

Unjust minerals: investing in the changes needed for a just transition in the mining sector

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Policy report

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Summary

Extraction is at the heart of the just transition challenge: both a just phaseout of coal mining and a just expansion of mining for minerals critical to the low-carbon transition are required. The scale and complexity of this task requires informed and proactive investor participation in shifting the mining sector towards more sustainable and equitable practices.

The need for a just transition in mining

The economic transformation needed to reach net zero emissions is precipitating a fall in demand for coal and setting off a dramatic acceleration in demand for energy transition minerals (ETMs). The decline of the coal sector will impact the livelihoods and regional economies that are dependent on it, while ETM mining presents one of the most crucial tasks ahead for the just transition: avoiding a trade-off between the expansion of mineral production for global climate action and the achievement of positive local outcomes. This is a particular challenge given the global mining sector's poor track record on human rights and environmental harm. To reduce the substantial social and environmental impacts of mining, mineral demand must be firmly managed and existing responsible mining standards and laws strengthened and applied in a time-bound and rapidly-evolving context.

Taking action: priorities, levers and tools

There is a need for investors to fulfil their role in supporting a just transition in mining: both in transitioning out of coal mining and into ETM mining. A just transition agenda for investors would build on three priorities:

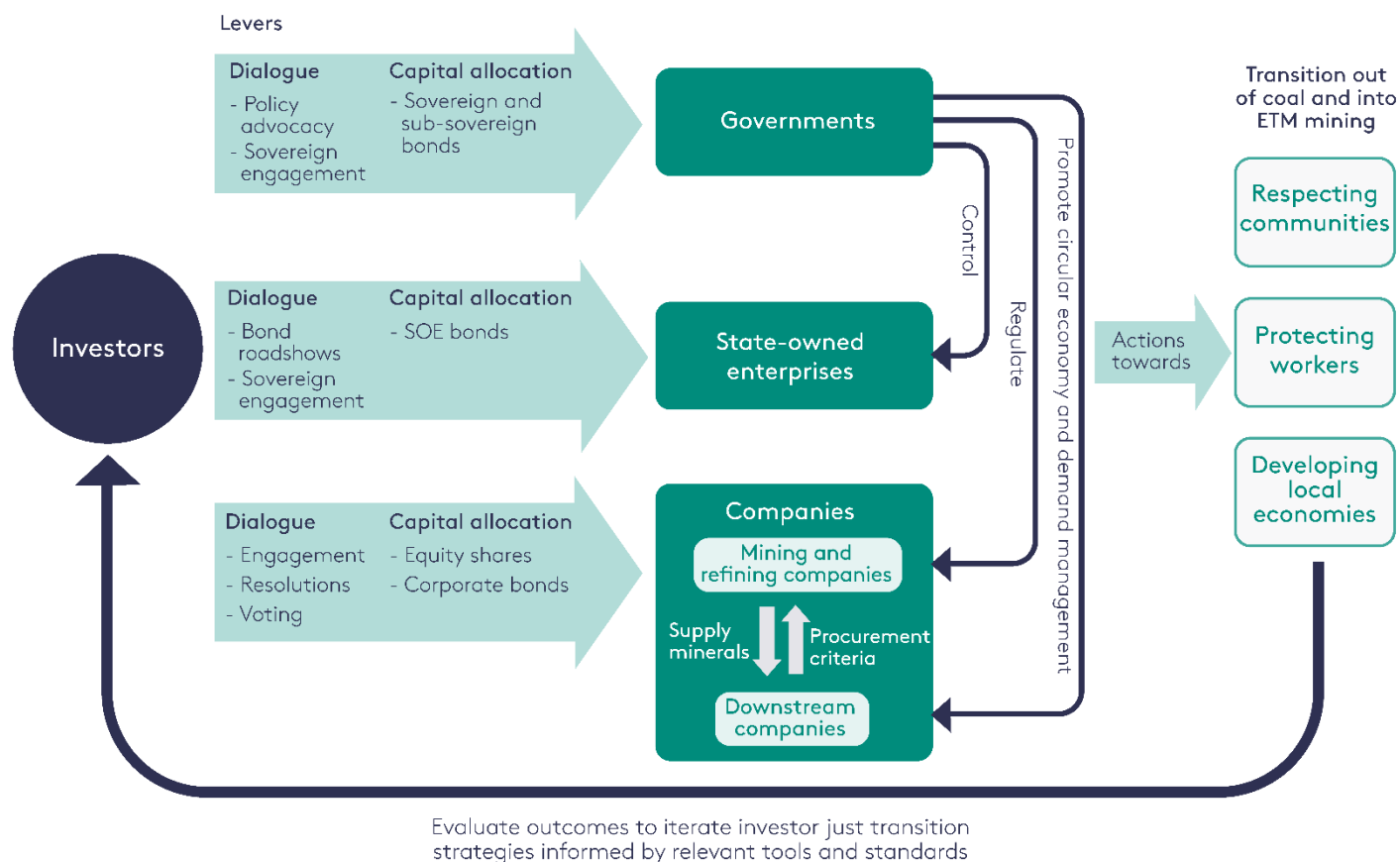
- **Respecting communities:** With its vast impacts on land, mining must respect local communities, in particular through securing the free, prior and informed consent of Indigenous Peoples for its activities.
- **Protecting workers:** Labour rights must be respected both in the closure of coal plants and in new ETM mines, addressing issues such as safety and informal employment.
- **Developing local economies:** In the context of transition, the mining sector should support the economic and social development of local communities and regions.

