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China's overseas investments in critical minerals

China is a major supplier of critical minerals. While China has abundant domestic resources of graphite, silver, tellurium, tin, and zinc, it has relatively scarce resources of cobalt, copper, and lithium, which China compensates for by investing in overseas mines. However, there is no single authoritative data source that clearly quantifies Chinese stakes in overseas mines.

This report provides a summary of Chinese overseas mining investment, with a focus on these three metals. We bracket the case of Indonesian nickel, where China is heavily involved, to quantify China's stakes in copper, lithium, and cobalt.

What is the extent of Chinese ownership in critical minerals supply chains?

- Between 2016 and 2021, China completed 246 overseas mining transactions in 52 countries, across all metals.¹
- China's outward foreign direct investment flow in the mining sector reached 8.4 billion USD in 2021, 5% of its total foreign direct investment flow.²
- China's exploration trend shows increasing share in Africa and Latin America, as well as decreasing share in North America and Southeast Asia.

COPPER

- In 2023, USGS reported China to hold 27 million metric tons of copper reserves, which makes it the 12th largest copper reserves in the world.³
- Currently, China is engaged in over 52 primary copper projects in Africa and Europe, which accounts for 60% of its total foreign projects.⁴
- As of 2018, the majority of China's equity reserves⁵ are concentrated in Peru, Afghanistan, and Congo; it has the largest number of mines in Zambia, Australia, and Congo.
- Apart from the aforementioned countries, China also has equity projects in Chile, Ecuador, Canada, Pakistan, Laos, Burma, Mongolia, Mexico, Namibia, and more.

In total, China holds an overseas equity reserve of over 50 million tons with current output exceeding 1 million tons on an equity basis.⁶

LITHIUM

- Nearly 80 per cent of known lithium deposits are in four countries – the South American lithium triangle of Argentina, Bolivia and Chile, and Australia.
- While China holds less than 7 percent of the world's lithium reserves inside its borders, China is the world's largest importer, refiner and consumer of lithium, buying 70 percent of lithium compounds and supplying 70 percent of lithium production.⁷
- China has at least a 20% stake in 14 primary lithium mining projects in 8 countries. 7 of the 14 primary projects are currently in the construction phase, with the other 7 already at the production phase.



- Ganfeng Lithium and Tianqi Lithium are the two major companies engaged in overseas projects.

Currently, China has stakes in projects representing 80 million tons of LCE resources. This accounts for over 79% of total world LCE resources (101 million tons).

COBALT

- China reports to have 0.14 million tons of cobalt reserves within the country.
- China currently has five primary overseas cobalt mining projects, all of which are in Congo. All five mines are currently in production, with the Kisanfu and Tenke Fungurume mine being the largest (both owned by Luoyang Molybdenum).

These five projects hold a total of 7.435 million tons of cobalt resources, which accounts for over 29% of world total cobalt resources (25 million tons).

¹ Yao, Shunyu and Jason Holden. "Chinese foreign mining investment — China's private sector eyes low-cost regions," S&P Global. Mar 12, 2021. <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/chinese-foreign-mining-investment-8212-china-s-private-sector-eyes-low-cost-regions-63066809>

² "2021 Statistical Bulletin of China's Outward Foreign Direct Investment," China Commerce and Trade Press, 2021.

³ "Mineral commodity summaries 2023," USGS. Jan 31, 2023. <https://www.usgs.gov/publications/mineral-commodity-summaries-2023>

⁴ "China's overseas copper mining scramble," Mining.com. June 29, 2021. <https://www.mining.com/subscribe-login/?id=1063517>

⁵ China's "equity reserves" are calculated using a formula that combines their share in the mine and the expected mineral content of the mine. Only copper reserve numbers were calculated on an equity basis, meaning that, for cobalt and lithium, any project with over 20% Chinese stake was included at its entirety.

⁶ "Global copper ore resources structure and overseas investment by Chinese companies," SMM. Dec 4, 2020. <https://news.metal.com/newscontent/101335794/Global-copper-ore-resources-structure-and-overseas-investment-by-Chinese-companies/>

⁷ Zhang, Marina Yue. "Lithium, lightest metal on earth, carries heavy geopolitical weight," The Lowy Institute. Jan 25, 2023. <https://www.loyyinstitute.org/the-interpreter/lithium-lightest-metal-earth-carries-heavy-geopolitical-weight>