



METALS FOR
HUMANITY



MINING AT THE CROSSROADS:

WHAT IS NEXT FOR ESG?

Foreword

When I founded **Metals for Humanity**, it was with a simple but urgent conviction: that mining, when done responsibly, can be a powerful force for human progress.

Metals underpin nearly everything that sustains and connects modern life—from clean water systems and electric grids to medical technologies, defence, and digital infrastructure. Yet the industry that makes this possible has too often been viewed through a narrow lens, shaped as much by past failures as by present realities.

Those realities are now shifting. The global order is fragmenting, supply chains are being reconfigured, and strategic competition is reshaping how governments and investors think about resources. In this environment, assumptions about ESG—what it requires, how it is applied, and how it relates to national and economic priorities—are being actively reinterpreted.

This moment presents both a challenge and an opportunity for mining. The challenge is that ESG can no longer be treated as a static or purely procedural exercise, nor dismissed as an optional overlay vulnerable to political change.

Expectations from investors, regulators, and host communities increasingly focus on how social and environmental performance contributes to resilience, security, and long-term value creation.

The opportunity is that this evolving interpretation of ESG aligns closely with the realities of modern mining. Companies that integrate social performance into core decision-making—particularly in jurisdictions where mining intersects with development, infrastructure, and strategic supply—are better positioned to attract capital, secure operating continuity, and maintain public legitimacy. In this context, responsible mining is not a constraint on competitiveness, but an enabler of it.

This report examines how these dynamics are playing out, and what they mean for the sector in a more contested and uncertain world. While circumstances may be changing, the essentials endure: good governance, responsible business, and returns that are sustainable—not only for shareholders, but for the people and places on which mining ultimately depends.

About Metals for Humanity (M4H)

Metals for Humanity is a social enterprise that designs and delivers strategic social programmes for the mining industry. Its programmes harness the intrinsic properties of the metals and minerals produced by its partners, transforming basic resources into practical solutions that help build resilient, self-reliant communities.

Working with diverse stakeholders, Metals for Humanity develops metals-based interventions that address essential needs, while also advancing public understanding of the critical role metals and minerals play in modern society.

Its objective is to better realise the mining sector's potential as a partner in development—and, in doing so, to fulfil its mission of *Making Metals Work for Us All*.



Ingrid Putkonen
Founder &
Managing Director

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INVESTOR PRIORITIES IN A RAPIDLY SHIFTING WORLD



Investor Priorities in a Rapidly Shifting World

Two years ago, *Metals for Humanity* commissioned a report examining institutional investors' attitudes toward mining.

Fuelling the Green Transition: The Mining Investment Gap was prompted by a growing disjunction between the scale of metals and minerals required to meet countries' commitments under the Paris Agreement and the persistent shortfall in the investment needed to supply them.

The report found that, despite the structural opportunities created by the energy transition, institutional investors remained wary of mining. Frequently cited concerns included:

- High capital intensity
- Long development timelines
- Price volatility
- Mixed historical record of value creation
- Exposure to environmental, social and governance (ESG) and political risks

When asked to rank these concerns, however, investors placed particular weight on ESG-related risks: most notably, the sector's impacts on local communities and the potential for human rights violations.

In the two years since the report was published, the global context has shifted markedly, including in ways that bear directly on the Paris Agreement itself. The re-election of Donald Trump and his decision to withdraw the United States from the Agreement as of January 2026 have cast renewed doubt on the durability of certain national climate commitments.

A presumptive dismissal would, however, be premature. Much of the international community—including many U.S. states—remains committed to the Agreement's objectives, and policy and investment momentum behind the energy transition continues.

Against this backdrop, demand for transition metals and minerals is expected to remain robust.

From the perspective of the supply-side risks that motivated the report, other developments are of greater consequence, most notably the rapid expansion of artificial intelligence (AI) and the renewed emphasis on defence.

AI is an energy-intensive technology, and its rapid diffusion is driving significant increases in electricity demand. Meeting this additional load, particularly under decarbonisation constraints, will require accelerated deployment of low-carbon generation, including wind and solar power, alongside expanded transmission, storage, and digital infrastructure. Each of these systems is materially intensive, reinforcing demand for a wide range of metals and minerals.

The implications of renewed defence spending are less straightforward, but they are already proving more consequential. Many transition metals and minerals also have military applications; increased defence procurement is therefore intensifying competition for resources that are already under strain. At the same time that AI is driving a sharp increase in electricity demand—requiring accelerated deployment of renewables and associated infrastructure—defence requirements are absorbing a growing share of the same material inputs.

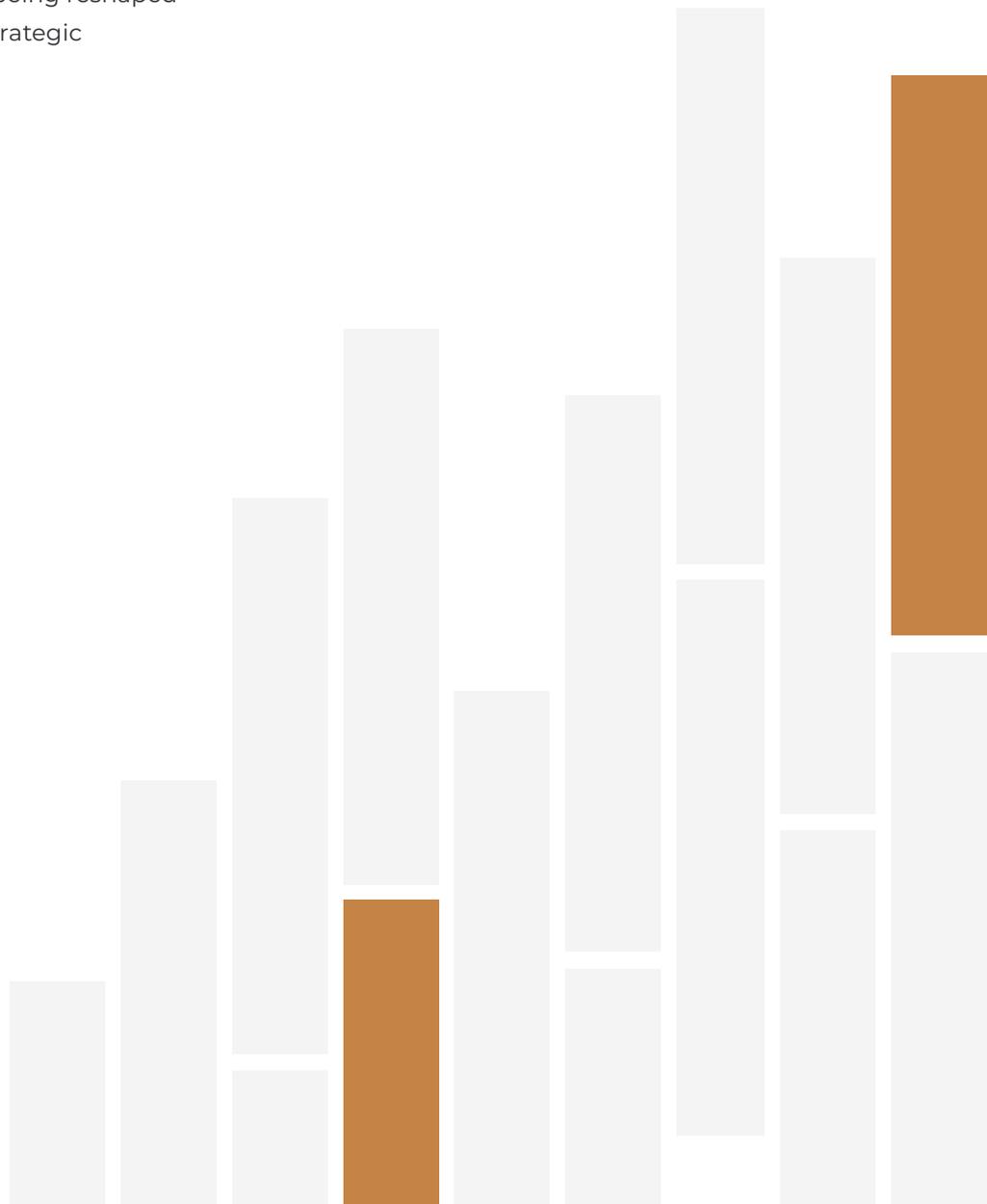
“Energy security now extends to the reliable and adequate supply of mineral and metal inputs used by the defence sector, batteries, and advanced manufacturing technologies.”

