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# International Cooperation for Financing Responsible Mining

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An initiative of the



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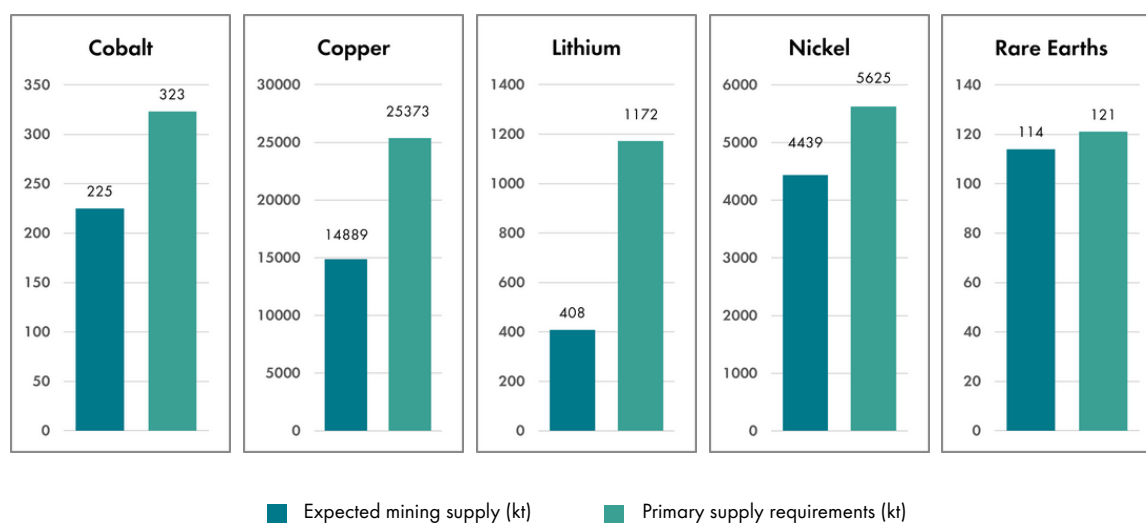
### Summary:

Mining finance is driven by specialist capital concentrated in a small number of financial centers and has shrunk dramatically over the last decade in Western markets. Attracting non-specialist finance to mining is proving extremely difficult due to the sector's challenges including commodity pricing cyclicality and volatility, operations' long lead times and increasing costs, ESG risks and their reputational impacts, and geopolitical uncertainty exacerbating concentration risks. Considering the limited mining finance pools available in Western markets and strategic focus on industrial and defense stakes, government intervention, previously a hallmark of China's positioning on critical minerals domestically and abroad, is on the rise. Responsibility is a key pillar of critical mineral strategies, aligning with societal expectations of responsible business conduct across borders and value chain levels, and with fair transition principles: ESG criteria should be viewed as a bolster to responsible investment and improving governance. Unlocking responsible financing for mining will require actioning international collaboration tools, amplifying public-private initiatives and better communication of minerals' critical role in addressing global sustainability stakes.

### 4.1. Challenges to Investment in Transition Minerals Projects

The market size for key transition minerals has doubled over the past six years to reach USD 325 billion in 2023, with investment and exploration spending continuing to increase by 10% and 15% respectively [1]. Yet, supply is still expected to be insufficient to meet market demand from the mid-term, much less net-zero requirements. In order to secure the supply of minerals for the energy transition, **an estimated US\$1.7 trillion over the next 15 years investment in mining will be needed** [2].





Source: "Global Critical Minerals Outlook 2024" by the International Energy Agency (2024)

## Key Obstacles in Financing Mining Projects

Mining finance is driven by specialist capital concentrated in a small number of financial centers led by Canada, Australia, the United Kingdom (UK), and China. Western mining finance has shrunk considerably over the last decade: mining specialist capital is estimated to have fallen by 60% in the UK and 80% in Canada between 2010 and 2022, and many financial institutions significantly decreased or even closed their mining debt portfolio over the same period. Although alternative finance is more available and has now integrated the mining landscape, it has not filled the gap [3]. Attracting non-specialist finance to mining is proving extremely difficult, considering some of the key challenges of the sector compared to other asset classes, including:

