

Lithium: A Critical Resource for Electric Mobility

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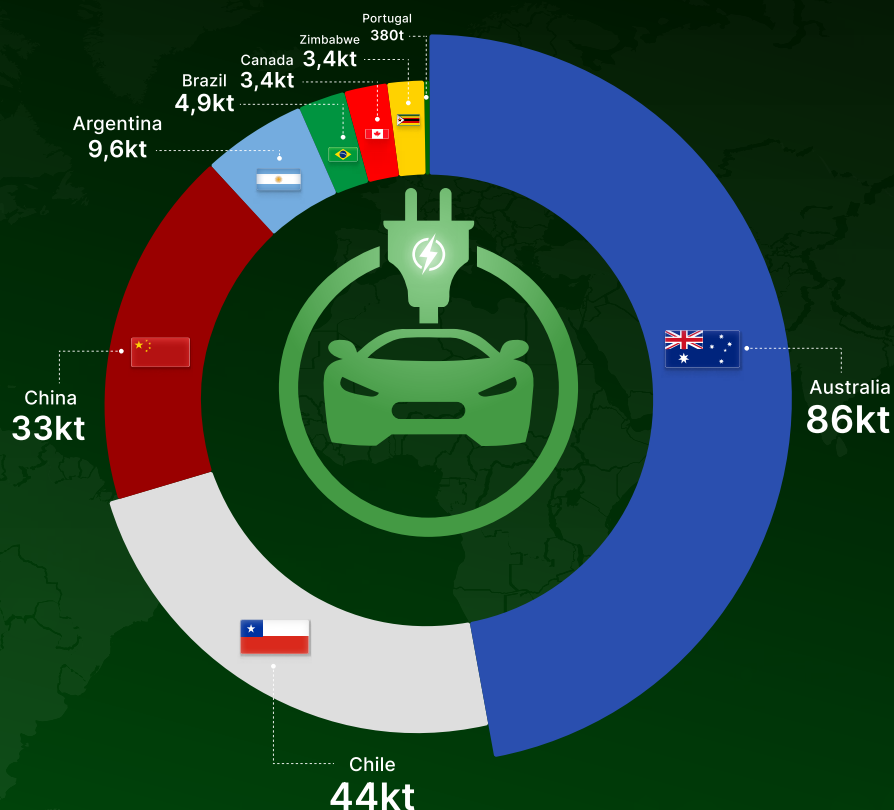
Why Lithium?

Lithium is a versatile chemical element that is used in a range of industries. Its primary use, however, is in rechargeable batteries. Lithium can store large amounts of energy relative to its size and also offers the ability to recharge without losing capacity. Therefore, it's ideal for battery applications.



World's Largest Lithium Producers

by Countries & Reserves in 2023



Lithium Reserves

Chile	9,3Mt	USA	1,1Mt
Australia	6,2Mt	Canada	930kt
Argentina	3,6Mt	Brazil	390kt
China	3Mt	Zimbabwe	310kt
Other countries ¹	2,8Mt	Portugal	60kt

¹Other countries with reported reserves: Austria, Congo (Kinshasa), Czechia, Finland, Germany, Ghana, Mali, Mexico, Namibia, Serbia, and Spain.

World total (rounded)²

Lithium production from mines 2023e **180kt** Lithium Reserves **28Mt**

²Excludes U.S. production.

