

Global mining update

The race for critical
minerals that will power
the energy transition

2023

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Overview

Assessing key challenges, opportunities, and best practices for international investors and executives in the competition for critical mineral commodities.

Their names may call to mind grade-school studies of the periodic table – copper, nickel, lithium, manganese, cobalt – but these and other minerals are fast-becoming hot commodities amid the global clean energy transition.

Some are key components of the batteries needed for electric vehicles (EVs) and energy storage. Others are critical in developing permanent magnets for wind turbines, solar panels, and EV motors. Still others fuel the electricity and technologies that will transform our grid infrastructure.

The pressing question, then, is not one of demand but of supply. One projection, for instance, suggests that lithium, cobalt, and graphite demand may outpace production for the U.S. and its allies tenfold, thirtyfold, and eightyfold, respectively, by 2030. A recent S&P Global report puts it in even blunter terms: “In the 21st century, copper scarcity may emerge as a key destabilizing threat to international security.”

The solution lies in new mining projects. The mining industry long ago moved away from rampant exploitation and dirty, unsafe operations, but mining projects still attract scrutiny and opposition. A focus on sustainability, equity, and obtaining a “social license to mine” have taken their place alongside new regulations and subsidies from numerous countries looking to secure their piece of the pie. While these are positive developments, new rules can also cause delays and add costs.

To meet burgeoning demand for these minerals – and accelerate the clean energy transition – policymakers, investors, and corporations will have to strike the right balance, finding ways to streamline the process while still upholding responsible mining practices. In what follows, we’ll provide an overview of some key challenges and best practices to help them do just that.

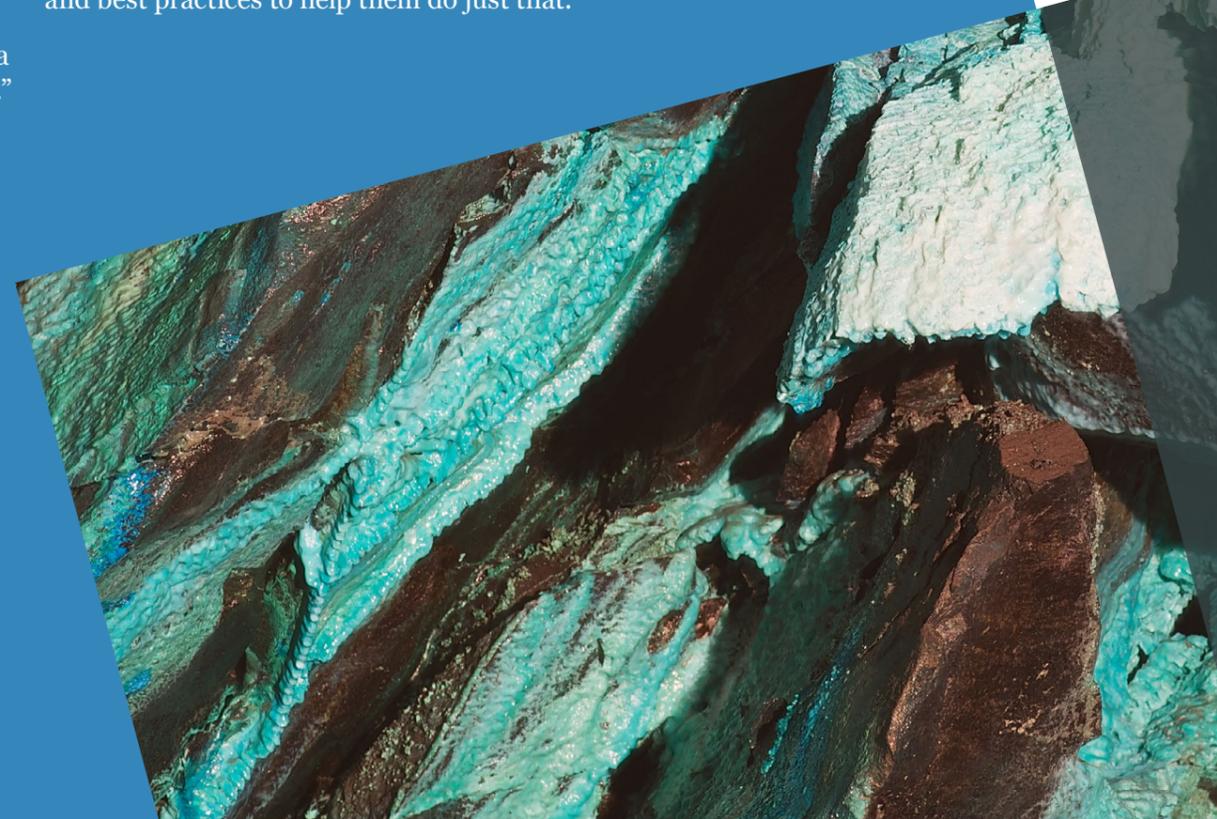
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In the 21st century, copper scarcity may emerge as a key destabilizing threat to international security.