- Cyclical and volatile prices:** Mining valuations are highly correlated with spot prices, with market capitalization having a 93% correlation with commodity prices, higher than industries such as oil and gas and steel. Companies find that they underinvest in downcycles and overinvest in upcycles, and investors are deterred by the unpredictable prices and returns [4].
- Long and uncertain lead times:** The development of new mining projects involves obtaining permits, conducting exploration and feasibility studies, and carrying out mine construction before extraction can occur. This process has become increasingly lengthy, with an average lead time of 17.9 years [5]. This long, bureaucratic and uncertain process can not only deter investors from investing at all, but also exacerbate the risk of timing mismatches in the investment cycle.
- Increasing production costs:** Given that high-quality deposits are exploited first, declining ore quality and deteriorating mine conditions are resulting in escalating production costs. For example, the average Chilean copper ore grade has decreased by 30% over the past 15 years [6]. As deposits in major mines are depleted, activity moves to the fringes of exploited deposits, necessitating more complex, energy intensive and costly extraction and processing of minerals from lower grade ores.



- **Environmental, social and governance (ESG) risks:** Mining projects are often located in developing countries struggling with poor governance, and subject to a range of supply-side risks that can disrupt production, including extreme climate phenomena, water shortages, and social conflict. Investors recognize that ESG performance is closely tied to such risks, with some divesting from mining entirely due in part to their reputational impacts. While governments are putting forth stricter regulations, compliance – reporting on ESG performance, conducting audits, and implementing mitigation measures – will also increase costs, and can limit the number of deposits that can be exploited.
- **Geopolitical uncertainty exacerbating concentration risks:** The transition minerals reserves are highly concentrated, with China dominating graphite and rare earths extraction, the Democratic Republic of Congo (DRC) dominating cobalt, and Indonesia dominating nickel. This concentration has left prices more vulnerable to supply shocks. For example, the current oversupply of cheap Indonesian nickel has affected the profitability of Australian nickel, resulting in numerous mine closures. Increased resource nationalism, friend-shoring, as well as potential cartelization, such as between the “lithium triangle” countries of Argentina, Bolivia and Chile, pose further threats to the transition mineral supply chain and price stability. Geopolitical uncertainty, foreign intervention and social manipulation, particularly in fragile states, are also amplifying the supply risk.

While the market uncertainties, high capital expenditures, long lead times, declining ore qualities, ESG issues and geopolitical tensions may deter investment, they also justify the need to take steps quickly to incentivize investment in

order to secure the minerals supply necessary to enable the energy transition.

### Challenges in Financing Mine Closure and Rehabilitation

Mine closure and rehabilitation are often overlooked, yet they are essential for **maintaining the social license for mining projects and represent the natural conclusion of the extraction process**. Over 80,000 inactive and unused mine sites can be found across Australia, with around 82% potentially requiring rehabilitation [7]. In South Africa, it was reported in 2021 that out of 2,322 mines classified as “high-risk” (including coal mines), only 27 mines (all mining asbestos) had been rehabilitated [8]. The increasing demand for transition minerals will lead to more mining activities, making it crucial to plan for the future to avoid ending up with abandoned mines. This is particularly relevant in a context where operators may become increasingly reluctant to trigger closure as technological innovation and shifting mineral priorities create opportunities to reprocess waste material: closure as a clearly defined moment in time may need to be reconsidered for a more holistic approach to rehabilitation throughout the life of mine.

**The long timelines and uncertainty around the full extent and costs of rehabilitation, especially for long-term environmental impacts, make accurate financial planning difficult.** Many companies fail to set aside adequate financial provisions during the operational phase, leading to a significant funding gap; States rarely plan and provision adequately from mining revenue for regional rehabilitation and reskilling solutions. The high costs associated with meeting environmental and safety standards, including land reclamation, decommissioning facilities, and long-term monitoring, peak at the end of a mine's life when cash flows are diminishing - by the time closure is needed, smaller mining firms

with limited financial resources might face the risk of insolvency or bankruptcy. Lastly, premature or unplanned closures due to factors like commodity price volatility can also leave insufficient time and resources for proper closure planning.

## 4.2. Exploring Existing Finance Channels for Transition Mineral Projects, and their Shortcomings

Financing needs and sources of mineral projects evolve throughout their lifecycle: whilst exploration is dominated by **equity funding** due to its singular risk profile, development of mines and facilities can be highly leveraged as cash flow expectations provide capacity for debt repayment. Additional funding sources can include **production-based financing** in the form of offtake royalty agreements, streaming or forward purchase and prepay agreements. Although **debt financing options** are starting to include green bonds, which fund environmentally sustainable projects, and sustainability-linked loans, whose terms depend on the borrower's sustainability performance, categorization of mining and minerals remains a limiting factor in its access to sustainability or transition finance pools.