These priorities are by no means new issues for the mining sector; they form part of its social licence to operate. But the scale and speed of change required to achieve climate goals in ways that also benefit people mean that all actors, including investors, need to explicitly place just transition considerations at the centre.

Investors have two main levers at their disposal to advance a just transition: dialogue and capital allocation. Figure S1 below shows how investors can identify and harness these in their interactions with governments, companies and state-owned enterprises (SOEs). For example, investors can:

- Encourage mining companies to align their activities with a just transition through shareholder engagement, resolutions and voting, and also through decisions about whether to purchase specific corporate shares or bonds.
- Advocate for government policies that manage mineral demand and that better regulate the mining sector.
- Incorporate just transition considerations into investment decisions on sovereign, sub-sovereign and municipal debt.
- Influence SOEs through dialogue during bond roadshows and broader sovereign engagement with governments.

Figure S1. A framework of investor leverage points to drive a just transition in mining



Source: Authors.

Many existing tools and standards for responsible mining can be used to support investors' efforts to drive a just transition in mining. Three initiatives demonstrate the range of information available. Robust responsibility standards such as the Initiative for Responsible Mining Assurance (IRMA) and the Climate Action 100+ Net Zero Diversified Mining Standard can help set aspirational criteria to reduce harm from mining activities. Examining evidence of actual harm from irresponsible practices is a crucial complement to normative standards; this is facilitated by databases such as the Transition Minerals Tracker.

Recommendations for investors

The global economy must design and implement a just transition in the mining sector. While there is growing recognition of the critical importance of a just transition in mining across the economic and policy landscape, no mining company or country currently demonstrates the level of ambition required to achieve it. Investors, along with other key actors, will need to transform their approaches and intensify their efforts if the phaseout of coal and scaling up of transition minerals is to take place justly and swiftly. The rationale for investor action is that it is a just and smart strategy: social stability and good employment opportunities enable long-term value creation and contribute to economic development.

The following eight recommendations encompass how investors can support a just transition in mining:

- 1. Institutional investors should make public commitments on how they will support a just transition, both out of coal and into ETM mining.**
- 2. Investors should deepen their engagement efforts with mining companies on the just transition with approaches that are informed by data on socio-environmental risks and tailored to particular companies, regions and commodities.**
- 3. As holders of sovereign debt, investors should share their expectations for just transition policies with governments and engage in dialogue and advocacy to achieve their implementation.**

4. Investors should communicate to SOEs their expectations for action on the just transition in a way that is joined up with their sovereign engagement.
5. Investors should advocate that companies and governments invite trade unions, Indigenous Peoples and representatives of local communities to the decision-making table in the design and implementation of just transition strategies for the mining sector. Investors might also engage directly in dialogue with these impacted stakeholders to jointly hold companies accountable.
6. Investors should identify opportunities to promote a just transition in mining along value chains, for example with processing companies, manufacturers of electric vehicles, banks and insurers.
7. Investors should support the implementation of high-integrity responsible mining standards, draw on just transition commitments and frameworks for the global minerals value chain, and contribute to their development to ensure consistency internationally.
8. Investors should explore opportunities to contribute to regional economic development, including through partnerships: a model similar to the Just Energy Transition Partnerships could help deliver targeted finance and action for a just transition in mining.