S&P Global Report, 2023

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Mineral commodities:

-  Copper
-  Nickel
-  Lithium
-  Manganese
-  Cobalt

Products reliant on mineral commodities:

-  Electric vehicles
-  Wind turbines
-  Solar panels
-  Grid infrastructure

Challenges

For industry stakeholders to navigate the evolving mining landscape, it's important that they grasp potential roadblocks that may arise as they explore new projects. Some key obstacles are as follows:

-  An increasingly complex geopolitical arena
-  Heightened pressure to meet environmental, social, and governance (ESG) criteria and obtain the social license to mine
-  Automakers and original equipment manufacturers (OEMs) drive competition – but face unique challenges of their own



Challenges



An increasingly complex geopolitical arena

As noted above, demand for critical minerals greatly outstrips supply. This has raised the alarm for countries around the world who want to ensure the security and reliability of their clean energy resources.

For many, the central issue is China's predominance in the sector. According to the International Energy Agency (IEA), China accounts for 60 to 70 percent of lithium and cobalt processing for battery cathode materials, and 70 percent of graphite processing for anode materials. It is also responsible for nearly all rare-earths processing. In a preview of what could come, should geopolitical tensions persist, the Chinese government recently announced that buyers of gallium and germanium – two rare metals used in computer chips and solar panels – will need to apply for export permits starting 1 August 2023.

Other regions have taken their own energy security measures. In April 2023, Japan's Ministry of Economy, Trade, and Industry announced that it would “subsidize up to half the cost of mine development and smelting projects of important minerals by Japanese companies.” There will also be a stipulation that a certain amount of output be supplied to Japan.

The U.S. has earmarked billions in its own subsidies to support procurement of such minerals, while the EU aims to procure 10 percent of rare earths and other important resources within their member states by 2030.

Regions that supply minerals (e.g., Africa, South America) come with their own geopolitics and resource nationalism, as well as varying levels of sophistication and regulation. For instance, Chile's plan for a state-led public-private model has concerned investors; Mexico nationalized its lithium deposits last year; and Bolivia has historically maintained control over its largely untapped resources (though, at least in the latter's case, this might be changing, as the country attempts to add government mining organizations and legal/political structures to attract investment). For its part, Argentina, which has long collaborated with foreign mining interests, could triple its lithium production by 2024-2025.

10%

The EU aims to procure 10 percent of rare earths and other important resources within their member states by 2030

Challenges



Heightened pressure to meet environmental, social, and governance (ESG) criteria and obtain the social license to mine

In mineral-rich regions like Africa and South America’s so-called “[Lithium Triangle](#),” there is mounting pressure on developers to obtain a social license to mine – that is, engaging with local communities and stakeholders to ensure that the business enterprise is mutually beneficial.

These licenses often take the form of [local content policies](#), which, depending on the region, may stipulate several requirements, such as increasing local employment and purchases by mining companies, funneling proceeds to build schools and hospitals, or even providing a local ownership stake in the mine itself. This, of course, adds complexity to any foreign investment decision.

Relatedly, ESG concerns are entering the mining business as well, forcing developers and investors (particularly those from the U.S. and EU, where regulations are stricter) to evaluate various areas of a given project, from the impact on a region’s water supply and biodiversity to the effects on local culture and indigenous peoples, and more. Less red tape from China’s government could give the country’s mining concerns a leg up.

Most stakeholders, however, are taking note. At this year’s premier mining conference, [sessions](#) included topics such as “Why Indigenous women in mining is a golden opportunity” and “Operationalizing the ‘S’ in ESG: Does it matter to investors?” As one journalist who attended [observed](#), “From the opening keynote address, it was clear that the climate crisis itself has become a means for mining interests to obtain social license.”

Why Indigenous women in mining is a golden opportunity

Operationalizing the ‘S’ in ESG: Does it matter to investors?

Sessions included at PDAC 2023

Challenges



Automakers and original equipment manufacturers (OEMs) drive competition – but face unique challenges of their own

According to the IEA, an electric car [requires](#) six times the amount of mineral resources as a gas-powered car. This fact – combined with significant incentives to roll out EVs and anticipated supply shortages – has put pressure on automakers to build up and secure their mineral supply chains.