Considering the limited mining finance pools available in Western markets and strategic focus on industrial and defense stakes globally, government intervention, previously a hallmark of China's positioning on critical minerals domestically and abroad, is on the rise.

### Public Financing Tools

As awareness of the necessity of minerals for achieving net-zero transitions grows, **governments in consumer markets have**



**developed financing tools and policies to secure mineral supply for their industries.** The Covid-19 pandemic (2020 - 2022) and the ongoing conflict in Ukraine (since 2022) have highlighted the vulnerability of global supply chains reliant on only a few suppliers. Recent financial initiatives by European and American governments primarily seek to reduce reliance on China's dominance in the mineral market and establish diversified supply chains worldwide. These efforts include:

- **Tax credits:** In the United States (US), the US Inflation Reduction Act (IRA) and its New Advanced Manufacturing Production Credit (2023) will grant a tax credit equal to 10% of the cost of production of transition minerals including cobalt, graphite, lithium and nickel. Furthermore, under the Title 17 Clean Energy Financing Program, the US Department of Energy's Loan Programs Office can support transition minerals mining and extraction activities with flexible, custom financing. This last IRA benefit is also being also extended to Canada. In Canada, the Critical Mineral Exploration Tax Credit and Clean Technology Manufacturing Tax (2024) Credit will support investments in transition mineral exploration, and extraction, processing and recycling respectively.

- **National funds:** Japan's Organization for Metals and Energy Security (JOGMEC) and the Japan Bank for International Cooperation (JBIC) have a strong track record in providing equity, loans and debt guarantees for overseas mineral projects, and have good standing in many resource-rich countries. National funds are emerging in other mineral-consuming countries, sometimes modelled on JOGMEC (Germany, EUR 1 billion sovereign fund announced), sometimes more focused on domestic or regional projects (France, EUR 2 billion public-private fund in progress). National financing examples in resource-rich countries include the Australian AUD 4 billion Critical Minerals Facility managed by Export Finance Australia (EFA) to support projects and related infrastructure.

### The Importance of Long-Term Strategies for Public Funding

While government funding can be useful in mitigating some of the technical, project, and market risks inherent in mining, thereby fostering commercial viability and attracting investment, the European Union (EU) and the US have only recently begun to announce substantial investments in global mineral supply chains (USD 360 million to finance the Lobito Corridor, an infrastructure project spanning from copper-producing Zambia and the Democratic Republic of Congo to Angola). Additionally, **rising debts, financial crises, competing priorities and public opinion** are playing a part in dissuading European governments from investing in this perceived high-risk sector. No dedicated financial envelope has been announced to support the ambitious EU Critical Raw Materials Act.

Generally, it is widely acknowledged that western countries lag behind China in energy and mining projects - China is a clear example of strong industrial policy, financing, and

government subsidies allowing for the development of strategic industries in the minerals and energy sectors. The Made in China 2025 initiative launched in 2015 aims to transform China into a "leading manufacturing power by the year 2049", and key sectors include energy-saving cars and new energy cars, as well as new materials such as permanent magnets and clean energy technology components [9]. A large range of financial tools are available to support its implementation, including national investment funds, ministerial special financial vehicles, and financing from state-owned banks such as the China Construction Bank, the Industrial and Commercial Bank of China and the China Development Bank. In March 2018, it was reported that there were more than 1,800 government industrial investment funds amounting to USD 450 billion [10]. These impressive investments, centralized decision-making and consistent practice of strategic vertical integration have allowed China to become a dominant actor in upstream and downstream mining supply chains.





## Leveraging ESG Criteria in Mining Investments for Sustainable Growth

Responsibility is a key pillar of Western national critical mineral strategies. The IRA requires that projects avoid or reduce air pollutants or greenhouse gas (GHG) emissions, includes a Community Benefits Plan, and is subject to an environmental and socioeconomic impact review. The EFA applies the OECD Recommendation of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence, as well as the Equator Principles in environmental and social project risk assessment, while JOGMEC has specific health, safety and environment screening criteria for lending and debt guarantees in metallic minerals.

