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East versus West

ESG perspectives & mineral property valuations

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East vs West

On trend now

The Consequences of China's New Rare Earths Export Restrictions

China's Germanium and Gallium Export Restrictions: Consequences for the United States

> Despite China's export restrictions, germanium and gallium are still reaching the United States through indirect trade routes

WORLD / ASIA

China bans exports of some critical minerals to US

Tech giant Intel, one of the largest providers of chips used in electronic devices, could be a future target

03 DECEMBER 2024 - 15:47

China's use of export controls

In recent years, China has been modernising its economic statecraft and offensive toolkit, with particular attention paid to its export-control strategy.

Ministry of Commerce Notice 2024 No. 46: Notice Concerning Strengthening Controls on Exports of Relevant Dual-Use Items to the United States

商务部公告2024年第46号 关于加强相关两用物项对美国出口管制的公告

December 3, 2024

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East vs West

EMEA media headers

Chinese Miner Accused of Cover-up of Big Toxic Spill in Africa – AP

Ghana Crackdown on Illegal Gold Mining Puts Focus on China

Congo jails three Chinese citizens in illegal mining crackdown | REUTERS

Africa: Chinese companies accused of being involved in illegal & exploitive mining practices in Africa causing socio-economic problems

Central African Republic: Gunmen kill 9 Chinese nationals in mine attack

Observers say that many of the Chinese nationals caught at galamsey sites are poorly educated people from rural parts of China, suggesting that there is an organized system to recruit them and bring them to Ghana. From 2008 to 2013, over 50,000 Chinese nationals entered the country to mine gold illegally.

"Chinese nationals mining Africa"

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East vs West

Background

The “East” (predominantly China) and “West” (traditionally the US & EU) are in a geopolitical competition for battery or transition minerals.

West: Arms length approach, independence, supply diversification, transparency, private sector almost exclusively, maintain E&S standards. Generally, the effects on local communities is well documented and the company’s “social license” to operate is important. Emphasis on upstream concerns.

East: Infrastructure and vertical integration (Belt & Road Initiative or BRI to 2049, resources-for-infrastructure), speed, flexibility, risk-taking. Chinese companies tend to focus on full mine ownership and downstream stakeholders, particularly end consumers, emphasizing ethical sourcing across the supply chain. Vague battery limits for E&S sometimes.

Both the East and the West are embracing ESG frameworks, key differences remain in stakeholder prioritization and investment philosophies and strategy.

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East vs West

Background

China has dominated mineral sectors such as gold, zinc, coal, rare earth elements and iron ore production/ steel manufacture. Now the focus is battery metals, since circa 2015.

China has developed and acquired many lithium, graphite, copper and cobalt projects and mines in Africa, securing supply chains for its manufacturing sector.

The real chokehold is in processing. China refines 73% of the world's cobalt, 68% of nickel, 59% of lithium, and 40% of copper. For REEs, China is responsible for ~61% of global production and 92% of processing.

East vs West

Background

26 of 50 minerals imported from China to the US, are currently classified as critical by the USGS (July 2023). Some 90% of battery-grade graphite & 77% of refined REEs in 2030 will originate from China (IEA).