This past January, General Motors [announced](#) a US\$650 million investment in Lithium Americas, which is developing what could be the U.S.’s largest lithium mine; Ford, meanwhile, has recently signed deals with mining giant [Rio Tinto](#) and CATL, a Chinese battery manufacturer. More joint ventures like these – as well as those with new technology upstarts – are on the horizon.

OEMs’ arrival on the scene is a game-changer, both for OEMs themselves and the industry stakeholders with whom they will compete or collaborate.

Part of this stems from a shift in leverage: OEMs have traditionally held the dominant market position but are now buyers in a seller’s market.

They’re also under pressure to factor ESG and sustainability into their investments and supply chains.

This could come into tension with the mining industry, which has a fairly standardized approach to how they sell their outputs, one that might differ from how OEMs typically engage with their suppliers. Wedding the two worlds – and integrating the right safeguards, due diligence processes, and contractual promises to make each party comfortable – will be key moving forward.

US\$650 million

General Motors announced investment in Lithium Americas

Best practices

While each mining project varies greatly depending on the stakeholders involved, location, and the type of mineral being mined, there are some high-level best practices that industry investors and executives would do well to follow.

-  Engage early with local communities and governments
-  Assess potential regulatory issues
-  Understand critical deal terms when dealing with emerging technologies

Best practices



Engage early with local communities and governments

It may sound intuitive, but many developers go a long way toward reaching a commercial mining agreement only to find, at the 11th hour, that they haven't addressed local regulations and/or obtained the social license to mine. The earlier this process starts, the earlier organizations can factor these elements into project modeling.

Remember, too, that there is a social element to early engagement: local players want to be brought along with the project, rather than have executives bring a final project to the table and expect it to be accepted.

A few key questions to start asking include:

- What are the local ownership and economic interest sharing requirements, if any?
- What does the government require in terms of social and economic development for local communities?
- Are there local beneficiation and/or preferential policy requirements?
- How will you secure the power supply for your project? For instance, will you rely on a publicly available grid, or do you embed a private power source? What constraints and regulatory concerns come with each option?
- What are the potential social impacts on local communities? A Social Impact Assessment will help to identify potential risks, benefits, and concerns related to the project. Engage in meaningful dialogue with government and local communities to understand their concerns, aspirations, and any expectations they have from the mining project.

- Assess the legal framework and related practices to implement a program to assure that the financial benefits from mining are shared with the local community. This process is often documented in a community development agreement or similar arrangement.

- What are the Local Customs and Traditions? Respect local communities rights, land tenure, and heritage, and consider incorporating their traditional knowledge into the project's design and implementation where appropriate.

This is where enlisting advisors with local, on-the-ground knowledge and experience becomes critical to the success of a given project.



Your checklist for early engagement

Best practices



Assess potential regulatory issues

In addition to the local content policies noted above, there are numerous regulations that stakeholders must evaluate. Though they're specific to each country, some overarching areas to keep in mind include:



Foreign direct investment (FDI) – Markets like the U.S., Australia, and Canada have universal screening programs for foreign investors, while some developing countries (e.g., Indonesia, Malaysia, and Brazil) have industry-specific FDI programs that often encompass the mining industry.



Competition – In some countries, like South Africa, where FDI review regimes are nascent or non-existent, other regulators (primarily competition regulators) have assumed the role of “public interest” monitors, screening foreign investments (particularly in sensitive sectors such as mining) to ensure that these investments are accretive to the local economy and populace, in addition to being compliant with local competition laws.



Rules related to foreign subsidies – As countries look to incentivize mineral mining production, there may be regulations associated with accepting certain subsidies. In the EU, for instance, the new [Foreign Subsidies Regulation](#) allows the European Commission to investigate and remedy subsidies received from non-EU countries that they deem distort the EU's internal market.



Supply chain regulations – A range of new supply chain directives have come into place, in large part due to ESG and sustainability concerns. These include, for instance, Germany's [Supply Chain Due Diligence Act](#), which imposes due diligence obligations with the aim of preventing or ending certain human rights or environmental violations.



Disclosure requirements – Corporations and investors increasingly have to disclose information related to ESG factors, be it as a result of the EU's [Sustainable Finance Disclosure Regulation](#) or the Security and Exchange Commission's impending [climate disclosure rules](#), among others. These will certainly come into play with new mining developments – and executives should take note.



State Equity Participation – It is common for countries with mineral resources to include a requirement or option for the state or a state-owned mining company to hold an equity interest in mining projects.

Best practices



Understand critical deal terms when dealing with emerging technologies

The clean energy transition – and the mineral mining that will fuel it – has catalyzed significant technological innovation and investment.

