# Energy transition metals and metals producers step into the spotlight

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## Key Takeaways

- The energy transition is a source of new demand for a group of base metals, battery raw materials and precious metals
- EVs and renewables anchor the transition
- From the mine to manufacturers, the full value chain offers growth

## A solid foundation for the recovery of confidence and dynamism

2023 was tough for dedicated renewables funds and the raw materials markets that support them. The general economic malaise brought on by a combination of inflation and high interest rates in Western economies and fears around China's prospects weighed heavily. In actual fact, the global economy didn't have that bad a year in 2023; the recession was avoided, and 2.3% growth was registered.

Weak sentiment was more a problem than poor fundamentals. In the battery raw materials space, markets jumped on softer plug-in Electric Vehicle (EV) sales data[1] in the US and Europe, overlooking annual global EV sales growth of 36% that resulted in a record 15.5 million plug-in EV sales in 2023.

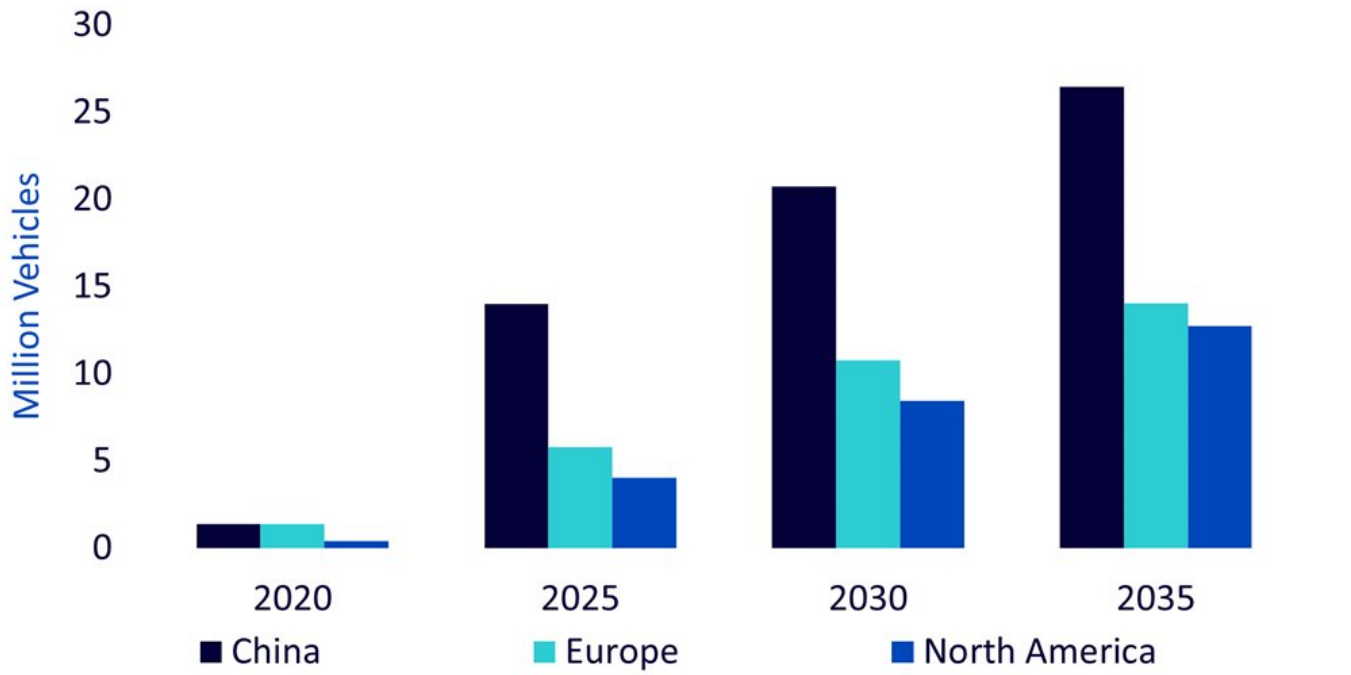
Given leading macroeconomic, policy and market indicators, 2024 offers a solid foundation for a recovery in confidence. While interest rates are likely to stay higher for longer, credit conditions for developers have improved. Policy support has remained in place and, in some markets, has expanded – In terms of objectives – into critical minerals like never before. Therefore, stabilisation is expected in renewables, and raw materials markets may even see a bounce.

## EVs and renewables anchor the transition

The energy transition has become synonymous with many changes, but it is ultimately about displacing fossil fuels from traditional use cases, like mobility, with low-carbon, electrified alternatives. To accomplish this, there must be a change in how power is generated alongside the establishment of new vehicles and charging networks for electric mobility. COP28 in Dubai saw global agreement to at least triple the installed renewable energy generating capacity to 11000 GW by 2030.

At the same time, the outlook for EV sales is notably robust, with the market to grow eight times the 2020 level by 2030, given the strong policy support in the key car markets of China, the US and the EU[2]. Wood Mackenzie expect EVs to make up 35% of total car sales by 2030, up from 17% today. By 2035 we expect 75 million passenger EVs will be sold each year.

## Figure 1: Annual EV sales




Source: Wood Mackenzie, 2024. **Forecasts are not an indicator of future performance and any investments are subject to risks and uncertainties.**

Policy support and market growth, combined with rising expectations for energy transition metals, especially those linked to battery energy storage technologies, and a renewed focus on the miners and refiners that dominate energy transition minerals and battery raw materials value chains.

## Greater calls for base and precious metals

The energy transition is a source of new demand for a group of base metals, battery raw materials and precious metals.