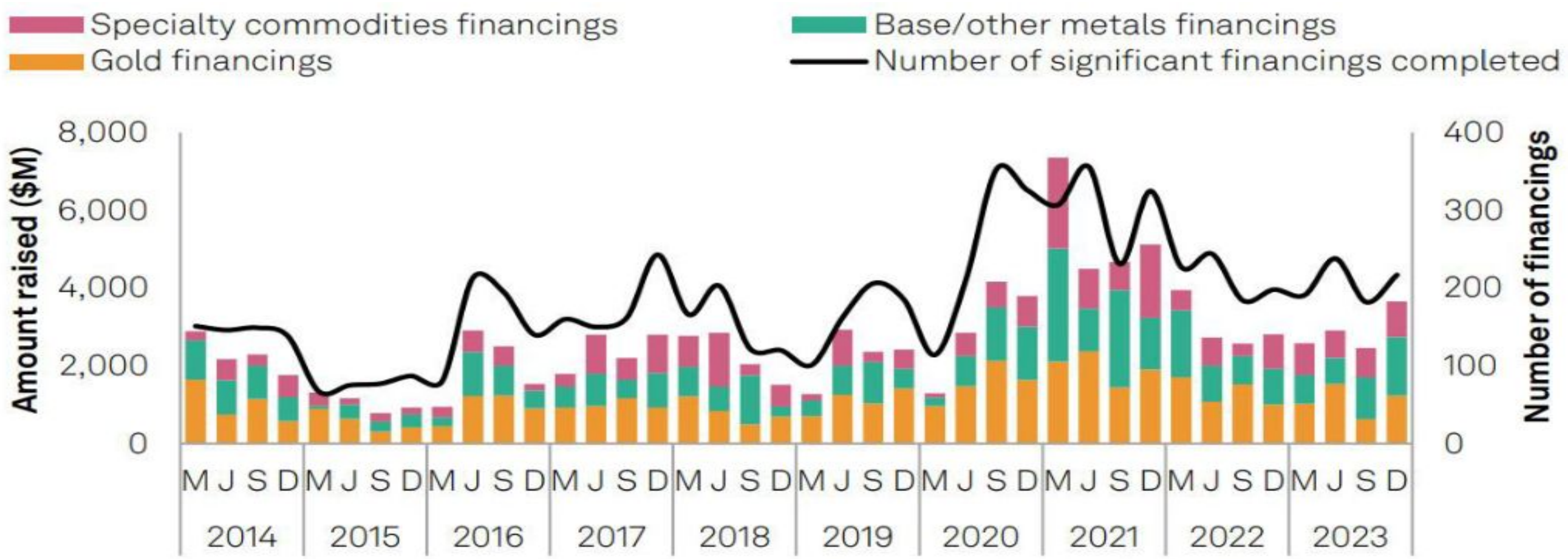
China holds 85% of battery cell production capacity; and 90% of cathode and 98% of anode material production capacity globally.

As a counter to Chinese dominance; in 2022, the US and its G7 allies launched the Partnership for Global Infrastructure and Investment (PGI), which is aiming to mobilize US$600 B in global infrastructure funding by 2027, to act as an alternative to the BRI. Soft infrastructure focus, sustainable development. Previously initiatives were the US Blue Dot Network and the US Build Back Better World projects.

Next slides – exploration & mining, Chinese legislation, Chinese lending practices.

Global exploration

Funds raised, gold versus base and other metals



As of Jan. 9, 2024.
Source: S&P Global Market Intelligence.

Gold is ~46%, copper ~24% of global exploration budgets.
Base metal & battery mineral exploration budgets are increasing, at the expense of gold exploration.

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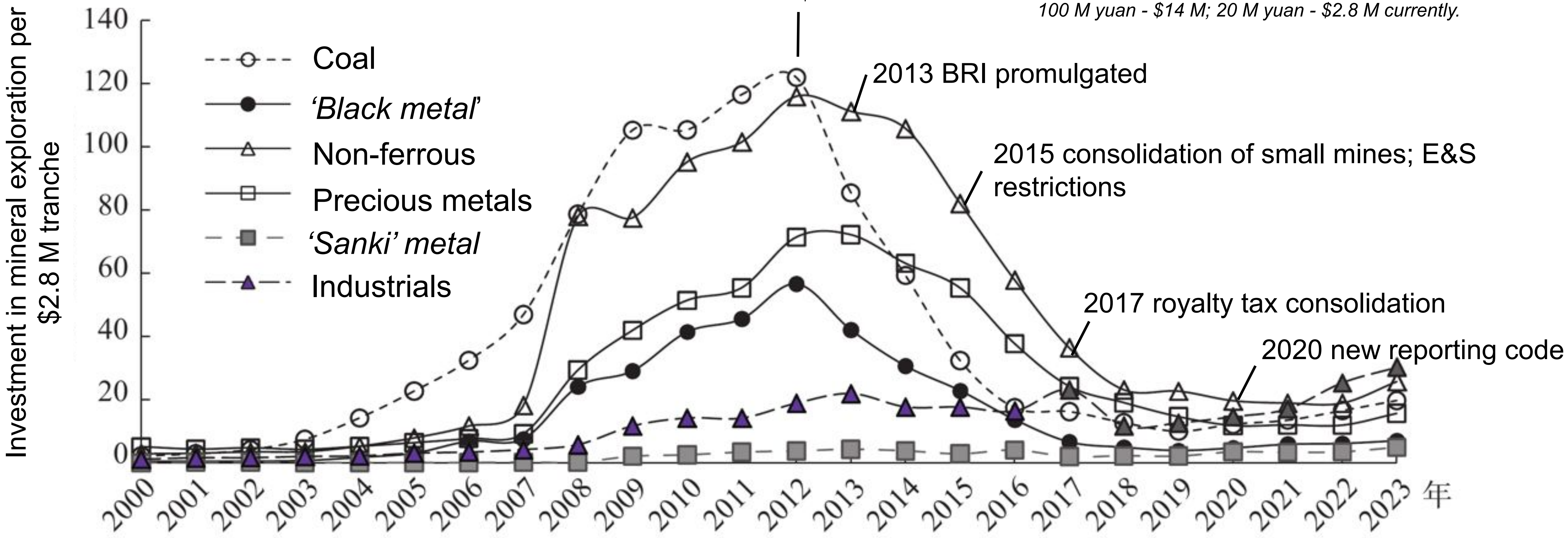
Chinese national exploration