1. Introduction

The mining sector is central to the achievement of a low-carbon transition that promotes positive social, economic and environmental outcomes. This report explores how investors can support just transitions out of coal mining and into mining for minerals. The scale of this challenge and its underlying dynamics are introduced in this section.

The need for a just transition in mining

Extraction is at the heart of the challenge of achieving a just transition: it requires both a just phaseout of coal mining and a just expansion of mining for minerals critical to a low-carbon economy, referred to in this report as energy transition minerals (ETMs).¹ Governments across the world have recognised that the just transition is essential to deliver climate goals in every sector, as marked by the world's first just transition [work programme](#) agreed at the 2023 UN Climate Change Conference (COP28). Extractive industries and associated value chains should be centre stage: a just transition in the mining sector is foundational to an economy-wide just transition as extraction occurs at the beginning of nearly all supply chains.

The economic transformation required to meet net zero goals is both triggering a decline in demand for coal and rapidly accelerating demand for ETMs. New coal mines and the unabated use of coal plants are now considered inconsistent with limiting global average temperature rise to 1.5°C above pre-industrial levels (IEA, 2021a). The decline of the coal sector will affect livelihoods and regional economies that are dependent on it, which is starting to be addressed through emerging national just transition policies. Mining companies also have a responsibility to set out just transition plans in their coal exit strategies to prevent significant job losses and regional decline. Meanwhile, extraction of ETMs is expected to take off in the coming decades due to high demand from manufacturers of low-carbon technologies like batteries, solar photovoltaics and wind turbines. The International Energy Agency's 1.5°C scenario projects that mineral demand for clean energy technologies will quadruple by 2040 (IEA, 2024). This could represent a meaningful opportunity for economic development in countries with mineral reserves.

The expansion of ETM mining presents one of the most severe potential trade-offs in the pursuit of net zero, given the global mining sector's poor track record on human rights and environmental harm, and its colonial history. Mining involves dangerous work for the millions of people that it employs, local environmental destruction and complex economic development risks and opportunities. Historically, mining has been an instrumental part of colonisation. In Latin America, for example, the plunder of silver and gold by Spanish colonisers in the 16th century was undertaken alongside the genocide and enslavement perpetrated against Native Peoples (Deonandan and Dougherty, 2016). Actors committed to a just transition need to recognise this history and its continuities. The rapid advance of resource extraction in developing countries to enable the greening of wealthier nations is a dynamic that is accused of being neocolonial (Jerez et al., 2021). A range of transformational approaches are required to prevent mining's historical injustices from being replicated in the low-carbon economy of the future.

A just transition is necessary to win the trust and consent of affected stakeholders, both in the phaseout of coal and the expansion of ETMs. Without a social licence to operate, mining companies may fail to meet demand for ETMs, impeding the development of clean energy technologies and putting the wider low-carbon transition at risk. Just transition research and practice has to date focused on workers and communities dependent on coal; particular attention is now also needed on those affected by increased resource extraction driven by the transition. This report addresses this gap by considering both the transition out of coal and the transition into ETM mining, with an emphasis on the latter.

¹ Given varying definitions and criteria, our use of the term 'energy transition minerals' broadly aligns with the definition of the UN Secretary General's Panel on Critical Energy Transition Minerals, which refers to the mineral commodities that are necessary for the construction, production and storage of renewable energy (UN Secretary General's Panel on Critical Energy Transition Minerals, 2024).

Figure 1.1. The social risks and opportunities in the mining transition: headline numbers

The mining sector as a whole



80% of employment in mining was informal in 2014.

Fritz et al. (2018)



40.5 million people were directly engaged in artisanal and small-scale mining in 2017.

Fritz et al. (2018)



48% of the world's publicly traded mining companies are listed in Canada.

Marshall (2020)

Transition out of coal mining



4.7 million people are currently employed in coal mining.

Ruppert Bulmer et al. (2021)



2 million coal mining jobs were lost in the last decade.

Ruppert Bulmer et al. (2021)



4% of energy demand will be met by coal in 2050 in a 1.5°C scenario, down from **26%** in 2020.

IEA (2021a)

Transition into energy transition mineral (ETM) mining



84% of platinum and **70%** of cobalt resources are located in contexts of high environmental, social and governance (ESG)-related risks.