White & Case LLP, Global Energy Review, White & Case Insights (2024).

More fundamentally, the re-emergence of defence as a central actor in metals and minerals markets reflects a shift in the political conditions under which investment decisions are made.

What has aptly been described as “geopolitical mining” does not simply tighten supply; it marks the return of political urgency to domains that, for much of the past three decades, were shaped primarily by market integration, efficiency, and risk optimisation. The permissive environment that allowed investors to prioritise non-financial externalities without confronting acute strategic trade-offs is giving way to one in which security of supply, resilience, and national interest are increasingly coming to the fore.

This change does not, in itself, negate ESG, but it does alter the context in which ESG operates. The question is no longer whether environmental, social, and governance considerations matter to investors, but how they are interpreted and applied once political urgency reasserts itself. To address this question, the analysis that follows examines the historical conditions under which ESG emerged, and how its role is being reshaped as geopolitical competition and strategic imperatives regain prominence.



ESG AND THE RETURN OF POLITICAL URGENCY



ESG and the Return of Political Urgency

After a thirty-year “holiday from history,” we once again live in a world that is shaped by great-power competition and conflict. – Fareed Zakaria, Age of Revolutions ¹

The ethical notions that underpin ESG—environmental stewardship, human rights and corporate responsibility—are not new. Variants of them have circulated for decades, and even centuries. How these perennial principles coalesced at a point in time into the concrete expectations and conventions we now associate with ESG warrants explanation. Why now, exactly?

What changed in the 1990s when the ESG movement first took shape was not the moral vocabulary itself, but the structural conditions under which that vocabulary could exert real force

in markets. With the collapse of the ideological and geopolitical contest between capitalism and communism, capital allocation was no longer subordinated, to the same degree, to overriding questions of national survival, strategic rivalry, or bloc competition.

This relaxation created space for investors to prioritise non-financial externalities—particularly those relating to the environment, local communities, and human rights—without fearing that doing so would place them, or the societies in which they operate, at a strategic disadvantage.

	1989-1995 “End of History” / strategic slack	Mid-1990s - Mid-2000s ESG - Artifact of Globalisation	2010-2016 ESG becomes financialised
Global Context	<ul style="list-style-type: none"> • Collapse of Soviet Union • Sharp reduction in existential military threat • Defence spending contracts across OECD 	<ul style="list-style-type: none"> • WTO expansion; China joins (2001) • Global supply chains lengthen and reward efficiency • Defense spending falls as share of GDP in most OECD states 	<ul style="list-style-type: none"> • Prolonged absence of peer-level great-power conflict • Quantitative easing creates surplus capital • Growth of index investing and long-horizon asset managers
ESG	<ul style="list-style-type: none"> • Sustainable development/ CSR gains prominence post-Bruntland (1987) • Sustainability framed as a technical-managerial issue • Reporting voluntary, ad hoc, and investor-light 	<ul style="list-style-type: none"> • GRI established; early reporting standards emerge (1997-2000) • ESG disclosures expand in narrative sections of annual reports • ESG used to manage reputational risk in global operations 	<ul style="list-style-type: none"> • ESG reframed as risk management and long-term value protection • Sustainability reporting becomes systematic and expected • ESG embedded in annual reports, blurring financial/non-financial lines

Figure 1. Evolution of ESG in Global Context

¹ Fareed Zakaria, *Age of Revolutions* (New York: W.W. Norton, 2025).

An analogy may help to clarify the point: the idea that all persons are moral equals long predates the modern era, yet women's large-scale participation in the formal economy did not materialise until the mid-twentieth century. The limiting factor was not the absence of egalitarian ideas, but the absence of enabling structural conditions—most notably effective birth control, which fundamentally altered the relationship between reproduction, labour, and economic participation.

In a similar way, ESG principles did not suddenly emerge at the end of the Cold War; rather, they became operationally effective only once the geopolitical environment allowed investors to act on them without incurring prohibitive strategic costs.

Viewed in this light, the rise of resource nationalism and the renewed salience of defence and strategic competition force a practical test: whether ESG reflects a lasting shift in investor priorities, or an approach whose continued relevance depends on conditions that are now changing.

From Procedural to Strategic ESG

In the current environment of rising geopolitical tension and renewed concern for economic resilience and supply-chain reliability, ESG may appear to be losing ground. Recent developments seem, at first glance, to support that impression. The closure of [The Net Zero Banking Alliance](#) in October 2025—following the withdrawal of several major members and a scaling back of ESG commitments—is one such example.

A similar pattern is visible in the policy sphere. As concerns about defence readiness, economic resilience, and strategic autonomy have intensified, many OECD governments have introduced policies and legislation that explicitly rebalance security considerations against other regulatory and policy objectives.

In November 2025, the Canadian government announced that it would begin taking direct equity stakes in mining and processing projects deemed strategically important to the national

interest. As Natural Resources Minister Jonathan Wilkinson explained, these are assets that are indispensable to Canada's economic and security objectives yet have struggled to attract private capital: "These entities would be deemed in the national interest, but for some reason they aren't able to find the equity." The move reflects a growing willingness on the part of the state to intervene directly where market mechanisms alone have proved insufficient to mobilise investment in resources considered critical to national objectives.