OEMs in particular are making acquisitions and injecting capital into cutting-edge startups: General Motors, for instance, recently [invested](#) in lithium technology startup EnergyX.

Yet given ongoing consolidation in the sector, those embarking on joint ventures should be sure to effectively negotiate clear and tailored change of control provisions to ensure they don't end up in a situation in which their technology is partly owned by a competitor.

Similarly, the fast-moving nature of such technologies – today they may have one use, tomorrow another – means any licensing deal terms should be thoroughly and comprehensively considered to limit potential uses and reserve rights for future opportunities.



Looking ahead

- 1 We can expect more joint ventures between Chinese and Western companies
- 2 New entrants (OEMs and otherwise) will continue to flood the space, investing in assets and sectors they might not have before
- 3 Policymakers and business leaders will need to make hard decisions and compromises
- 4 This may mean accepting that in order to decrease emissions, we may have to increase them first

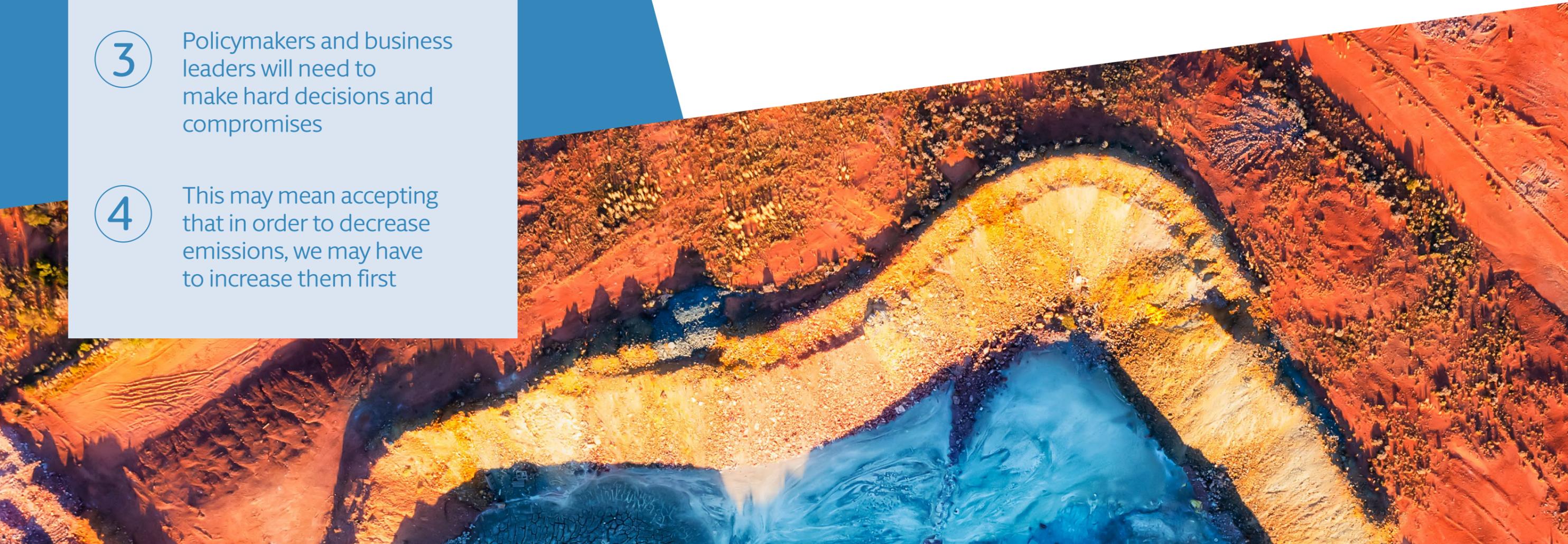
What's next?

For one, we should expect more joint ventures between Chinese and Western companies as governments and businesses around the world do their best to meet demand. At the same time, new entrants (OEMs and otherwise) will continue to flood the space, investing in assets and sectors they might not have before. As noted above, these stakeholders will need to focus not only on the regulatory and political factors at play, but the social license to mine and potential impacts on local communities.

Zooming out, the success of the clean energy transition likely depends on a widespread paradigm shift in the mining sector.

Policymakers and business leaders will need to make hard decisions and compromises to loosen ossified structures, reduce costs, speed up project timelines, and expand supply – without sacrificing responsible mining practices. This may mean accepting that in order to decrease emissions, we may have to increase them first through projects like those discussed here.

Whatever the case, it's clear that we are in the midst of an exciting moment for the global mining industry – and that it will play a vital role in international politics, investment, and global clean energy goals for years to come.



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