

The Ongoing Evolution of Sustainable Business

Mining and Metals Supplement

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Introduction

In our annual Trends Reports we track 10 enduring sustainability trends, how they are evolving, and how business is responding to them. While many of the trends and developments affect all industries and businesses in similar ways, we also see important nuances between sectors.

Last year, we published our first industry trends supplement that focused on the technology sector.

In this report, we explore our 2023 trends from the perspective of the mining and metals sector.

The Environmental, Social, and Governance (ESG) risks and opportunities facing the mining and metals sector are transformational with decarbonization as the most immediate challenge. Companies are grappling with the conflicting investor demands to reduce fossil fuel use, decrease emissions, and minimize the environmental footprint of operations, while maintaining their profitability. As nations and non-state actors increase their climate commitments, consensus has emerged on the need to transition asset portfolios away from thermal coal towards critical materials that are essential for the transition to a low carbon economy such as copper, nickel, cobalt, lithium, and aluminum. Furthermore, biodiversity and water stewardship are rapidly becoming the next most pressing ESG focuses after carbon. The launch of the Taskforce on Nature-related Financial Disclosures (TNFD) and developments at the UN Biodiversity Conference, COP15, have accelerated the urgency to think holistically about the impacts and contributions mining and metals companies are making to the nature agenda.

In addition to environmental challenges, mining and metals companies find themselves facing an increasingly complex social landscape. While most leading mining companies are global, their individual assets are typically embedded deeply into local economies. Mining companies generate employment, produce tax revenues, and stimulate local commerce. However, they also can displace communities, inadvertently support unethical labor practices, and disrupt subsistence economies and quality of life through environmental pollution. Socio-economic issues, especially in mining, are a major priority for governments and communities and the sector increasingly recognizes the importance of effective community relationships for business performance. Lack of gender diversity and sexual harassment are also recognized as being among the most important social issues facing the industry.

In this report, we focus on ESG-related trends that we anticipate will have the most impact on the mining and metals sector over the course of the next few years. For each of the five sustainability trends – decarbonization, innovation, ESG in capital markets, value chains, and social paradigms – we explore recent developments, future advances, and potential impacts on the companies in the sector.

Headlines



1 Putting decarbonization commitments into practice

Many leading mining companies have made commitments to achieve net zero emissions by 2050. Determining and scaling the solutions required to decarbonize operations and value chains while simultaneously addressing other environmental issues such as water consumption and biodiversity impacts will be a major focus for the industry in the coming years.

- Achieving Scope 1 and 2 emissions reductions will require transforming operations.
- Stakeholder expectations for companies to reduce Scope 3 emissions will continue to rise.
- Biodiversity impacts and water usage will remain important environmental priorities.



2 Accelerating innovation

Often viewed as laggards on innovation, mining and metals companies are increasingly reexamining their business models and reshaping operations as they seek to adapt to the changing economic environment, the accelerating low carbon economy transition, and growing ESG-related expectations from stakeholders.

- Mining companies will accelerate the integration of smart technologies into sites.
- Data solutions will help to increase employee engagement among other benefits.
- Companies will be re-examining their business models to increase efficiency and respond to changing commodity demand.



3 Responding to investor expectations on ESG

A growing number of mining and metals companies are making ESG commitments. While investors are applauding this trend, they want to see evidence that commitments are being translated into changing practices on the ground.

- Investors and customers are increasing the scrutiny of E, S, and G commitments.
- Mid-tier and junior mining companies will continue to face rising ESG expectations.¹
- Market slow-down and recession fears are likely to hamper progress on sustainability.

¹ Junior mining companies are small, early-stage mining companies that are typically still in the exploration and development phase and have yet to mine any resources. Unlike large-cap companies, junior mining companies are new to the market and often have smaller asset bases.



4 Building value chain resilience

Recent geopolitical events, international crises, and trade disputes have exposed weaknesses in globalized supply chains. Their reconfiguration will be needed to improve business resilience.

- Control of critical mineral supply chains will increasingly be used to advance geopolitical goals.
- More companies will seek vertical integration and regionalization of value chains.
- Transparency and traceability of mineral supply chains will continue to improve in response to increased stakeholder demands.