This interventionist stance is reinforced by broader regulatory and legislative changes. The fast-tracking agenda introduced under the Building Canada Act establishes new mechanisms to accelerate the approval of "projects of national interest," including mining and natural-resource infrastructure. These include streamlined review processes, the use of a Major Projects Office, and shortened federal permitting timelines. Importantly, the Act does not dispense with environmental or social review. Rather, it reframes those reviews within a policy architecture that explicitly prioritises national security, economic resilience, defence readiness, and national autonomy, particularly for projects that enhance Canada's capacity to supply critical inputs to allied economies.

Canada's approach is not an isolated case. Across the OECD, governments are increasingly treating mining and critical-minerals policy as a strategic domain, shaped by supply-chain disruptions, geopolitical competition, and concerns over concentrated dependencies. The European Union's 2024 Critical Raw Materials Act, for example, introduced a mechanism to designate and fast-track "Strategic Projects" intended to bolster EU resilience and supply-chain security. While existing environmental and social standards are formally retained, the Act reduces the scope for delay in projects deemed essential to European autonomy.

Comparable shifts are evident elsewhere. In the United Kingdom, the Critical Minerals Strategy frames minerals as indispensable to national

security and economic resilience, committing to expanded domestic extraction, processing, and recycling despite the heightened environmental sensitivity such projects often entail.

Responsible sourcing is increasingly framed not simply as a constraint on development, but as a means of reducing geopolitical exposure to unreliable suppliers. Australia has gone further still, pairing its Critical Minerals Strategy with targeted public finance, loan guarantees, and tax incentives designed to accelerate extraction and downstream processing, signalling a willingness to absorb fiscal risk in pursuit of supply-chain sovereignty. In the United States, meanwhile, critical and processed minerals are increasingly treated as strategic inputs for defence and advanced manufacturing, with trade controls, procurement preferences, and federal financing mechanisms narrowing the tolerance for regulatory delay where security considerations are at stake.

Taken together, these developments point to a broader recalibration in how environmental, social, and governance considerations are being applied in policy and investment decisions. What is changing is not whether such considerations matter, but how they function in contexts defined by strategic urgency. Environmental and social factors are increasingly assessed alongside—rather than independently of—objectives such as supply-chain security, economic resilience, and national defence.

This shift can be captured through a distinction between *procedural* ESG and *strategic* ESG. Under a procedural ESG approach, environmental and social considerations operate primarily as fixed governance constraints, embedded in process-heavy review and disclosure mechanisms that can delay or block projects largely irrespective of their strategic significance. Under a strategic ESG approach, those same considerations are retained but reordered: they are managed, mitigated, and weighed in relation to higher-order strategic objectives. The difference is not a rejection of ESG principles, but a change in their operative role, as governments and investors adapt to a less

permissive and more contested geopolitical environment.

This shift in how ESG considerations are applied in policy is mirrored—and tested—in the domain of sustainable finance, most clearly in recent guidance on the treatment of defence under the EU’s Sustainable Finance Disclosure Regulation (SFDR).

From Boundary Drawing to Boundary Management

The shift from procedural to strategic ESG also has implications for how the boundaries of ESG are drawn and enforced. These implications are most clearly visible in the evolution of the EU’s Sustainable Finance Disclosure Regulation, where recent clarifications around defence illustrate a move away from categorical exclusion toward conditional inclusion.

Under the SFDR regime, Article 8 designation applies to financial instruments that promote environmental and/or social characteristics without having sustainable investment as their primary objective. These so-called “light green” products stand in contrast to “dark green” Article 9 products, for which sustainable investment is the explicit objective, and Article 6 products, to which neither designation applies.

As expected, Article 9 funds have a near-zero exposure to defence. Until recently, much the same was true of Article 8. According to [Sustainalytics](#) data, prior to Russia’s invasion of Ukraine in 2022, defence exposure among Article 8 funds was minimal, averaging just 0.6% for active funds and 0.2% for passive funds. By 2025, however, those figures had risen sharply—to 2.5% and 1.2%, respectively, representing a fourfold increase for active funds and a sixfold increase for passive funds. Over the same period, the share of Article 8 funds with no defence exposure fell from 67% to 47%, while the proportion with exposure of 5% or more rose from 3% to 19%.

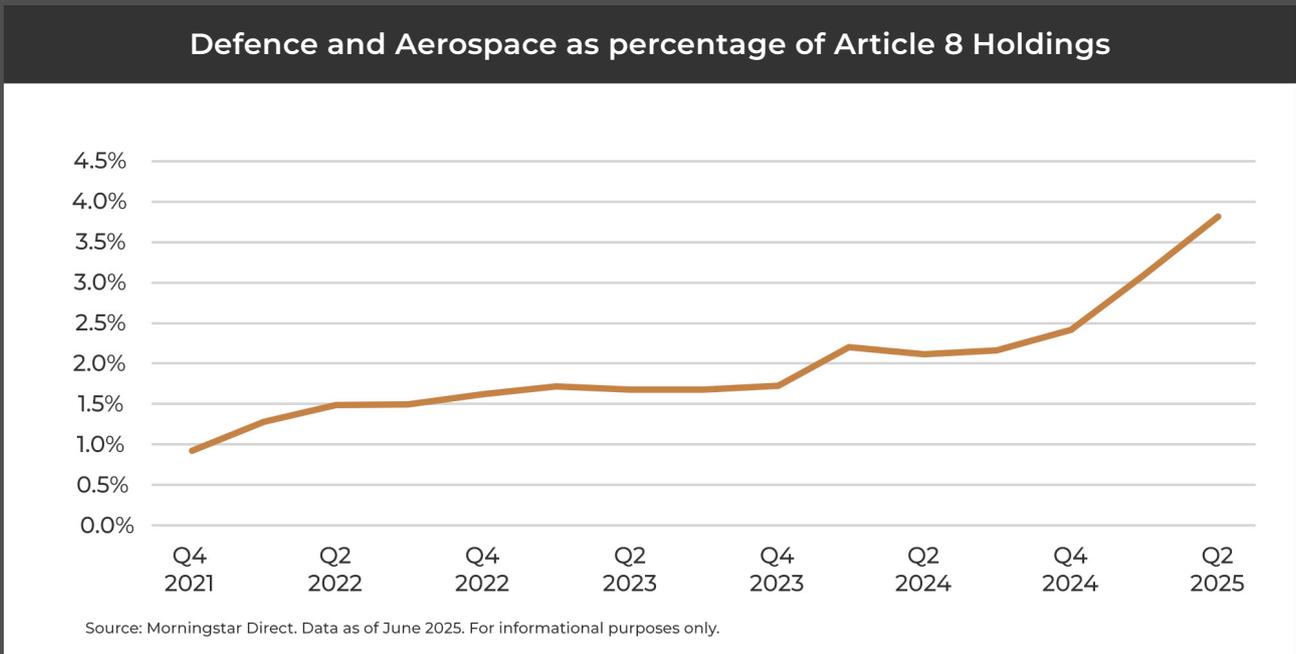


Figure 2. Increasing Defence Exposure of Article 8 Active and Passive Funds (combined).
Source: Adapted from Sustainalytics