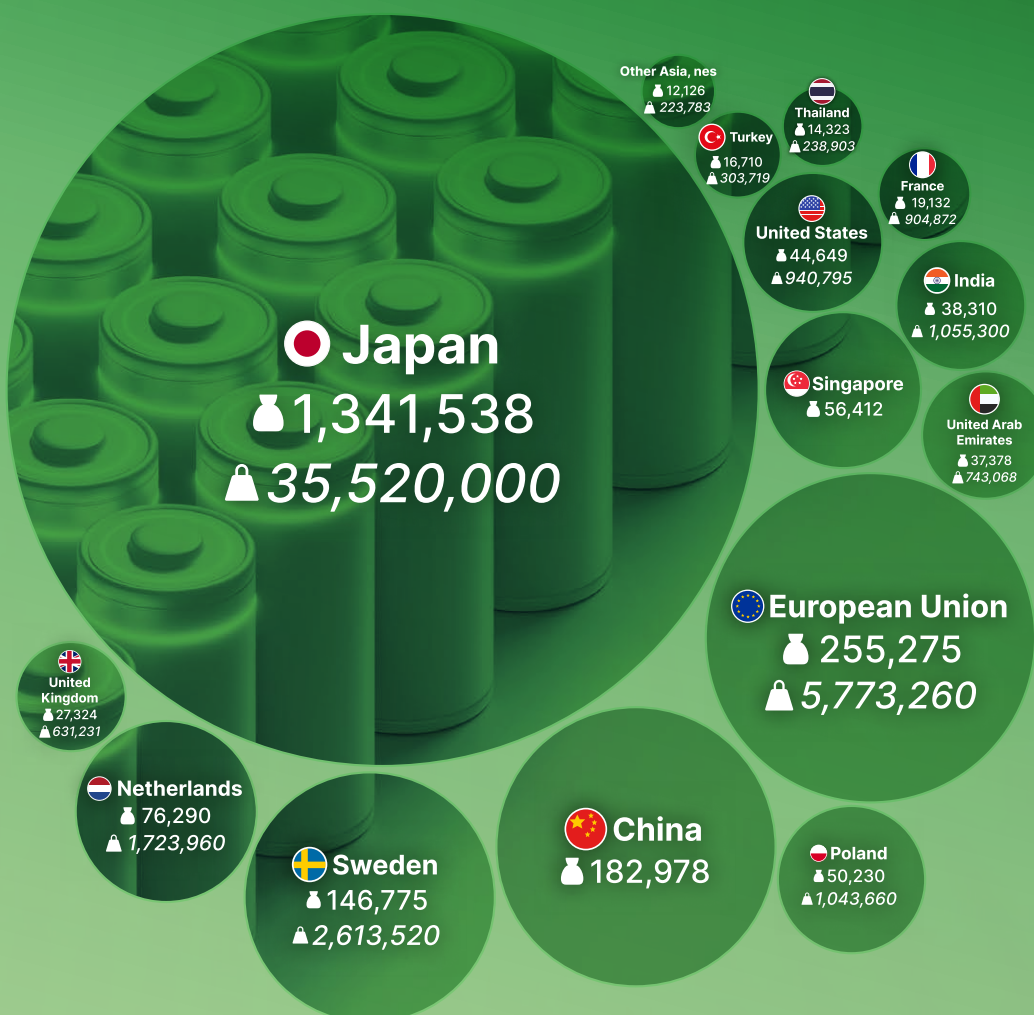
Source: US Geological Survey, Mineral Commodity Summaries, as of January 2024

Lithium Oxide and Hydroxide Imports

by Country
in 2023

Trade Value
(Rounded; 1000 USD)

Quantity
(Kg)

