spherical graphite. Despite this, there are several analysts now forecasting graphite deficits to begin as soon as 2024/25 as you can read in a recent InvestorNews article [here](#).

**Nickel** prices fell slightly in December to [US\\$16,279/t](#). The [1 year outlook](#) for nickel remains poor due to oversupply concerns from Indonesia. A recovering global economy and Chinese property sector will be needed to help balance the nickel market, which is currently in oversupply.

Manganese [prices](#) also fell slightly in December and are now at [CNY29.20/MTU](#).

2023 has been a tough year for many [critical mineral prices](#) (except for gallium, germanium, tellurium, indium, tin, and uranium – [a critical mineral in Canada](#)) as a slowing China and global economy weighed down demand at a time where supply increased. Uranium was the standout performer in 2023 with a gain of [over 75%](#). You can read an article [here](#) from back in April 2023 where we highlighted the coming rise of uranium.

The key to watch in 2024 will be if we see lower interest rates in China trigger a China property and economy recovery. A stronger U.S. and Europe in 2024 would also help boost the global economy and demand for critical minerals. Lower interest rates in 2024 could potentially make it a great year for the auto sector and EV metals.

Wishing you all a safe and prosperous 2024 from the Critical Mineral Institute (“CMI”).

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**Setback for U.S. Rare Earth Industry: China Tightens Export Laws on Key Technologies, Impeding**

# American Efforts to Gain Independence Despite Financial Incentives

written by Jack Lifton | March 14, 2024

Bad news for those who think that the shortage of rare earth processing in America can be resolved by the injection of “free” money (A/K/A subsidies [also known as taxpayer’s money]) into the “free” market as, drum roll, please, “tax credits,” grants, and loans. The Chinese have decided not to give up their decades-long, learned by trial and error as much as by science and engineering, dominance in rare earth processing. China has announced a (further) tightening of its strict laws against the export of rare earth themed industrial technology. In particular, this means that technologies for producing rare earth metals, alloys and MAGNETS may not be shared with ANY foreign (to China) entity as a matter of national security!

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**Ucore’s Pat Ryan on the significant milestone in being awarded a \$4.28 million funding agreement by the**



# Canadian Government

written by InvestorNews | March 14, 2024

In a recent interview with InvestorNews' host Tracy Weslosky, Pat Ryan, Chairman and CEO of Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF), detailed a significant development in the rare earths sector. The Canadian government has awarded Ucore a \$4.28 million funding agreement, a move that underscores Canada's commitment to advancing critical mineral processing and green energy transition.

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# Malaysia's Decision is a Game Changer for Lynas Rare Earths

written by Tracy Weslosky | March 14, 2024

Lynas Rare Earths Ltd. (ASX: LYC), the Australian mining giant, recently breathed a sigh of relief. Malaysia's government granted the firm a pivotal extension on their operating license, allowing them to continue importing and processing raw materials laden with naturally occurring radioactive elements until March 2026.