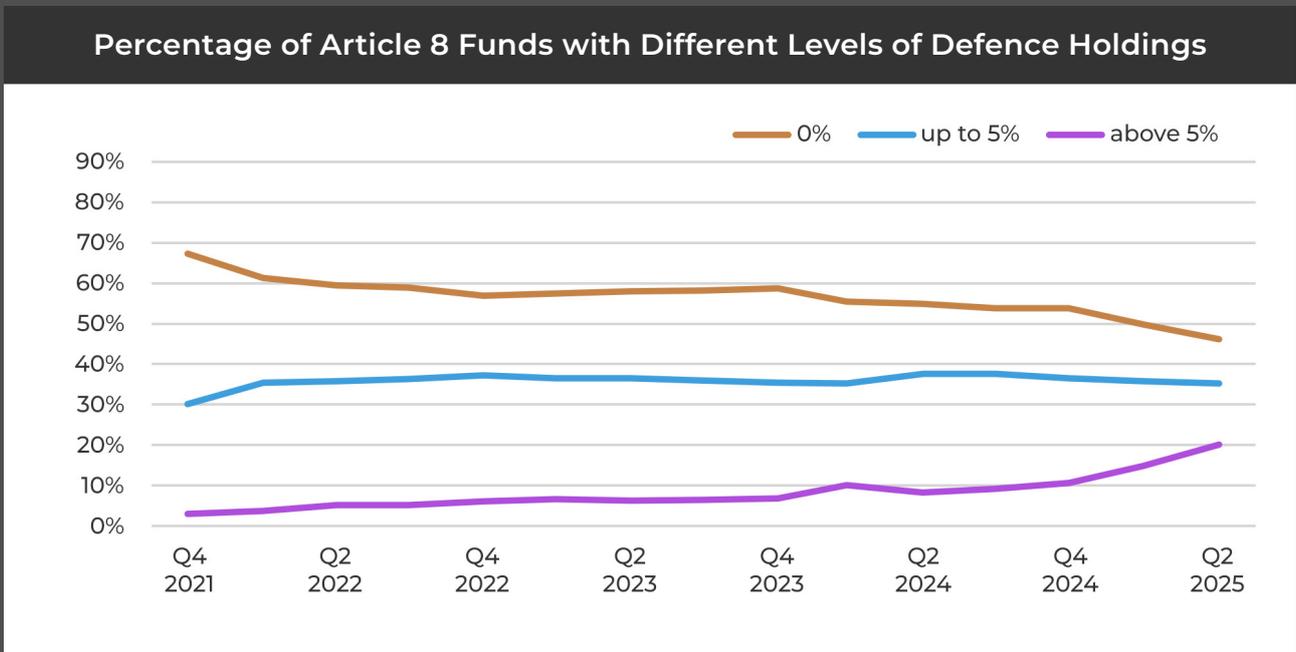


Figure 3. The Normalisation and Amplification of Defence Holdings Under Article 8.
Source: Adapted from Sustainalytics

These shifts must be understood in their political context. In response to the war in Ukraine and rising geopolitical tensions, the European Commission introduced the [ReArm Europe Plan/Readiness 2030](#) in March 2025, committing up to EUR 800 billion in defence-related funding and signalling a broader effort to mobilise private capital for the sector. To support this objective, EU authorities issued a series of clarifications confirming that involvement in defence activities is not automatically incompatible with Article 8 status under the SFDR.

Through successive Q&A guidance, the Commission emphasised that SFDR is a disclosure regime rather than a labelling or exclusion framework, and that it does not impose blanket sectoral prohibitions. Supervisory practice by the European Securities and Markets Authority has accordingly focused on internal consistency in promoted environmental or social characteristics, the exclusion of internationally prohibited weapons, and the demonstration of good governance, rather than on the intrinsic moral status of defence activities as such.

Notably, these clarifications have extended beyond fund-level disclosures into the broader infrastructure of sustainable finance. Major index providers have revised defence-related exclusion screens in benchmarks underlying Article 8 passive funds, narrowing them toward international-law-based weapons prohibitions and away from broader sectoral exclusions. In this sense, the accommodation of defence within the SFDR framework reflects more than technical clarification. It represents a shift in how ESG boundaries are managed: from rigid demarcation to conditional inclusion governed by disclosure, governance, and risk discipline.

Taken together, these developments illustrate a broader transformation in the operation of ESG. Rather than functioning primarily as a mechanism for excluding entire categories of economic activity, ESG increasingly operates as a framework for managing tensions between sustainability claims and strategic necessity. The evolution of Article 8 under the SFDR exemplifies this shift.

ESG principles are not abandoned, but recalibrated—preserved institutionally by becoming more elastic, and adapted to a more contested geopolitical environment by shifting emphasis from categorical moral demarcation to procedural coherence and strategic alignment.

These developments point to a clear conclusion. ESG is not disappearing under geopolitical pressure; it is being reshaped by it. A framework that took hold in a permissive post-Cold War environment—one that allowed investors to draw relatively firm ethical boundaries—is now being asked to operate in a world defined by strategic rivalry, supply-chain vulnerability, and urgency. In response, ESG is being repositioned: shifting from a predominantly procedural regime, in which capital allocation was constrained through exclusion and delay, towards a more strategic framework that weighs environmental and social considerations alongside imperatives of security and resilience. The treatment of defence under the EU's Sustainable Finance Disclosure Regulation illustrates this shift in particularly clear form.

Whether this evolution represents a pragmatic adaptation that preserves ESG's relevance, or a thinning of its original normative force, cannot be resolved in the abstract. It must be assessed where strategic necessity collides most directly with material environmental and social impact. There is no better test case for this assessment than the mining industry.

