Power Playbook

Beijing's Bid to Secure Overseas Transition Minerals

Executive Summary

January 2025

Brooke Escobar, Ammar A. Malik, Sheng Zhang, Katherine Walsh, Alexandra Joosse, Bradley C. Parks, Jacqueline Zimmerman, and Rory Fedorochko

AIDDATA
A Research Lab at William & Mary

Acknowledgements

We thank John Custer, Sarina Patterson, and Alex Wooley for the editing, formatting, and graphic design of the final report; Lea Thome for comments on an earlier version of this report; Sasha Trubetskoy for cartographic support; and Brook Lautenslager for data management software support. We also owe a debt of gratitude to Guyu (Emily) Yang and Hazel Vineet for helping to construct the dataset that made this study possible. The cover photo is by Mineral Vision via Adobe Stock, used under the Standard license.

We gratefully acknowledge financial support from the William and Flora Hewlett Foundation and the Ford Foundation. The findings, interpretations, and conclusions expressed in this study are entirely those of the authors. They do not necessarily represent the views of the William and Flora Hewlett Foundation or the Ford Foundation. AidData's research is guided by the principles of independence, integrity, transparency, and rigor. A diverse group of funders supports AidData's work, but they do not determine its research findings or recommendations.

Citation

Escobar, B., Malik, A. A., Zhang, S., Walsh, K., Joosse, A., Parks, B. C., Zimmerman, J., & R. Fedorochko. (2025). *Power Playbook: Beijing's Bid to Secure Overseas Transition Minerals*. Williamsburg, VA: AidData at William & Mary.

Acronyms

BOC	Bank of China
BRI	Belt and Road Initiative
CCB	China Construction Bank
CDB	China Development Bank
CFTM 1.0	AidData's Chinese Financing for Transition Minerals Dataset, Version 1.0
Chinalco	Aluminum Corporation of China
CSR	Corporate social responsibility
DFC	U.S. International Development Finance Corporation
DRC	Democratic Republic of the Congo
ESG	Environmental, social, and governance
EV	Electric vehicle
DG GROW	European Commission's Directorate-General for Internal Market, Industry, Entrepreneurship, and SMEs
EITI	Extractives Industries Transparency Initiative
China Eximbank	Export-Import Bank of China
GCDF 3.0	AidData's Global Chinese Development Finance, Version 3.0
G7	The Group of 7
ICBC	Industrial and Commercial Bank of China
IEA	International Energy Agency
IMF	International Monetary Fund
JV	Joint venture
LIC	Low-income country
LME	Liberal market economy
MIC	Middle-income country
MOFCOM	China's Ministry of Commerce
MSP	Minerals Security Partnership
Mt	Million metric tons
NZE	Net zero emissions
OECD	Organisation for Economic Co-operation and Development
PGII	Partnership for Global Infrastructure and Investment
PNG	Papua New Guinea
PPG	Public and publicly guaranteed debt
PRC	People's Republic of China
REE	Rare earth element
RFI	Resource-for-infrastructure
Sinosure	China Export & Credit Insurance Corporation
SNA	Social network analysis
SOE	State-owned enterprise
SPV	Special purpose vehicle
TUFF	Tracking Underreported Financial Flows
U.S.	United States
USD	U.S. dollars
USGS	United States Geological Survey

Executive summary

Beijing is a major source of financing for projects around the globe that involve the specific minerals—copper, cobalt, nickel, lithium, and rare earth elements (REEs)—that are needed to facilitate a clean energy transition and achieve the global goal of net zero emissions by 2050. Under the auspices of the Belt and Road Initiative (BRI), it has bankrolled mine acquisitions, the development and expansion of mineral extraction infrastructure, and the day-to-day operational needs of mine owners and operators. Yet its loan and grant commitments for "transition mineral" operations in low-income and middle-income countries are opaque and poorly-documented.

In order to help policymakers understand how Beijing is using the power of the purse to expand its control over key segments of the global supply chain for transition minerals, we have assembled a first-of-its-kind dataset that systematically tracks China's official sector financial commitments for copper, cobalt, nickel, lithium, and REE extraction and processing operations across 165 low-income countries and middle-income countries over a twenty-two-year period.[1] Our analysis of the dataset demonstrates that China has provided nearly $57 billion of aid and subsidized credit for transition mineral projects in a core group of 19 BRI participant countries. Beijing has prioritized upstream extraction operations rather than midstream processing activities.[2] We also find that Beijing has consistently assigned a high level of priority to copper: 83% of its official sector financial commitments involve copper extraction and processing operations. Yet there is some evidence that a pivot towards lithium mining operations is underway.