Lèbre et al. (2020)



Over **50%** of energy transition minerals are located on or near the lands of Indigenous Peoples and agrarian communities.

Owen et al. (2022)



Mineral demand for clean energy technologies will **quadruple** by 2040 in a 1.5°C scenario.

IEA (2024)

The role of investors

The projected scale of the increase in demand for ETMs will require massive investments, giving investors an important role to play. While long-term projections in demand for ETMs appear strong in scenarios where the low-carbon transition proceeds at pace, investments in the short and medium term have been constrained by recent low mineral commodity prices and risk perception among investors (Global Battery Alliance, 2024). These factors, among others, can hinder the channelling of investment into critical mineral value chains and towards more responsible mining practices.

Implementing the just transition is a shared responsibility and investors have a clear rationale for taking action: it is simply the right thing to do and is part of the financial sector's longstanding responsibilities to respect human rights and contribute to sustainable development. It is also a smart strategy for investors to create long-term value in the corporate and public sector assets they hold. Investors can contribute to broader economic development by ensuring that workers gain employment in new and growing low-carbon sectors where they are needed and supporting communities to diversify their economies. Furthermore, social conflict resulting from irresponsible corporate practices can have serious reputational, operational and opportunity costs. There is therefore a financial case for establishing good governance and responsible practices.

Investors are well-placed to promote just transitions in the mining sector. A few major companies dominate the global mining industry to form small and often oligopolistic markets and some segments of the value chain are concentrated, with five companies controlling over 60% of global lithium output, for example (IRENA, 2023). This means that investors with significant stakes in major mining companies can focus their corporate engagement efforts on a small number of key companies to influence just

transition outcomes. Furthermore, given that raw materials are at the base of complex value chains, there are several points of influence across different economic sectors. Investors' role in driving a just transition therefore goes beyond their financing of mining companies that operate at the point of extraction to also include corporations buying mined materials further down the supply chain.

Aims and structure of this report

Several general just transition frameworks have been developed, usually with broad applicability across economic sectors. However, sector-specific understandings of how to bring about just transitions can help guide more informed engagement and investment decision-making.² Specific advice on the just transition for the mining sector has also been generated, such as by the UK's Transition Plan Taskforce (TPT, 2024).

This report takes forward a sector-specific approach to elaborate the priorities for a just transition in the mining sector and the levers that investors have at their disposal to drive action. It adopts an expansive and systemic definition of the just transition to explore the broad social challenges related to the transformations that are occurring in the mining sector. Many of these challenges significantly pre-date climate change becoming a global priority and are taken as foundational considerations for a just transition in this sector.

Section 2 synthesises the vast range of socio-environmental challenges related to mining into three specific just transition priorities for investors: respect for communities; protection of workers; and development of local economies.

Section 3 puts forward a mining sector-specific just transition framework for investors, illustrating their points of influence with the entities with greatest power to realise the proposed just transition priorities: mining companies, governments and state-owned enterprises. To make sense of how these levers can translate into just transition outcomes, this section also sets out the specific actions and practices that can be adopted.

Section 4 provides a brief overview of a sample of relevant tools and standards on responsible mining, highlighting three in particular that demonstrate the range of information that investors can draw on in their activities.

Section 5 concludes with a set of high-level recommendations for investors to encourage just transitions in mining-affected areas.

² See Robins et al. (2021) for an overarching framework for investor expectations on the just transition for the electricity sector. See Muller and Robins (2022) for specific considerations for the just transition in the context of the agricultural sector, nature-based solutions to climate change and nature conservation.

2. Priorities for a just transition

To guide efforts to create just outcomes for the low-carbon transition in the context of the mining sector, this section outlines the areas that should be front and centre for investors and other stakeholders, informed by the numerous socio-environmental challenges relevant to mining.

Investors and other key stakeholders should prioritise the three following overarching outcomes which help define what just transitions in the mining sector might entail:

- Respect for affected communities
- Protection for the mining workforce
- Provision of local economic development opportunities for host countries and small and medium-sized enterprises (SMEs).

Within these priorities are dimensions that are either foundational to a just transition (e.g. fundamental human rights) or specific to the transition 'in' of ETM mining or the transition 'out' of coal mining. Table 2.1 presents example actions that correspond to each of these three priorities, across the aforementioned dimensions.