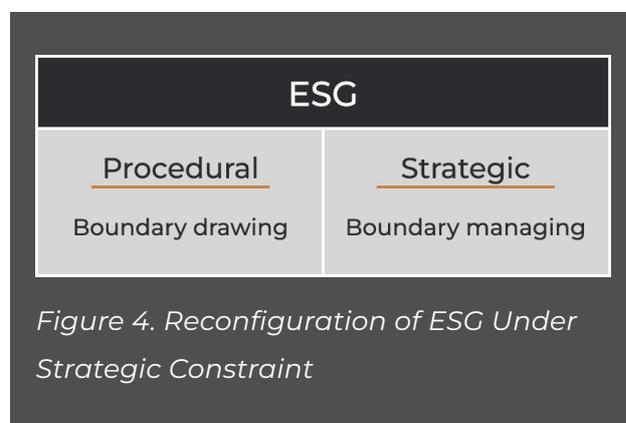
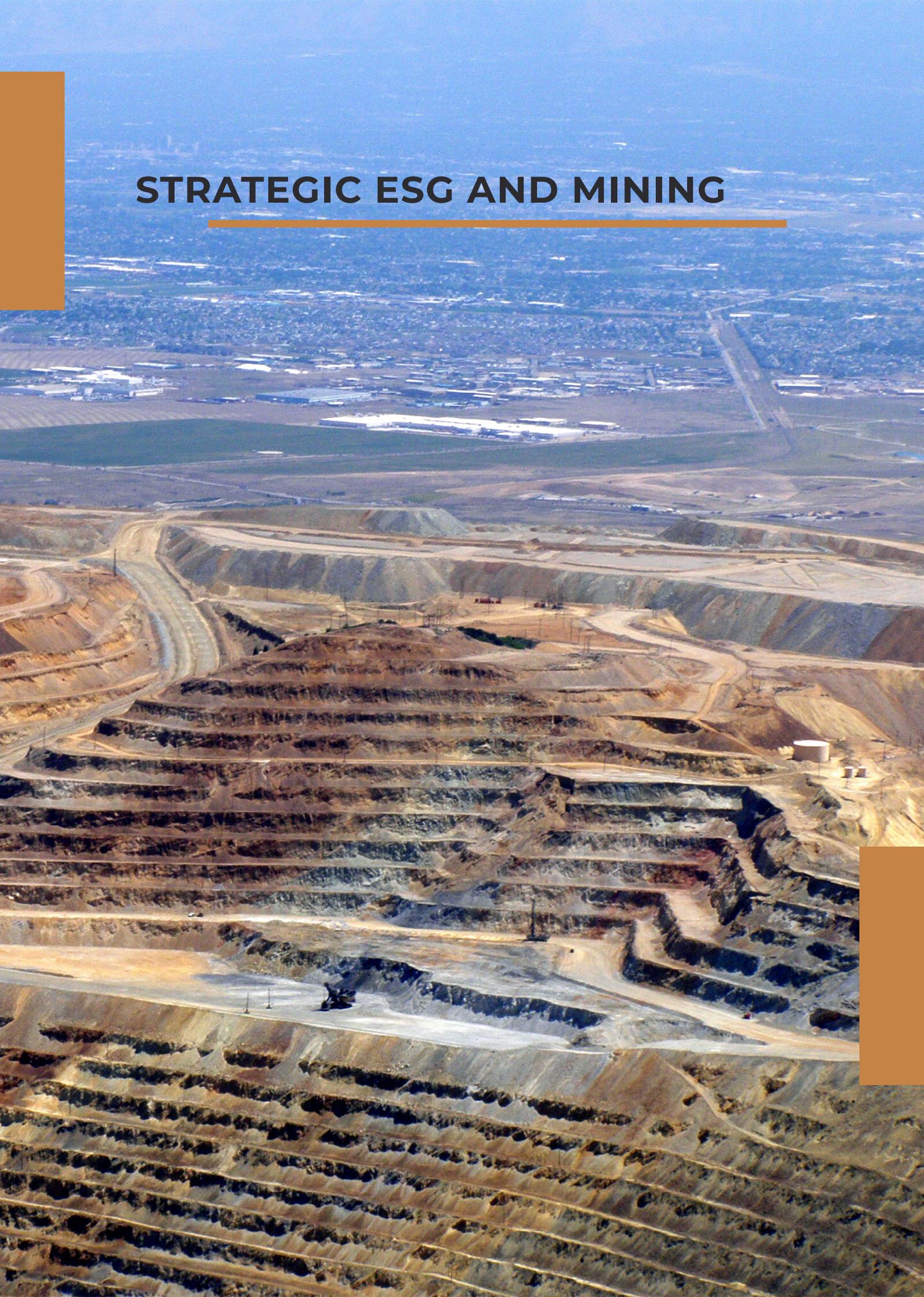


Figure 4. Reconfiguration of ESG Under Strategic Constraint

STRATEGIC ESG AND MINING



Strategic ESG and Mining

Resources are not; they become. – David S. Landes, *The Wealth and Poverty of Nations*²

The evolution of ESG outlined in the previous chapter has direct and practical implications for the mining industry. As ESG shifts from a predominantly procedural framework towards a more strategic one—shaped by geopolitical competition, supply-chain vulnerability, and political urgency—mining is among the sectors where this reorientation will be most consequential.

Mining occupies a distinctive position in today's investment landscape. Certain metals and minerals are now widely recognised as strategically essential, and projects involving them are increasingly designated as being in the public interest—bringing with them public funding, accelerated permitting, and, in some cases, direct state involvement. At the same time, mining has long struggled to attract ESG-aligned capital, frequently treated as presumptively incompatible with ESG mandates even as those same mandates support industries—such as renewables, electrification, and digital infrastructure—that depend fundamentally on mined inputs.

Recent developments in defence provide a revealing point of comparison. Defence companies, once routinely excluded from ESG portfolios, are now being recognised as compatible with ESG investment frameworks under defined conditions, most notably under Article 8 of the Sustainable Finance Disclosure Regulation. This accommodation reflects the broader shift from exclusion towards conditional inclusion identified in the previous chapter. It raises a natural question for mining: whether a sector with intrinsic environmental and social impacts can be reconciled with strategic ESG in a similar way—or whether mining exposes the limits of this evolving framework more starkly than defence.

The answer is not straightforward. Defence's accommodation within ESG-aligned finance

has been achieved largely through governance criteria—transparency, oversight, and compliance with international law. Mining, by contrast, cannot rely on governance alone. Its environmental footprint and its social impacts on local communities are intrinsic to extraction and unavoidable.

For this reason, mining poses a more demanding test of ESG's current evolution. It asks not whether strategically necessary activities can be rendered acceptable through improved governance, but whether ESG can remain credible when environmental and social impacts are inseparable from production itself. How strategic ESG operates under these conditions—and what investors require in response—is the question that follows.

Beyond Governance

For mining, the current reconfiguration of ESG is, on its face, good news. The growing recognition of metals and minerals as strategic inputs—for defence, the energy transition, artificial intelligence, and advanced manufacturing—has materially altered the investment and policy backdrop. Projects involving critical minerals are increasingly being designated as in the public interest, bringing with them public finance, regulatory prioritisation, and, in some cases, direct state participation.

This marks a meaningful departure from the assumptions that shaped mining investment under earlier ESG frameworks. Rather than requiring mining risks to be resolved exclusively through private capital operating under rigid, process-driven constraints, governments are now more willing to share risk and accelerate development where strategic necessity is clear.

For an industry long constrained by procedural ESG hurdles, this shift opens genuine space for renewed capital flows and policy support.

² David S. Landes, *The Wealth and Poverty of Nations* (New York: W.W. Norton, 1999).