5 Shifting the social paradigm

As expectations for businesses to tackle the 'S' in ESG rise, mining companies will be paying increasing attention to the impact they have on local communities and their social license to operate.

- Mining companies will increasingly collaborate with local and Indigenous communities to comply with revised consultation requirements.
- Local communities will strengthen advocacy for shared benefits from mining investments.
- Competition for talent will intensify amid a shrinking talent pool.

1 Putting decarbonization commitments into practice

Many leading mining companies have made commitments to achieve net zero emissions by 2050. Determining and scaling the solutions required to decarbonize operations and value chains while simultaneously addressing other environmental issues such as water consumption and biodiversity impacts will be a major focus for the industry in the coming years.

There has been a significant increase in net zero commitments by the private sector in recent years, with mining and metals companies being no exception. The industry accounts for 4 to 7 percent of global greenhouse gas (GHG) emissions though fugitive-methane emissions from coal mining are estimated to account for 3 to 6 percent of these emissions.¹ According to some estimates, 21 of the largest 30 global mining companies have committed to reaching net zero by 2050.²

While the rising number of net zero commitments is a welcome development, putting them into practice will not be easy.

According to analysis by Bloomberg Intelligence, only 11 out of the 46 mining and metals companies it analyzed have carbon-reduction targets that meet the Paris Agreement commitment of limiting global warming to 2C.³

Some of the greatest opportunities to reduce Scope 1 and 2 emissions from mining include changing operating technologies such as electrifying equipment and vehicles and decarbonizing electricity supply through renewables and smart microgrids. However, while many of these technologies are already available, their implementation and scaling are often not commercially viable.

Scope 3 emissions, which are primarily connected to downstream supply chains of steel and aluminum smelting, and thermal coal use, present an even greater challenge. Despite having varying levels of control over their value chains, metals and mining companies face increasing expectations to reduce their supply chain emissions. In one example of rising pressure from stakeholders, in April 2022, 34 investors representing more than \$7 trillion in assets warned 17 of Europe's largest companies, including Anglo American, Rio Tinto and BHP, that they could challenge their boards of directors over accounting for climate risk, specifically Scope 3.⁴

In addition to climate and decarbonization, the mining sector will also need to tackle other environmental issues. Water consumption and water stress are major priorities for mining companies, which often operate in challenging environments. Biodiversity impacts is another area that is gaining increasing attention from stakeholders. The Taskforce on Nature-related Financial Disclosure (TNFD) is set to adopt its recommendations in September 2023, which will increase company expectations for integrating nature considerations into their business models and disclosing related information about risks and impacts.

Below we highlight three developments for mining companies to watch and address.



“The ESG drive from capital markets pushes mining companies towards a need for much greater transparency and clear action plans. On material ESG elements such as water management, social performance and, particularly, decarbonization, mining and metals companies need to think beyond techno-economics to their business incentives and culture. Decarbonization and sustainability more broadly should be built into everyone’s job in the same way safety has been.”

Louise Pearce
Global Head of Risk, ERM

What to expect:

Achieving Scope 1 and 2 emissions reductions will require transforming operations

In order to achieve Scope 1 and 2 emissions reductions, mining companies will need to prioritize electrification of equipment and vehicles, switching fuels to more sustainable options, and changing power supplies to reduce or eliminate emissions. These solutions differ in their maturity and required capital investment. For instance, electric vehicles, fuel switching, and carbon capture, use, and storage (CCUS) are often uneconomic with high capital costs. These technologies are still emerging and while their cost effectiveness is improving, it may not be achieved in time to meet 2030 emissions reduction goals. With customers and investors scrutinizing emissions performance, questions remain as to how mining companies will achieve business and emissions goals simultaneously. As a solution, some mining companies may seek a price premium for their low carbon products, while others are exploring vertical integration to achieve higher margins and improve decarbonization options.