Table 2.1. Priorities for a just transition in mining with example actions

	Respecting communities	Protecting workers	Developing local economies
Just transition foundations	• Respect human rights • Respect environmental standards • Strengthen regulations • Strengthen voluntary efforts	• Respect social dialogue • Respect labour standards • Promote formalisation and occupational safety	• Drive sustainable regional development • Support local SMEs
Just transition 'in' of ETM mining	• Minimise impacts of new mines on communities • Respect consent on mine developments • Manage mineral demand	• Provide stable green jobs in ETM mining	• Localise upstream and downstream supply chains of ETM minerals
Just transition 'out' of coal mining	• Support communities and regions affected by coal mine closures	• Support workers affected by coal mine closures, in the mining sector and associated sectors	• Support local businesses and suppliers affected by coal mine closures

Respecting communities

Recognising that additional mining of minerals is necessary to achieve the low-carbon transition, decision-makers must acknowledge its local human and environmental cost. In many cases, communities and ecosystems located close to mines must endure deforestation and air, soil and groundwater pollution from mine tailings, destructive vibrations and water stress (Jerez et al., 2021). As the best ore grades are depleted, the extraction of lower grades can require open-pit mining, which tends to disturb and pollute larger areas (Deonandan and Dougherty, 2016).

A just transition requires governments and companies to respect local communities. This means meeting existing commitments and aligning with the [UN Guiding Principles on Business and Human Rights](#) (UNGPs), which define the duties of states and businesses to respect and protect human rights. A foundational principle of the UNGPs is ensuring access to remedy, which means that governments should

investigate, punish and redress human rights abuses through judicial or administrative means and businesses should establish transparent and accessible operational grievance mechanisms.

Indigenous Peoples' consent

In the mining sector, respecting local communities often requires gaining Indigenous Peoples' consent for industrial activities on their territories. Unlike most economic sectors other than agriculture, mining is a land-based and geographically expansive activity. For this reason, those with strongest economic and cultural connections to the land, such as Indigenous and agrarian communities, must be front and centre in discussions about the social impacts of mining. Indigenous Peoples are recognised internationally through the [UN Declaration on the Rights of Indigenous Peoples](#) (UNDRIP) to have specific sovereignty-based rights that go beyond those of other local communities. There is extreme concentration of ETM deposits near Indigenous land: over 50% of ETMs are located on or near the lands of Indigenous and agrarian communities (Owen et al., 2022). According to the principle of free prior and informed consent enshrined in Article 32 of the UNDRIP and the International Labor Organization's (ILO) [Indigenous and Tribal Peoples Convention 169](#), local Indigenous Peoples should be able to refuse an extraction project that would affect their lands and resources. However, this represents a departure from how extractive industries currently operate, as explained in Owen et al. (2022):

Extracting more ETMs to advance the energy transition will extend the global mining land footprint presenting significant threats to social and environmental sustainability. Processes of self-determination tend to see Indigenous peoples prioritize cultural and ecological values over indiscriminate industrial development. Increases in global demand for ETMs is likely to impose unprecedented pressure on these rights-holding groups. Indigenous peoples' and peasant lands are at the forefront of competing sustainability objectives where the location and likely social and environmental trade-offs associated with resource development have not previously been established.

Governments and companies should comply with statements made by Indigenous nations, such as the Grassy Narrows First Nation's [Land Declaration](#) which bans industrial logging on their territory and the Attawapiskat, Fort Albany and Neskantaga First Nations' moratorium against mining in the Ring of Fire region of Canada (CBC, 2021). In a rare case that exemplifies true consent, NWP Coal Canada agreed in 2023 that the Tobacco Plains Indian Band, the local Indigenous community, will have the right to veto its proposed metallurgical coal mine (Bakx, 2023).

Failure to obtain Indigenous Peoples' consent may also become a source of operational, litigation and reputational risk. In Argentina and Chile, over half of mines have been delayed by socio-environmental conflicts with local, often Indigenous, communities (Marín, 2023). Operations at Pan American Silver's [Escobal mine](#) in Guatemala were suspended because the country's Constitutional Court determined that an ILO 169 consultation process with the Indigenous Xinka People was needed before the mining licence could be reinstated. A tragic and high-profile example of environmental and cultural harm from mining is Rio Tinto's destruction of [Juukan Gorge](#), an Aboriginal heritage site in Australia, which brought major operational and reputational consequences, including the resignation of its CEO.