Chinese exploration spend trend

'Sanki' – oil & gas?
Black metal – Ferrous metals?
100 M yuan - $14 M; 20 M yuan - $2.8 M currently.



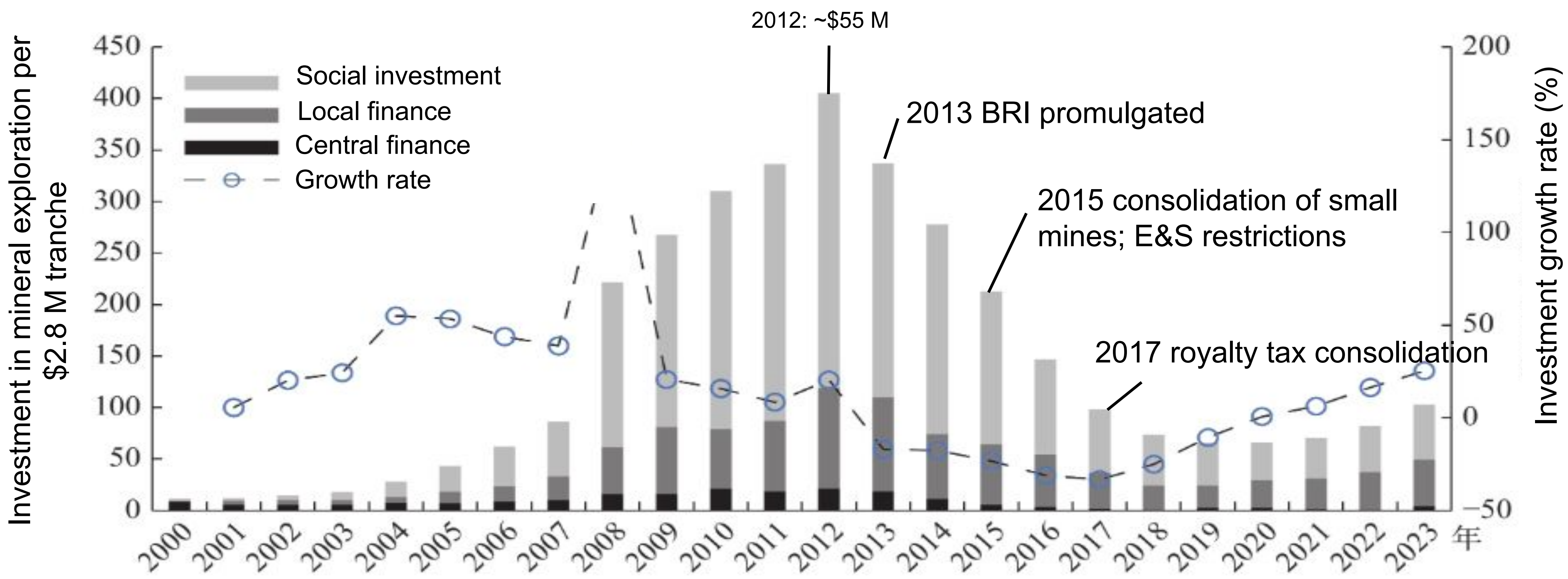
Source: Chinaminingmagazine.com

Drawbacks: Royalties to be paid on exploration licences; upfront payment (20%) of total royalty (rest over mining phase); changing, complex mining legislation; incompatibility with other reporting codes.