China has shielded its playbook for the pursuit of transition minerals in overseas markets from public scrutiny. However, our report seeks to overcome this

[1] The 1.0 version of AidData's Chinese Financing for Transition Minerals Dataset (CFTM 1.0) can be accessed at aiddata.org/china-transition-minerals. It systematically tracks transition mineral projects supported by official sector loan and grant commitments from China over 22 financial commitment years (2000-2021) and it provides details on the timing of project implementation over a 25-year period (2000-2024).

[2] 92% of its transition mineral financing portfolio supports upstream extraction operations, but only 8% supports midstream processing activities.

challenge in a simple but powerful way—by following the money. We provide new empirical evidence that addresses two big-picture questions:

How has Beijing leveraged BRI lending institutions and instruments to expand its control of the global supply chain for transition minerals?

- A large network of 26 official sector creditors from China has come together to bankroll transition mineral projects in the developing world. Beijing's policy banks—the Export-Import Bank of China (China Eximbank) and China Development Bank (CDB)—have played a pioneering role, extending nearly $32 billion of credit for transition mineral operations.

- However, with the passage of time, Beijing has scaled back its use of the policy banks and ramped up its use of state-owned commercial banks, such as Industrial and Commercial Bank of China (ICBC), Bank of China (BOC), and China CITIC Bank. The policy banks accounted for nearly 90% of China's transition mineral financing commitments to developing countries during the pre-BRI period. However, this figure plunged to 46% during the early BRI period and 14% during the late BRI period. At the same time, the share of China's transition mineral financing portfolio provided by state-owned commercial banks sharply increased from 2% during the pre-BRI era to 39% during the early BRI period and 74% during the late BRI period.

- In order to more effectively manage the repayment risks and environmental, social, and governance (ESG) risks posed by transition mineral operations, Beijing has ratcheted down its use of bilateral lending instruments and ratcheted up its use of syndicated lending instruments. Syndication is effectively a de-risking shortcut: rather than relying upon a single Chinese bank to vet borrowing institutions and proposed projects, Beijing is increasingly outsourcing risk management to lending institutions with stronger due diligence standards and safeguard policies. At the turn of the century, there was not a single syndicated loan in China's portfolio of loan-financed transition mineral projects in low-income and middle-income countries. By 2021, nearly 80% of its transition mineral

loan portfolio in the same set of countries was supported by syndicated lending arrangements with Chinese and non-Chinese creditors.

- Nearly three-quarters (74%) of China's official sector lending portfolio in the developing world consists of loans to host government institutions and entities that have secured repayment guarantees from host government institutions.[3] All of these loans qualify as public and publicly-guaranteed (PPG) debt. However, Beijing rarely uses PPG loans to bankroll transition mineral operations in the Global South. It has prioritized limited recourse project finance transactions rather than full recourse sovereign debt transactions: approximately 81% of China's transition mineral lending portfolio in developing countries qualifies as non-PPG debt and roughly the same percentage of the portfolio supports project companies—including special purpose vehicles (SPVs) with a single shareholder and joint ventures (JVs) with multiple shareholders—without host government repayment guarantees.[4]

- The limited recourse project finance model offers Beijing something that the full recourse sovereign debt model cannot: the opportunity to control the overseas production and sale of transition materials that it lacks in sufficient quantities at home. In mining sector JVs and SPVs, the primary output is raw or processed mineral ore, which is typically allocated among the shareholders of JVs/SPVs based on their equity stakes. These mineral ore allocations are formalized through so-called "offtake agreements" that specify how much of the mine's output each shareholder receives. Shareholders can then sell or direct their shares of the output as they wish. Chinese companies with equity stakes in overseas mines—via JVs and SPVs—usually sell their shares of the mineral output to buyers (importers) in mainland China. Therefore, by providing loans that allow

[3] This figure is based on China's official sector lending activities across all sectors between 2000 and 2021.
[4] A unique feature of limited recourse project finance transactions is that borrowing institutions (SPVs and JVs) own the project assets. Therefore, the SPV/JV usually owns the mine, the output generated by it, and the revenues derived from the sale of the output. Loans to SPVs and JVs are often characterized as limited recourse project finance transactions because lenders only have recourse to the liquid and illiquid assets of their SPV/JV borrowers.

Chinese-owned JVs and SPVs to establish and expand transition mineral operations in developing countries, Beijing is locking in long-term access to the substantial ore reserves that its domestic mineral processing firms and battery production firms require.