Stakeholder expectations for companies to reduce Scope 3 emissions will continue to rise

Companies in all sectors are facing rising expectations to track and reduce Scope 3 emissions. In the mining and metals sector, a large share of value chain emissions can be traced to steel and aluminum smelting and energy production. One solution that companies are using to address emissions associated with smelting is replacing carbon-based anodes with electrolysis, a technology developed by Rio Tinto and Alcoa among others. Direct reduction iron (DRI) is another solution that helps to reduce carbon use in steel smelting by leveraging hydrogen. DRI is utilized by Anglo American and Nippon Steel, while thyssenkrupp has invested 2 billion euros (\$2.2 billion) in a hydrogen-based DRI plant in Germany.⁵

In another example of high-potential solutions for reducing emissions, Teck is piloting CCUS technology to reduce its own operational carbon footprint but also as a solution to be implemented at customer sites. To address Scope 3 emissions associated with coal usage and energy production, a growing number of mining companies are shifting commodity portfolios away from thermal coal towards materials essential to produce renewable energy infrastructure.

Biodiversity impacts and water usage will remain important environmental priorities

Beyond emissions reductions, issues related to water use, especially in water scarce regions, and the impacts of the mining sector on biodiversity will remain high on the industry’s agenda. In June of 2022, the International Council on Mining and Minerals (ICMM), the leading mining industry body, called on its members to embed nature-positive approaches into business planning and it is engaging with leading frameworks such as the TNFD and GRI to support robust, consistent, and credible nature-focused metrics.⁶

Beyond positive impacts on biodiversity, pursuing nature-positive goals provides an opportunity for mining companies to deliver benefits for local communities and generate additional economic value. According to the World Economic Forum, nature positive

solutions have the potential to generate over \$3.5 trillion in annual value by 2030.⁷ Many mining companies are already acting. For example, both BHP and Teck have announced nature goals. Teck has announced conservation investments for 14,000 hectares of land by 2030 – equivalent to 40 percent of the company’s mining footprint.⁸ Improving biodiversity and water use performance while progressing decarbonization will push mining companies to take a systems thinking approach to sustainability. While challenging to integrate into decision-making, improved nature performance may de-risk local operations with communities and support more affordable access to capital.



2 Accelerating innovation

Often viewed as laggards on innovation, mining and metals companies are increasingly reexamining their business models and reshaping operations as they seek to adapt to the changing economic environment, the accelerating low carbon economy transition, and growing ESG-related expectations from stakeholders.

The mining sector is at a crossroads. The sector must decarbonize and address a range of ESG challenges, while adapting to changing societal, geopolitical, and technological trends rapidly transforming commodity markets. Innovation is essential to meeting these decarbonization and ESG challenges. Mining and metals companies are adopting new technologies, transitioning to new commodities, adopting new circular models, and launching initiatives to access new talent pools, all while seeking to meet investor and customer demands.

At the local site level, mining companies are primed for a digital transformation. While currently they mostly rely on traditional operating technologies including equipment, vehicles, and machinery, companies are rapidly integrating new technologies and digital solutions in both front-line risk control and mine plan optimization. Such technologies include digital twinning, Internet of Things (IoT), AI, and blockchain based assurance. These technologies are increasingly influencing social and environmental performance management through remote monitoring and increasing data volumes.

Shifting commodity demand patterns toward critical minerals and decommodification present a challenge but also an opportunity for innovation. There is a growing demand for commodities essential for low carbon technologies such as electrical vehicles, solar panels, and batteries. According to some estimates, the demand for nickel is likely to rise by 65 percent by 2030,

aluminum – 29 percent, and copper – 85 percent. Additionally, new critical minerals such as cobalt (by 167 percent) and lithium (by 130 percent) will need to be rapidly scaled.⁹ With most of the critical minerals mined in countries with higher political risks, the sector is likely to face challenges responding to the growing demand. This will lead mining companies to explore new extraction opportunities and novel technologies such as Jetti Resource’s hydrometallurgical copper extraction, a process that leverages natural microbial systems for copper recovery.¹⁰

Traditional commodity markets are also undergoing a decommodification as direct sale agreements are displacing these traditional markets. Purchase agreements are increasingly formed on the basis of quality and environmental prominence (e.g., lower carbon intensity) as companies work to reduce their Scope 3 emissions.