**Application of ESG criteria to mining investment has been criticized for being overly restrictive**, potentially deterring companies from investing in developing countries where many essential minerals are found. The European Investment Bank has, for example, been accused of imposing stringent ESG standards that create barriers for investments in these regions. The administrative barriers and burden of proof required to implement ESG criteria are often flagged as being unattainable for countries and companies with limited capacity.

However, **there is a strong argument that such a narrative dilutes accountability, which is no longer aligned with societal expectations of responsible business conduct across borders and value chain levels, nor with fair transition principles.** Mining companies that demonstrate robust ESG practices and reporting are more likely to attract longer-term capital from ESG-focused institutional and backing of financial institutions supportive of wider development stakes. Robust ESG practices enable companies to identify, assess, and manage environmental, social, and governance threats and

opportunities, and mitigate the risk of liabilities, conflicts, lawsuits, reputational damage, and operational disruptions which can affect all stakeholders. Integrating ESG criteria helps optimize resource use, reduce waste and emissions, and drive operational efficiencies, resulting in significant cost savings for mining operations as well as good corporate citizenship. China has been working on its companies' ESG performance for these reasons, with the China Chamber of Commerce for Metals Minerals & Chemicals Importers & Exporters issuing their own Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains in 2015 [11].

Furthermore, addressing social and community concerns is also essential to build trust and foster long-term relationships and wider economic development. The cost of reporting and verification is an issue, but this does not diminish the value of sound principles, practices and outcomes in pursuing responsible investment and mining [12].

Investors, lenders, and financiers are placing greater emphasis on ESG performance when making investment decisions for mining projects and companies world-wide. Applying high ESG expectations does not entail disengagement but rather increased focus on governance (corporate and mineral), deeper understanding and management of risks and consistent transparency with stakeholders.



## 4.3. Leveraging the Strengths of International Collaboration

### Partnerships for Responsible Project Financing

To boost investor confidence, governments generally address **geopolitical uncertainty** by securing agreements with partner countries, through instruments such as free trade agreements (FTAs). Under the US Inflation Reduction Act, FTA partners are privileged and eligible for domestic tax credits. Commercial and strategic agreements between governments and industries can also attract capital, technology, skilled labor, and private-sector partnerships, and help the sector scale up quickly. Such international engagement would also be an opportunity to shape and embed ESG standards and other market norms such as transparency and traceability.

One such example is the **Minerals Security Partnership (MSP)** between Australia, Canada, Estonia, Finland, France, Germany, India, Italy, Japan, Norway, the Republic of Korea, Sweden, the UK, the US, and the EU which aims to “accelerate the development of diverse and sustainable critical energy minerals supply chains through working with host governments and industry to facilitate targeted financial and diplomatic support for strategic projects along the value chain”. Supported projects must adhere to internationally recognized ESG standards – demonstrate responsible stewardship of the environment, ensure fair and safe working conditions, and provide economic benefits for local communities, among others.

However, **government partnerships such as the MSP run the risk of feeding into and being part of geopolitical tensions**, rather than assuaging them. The MSP is widely perceived as an anti-China endeavor for the US to build alternative supply chains, and while the MSP commits to consulting with mineral-rich countries,

with countries such as Angola, Botswana, the DRC, South Africa, Tanzania, Uganda, and Zambia in attendance at the ESG Principles meeting in South Africa, these countries are not full-fledged members. Criticism has also been raised regarding “friend-shoring” and protectionism in the MSP, as well as its opacity [13].

A less controversial example of a strategic partnership is **Africamaval**, an EU-funded initiative aimed at fostering responsible sourcing of transition minerals from Africa through sustainable investments and knowledge-sharing between European and African stakeholders in the raw materials sector. One of their activities will be to evaluate 100 investment opportunities and disseminating results through their EU-Africa networks. Such partnerships, with their emphasis on networking and knowledge-sharing could be reassuring to investors, and have a wider positive impact on the mineral sector.

### A Public-Private International Fund for Transition Minerals Mining Projects

Amid the competition to secure strategic transition minerals, nations have been setting up **national funds** that utilize public funds to attract private investors for financing their domestic supply chains. Examples include the French Fund (EUR 500 million public money and private firm Infravia Capital Partners raising additional funds to reach a total target of EUR 2 billion) [14], and the “Made in Italy” fund with EUR 1 billion from the government, and a mandate to attract at least an equal amount (EUR 1 billion) from private investors [15]. There has been concern that these separate national funds would compete with each other and that they would serve exclusively their national industrial interest.



