Lithium mining: Global markets

By BCC Publishing Staff

The global lithium mining market was valued at $5.2 billion in 2022 and is expected to grow at a compound annual growth rate (CAGR) of 10.0% to reach $9.1 billion by 2028.

This market grew significantly in the last decade due largely to demand for lithium-ion batteries in electronic vehicles, consumer electronics, and medical devices. This demand, coupled with declining costs and improved performance, will contribute to lithium production almost doubling by the end of 2028.

Besides batteries, which account for almost 70% of the total lithium produced globally, other uses of lithium include as additives in glass, ceramics, lubricants, and grease to improve temperature resistance as well as catalysts in aluminum production.

Lithium is primarily found in large concentrations in two material types: silicate minerals, such as spodumene and petalite, and mineral-rich salt brines. Salt brines were the major source of lithium in 2021 (approximately 60%), while about 24% of lithium was extracted from silicate minerals. The remaining 16% was sourced from clay deposits and other sources.

Pricing for the different source types of lithium varies a good deal from one reserve to another because the cost of lithium extraction is highly dependent on the quality and depth of the reserves. It also varies by country due to differing tax reforms, supply–demand balances, and geological differences.

To improve operational performance, increase production, and reduce the cost of lithium, mining companies are looking to implement new and emerging extraction technologies, such as direct lithium extraction. This technique uses selective adsorbents, membranes, or solvent extraction processes to reject impurities, such as calcium and magnesium, when extracting lithium from underground brine. Compared to conventional lithium extraction technologies, direct lithium extraction reduces carbon emissions by almost 50% and consumes less water.

Table 1. Global lithium reserves, by country, 2021 and 2022 (metric tons)
* Others include Austria, Congo (Kinshasa), Czechia, Finland, Germany, Mali, and Mexico

Country	2021	2022
Chile	9,200,000	9,300,000
Australia	5,700,000	6,200,000
Argentina	2,200,000	2,700,000
China	1,500,000	2,000,000
U.S.	750,000	1,000,000
Canada	681,000	930,000
Zimbabwe	220,000	310,000
Brazil	95,000	250,000
Portugal	60,000	60,000
Others*	2,700,000	3,300,000
Total	23,106,000	26,050,000

Until the 1990s, the lithium market was dominated by the Americas in terms of production from mineral deposits. In the 21st century, however, most of the world's lithium began being produced by Australia, Chile, and China, with these three countries accounting for 91% of lithium production, according to the U.S. Geological Survey. Almost 70% of the world's lithium reserves are in these three countries (Table 1).

Two major constraints on growth of the lithium mining industry include harmful environmental impacts and the concentration of lithium in politically unstable regions (Figure 1). With lithium production increasing, lithium-rich countries must follow a balance-out approach for lithium mining without causing environmental or community problems.

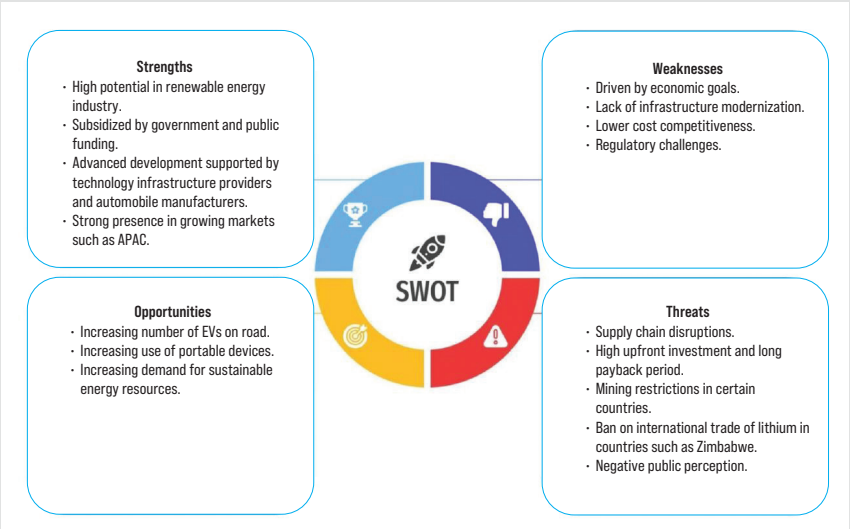

Figure 1. SWOT analysis of the lithium mining industry.

About the author

BCC Publishing Staff provides comprehensive analyses of global market sizing, forecasting, and industry intelligence, covering markets where advances in science and technology are improving the quality, standard, and sustainability of businesses, economies, and lives. Contact the staff at Helia.Jalili@bccresearch.com.

Resource

BCC Publishing Staff, "Lithium mining: Global markets," BCC Research Report EGY184B, February 2024. https://bit.ly/BCC-February-2024-lithium ■