Below we highlight three developments for mining companies to watch, understand, and address.





“The mining industry has been accelerating technological innovation to meet both productivity and sustainability challenges. While this is vital for risk mitigation, the biggest leaps in value creation lie in business model innovation. The industry still seems to follow traditional thinking here – which means the early mover positions remain open for the taking.”

Jonathan Molyneux
Partner, ERM

What to expect:

Mining companies will accelerate the integration of smart technologies into sites

Mining companies are increasingly integrating smart technologies that are transforming operations at the site level. Growing adoption of automation solutions, satellite services, and AI will increase safety, and efficiency helping to reduce costs and emissions. For instance, Resolute Mining operates a fully automated Syama Mine in Mali. This mine’s automation has helped to reduce operating costs by 15 percent, while improving worker safety and reducing GHG emissions.¹¹ Adoption of IoT and metaverse solutions in the coming years is likely to further enhance efficiency and safety at sites. Similarly, digital twinning has high potential to improve data collection and employee training.

Data solutions will continue to enable employee engagement

Increasing adoption of technologies such as IoT and automation are helping to increase worker engagement and efficiency of operations by bringing employees closer to the site through the metaverse, specifically augmented reality and virtual reality. Mining companies can use these technologies to bridge knowledge and culture gaps between offices and sites by allowing office employees to ‘visit and experience’ sites.

However, like all other digital solutions, cyber security will be critical for successful implementation of such digital technologies. Connectivity between network architecture (IT)

and operating assets (OT) will increase attack vectors and exposure risk for mining companies. As such, increasing the robustness of cyber security measures will become a growing priority for the sector.

Companies will continue re-examining their business models to increase efficiency and respond to changing commodity demand

A growing number of mining and metals companies are re-examining how they do business in the context of changing economic, social, and geopolitical developments. For instance, Teck has grown its copper business in response to increasing demand for critical minerals.¹² Other companies are adapting their business models by creating their own-label green materials (e.g., branded products), offering mining-as-a-service, or leveraging existing assets (e.g., land) for new revenues. Rio Tinto has increased its focus on green commodities and launched its START material stewardship and tracing initiative to meet expectations of buyers like Apple and Ford.¹³ The most ambitious companies are reimagining value chains through circularity or commodity diversification. For instance, Fortescue Metals Group established Fortescue Future Industries to diversify into energy including renewable energy, green hydrogen, and green ammonia projects.¹⁴ Meanwhile, Glencore is increasing the use of circular business models with the help of its partnership with Li Cycle, a battery recycler, and has started electronics recycling operations at its Horne Smelter.^{15, 16}

3 Responding to investor expectations on ESG

A growing number of mining and metals companies are making ESG commitments. While investors are applauding this trend, they want to see evidence that commitments are being translated into changing practices on the ground.

ESG commitments by mining and metals companies are on the rise. However, the sector is still lagging in its efforts to translate goals into improvements in actual performance.

This lag has been recognized by investors and customers who increasingly look past broad disclosure and are closely examining specific asset-level performance indicators. Based on its assessments of 250 mine sites in 53 countries, Responsible Mining Foundation found that “some 94 percent of the mine sites score an average of less than 20 percent on the fifteen basic ESG issues assessed.”¹⁷

In addition to the highly complex nature of the ESG issues facing the industry, mining companies are also grappling with other challenges that are unique to the sector. For instance, progress on ESG issues is often hampered by a disconnect between corporate and site levels. Individual mines operate with a high degree of autonomy from corporate headquarters and lack incentives to invest time and effort to advance ESG issues. Front-line staff tend to hold a view that corporate workers and priorities are not reflective of the realities of the mine’s local context, including

its environment. Such friction and disconnect between headquarters and site-level priorities limit effective company-wide implementation of corporate ESG goals. Coupled with a culture prioritizing production in an industry sensitive to changing economic conditions and market prices, sustainability-based projects are often deprioritized. Facing increasing pressure, mining companies will need to alter their culture and operating models to better connect corporate priorities to site-level implementation.