A dedicated public-private international fund could focus on global transition mineral projects to ensure an ample supply of responsibly sourced minerals for the energy transition. This fund could also be dedicated to mining closure and rehabilitation, as aforementioned. This new international fund could be associated with an existing international organization such as the United Nations, the World Bank, or IRENA. Alternatively, it could involve expanding the scope of an existing fund like the World Bank Smart Mining Facility, the Green Climate Fund, or the Global Energy Efficiency and Renewable Energy Fund (GEEREF).

Such a fund could also serve to finance exploration. Junior miners are small companies generally focused on exploration, typically with market capitalizations under USD 500 million, that then sell discovered deposits to (or otherwise partner with) major miners to develop them [16]. Given the exhaustion of existing mines and the need for new mines to meet future demand, junior miners play a key role in supporting transition mineral supply. However, juniors face significant challenges in obtaining financing for their activities. Exploration is not only capital intensive, but also highly risky and subject to geological uncertainties and delays. Project viability is also sensitive to commodity price, and many transition mineral markets have been extremely volatile, exacerbated by the possibility of dominant players influencing prices to discourage new entrants. As such, despite the potential for high returns, market failure abounds and investor appetite is weak. A private-public international fund could therefore help in investing in technology such as data aggregation and artificial intelligence tools to increase the likelihood of exploration success, as well as absorb some of the financial risk when unsuccessful searches are conducted.

## Global Communication on the Role of Transition Minerals

Despite increasing awareness of the critical role minerals play in the energy transition, the topic remains largely obscure to the general public and investors not connected to mining finance. This lack of public knowledge stems from several factors, including the complexity of the supply chains, the technical nature of mineral extraction and processing, and the negative imagery associated with mining. There is therefore a **need for increased education and outreach efforts that simplify and clarify the importance of minerals in the energy transition**. This could involve a global informative campaign, more accessible reporting from mining companies, and initiatives by governments and industry bodies to provide clear, reliable information, fostering **greater public and investor engagement**.

It will also require significant political courage to designate financing of mining and mineral projects as strategic to national and global stakes. This includes categorization of mining and processing as aligning with climate change mitigation and sustainability goals, for example within the EU taxonomy of economic activities that can be considered environmentally sustainable [17]. This will be an essential signal to financial markets, but also to stakeholders in resource-rich countries and in mineral-consuming markets, of the coherence of sustainability policies, expectations and actions in the critical minerals space.

## Notes

[1] "Global Critical Minerals Outlook 2024", International Energy Agency, 17 May 2024, <https://iea.blob.core.windows.net/assets/ee01701d-1d5c-4ba8-9df6-abeeac9de99a/GlobalCriticalMineralsOutlook2024.pdf> (accessed 17 May 2024)

[2] Desai, "Low carbon world needs \$1.7 trillion in mining investment", Reuters, 10 May 2021, <https://www.reuters.com/business/energy/low-carbon-world-needs-17-trillion-mining-investment-2021-05-10/> (accessed 17 May 2024)

[3] "Alternative mining finance goes mainstream" Fieldfisher, 24 May 2023, <https://www.fieldfisher.com/en/insights/alternative-mining-finance-goes-mainstream> (accessed 18 May 2024)

[4] Mareels et al., "Through-cycle investment in mining", McKinsey & Company, July 2020, <https://www.mckinsey.com/~media/McKinsey/Industries/Metals%20and%20Mining/Our%20Insights/Through%20cycle%20investment%20in%20mining/Through-cycle-investment-in-mining.pdf> (accessed 17 May 2024)

[5] Manalo, "Average lead time almost 18 years for mines started in 2020-23", S&P Global, 10 April 2024, <https://www.spglobal.com/marketintelligence/en/news-insights/research/average-lead-time-almost-18-years-for-mines-started-in-2020-23> (accessed 17 May 2024)

[6] "Critical minerals supply and demand challenges mining companies face", EY, 25 April 2022, [https://www.ey.com/en\\_us/insights/energy-resources/critical-minerals-supply-and-demand-issues](https://www.ey.com/en_us/insights/energy-resources/critical-minerals-supply-and-demand-issues) (accessed 17 May 2024)

[7] "Unearthing a gold standard for rehabilitating 80,000 mines in Australia", Monash University, 25 September 2020, <https://www.monash.edu/news/articles/unearthing-a-gold-standard-for-rehabilitating-80,000-mines-in-australia> (accessed 17 May 2024)