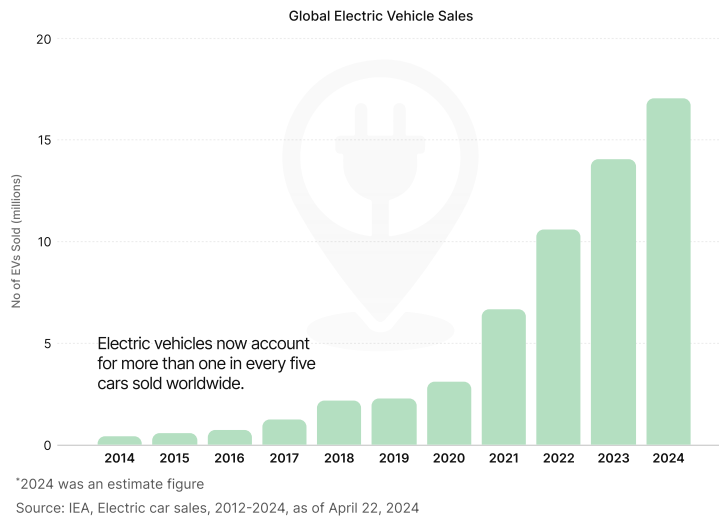


Source: WITS World Integrated Trades Solution, as of December 3, 2024

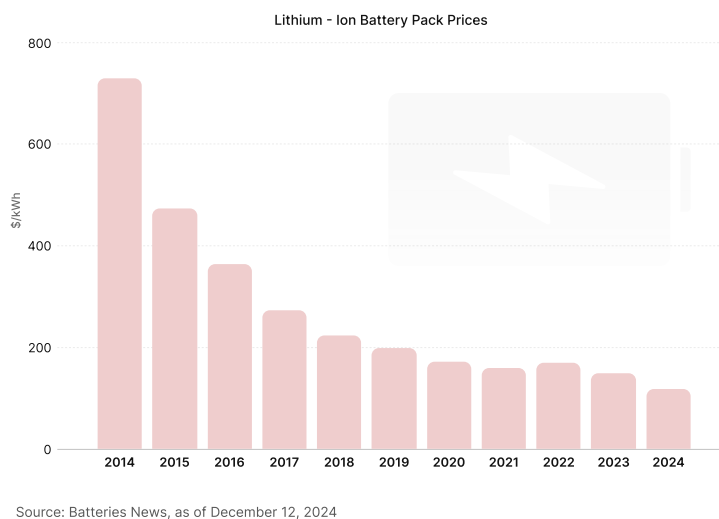
Lithium is Powering the EV Revolution

Today, the vast majority of electric vehicles (EVs) use lithium-ion batteries. These batteries have a high power-to-weight ratio and offer good high-temperature performance. And in recent years, the cost of these batteries has come down significantly. This has made it possible for automotive manufacturers to produce EVs at reasonable prices.

Electric Vehicles Sales Are Rising Sharply

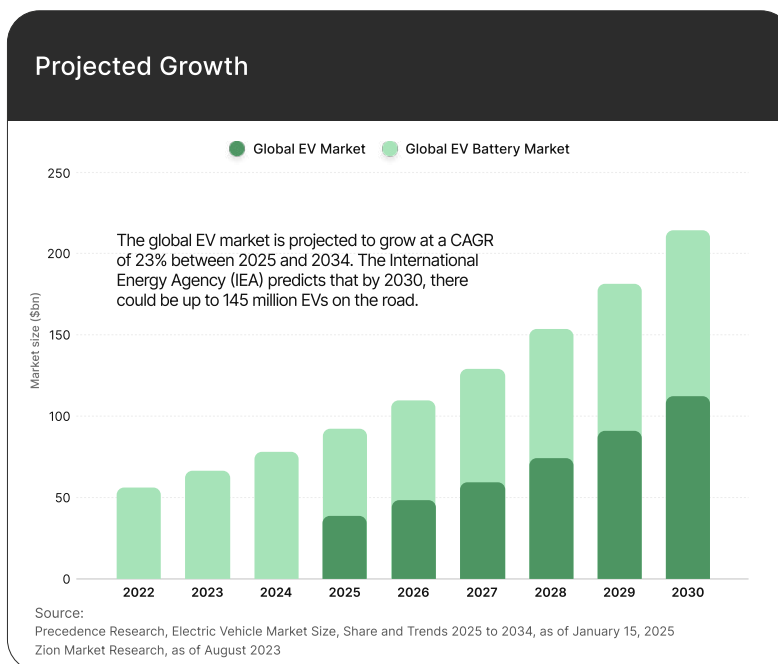


Lower Lithium-Ion Battery Prices Have Made EVs Viable



EV Market Growth and the Demand for Batteries

The electric vehicle market is projected to grow at a compound annual growth rate (CAGR) of 23% in the years ahead to be worth \$2,453 billion by 2034. This growth is expected to be driven by a combination of factors including favorable government regulations and incentives, expansion of charging infrastructure, lower vehicle prices, and a shift towards sustainable mobility. As the EV market expands, the EV battery market is likely to expand too. According to Zion Market Research, the EV battery market is set to be worth \$215.5 billion by 2030, up from \$56.4 billion in 2022.