The deepening focus on ESG is also occurring under the specter of a global recession. As economic recession becomes more and more probable in 2023, companies are likely to restrict their spending, as they grapple with trade-offs between achieving sustainability objectives and preserving short-term cash flows.

Below we highlight three developments for mining and metals companies to watch, understand, and address.

What to expect:

Investors and customers are increasing the scrutiny of E, S, and G commitments

Investor and customer understanding of ESG issues is becoming more nuanced and complex. While investors continue to rely on data from ESG ratings agencies, they are increasingly turning their focus to analyzing specific site-based data such as the commodities being mined and the impact of mining operations in different locations. Banks and lenders are also demanding more accurate and comprehensive ESG data, as they incorporate ESG KPIs into financing instruments such as green loans and bonds.¹⁸ Likewise, expectations are also rising from customers. For instance, end-users like car manufacturers are demanding the implementation of asset-level standards like the Initiative for Responsible Minerals Assurance (IRMA).¹⁹ Mining companies are taking notice and responding to the rising investor and customer expectations by increasing focus on ESG issues and integrating them into core operations. For example, in June, BHP launched ‘Social Value in Action’, its sustainability approach, explicitly tying its ESG priorities to competitive advantages and long-term value creation.²⁰

ESG expectations are rising for mid-tier and junior mining companies

Junior and midsized mining companies are also facing greater scrutiny from investors and larger miners. This pressure will drive greater focus on ESG among the companies, which have paid relatively little attention to these topics. For instance, according to some estimates, in 2021, only 8 percent of junior lithium mining companies reported on ESG topics.²¹ Some leading junior miners are starting to use their ESG performance as a competitive differentiator. Skeena Resources is marketing its Eskray Creek company by emphasizing its ‘low carbon mine’ design and Indigenous partnerships as key project attributes.²² Another miner, British-based Gem Diamonds, which was recently awarded three ESG awards at the Mining Indaba, has integrated biodiversity in their financial planning and corporate strategy.²³

Market slow-down and inflation fears may hamper progress on sustainability

Market slow-down and inflation are already affecting company spending and these factors are likely to be felt even more throughout 2023. Capital expenditure, including investment in new equipment and operations infrastructure, is integral to decarbonizing mine sites. With a global recession potentially on the horizon, capital may be constrained as companies focus on maintaining cashflows. In this business climate, mining companies will be increasingly challenged to meet their ESG and decarbonization objectives while also delivering value for shareholders. To respond to these pressures, mining companies will need to think and plan long-term and look for opportunities to access cheaper capital. Developing effective scenarios and understanding financial instruments for sustainability projects can also help companies navigate uncertain market conditions while progressing on their sustainability objectives.



4 Building value chain resilience

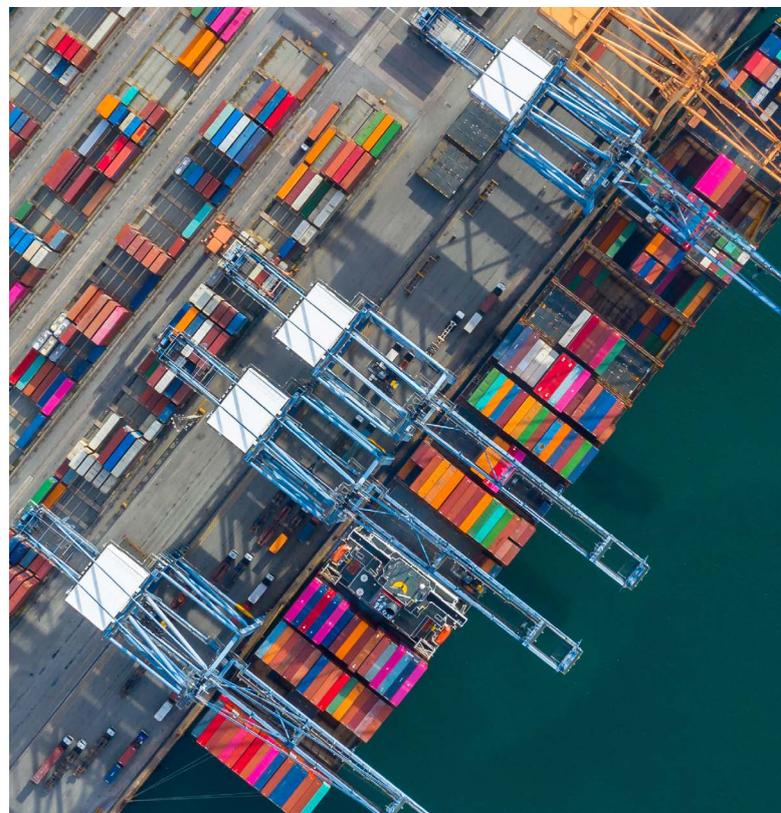
Recent geopolitical events, international crises, and trade disputes have exposed weaknesses in globalized supply chains. Their reconfiguration will be needed to improve business resilience.