At the same time, mining's ESG challenges are more demanding than those faced by many other strategically important sectors. Unlike defence or manufacturing, mining cannot freely choose where to operate. Environmental disruption and social impact are inherent to extraction, and are shaped by the physical location of the resource and the communities around it. As a result, while strategic ESG may ease certain procedural barriers for mining, it does not—and cannot—neutralise the sector's underlying environmental and social exposure.

The evolution of ESG suggests that mining may be gaining greater latitude within strategic investment frameworks. Whether this translates into materially different investment behaviour, however, depends on how investors interpret ESG's changing role. Even as exclusion-based approaches soften, expectations around environmental and social performance continue to shape perceptions of operational risk, regulatory exposure, and reputational vulnerability. The discussion that follows draws on recent investor interviews to examine how these considerations are influencing capital allocation decisions in practice.

“Critical mineral supply chains cannot be truly secure, reliable and resilient unless they are also sustainable and responsible.”

International Energy Agency

Supply Security

Concerns about supply disruption and project fragility, now increasingly prominent in public policy debates, are far from new to capital providers. Long before geopolitical tensions elevated these issues to the level of national strategy, investors and lenders were already acutely aware that operational interruptions—whether caused by community opposition, labour unrest, or regulatory intervention—pose direct threats to asset value and cash flow. With capital at risk, financial institutions have therefore tended to treat social performance not as an ethical

add-on, but as a form of risk mitigation: a way of limiting downside exposure rather than maximising upside returns. This logic is embedded in long-standing lending frameworks such as the International Finance Corporation Performance Standards, which explicitly link community engagement, human rights protections, and grievance mechanisms to project bankability and financial resilience. In this sense, ESG has long functioned less as a moral screen than as a tool for managing tail risks—low-probability but high-impact events capable of severely impairing investment performance.

“Many large investors view ESG primarily as a way of reducing volatility and risk in their portfolios—especially tail risk, the probability that a rare but severe event severely hurts performance.”

Stanford Graduate School of Business (2024).

This focus on tail risk also helps explain growing investor scepticism toward ESG claims made solely at the level of corporate policy or group-wide reporting. Interviews conducted for this study suggest that investors are acutely aware of the potential disconnect between how mining companies describe their ESG performance in annual reports and sustainability disclosures, and conditions on the ground at individual sites. For diversified mining groups operating across multiple jurisdictions, headline commitments and aggregate metrics can obscure precisely the localised risks that matter most—particularly where social tensions, environmental sensitivities, or governance weaknesses are concentrated at specific assets. From an investor's perspective, it is these site-level failures that generate the rare but severe events most likely to impair value.

As a result, several investors emphasised that effective ESG analysis depends less on corporate narrative than on granular, asset-level visibility. Rather than treating ESG as a reputational overlay applied at the company level, they approach it as

an exercise in identifying where, and under what conditions, operational risks are most likely to crystallise. This has led to growing pressure for more detailed disclosure on community relations, grievance mechanisms, permitting status, and environmental performance at the level of individual projects—especially in regions where social opposition or regulatory intervention could materially disrupt operations.

“There should be more effort to make the whole metals ecosystem better. Mining companies could make more effort to make the ESG sections of their reports clearer and easier to understand...”

Nitesh Shah, WisdomTree (M4H research)

“Regulatory reporting tends to reflect policies and intentions rather than implemented practice... What the sector needs is a better articulation—and verification—of how stated policies are executed at the asset level.”

Matthew McKernan, Norges Bank Investment Management (M4H research)

Some investors go further still. Reflecting concerns about selective disclosure and reporting bias, a number indicated that they place limited weight on company-produced ESG reporting altogether, preferring instead to rely on independent third-party sources, local intelligence, and specialist data providers. For these investors, the credibility of ESG information lies not in its rhetorical alignment with global standards, but in its ability to withstand external verification and contradiction. In this sense, the push for asset-level reporting and independent scrutiny is not a moral demand for transparency as such, but a practical response to the asymmetric and often opaque nature of risk in mining.

“I do not get my ESG data on a company from its annual reports, but rather from specialist data providers looking at sector-specific standards and risks.”

Matt Crossman, Rathbones (M4H research)

Yet the risk of operational disruption is not the only reason investors remain closely attuned to ESG in mining.

Reputational Risk

Concerns about reputational exposure form a second, independent channel through which ESG continues to shape investment behaviour in mining. Even where production remains uninterrupted, environmental incidents, tailings failures, or allegations of social harm can generate significant financial consequences by triggering market reactions, regulatory scrutiny, capital reallocation, and sustained stakeholder pressure. For investors, reputational risk operates less through the mechanics of output and delivery than through visibility, association, and expectation—particularly in a sector where adverse events are highly salient and often come to define broader perceptions of industry conduct.

“Reputation matters. Major events drive real financial consequences. Companies operating to lower standards overseas create additional reputational exposure.”

Michael Proulx, ESG Risk Consultant (M4H research)

Importantly, reputational risk operates according to a different logic than supply security. It is not primarily about the physical interruption of output, but about how activities are perceived and interpreted by markets, regulators, and the public. Investors are acutely aware that capital is increasingly judged not only by financial returns, but by the conduct of the activities it supports—especially in sectors such as mining, where negative events tend to dominate public narratives. As several interviewees emphasised, major incidents shape perceptions of the industry

as a whole, while positive performance and incremental improvements attract far less attention.

Reputational risk has acquired this force not because investors have become uniformly more ethical, but because expectations around corporate conduct have hardened across financial, regulatory, and social institutions. Over the past three decades, ESG norms have been embedded into lending standards, disclosure frameworks, stewardship practices, and media scrutiny. As a result, adverse events in mining are no longer assessed in isolation; they are interpreted as signals of governance quality, risk discipline, and management credibility across a company's wider portfolio. Even in a more geopolitically constrained environment—where strategic necessity may temper exclusionary impulses—reputational exposure remains difficult to discount, because it operates through channels of perception, trust, and legitimacy that continue to shape access to capital and commercial relationships.

Interview responses suggest that this reputational sensitivity is especially acute in relation to overseas operations and assets located in jurisdictions with weaker regulatory oversight. For investors, discrepancies between standards applied in different operating contexts are not compartmentalised; they are read across the portfolio. Companies that operate to lower environmental or social standards in one jurisdiction may expose their investors to reputational spillovers elsewhere, undermining confidence in management discipline, governance consistency, and risk controls more broadly. In this sense, site-specific performance matters not only because risks crystallise locally, but because failures at individual assets can reverberate far beyond them. From an investor perspective, ESG thus functions less as a declaration of ethical intent than as a defensive signal—demonstrating diligence, consistency, and foresight in environments characterised by asymmetric information and heightened scrutiny.

This reputational dimension reinforces, rather than displaces, the supply-security logic discussed

above. Together, they help explain why investor attention to ESG in mining has not diminished even as geopolitical urgency has increased. ESG persists not simply because it constrains behaviour in principle, but because it provides a practical framework through which investors manage exposure to low-probability, high-impact risks whose consequences extend beyond any single project, jurisdiction, or reporting cycle.