The Lithium Supply Shortage

Looking ahead, analysts expect demand for lithium to rise significantly on the back of the global EV boom. According to the International Energy Agency (IEA), the growth of the EV market could see lithium demand increase by up to 40 times¹ by 2040. This could lead to significant supply shortages in the coming years. The IEA forecasts that by 2030, supply will meet less than 70%² of global demand.

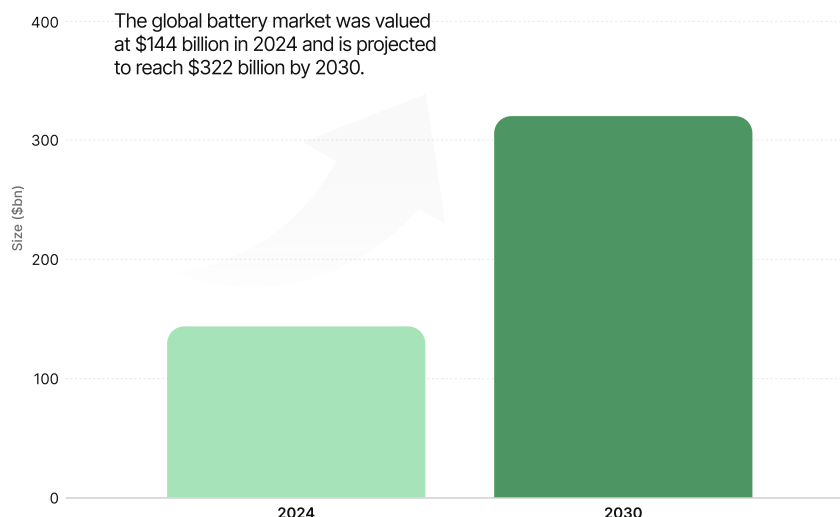
For EV manufacturers, lithium supply shortages pose a major threat. So much so that Tesla is currently building its own lithium refinery in Texas. This will convert lithium-containing ore into lithium hydroxide – a key ingredient for EV batteries. Tesla's move to build its own lithium plant shows the company's commitment to securing a reliable supply of this crucial battery metal and is a major step towards reducing reliance on foreign lithium producers, especially China.

The Growing Demand for Batteries

Batteries are not a new technology. For decades, they have powered electronic devices such as laptops, mobile phones, watches, calculators, and power tools. However, thanks to recent advances in battery technology, and the shift from heavy lead-acid and cadmium batteries to high-powered lithium-ion batteries, they're now playing a much larger role in the global economy. Today, lithium-ion batteries can be found in everything from Bluetooth headphones to personal medical devices such as hearing aids.