Supply chain disruptions caused by external events – such as natural disasters, extreme weather, and conflicts – are not a new challenge for global businesses. The pandemic caused major disruptions to global supply networks placing renewed emphasis on the risks of relying on long and complex value chains. Such disruptions are likely to continue as rising geopolitical tensions between the U.S. and China heighten the risk of trade disputes. At the same time, climate change is increasing the frequency of extreme weather events, while ecological destruction is likely to lead to more pandemics, generating more supply chain disruption.^{24, 25}

At its core, the mining industry is highly dependent upon its value chain, relying on a vast array of dispersed global actors to support the delivery of metals and minerals from mine to market. Because of this dependency, mining companies are particularly vulnerable to disruptions in their value chains. Although some disruptions can generate positive impacts for certain companies (e.g., increased commodity prices), they can also cause delays in importing supplies that are critical to operations, thereby impacting revenues. As a result, companies are recognizing the need to adopt a more risk-based approach to supply and value chain management, as opposed to an approach focused on short-term cost reductions and

efficiencies. Reconfiguring existing value chains to improve resilience will ultimately help reduce the longer-term costs that could result from severe supply chain disruptions.

Below we highlight three developments for mining companies to watch, understand, and address.



What to expect:

Control of critical mineral supply chains will increasingly be used to advance geopolitical goals

The development of clean energy technologies is considered a strategic issue for many countries. As a result, ensuring the supply of the critical minerals needed to develop these technologies is becoming increasingly politicized. Of particular concern is China's role in critical mineral refining and processing. According to the International Energy Agency, China controls 50 to 70 percent of lithium and cobalt's global refining, both crucial technology-enabling metals. Likewise, China's share of nickel and rare earth mineral refining are 35 percent, and 90 percent, respectively. China has already demonstrated its willingness to use export bans and trade barriers as geopolitical weapons, with the export ban placed on Australia, in response to its role in encouraging WHO to investigate the origins of COVID-19 as one example.²⁶

With tensions between the U.S. and China rising, it is likely that China will continue to use its influence over critical mineral supply chains to assert its supremacy. Other countries are also looking for ways to exert more influence over the global supply of critical minerals. In another example, Indonesia and the 'lithium triangle nations', which include Chile, Bolivia, and Argentina, have put forward the idea of creating OPEC-like organizations of nickel and lithium respectively.²⁷ If created, this would give these nations greater control of the supply and price of these critical metals, similar to the power and influence OPEC members have exerted over oil markets during the last century.

More companies will seek vertical integration and regionalization of value chains

To increase resilience, more companies are likely to pursue vertical integration, in which a company controls its entire value chain from manufacturing to sales. This is not a new phenomenon and many mining companies, including Anglo American, BHP, Glencore, and Rio Tinto, have already made investments in downstream companies in order to create vertically integrated value chains. This trend has been particularly prominent within battery mineral supply chains with many electric vehicle manufacturers considering integration of mines producing critical minerals. For instance, Tesla, has discussed the possibility of transitioning from long-term offtake agreements for nickel (e.g., with Vale and Talon Metals) and lithium (e.g., with Ganfeng and Albermarle), to acquiring a mining company.²⁸