[8] Human Rights Watch, "Failure to rehabilitate abandoned coal mines – who suffers most?", ESI Africa, 7 July 2022, <https://www.esi-africa.com/southern-africa/failure-to-rehabilitate-abandoned-coal-mines-who-suffers-most/> (accessed 17 May 2024)

[9] "'Made in China 2025' plan issued", The State Council of the People's Republic of China, 19 May 2015, [https://english.www.gov.cn/policies/latest\\_releases/2015/05/19/content\\_281475110703534.htm](https://english.www.gov.cn/policies/latest_releases/2015/05/19/content_281475110703534.htm) (accessed 17 May 2024)

[10] Zenglein and Holzmann, "Evolving Made in China 2025: China's industrial policy in the quest for global tech leadership", Mercator Institute for China Studies, July 2019, <https://merics.org/sites/default/files/2020-04/MPOC%20Made%20in%20China%2025.pdf> (accessed 17 May 2024)

[11] "Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains", Organization for Economic Co-Operation and Development, 2 December 2015, <https://mneguidelines.oecd.org/chinese-due-diligence-guidelines-for-responsible-mineral-supply-chains.htm> (accessed 17 May 2024)

[12] “Global: Environmental, Social and Governance (ESG) considerations for the mining sector”, Baker McKenzie, [https://insightplus.bakermckenzie.com/bm/attachment\\_dw.action?attDocParam=pB7HEsg%2FZ312Bk8OIuOIH1c%2BY4belEAesZU6%2BAOS%2B7g%3D&attKey=FRbANucS95NMLRN47z%2BeeOgEFCt8EGQJsWJiCH2WAUuQVQjpl3o%2BUTKkJtbUFRZ&fromContentView=1&nav=FRbANucS95NMLRN47z%2BeeOgEFCt8EGQbuwypnpZj c4%3D](https://insightplus.bakermckenzie.com/bm/attachment_dw.action?attDocParam=pB7HEsg%2FZ312Bk8OIuOIH1c%2BY4belEAesZU6%2BAOS%2B7g%3D&attKey=FRbANucS95NMLRN47z%2BeeOgEFCt8EGQJsWJiCH2WAUuQVQjpl3o%2BUTKkJtbUFRZ&fromContentView=1&nav=FRbANucS95NMLRN47z%2BeeOgEFCt8EGQbuwypnpZj c4%3D) (accessed 17 May 2024)

[13] Vivoda, “Friend-shoring and critical minerals: Exploring the role of the Minerals Security Partnership”, ResearchGate, June 2023, [https://www.researchgate.net/publication/369977929\\_Friend-shoring\\_and\\_critical\\_minerals\\_exploring\\_the\\_role\\_of\\_the\\_Minerals\\_Security\\_Partnership](https://www.researchgate.net/publication/369977929_Friend-shoring_and_critical_minerals_exploring_the_role_of_the_Minerals_Security_Partnership) (accessed 17 May 2024)

[14] Energynews, “France launches a critical metals investment fund”, Mining SEE, 12 May 2023, <https://www.miningsee.eu/france-launches-a-critical-metals-investment-fund/#:~:text=France%20will%20create%20a%20%E2%82%AC%20billion%20investment%20fund,avoid%20dependence%20on%20the%20countries%20producing%20these%20metals.> (accessed 17 May 2024)

[15] Fonte & Amante, “Italy plans \$2.2 billion fund to support key supply chains”, Reuters, 2 August 2023, <https://www.reuters.com/markets/europe/italy-plans-22-bln-fund-support-key-supply-chains-2023-08-02/> (accessed 17 May 2024)

[16] Giustra, “The dirty truth about why we need mining if we want a cleaner world”, Toronto Star, 31 October 2023, [https://www.thestar.com/business/the-dirty-truth-about-why-we-need-mining-if-we-want-a-cleaner-world/article\\_c7f890a8-8422-5563-bcc8-9b613f79c162.html](https://www.thestar.com/business/the-dirty-truth-about-why-we-need-mining-if-we-want-a-cleaner-world/article_c7f890a8-8422-5563-bcc8-9b613f79c162.html) (accessed 17 May 2024)

[17] “EU taxonomy for sustainable activities”, European Commission, [https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities\\_en](https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en) (accessed 15 May 2024)