Chinese national exploration

Chinese exploration spend trend

100 M yuan - $14 M; 20 M yuan - $2.8 M currently.



Source: Chinaminingmagazine.com

Chinese mining

Primary mining stats, 2022

- China has over 1,500 major mining operations; and >40,000 mines
- Approximately 75% of all major Chinese mining operations are underground
- In 2021, 1,254 mining companies were listed on the National Green Mine Directory
- China's mining industry produces over US$ 400 B/year
- In 2020, the national resources tax revenues totalled US$ 27 B, accounting for 1.1% of national tax revenues.

Chinese mineral policies

Primary Chinese legislation, 1990 to 2025

From 1990 to 2025, China's mineral policies evolved from poor regulation (early 1990s) to market-oriented reforms (mid-1990s), privatization, then to state-directed consolidation (mid-2010s) and resource security; and finally, critical metal dominance and the emergency response plan (2020 onwards).

- 1993. China first **allowed foreign investment** in domestic resource exploration and mining.
- 1996. The revised Mineral Resources Law clarified mineral extraction procedures and the regulatory roles of government bodies. Allowed for the **transfer of mining rights**.
- 1999. The 1999 Classification & General Specification on Solid Mineral Exploration (GB/T17766-1999).
- 2000. Going Global (Zou Chu Qu) Policy. Allowed Chinese state-owned enterprises to invest in and expand **mining operations internationally**, supported by low-cost **government-backed loans**. “Two Markets, Two Resources”.
- 2002. Guidance Catalogue for **Foreign Investment** was revised.
- 2013. **BRI**. Investing in more than 150 countries and international organizations.

Chinese mineral policies

Primary Chinese legislation, 1990 to 2025

- 2015. ISO Technical Committee for Rare Earths. The ISO/TC 298 standardized rare earth products, aiming to control Chinese trade and establish **global supply chain standards for REEs**.

- 2017. Guidance Catalogue for **Foreign Investment** was revised.

- 2017. Reform Plan of the Mineral Resources **Royalty Policy** (MRRP).

- 2020. The **2020 Classification** & General Specification on Solid Mineral Exploration (GB/T17766-2020).

- 2025. Mineral Resources Law revision. Includes Mineral Resource & Reserves section; and **Emergency Response** establishes the legal framework for a national **critical mineral** stockpiling system.

- 2021-2025. 14^{th} Five-Year Plan (**FYP**) for the Raw Material Industry Development. The FYP provides the policy context for the 2025 MRL revision. Current FYP includes five world-class advanced raw material manufacturing clusters and 5-10 leading industrial companies with core competitiveness.

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Chinese lending practices

2000 to 2021

*AIDDATA, Jan 2025. Power Playbook: Beijing's Bid to Secure Overseas Transition Minerals. This study focuses on copper, cobalt, nickel, lithium, and REE extraction (**transition minerals**).*

From 2000 to 2021, China provided some $57 B of aid and subsidized credit for transition mineral projects in a core group of 19 BRI participant countries. China has prioritized **upstream extraction** operations (92%) rather than midstream processing activities (8%) in these countries.

Copper priority. 83% of its official sector financial commitments involve copper extraction and processing operations. A pivot towards lithium mining operations is underway.

The **policy banks** (the Export-Import Bank of China and China Development Bank) have extended some $32 B of credit for transition mineral operations.

A scale back of policy banks lending and a ramp up of **state-owned commercial banks** lending (Industrial and Commercial Bank of China, Bank of China and China CITIC Bank) noted; policy banks comprised 90% of financing commitments pre-2013 by value, now only 14%.

Chinese lending practices

2000 to 2021

In order to more effectively manage the repayment risks and ESG risks posed by transition mineral operations, China has used **less bilateral** and **more syndicated lending** instruments. This has led to outsourcing of risk management to lending institutions with stronger due diligence standards and safeguard policies.

About 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.

Between 2000 and 2021, China channelled 66% of its lending commitments for transition mineral operations to 14 major mining sites in 8 countries. On average, the mining sites that benefited from **serial lending** received 3.6 loans from Chinese state-owned creditors over this period.