In a similar move, another EV manufacturer Stellantis (owners of Jeep, Peugeot, Fiat, and Maserati) acquired an 8 percent stake in miner Vulcan Energy in June 2022.²⁹ Another way in which companies are making their value chains more resilient is through localization and regionalization. Minimizing the geographical spread of mining value chains and limiting the locations to fewer high-risk countries will help to improve flexibility and efficiency, while reducing the likelihood of a value chain being weaponized. The globalized nature of the mining industry and the location of many operations in geopolitically complex jurisdictions means that it will take some time to reconfigure value chains but given increasing geopolitical risks, many companies are likely to consider such opportunities.

Transparency and traceability of mineral supply chains will continue to improve in response to increased stakeholder demands

Companies have been under pressure to demonstrate that metals and minerals have been responsibly sourced, especially since the UN established its Sustainable Development Goals in 2015. Indeed, many companies have already faced demands from stakeholders to ensure compliance with the OECD's Due Diligence Guidance for minerals sourced from conflict-affected and high-risk areas.³⁰

Russia's invasion of Ukraine reinforced the need to ensure supply chain transparency and traceability. As governments seek to limit Russia's influence on the global stage, reputational risks associated with supporting an aggressive regime have required many companies to cut ties with Russia. For example, Rio Tinto was one of the first miners to announce that it was cutting all ties with Russian

businesses, including sourcing Russian raw materials for its operations, and halting offtake contracts (e.g., with Rusal Aughinish, one of Europe's largest alumina refineries, located in Ireland).³¹ With stakeholder demands to enhance supply chain transparency expected to increase, a growing number of companies will be required to implement new procedures to demonstrate the responsible minerals sourcing. The use of blockchain technology, in particular, is likely to increase. This technology is already popular within the battery mineral supply chain as a significant proportion of global cobalt supply is sourced from the Democratic Republic of Congo.



5 Shifting the social paradigm

As expectations for businesses to tackle the ‘S’ in ESG rise, mining companies will be paying increasing attention to the impact they have on local communities and their social license to operate.

The impact of the global pandemic, emergence of social movements such as Black Lives Matter and #MeToo, and rising inequality exacerbated by the global cost of living crisis have underscored the importance of the ‘S’ in ESG. Mining companies will face increased pressure to do more on social issues in recognition of significant impacts they have on a broad range of stakeholders. They will also be increasingly expected to evaluate the impacts of their operations on local communities, Indigenous communities, and their workforce.

Some companies have already started to rethink their approach to the social aspects of ESG. BHP’s Social Value Scorecard, a new initiative focused on tracking and reporting specific KPIs globally, focuses on decarbonization, the environment, Indigenous partnerships, workforce, communities, and supply chains.³² Anglo American’s Social Way Management System comprises a policy toolkit and assurance framework, which allows the company to embed and track social performance metrics, such as employment levels, human rights, and infrastructure development, into core business processes.³³ Agnico Eagle uses a regional development approach in Canada’s Nunavut territory, where they have three operating mines. In 2021, Agnico Eagle represented more than 25 percent of Nunavut’s GDP employing more than 3,880 employees and contractors with over \$500 million in local procurement.³⁴

Diversity, Equity, and Inclusion (DEI) is another area where many businesses and especially mining and metals companies will need to accelerate progress. Currently women make up only 5 percent of CEO roles at publicly traded companies globally and 19 percent of C-suite teams.³⁵ The mining sector’s record is even worse. Only one-fifth of the global mining workforce are women with a significant drop-off from entry level positions to the C-Suite.³⁶ In order to attract the best talent, especially as Generation Z begins to enter the workforce, mining companies will have to improve their DEI record to solve these persistent issues.

Below we highlight three developments for mining companies to watch, understand, and address.





“Addressing the mining industry’s most pressing challenges will require innovative solutions that can be accomplished through diverse teams and perspectives. But there is a long road ahead for diversity and inclusion in mining: women only make up 20 percent of the workforce on average. To improve this situation, the industry should pursue three essential strategies.