Copper and aluminium consumption outlooks have been boosted by the expectations of deeper and wider electrification, electricity transmission and lightweighting. More of these two metals is needed in all major energy transition subsectors.

Cobalt and lithium are essential inputs to battery storage technologies today , and even though alternative technologies are emerging for lithium-ion storage, those alternatives need their own lithium inputs, thereby anchoring the demand case.

Lead is important for storage, as are nickel and zinc, which will be needed in greater quantities to support the performance and durability of batteries, wind and solar generations.

Solar is one area where the importance of silver and tin is notable, so as solar grows so too will new applications for those metals.

## Figure 2: Energy transition metals and subsector applications

| Sub sector | Electric vehicles | Transmission | Charging | Energy storage | Solar | Wind | Hydrogen | Geothermal |
|---|---|---|---|---|---|---|---|---|
| **Aluminium** | | | | | | | | |
| **Cobalt** | | | | | | | | |
| **Copper** | | | | | | | | |
| **Lead** | | | | | | | | |
| **Lithium** | | | | | | | | |
| **Nickel** | | | | | | | | |
| **Platinum** | | | | | | | | |
| **Silver** | | | | | | | | |
| **Tin** | | | | | | | | |
| **Zinc** | | | | | | | | |

*Source: Wood Mackenzie, 2024*

## The importance of REE

Rare earth elements (REE) refer to a group of seventeen different metals that are united by their unique physical or chemical properties[3]. These properties, which include catalytic activity, magnetism, and luminescence, have demonstrated improvements in specific use cases associated with the energy transition. Rare earths are essential for creating high-performance magnets that enable compact and efficient electric motors.

Simply put, if you want a smarter computer or a faster motor, REE additives can improve performance. The miners of REE, therefore, are well positioned to benefit from the increased consumption of REE as the energy transition continues apace.

## From the mine to the manufacturers – the full value chain offers growth

So too are the refiners and processors of energy transition metals in line to benefit from the increased demand for EVs, batteries, renewables, and the rewiring of the global economy. The midstream sector may have been an overlooked facet of the energy transition in the first year after the Paris Agreement was signed, but that is no longer the case. The supply chain bottlenecks experienced as a result of COVID-19 were swiftly followed by fundamental shifts in global trade patterns due to Russia's invasion of Ukraine. Incentives to onshore commodity supply chains and ring-fence access to metals and minerals critical to the energy transition and the economies it supports are increasingly evident.

Lithium is exemplary. Several countries have officially recognised the importance of critical minerals, including lithium, through major funding programs. Lithium projects, including mines, brines, and processing facilities, have received hefty funding in recent years. In 2022, the US announced funding of nearly $3 billion for lithium processing and battery recycling[4]. The emphasis on processing capacity is notable as a response to said concentrations in China, but does not align with energy security priorities. That trend promises to boost the standing of several refining, processing, smelting and chemicals businesses outside of China.

## China's macroeconomic strategy offers countercyclical asymmetry

Wood Mackenzie forecasts that China's GDP will grow by 4.6% in 2024. That's down slightly from the 5.2% growth of 2023. In the year ahead, the real estate sector will continue to weigh on macroeconomic performance but infrastructure will be a key countercyclical measure.

Utility infrastructure, associated with power capacity, transmission and distribution, had another strong year with investment growth of 23%, accelerating from 19% in 2022. The RMB 1 trillion (USD 140 billion or 0.8% of GDP)[5] special treasury bond announced that the government has again resorted to infrastructure to stimulate the economy. Half of the fund was issued in 2023, and the other half will be issued in 2024. Rumours are circulating that the central government will issue another RMB1 trillion special treasury bond soon and that raises expectations of higher infrastructure investment, related commodity demand and a source of price formation through 2024 and beyond.

## Challenging the prevailing narrative of "why now?"

The metals and minerals sector has traditionally seen a strong correlation between equity valuations and commodity prices. Free cash flow is shaped by those commodity prices, as well as costs and volumes. The latter two tend to be more stable but prices are prone to volatility. Those companies operating across subsectors including upstream (mining), in the midstream (refining, smelting, conversion and chemicals) or industry (as applies for the nickel industry) have seen their share prices challenged by the wider market environment.

Commodity markets are known for their cycles. We have seen five or six since 2000, depending on who you speak to. The low prices seen since late 2022, driven largely by supply-side responses to the notably

high prices of 2021, have led to volatility in valuations with negative implications for the attractiveness of commodity equities.

There is a negative correlation at work here. Given the overall health of the global economy and the policy-influenced low carbon consumption outlooks in key commodity-consuming markets, including the US and China, demand-side drivers associated with the energy transition remain robust. As in any downcycle, there is a strong countercyclical argument in favour of the commodity sector equities today.

## Sources

[1] In the last quarter of 2023, plug-in EV sales were down ~5% quarter on quarter in Europe and down ~9% in the US but up 17% in China.

[2] Policy incentives in China: dual credit system for EV adoption and emissions norms, state subsidies for neighbourhood EVs; in the US: EPA emissions standards, 30D and 45X tax credits; and in the EU: Fit for 55 ban on ICEs, purchase subsidies in Germany and France.

[3] Rare earth elements include: scandium, yttrium, lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium.

[4] In July 2023, the US Department of Energy (DOE) announced funding of $10.9 million for 10 projects to extract battery-grade lithium from geothermal brine sources in the US. Albermale also received $90 million under the US Defense Production Act to reopen its Kings Mountain lithium mine in North Carolina.

[5] Source: Wood Mackenzie, Q1 2024 Macroeconomic Outlook

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