China is following its own playbook rather than a set of rules and norms established by and for its Western competitors. A go-it-alone approach. The hybrid superpower.

Chinese mega external projects

Examples of major railway projects undertaken

- **Laos-China Railway line**
  This 414 km line (US$ 5.9 B) connects Vientiane (capital of Laos) to Kunming (China). Improves ASEAN-China connectivity.

- **Tanzania-Zambia Railway (Tazara)**
  A 1,860-km line (US$1.4 B initially from China). Strategic access to mineral resources from Zambia and DRC, serving as a geopolitical counterweight to US/ EU initiatives like Lobito Corridor.

- **Ethiopia-Djibouti Railway**
  The 756 km line (US$3.5 B) links Addis Ababa (Ethiopia), to Djibouti's Doraleh port. Strategic logistical and military presence, with China's first overseas military base (2017) located in Djibouti.

- **Mombasa-Nairobi Railway (Kenya):**
  Flagship project in the BRI (US$3.8 B). Securing maritime routes and naval reach through Mombasa port.

- **Benguela Railway (Angola):**
  Originally this was Chinese funded and built (~US$2.0 B). Core of the Lobito Corridor. Lubumbashi (DRC) to Lobito port (Angola). Allowed for significant regional influence, including the Lobito refinery. "Oil-for-infrastructure" deal.

- **Budapest-Belgrade Railway (Hungary-Serbia)**
  Intention is to increase Chinese trade flow into Europe via high-speed rail from the port of Piraeus (Greece). US$2.9 B, financed mostly by China.

East vs West

Current ESG trends, Chinese mining operators/ investors

ESG standards are increasingly being adopted by Chinese companies. This convergence is driven by:

- Reputational risks
- National efforts to standardize corporate governance
- The need to align with global market expectations and standards, such as:
  - 2021 LMEpassport system – Cu, Pb, Zn Mark
  - 2020 Joint Due Diligence Standard for Copper, Lead, Nickel and Zinc (the JDS)
  - 2020 Copper Mark Assurance Framework.
  - 2019 LME Responsible Sourcing Requirements
  - 2018 Organisation for Economic Co-operation and Development (OECD) Due Diligence Guidance
  - 2017-2021 Responsible Minerals Assessment Process developed by Responsible Minerals Initiative.

East vs West

Current ESG trends, Chinese mining operators/ investors

Chinese mining companies have adopted international ESG standards such as the OECD Due Diligence Guidance (2018), while also adhering to domestic standards (e.g. China Chamber of Commerce of Metals, Minerals and Chemicals guidelines, 2015) and the United Nations Guiding Principles on Business and Human Rights (2011).

This dual adherence reflects the broader trend of Chinese companies balancing international ESG expectations with national priorities.

Three Chinese stock exchanges (Beijing, Shanghai and Shenzhen Stock Exchanges) issued ESG reporting guidelines in 2024. Companies listed domestically and overseas must disclose their ESG data in 2026.

China's Ministry of Finance finalized the Basic Guidelines for Corporate Sustainability Disclosure in Dec 2024, incl. basic and specific standards and application guidelines. Follows International Sustainability Standards Board's disclosure framework. Intent is for national sustainability disclosure system, with a full implementation by 2030.

East vs West

Current ESG trends, Chinese mining operators/ investors

In China, internationally oriented companies, specifically privately owned firms and investment funds are more likely to demonstrate broad engagement with global ESG standards, while SOEs are less likely to.

Current research indicates that the Mineral Resources Royalty Policy (2017) has significantly reduced the cash flow risk of mining-related enterprises in China (consolidation of resource taxes). Moderate positive effects on local mining industry through the 2020 Code and the Mineral Resources Law revision (2025).

Chinese upfront royalties persist, coupled with higher royalties payable versus global averages.

East vs West

Current trends

Based on industry experience and anecdotal evidence, for the same mineral property in Africa, in decreasing order of value, the following scenario may exist:

1) Western company may consider a high valuation for the mineral asset (arms length, independent and based on full ESG compliance to international level).

2) A Chinese institutional investor may consider a similar or marginally lower valuation.

3) A Chinese private company may consider a lower valuation to the former two groups (and less compliance in terms of Equator Principles or IFC Performance Standards), and/or general compliance to a national environmental standard.