First, companies should diversify their recruitment, including by attracting a larger pipeline of women in STEM roles. Second, the industry should improve its retention record by implementing practices that would lead to better work/life balance for both women and men. And finally, mining companies should re-examine their stakeholder engagement practices through a diversity lens. Only then will the mining sector unlock the benefits of diverse solutions to pressing issues such as social license to operate, decreasing deposits, climate change, digitalization, and geopolitics, amongst others.”

Carolina Rojas

Former Vice Minister of Mining in Colombia and Senior Advisor to ERM Critical Resource

What to expect:

Mining companies will increase collaboration with local and Indigenous communities to comply with revised consultation requirements

Free Prior and Informed Consent (FPIC) is a right recognized by the United Nations that allows Indigenous Peoples to give or withhold consent to a project that may affect them or their territories, but mining companies have not been consistent in respecting this right. This is changing with the introduction of stricter consultation requirements in a range of jurisdictions across the world, most notably within Latin American countries, which grant Indigenous communities veto power over mining company decisions. A landmark ruling by the South African High Court passed in 2019 is another development that is impacting how consultation laws are being implemented. Prior to 2019, mine developers were required to consult, but not necessarily gain permission from the landowner or any affected party.

However, the court ruled that permit applicants must gain consent regarding mine development from informal rights owners. This evolution means that consultation without permission is no longer sufficient. As a result, mining companies will need to develop better strategies for engaging with Indigenous communities and invest in solutions that facilitate dialogue, such as language specialists and interpreters, to effectively discuss and understand community members’ critical concerns.



Local communities will strengthen advocacy for shared benefits from mining investments

Mining companies have relied on boosting employment to derive shared value in communities where they operate. The challenges of automation, rising inequality, and increased stakeholder expectations are making this approach insufficient to support local economies. For instance, in Peru, communities have recently blocked and forced suspension of operations in Antamina, Glencore's Antapaccay copper mine, and Southern Copper's Cuajone mine alleging that the operations were not bringing economic benefits to them.³⁷ The risk of such operational disruptions is likely to increase in 2023 as communities become increasingly aware of the growing gap between shareholder returns and social investment programs.

For instance, according to their annual report, Glencore returned \$2.8 billion to shareholders in 2021, which was more than 41 times greater than the \$68 million spent on community investment.^{38,39} Similarly, Rio Tinto paid a record full-year dividend of \$16.8 billion to shareholders in 2021, more than 53 times greater than the \$314 million it spent on community investment, development contributions, and payments to landowners, according to their annual report.⁴⁰ With this trend set to continue in 2023, mining companies will need to work harder to articulate and deliver their commitments to the communities where they operate. In one example, Vale SA, the largest producer of iron ore and nickel in the world, have implemented their Share Program which will ensure the company prioritizes suppliers that make the biggest socioeconomic contribution in their respective regions of operations.⁴¹

Competition for talent will intensify amid a shrinking talent pool

Concerns over corporate culture, a shrinking talent pool, and reputational issues associated with mining will continue to create difficulties for mining companies in attracting and retaining talent. Even as the energy transition accelerates over the next decade and mining-related jobs are expected to grow approximately 17 percent,⁴² the industry's reputation remains a major obstacle for attracting young talent.⁴³ Younger people are more focused on working at companies with missions and values that align with their own – with many having strong opinions on the reputation and perceptions of mining companies' poor ESG track records.

Additionally, the lack of diversity within mining companies – especially with high rates of women leaving due to pay, type and variety of work, and some women reporting being sidelined, especially in technical and operational roles – is a concern for potential employees. According to a recent study by the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) women only represent 5-15 percent of large-scale mining.⁴⁴ In one recent development that illustrates the challenges faced by the industry, the results of Rio Tinto's independent review of its workplace culture, were published in early 2022 and revealed systemic bullying, sexual harassment, and racism across its worksites. Since then, Rio Tinto has launched several campaigns to address the findings, including restructuring the company's internal reporting systems and compliance.⁴⁵ BHP announced in its 2021 annual report its intention to increase women's representation from 30 percent to 40 percent by 2025.⁴⁶



Endnotes

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