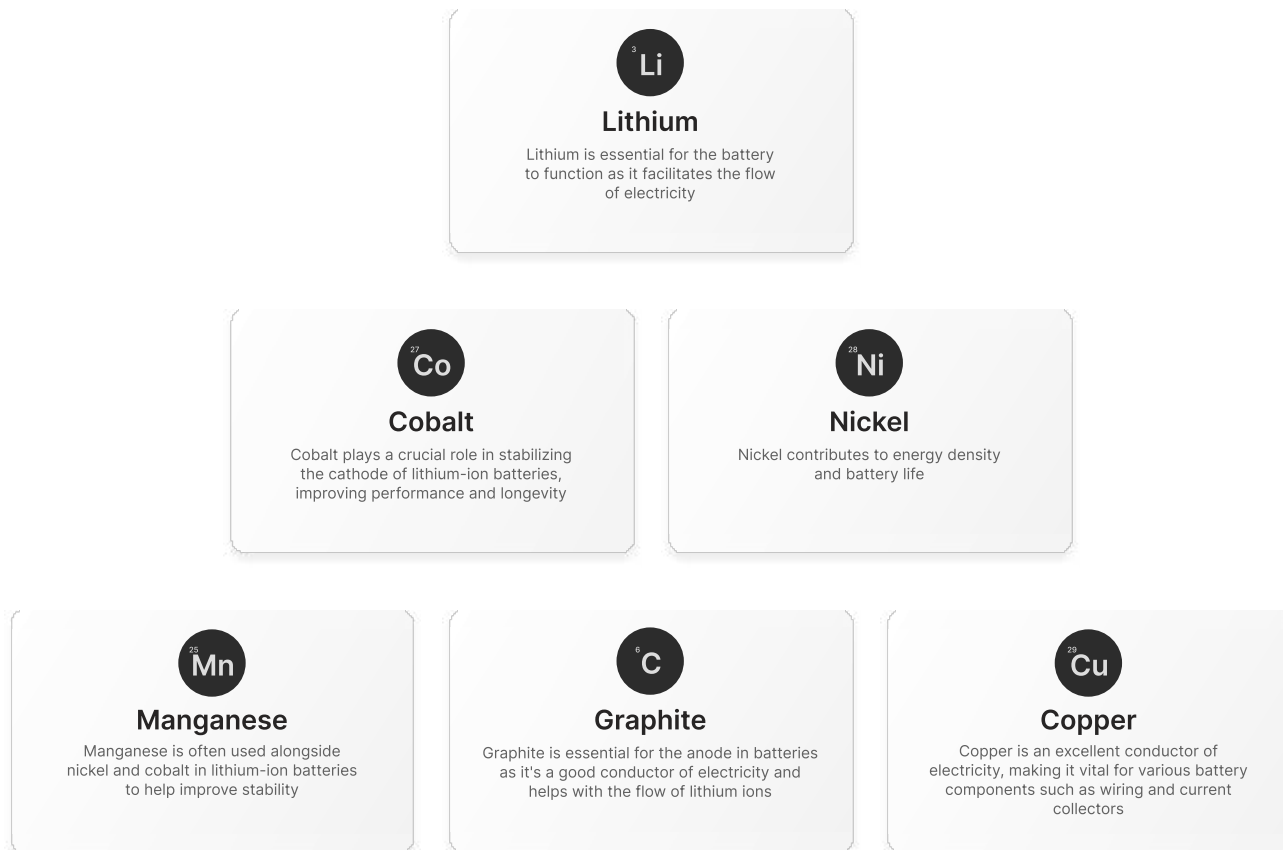
Looking ahead, the market for batteries is projected to grow substantially. Alongside the growth of the electric vehicle market, the global shift to renewable energy is expected to be a major growth driver. If the world is to make the shift to clean energy and move away from fossil fuels, there will need to be considerable investment in energy storage systems, which enable energy from renewables such as solar and wind to be stored and released later on. These play a vital role in the clean energy ecosystem as there are times when the sun isn't shining, or wind speeds are low. Given that lithium-ion batteries can store a lot of energy in a relatively small space, they are ideal for energy storage systems. So, they are likely to be used in both small-scale (residential) and large-scale (grid-level) energy storage applications in the future.

The Projected Growth of the Global Battery Market



Source: Research and Markets, Global Battery Market, as of February 2025

The Growing Demand for Batteries



The Themes Lithium & Battery Metal Miners ETF

The Themes Lithium & Battery Metal Miners ETF (LIMI) seeks to track the BITA Global Lithium and Battery Metals Index (BGLISI), which identifies companies that derive their revenues from lithium and battery metals mining, explorations, refining, and royalties. Designed for those who are looking for portfolio exposure to battery metals, this ETF provides access to around 50 different companies involved in the mining and production of such metals.

Footnotes:

¹Precedence Research, Electric Vehicle Market Size, Share and Trends 2025 to 2034, as of January 15, 2025

²IEA, Anticipated supply and projected demand for lithium in the Net Zero Scenario, 2030, as of September 22, 2023

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Effects of Compounding and Market Volatility Risk: The Fund has a daily leveraged investment objective and the Fund's performance for periods greater than a trading day will be the result of each day's returns compounded over the period, which is very likely to differ from the Fund performance, before fees and expenses.

Leverage Risk: The Fund obtains investment exposure in excess of its net assets by utilizing leverage and may lose more money in market conditions that are adverse to its investment objective than a fund that does not utilize leverage.

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