4) A Chinese state-funded commercial bank.

5) A Chinese policy bank.

Chinese SOEs focus may be on regional consolidation, critical infrastructure upgrades, a ‘first mover’ option and alignment with the BRI.

East vs West

Current trends

Chinese internationally oriented companies, specifically privately owned firms and investment funds are more likely to demonstrate broad engagement with ESG standards, while SOEs are less likely to.

A Chinese SOE valuation may also be higher than a Western company valuation, by applying a zero discount rate; or be the lowest valuation, potentially with a cash offer, low-interest loans for host country, a resource-for-infrastructure swap, less adherence to IFC or EP guidelines, and/or general compliance to a national environmental standard.

Factors such as company size, ownership structure, international orientation and shareholder or fund objectives, play a significant role in shaping how mining companies are guided by national investment philosophies, engagement with ESG, and ultimately how they would value a mineral property.

East vs West

Current trends

Likely steps in valuation methodology by Chinese entity:

- Alignment with critical metals strategy (less of a BRI focus now)
- Institutional investor, private investor, state-owned commercial banks, policy bank, SOE
  (decreasing ESG focus and mineral property value →)
- Overarching regional strategy (bulk-, transport infrastructure, processing, naval, military)
- The offer (JV, full ownership, offtake, various loan arrangements (and top ups) on different levels, royalty streams, mining fleet finance).

Chinese mineral policies

The history, 1990s

- 1990s: Market-oriented reforms and decentralization.
  - Liberalization of the mining industry following broader economic reforms. Following Deng Xiaoping's 1992 Southern Tour, China's mining industry became more market-oriented.
  - The revised Mineral Resources Law (1996) clarified mineral extraction procedures and the regulatory roles of government bodies. Allowed for the transfer of mining rights.
  - Reform of state-owned enterprises (SOEs): Many SOEs in minerals sector were privatized.
  - Decentralization of coal mines (led to a proliferation of small, often unregulated, mines).
  - By the late 1990s, China became world's 2nd largest producer of solid minerals, with significant increases in coal and iron output.

Chinese mineral policies

The history

- 2000s: Industrial consolidation and sustainable development
  - Policies shifted toward re-consolidating the fragmented industry and addressing growing environmental and safety concerns.
  - The government began shutting down small-scale mines that were inefficient, unsafe, and environmentally damaging (especially coal sector).
  - SOEs began acquiring smaller private mines to increase industrial concentration and improve resource utilization.
  - Growing awareness of environmental degradation and resource scarcity. Green reforms focus.
  - Concerns arose about Chinese investment overseas, especially in Africa, to secure a steady mineral supply for its expanding economy.

Chinese mineral policies

The history

- 2010s: Resource security and technological advancement
  - Policies focused on ensuring a reliable mineral supply to meet the needs of China's high-tech manufacturing sector, which was becoming import-dependent. BRI in 2013.
  - China tightened export restrictions on critical minerals, including REEs, to secure domestic supplies for strategic industries like electronics and military applications.
  - Concerns about resource security intensified due to rising import dependency on key minerals like iron ore, copper, and aluminium.
  - China increased investment in overseas mines, particularly in Africa, to secure access to critical minerals.
  - The government designated local cities as either "resource-depleted" or "resource-rich" and implemented differentiated policies to encourage economic transition and resource management.

Chinese mineral policies

The history

- 2020s: Critical mineral dominance and emergency response
  - Policies have secured China's role as dominant player in critical minerals market (incl. strategic stockpiling and self-reliance).
  - China has focused on controlling the midstream segments of critical mineral supply chains, with significant capacity in processing materials like refined copper, lithium, and graphite.
  - The "New Energy Vehicle Industry Development Plan (2021–2035)" focused on securing specific commodities to support clean tech manufacturing.
  - Major revision to the Mineral Resources Law in 2024. Comprehensive legal framework for a national critical mineral stockpiling system, effective July 2025 (includes maintaining strategic reserves, production capacity reserves, and designated resource sites for emergency exploitation).
  - Critical mineral policies have become central to China's geopolitical strategy, influencing trade relationships and global supply chains.
  - Currently in the 14th Five Year plan or FYP (2021 to 2025). Five world-class advanced raw material manufacturing clusters and five to ten leading industrial companies with core competitiveness during the current FYP.