Adaptation and Persistence

Taken together, these dynamics clarify how the evolution of ESG described previously translates into practice for the mining sector. As ESG shifts from a predominantly procedural framework toward a more strategic one—and from boundary drawing toward boundary management—its constraining force does not disappear. It is redistributed. Procedural veto points may weaken where projects are deemed strategically necessary, but expectations around social performance, transparency, and risk discipline harden precisely because failures in these areas carry outsized consequences. Strategic ESG does not relax constraints on mining; it concentrates them where risk most directly crystallises.

Importantly, this persistence cannot be explained by the current geopolitical moment alone. The weight investors place on social performance and reputational exposure reflects a deeper form of institutional momentum. ESG practices that arose under one set of historical conditions have become embedded in investment processes, lending standards, and public expectations. Even as the moral consensus that once underpinned ESG weakens, these conventions continue to structure behaviour because they serve additional, durable functions: protecting capital, signalling diligence, and managing visibility in an environment where adverse events are highly salient and rapidly amplified.

The implications for mining are therefore more demanding than a simple narrative of ESG retrenchment would suggest. While the evolving ESG regime leaves space for mining to be

considered within strategic investment frameworks, it does so only under tighter expectations around how risks are identified, managed, and disclosed at the asset level. Mining's renewed strategic importance does not insulate it from scrutiny; it raises the stakes of failure.

This conclusion also points beyond the confines of OECD regulation and Western capital markets. If ESG discipline in mining is increasingly sustained

by supply-chain exposure, reputational sensitivity, and institutionalised expectations—rather than by shared moral conviction alone—then similar pressures should be observable even in jurisdictions where ESG has not historically been a policy priority. It is to this question, and to the instructive case of China, that the discussion now turns.

ESG's persistence in mining is now driven less by shared moral consensus than by risk discipline, market access, and reputational exposure—forces that extend well beyond Western regulatory regimes.

ESG Under Strategic Constraint: The Case of China

For much of the period during which ESG norms were consolidating in Western capital markets, China's mining sector developed along a markedly different trajectory. Regulatory oversight was comparatively limited, enforcement uneven, and environmental and social considerations consistently subordinated to the pursuit of production scale, cost advantage, and industrial positioning across critical minerals. Unlike ESG in OECD countries—which emerged in a permissive post-Cold War environment that allowed investors to prioritise non-financial externalities—China's approach to mining was shaped by the imperatives of rapid industrialisation and resource security, with little expectation that extraction would be constrained by broader environmental or social norms.

Against this background, recent shifts in Chinese policy and corporate practice are noteworthy—not because they signal convergence with Western

ESG frameworks, but because they point to an incremental and strategically conditioned evolution. As one external assessment observes, “China's mineral strategy, initially focused on achieving production scale and industrial positioning, appears to be evolving toward a more sustainability-conscious model—a natural progression as its leadership consolidates and global expectations shift.”³ The significance of this evolution lies less in its depth than in its timing: it is occurring not in a benign geopolitical environment, but amid intensifying strategic competition, supply-chain fragmentation, and heightened scrutiny of overseas operations.

This shift has been reflected in a gradual broadening of official initiatives aimed at improving environmental and social performance in the mining sector. In 2024, China expanded its “Green Mines” programme—previously applied on a pilot or regional basis—to cover the entire country. While the standards associated with the programme remain largely voluntary and less

³ Marta Rivera and Eduardo Zamanillo, *Mining is Dead, Long Live Geopolitical Mining* (Toronto: QM Books, 2025).

demanding than the combined regulatory and disclosure frameworks typically applied to mining operations in OECD jurisdictions, its nationwide rollout signals growing recognition that environmental performance and social stability now shape operational continuity and international perception, rather than functioning solely as matters of domestic regulation.

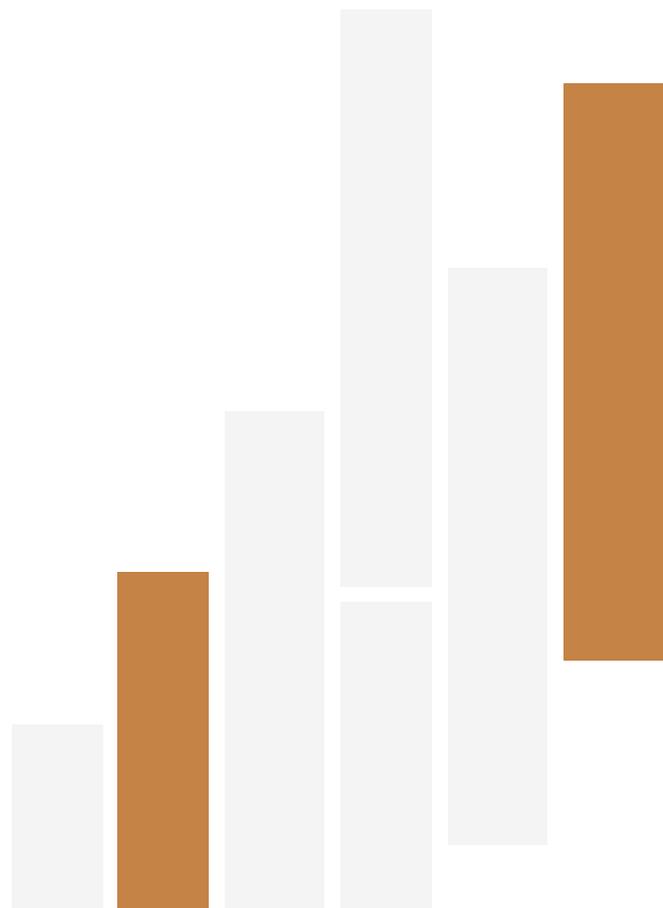
At the corporate level, ESG-related practices in China remain at an early stage. Only a small number of Chinese mining companies have begun to engage systematically with sustainability reporting, and even then only recently. Zijin Mining, one of the country's largest and most internationally exposed producers, is among the few to publish a dedicated sustainability report—and it has done so only within the past couple of years. This contrasts sharply with the decades-long institutionalisation of ESG reporting in Western mining companies, underscoring the extent to which ESG practices in China remain emergent rather than embedded.

China has also increasingly adopted the language of sustainability in international contexts, including rhetorical support for a “just energy transition” and references to responsible resource development in overseas operations. Guidelines addressing responsible mining conduct abroad were first issued in 2021 and participation remains voluntary, but their existence reflects an emerging awareness that environmental and social standards increasingly shape access to downstream markets, partnerships, and financing. In this sense, sustainability is being recognised less as a constraint on strategic ambition than as a tool of soft power—a means of managing reputational exposure and maintaining legitimacy amid growing external scrutiny.

“China increasingly views environmental and social standards as part of its international economic engagement, recognising their role in reducing friction, managing reputation, and sustaining long-term access to overseas markets.”