- Beijing favors overseas transition mineral operations where its companies have skin in the game: 83% of China's official sector lending for transition mineral operations in developing countries is earmarked for mining sites that are partially or wholly owned by Chinese companies. These companies are not simply playing with "house money" (i.e., bank loans); they are investing their own money—via equity contributions—in the same overseas mining assets being bankrolled by Chinese state-owned creditors. Beijing wants its firms to have skin in the game to ensure that creditors and borrowers have a shared interest in the profitability of the overseas investments that they pursue. However, given that the majority of the companies receiving loans and providing equity contributions are Chinese state-owned enterprises, Beijing's party-state is financing overseas transition mineral operations in a way that places its Western competitors in liberal market economies (LMEs) at a significant disadvantage.

How has Beijing established itself as the pace-setter in the transition mineral sector—and outmaneuvered its Western competitors?

- One of the most important ways that Beijing has established a foothold in the overseas transition mineral sector is by helping its firms overcome *barriers to market entry*. The sector's capital-intensive nature sets a very high "price of admission." Acquiring a copper, cobalt, nickel, lithium, or REE mine requires a major upfront investment; a company seeking to purchase a majority ownership stake in such a mine might need several billion dollars of liquidity (i.e., freely available cash) to complete the transaction. Beijing has helped Chinese firms pay the high "price of admission" through an aggressive acquisition lending program.[5]

[5] For example, consider a Chinese firm that wishes to acquire a majority ownership stake in an overseas mine for a cash consideration of $1 billion. It would not be uncommon for Beijing's

- Beijing is also helping its companies—in particular, its state-owned enterprises—expand market share by linking the provision of credit for public infrastructure projects to (a) long-term concession agreements that grant Chinese firms exclusive rights to the profits generated by mining assets; and (b) long-term contracts that lock-in the sale of pre-specified quantities of mineral output to Chinese importers over extended periods of time. This "deal sweetener" has proven decisive in several developing countries—such as the Democratic Republic of the Congo (DRC)—where governing elites have strong political incentives to fast-track the implementation of big-ticket public infrastructure projects.

- Once a foothold is established (through the acquisition of an ownership stake in an overseas mine, the signing of a long-term concession agreement, or otherwise), Chinese state-owned creditors often provide a series of consecutive loans for the development and expansion of mines and working capital to sustain the operations at those mines. As "relationship bankers," they provide borrowers with long-term financing packages that support transition mineral operations from cradle to grave. Between 2000 and 2021, Beijing channelled 66% of its official sector lending commitments for transition mineral operations to 14 major mining sites in 8 countries.[6] All of these mining sites secured a series of consecutive loans from Chinese state-owned creditors.[7] On average, the mining sites that benefited from serial lending received 3.6 loans from Chinese state-owned creditors between 2000 and 2021.

- In the interest of helping Chinese companies gain greater market share, Beijing's state-owned banks have also prioritized the provision of

state-owned banks to offer the firm a $700 million "acquisition loan" to provide 70% of the liquidity needed to purchase the asset. However, accessing this type of state credit would depend upon the Chinese firm (borrowing institution) using its own money to cover the remaining cost of the asset acquisition ($300 million).

[6] This figure excludes China's official sector financial commitments for transition mineral operations in high-income countries.

[7] The 14 mining sites are the Toromocho, Las Bambas, and Marcona mines in Peru; the Tenke Fungurume, Kamoa-Kakula, Sicomines, Kolwezi, and Kinsenda mines in the DRC; the Bor Mine in Serbia; the Aktogay mine in Kazakhstan; the Phu Kham mine in Laos; the Mirador mine in Ecuador; the Bisha mine in Eritrea; and the Ramu mine in Papua New Guinea.

subsidized credit (i.e., loans that are priced below market rates). Export credit agencies in Organisation for Economic Co-operation and Development (OECD) countries have "tied their own hands" for many decades, voluntarily abiding by a set of international rules that limit the provision of subsidized credit to domestic companies with overseas operations. However, Beijing never agreed to participate in the OECD's "Gentlemen's Agreement" on Officially Supported Export Credits and it has used concessional lending instruments to help its firms gain a competitive edge over Western firms in the overseas transition mineral sector. Our analysis demonstrates that China's official sector lending commitments for copper, cobalt, nickel, lithium and REE operations in developing countries usually meet or exceed the OECD's 25% grant element threshold for concessionality.

Beijing is following its own playbook rather than a set of rules and norms established by and for its Western competitors. Its go-it-alone approach begs the question of whether Washington and its allies have a coherent strategy to help their companies achieve market entry and expand market share in the overseas transition mineral sector. A related question is whether policymakers in Western capitals need to empower their export credit agencies and development finance institutions with new authorities and additional resources to "level the playing field."