International Institute for Strategic Studies (IISS)

Viewed through the historical framework advanced in this report, these developments reinforce the paper's broader argument. ESG's persistence does not depend on the continuation of the geopolitical or moral conditions under which it first took hold in Western markets. Instead, ESG-related practices can take root—even belatedly—in contexts where their original normative foundations were weak, because they come to serve additional functions: managing risk, facilitating market access, and responding to expectations embedded in global economic interaction. That these dynamics are now observable in China's mining sector highlights the extent to which ESG has acquired institutional momentum—operating under strategic constraint rather than moral consensus.



CONCLUSION



Conclusion

This paper has examined how ESG is changing under the pressure of a more contested geopolitical environment, and what that change means for mining and mining investment. **The central conclusion is a constructive one: ESG is not receding, but being reconfigured.** The shift now underway creates meaningful opportunities for mining, provided companies and investors understand where ESG constraints are easing—and where they are becoming more exacting.

ESG emerged and consolidated during a period of relative geopolitical permissiveness, when investors could prioritise environmental and social considerations without confronting acute trade-offs with national security, supply resilience, or strategic competition. Those conditions have weakened. Across jurisdictions, governments are now explicitly prioritising security of supply, defence readiness, and economic resilience. In response, ESG is evolving from a predominantly procedural framework—characterised by exclusion, delay, and process-heavy review—towards a more strategic one, in which environmental and social considerations are retained but weighed alongside overriding strategic imperatives.

This transition is accompanied by a broader normative shift in how ESG operates in practice: **from boundary drawing to boundary management.** As illustrated by the experience of the defence sector under the EU Sustainable Finance Disclosure Regulation, ESG principles have not been abandoned in more troubling times. Rather, they have been recalibrated—becoming more elastic and less focused on categorical moral demarcation, and more oriented toward governance standards, disclosure requirements, and disciplined risk management.

These developments have profound implications for mining. On its face, the move away from exclusion-based approaches toward more conditional and context-specific assessments appears favourable for the sector. Like defence,

mining has often been treated as presumptively incompatible with ESG mandates under earlier frameworks, and the shift towards boundary management creates scope for reassessment. At the same time, mining differs in crucial respects from sectors whose ESG challenges can be addressed primarily through governance, disclosure, and oversight. Environmental disruption and social impact are inherent to extraction and vary markedly by site. As a result, the practical implications of strategic ESG for mining depend less on formal classification than on how ESG expectations are applied where risks actually arise.

Investor behaviour helps clarify how this distinction is being resolved in practice. Long before supply disruption became a central concern of public policy, capital providers had already internalised the operational risks associated with poor social performance in mining. Community opposition, regulatory intervention, and project suspension have long been understood as direct threats to asset value and delivery. Alongside this, reputational exposure has emerged as a distinct and increasingly powerful channel through which ESG continues to shape investment decisions. Environmental incidents, tailings failures, and social conflict can impose material financial costs even where production is unaffected, shaping investor perceptions well beyond the site in question. After three decades of incorporation into lending standards, reporting practices, and public expectations, ESG norms continue to operate as institutionalised tools of risk management, sustained less by moral consensus than by their demonstrated capacity to protect capital from low-probability, high-impact events.

The case of China reinforces this conclusion. China's gradual, partial, and still largely voluntary move toward ESG-aligned mining—despite intensifying geopolitical pressures and a long-standing emphasis on production scale—underscores that ESG's persistence does not depend on Western regulatory ideology alone.

Instead, ESG-related practices endure because they have become embedded in the practical conditions of market access, reputational management, and supply-chain participation.

This institutional momentum suggests that ESG will continue to shape mining investment globally, albeit in differentiated and strategically constrained forms.

For mining companies and investors, the implications are clear. The evolving strategic ESG regime promises improved access to capital and policy support. At the same time, rather than relaxing expectations, the disappearance of the geopolitical conditions under which ESG first emerged has sharpened scrutiny where risks crystallise. **Expectations around social performance, environmental management, and transparency are becoming more exacting, not less so.** Strategic designation does not insulate projects from scrutiny; it raises the stakes of failure.

The opportunity, therefore, lies in building on—rather than discarding—the advances in responsible mining that have developed over the past 30 years. Companies that invest in credible social performance, asset-level transparency, and robust risk management are well positioned to benefit from mining’s renewed strategic relevance, while extending the benefits of extraction more consistently to local communities and stakeholders. Seen in this light, **the ESG transition now underway should be understood not as a constraint on mining’s future, but as a framework through which that future can be made more resilient, legitimate, and broadly shared.**

In a more contested and urgent world, mining’s renewed strategic importance creates not a licence to retreat from ESG, but **an opportunity to anchor responsible extraction more firmly in the practical requirements of supply security, investor confidence, and shared local benefit.**

Executive Brief: ESG Priorities for Mining Leaders in a Strategic ESG Environment

Context

ESG is not disappearing under geopolitical pressure, but it is being reconfigured. As ESG shifts from a procedural, exclusion-driven framework toward a more strategic and risk-focused one, mining companies face narrower tolerance for failure, not looser scrutiny. Strategic importance increases visibility, expectations, and downside risk.

What This Means in Practice

1. ESG is now a credibility test, not a signalling exercise

Capital is increasingly available for mining, but only for companies that can demonstrate credible, on-the-ground performance. High-level commitments and corporate narratives no longer suffice unless they are supported by asset-level evidence that can withstand external scrutiny.

2. Social performance is a core operational risk

Community opposition, labour unrest, and social conflict remain among the most common causes of project delay, suspension, or cancellation. Investors treat social performance as insurance against supply disruption and value impairment—not as a discretionary reputational add-on.

3. Reputational risk extends beyond individual assets

Environmental incidents, tailings failures, or human-rights allegations can trigger portfolio-wide consequences, including capital reallocation, regulatory scrutiny, and loss of partner confidence. Where operations span multiple jurisdictions, failures at one site can reverberate far beyond it.

4. Governance and disclosure must be asset-level, not aggregate

Investors are increasingly sceptical of group-level ESG reporting that obscures localised risk. Expect growing pressure for clear, asset-level disclosure on:

- community engagement and grievances
- permitting and regulatory status
- environmental management and incident response

5. Independent verification matters

Many investors now triangulate—or bypass—company-produced ESG reports in favour of third-party data, local intelligence, and specialist providers. Transparency that cannot withstand external verification increases perceived risk rather than reducing it.

6. Strategic designation raises expectations

Projects labelled as “strategic” may benefit from policy support and accelerated processes, but they also attract heightened scrutiny. ESG failures in such projects can escalate rapidly into national or international issues, amplifying downside risk.

7. Assume ESG will be differentiated, not diluted

Procedural hurdles may ease where projects are strategically necessary, but environmental and social constraints remain hard limits. **ESG's future is uneven:** approval and governance processes may be accelerated, but expectations around social licence, environmental performance, and risk discipline are becoming more exacting—not less so.