Human rights

The mining sector has a chilling track record of intimidation and murder of defenders of land and human rights. In the last decade, nearly a quarter of more than 630 documented allegations of abuse in the ETM mining sector were cases of attacks against human rights defenders (Avan et al., 2024). Gendered violence against local communities has also been linked to extractive activities. Women can be victims of violence related to mining activities, yet they often build the foundations of local resistance to mining, in part because their management of household activities means they are keenly aware of impacts from mining like water contamination (Altamirano-Jiménez, 2021).

Demand management

Accepting that some mines will not be approved on the grounds of a lack of consent means that the first principle of waste management, 'reduce', must become a higher priority. Those committed to a just transition need to aggressively tackle the astronomical increase in mineral demand, seeking to manage it through innovations that support a circular economy, material efficiency and cultural change such as

embracing carless cities and anti-consumerism. For investors, this means expanding the scope of climate engagement and policy advocacy from a focus on improving individual mine projects to transforming wasteful economic activity throughout supply chains. Specific policy options and solutions for mineral demand management are discussed further in Section 3.

Relationships with local communities

Mining activities and related violence can destroy the social fabric of local communities, a situation that extractive companies may later exploit. For example, in San José del Progreso in Mexico, a gold and silver mine of Minera Cuscatlán, a subsidiary of the Vancouver-based company Fortuna Silver Mines, has “divided [the community] into two halves, with two churches, two markets, and two separate taxi services used by those working at the mine and those opposed to its existence” (ibid.).

Improving the mining sector’s relationships with communities requires action before, during and after the development of a mine:

Before mining

- Frequent, collaborative and long-term consultations
- Local community or Indigenous co-ownership and shared prosperity models (see ‘Developing local economies’ below)
- Community benefit agreements
- Commitment to land remediation
- Accrual trusts to pay for eventual clean-up.

During mining

- Risk reduction and warning systems
- Prioritisation of opportunities for local workforce
- Continuous monitoring and enforcement of compliance with laws and responsible mining standards.

After mining

- Clearly established liability for the legacy of mining activities
- Rehabilitation of lands at old mines and processing sites
- Continuous monitoring to avoid the failure of tailings dams.

Affected local communities must be respected in both the transition out of coal and the transition into ETM mining. For the transition out of coal mining, communities must be included and listened to in designing closures, land rehabilitation and future economic opportunities. For ETM mining, investors, companies and governments must ensure that irresponsible and abusive mining practices are remedied, for their own sake and to avoid derailing the low-carbon transition (Business & Human Rights Resource Centre, 2022).

Protecting workers

Labour rights

The labour rights of people working in the mining sector must be centred in a just transition, which has the delivery of decent work at its heart. This includes providing skills development, occupational health and safety, social protection and social dialogue, and exercising a cross-cutting imperative of gender equality and women’s empowerment. The ILO’s [standards and conventions](#), developed in partnership by governments, employers and workers, form the foundations that define international labour rights. Fundamental workers’ rights include freedom of association and effective recognition of the right to collective bargaining, which protects workers’ ability to form unions, along with the elimination of forced labour, child labour and employment discrimination. The mining sector is replete with cases of bad practice relating to companies’ violation or governments’ weak enforcement of international labour rights. Reversing this track record will contribute to the better alignment of the sector with a just transition.

Among the many serious labour-related concerns, the mining sector must address two key challenges: safety and precarity. Mining work can be extremely dangerous and it has one of the highest accident rates of all sectors (Baraza et al., 2023). Various chemicals used to process minerals can seriously impact employees' health (IEA, 2021b). The importance of protecting workers' abilities to unionise is demonstrated by the notable historical role unions have had in improving safety standards in the mining sector. Unionisation among coal miners was found to be associated with a 14–32% decrease in traumatic injuries and a 29–83% decrease in fatalities (Morantz, 2013). Mining staff are often sub-contracted and thus hold employment contracts that are not vetted by mining companies themselves, enabling a path to low wages and a lack of benefits. Mining companies that rely on sub-contracting also have less visibility over working conditions.

A special case of precarious work is artisanal and small-scale mining (ASM), an informal mining activity undertaken by 40.5 million people around the world (Fritz et al., 2018). Its informal nature means that safety practices in ASM are very poor. Increased regulation and associated formalisation are needed while still offering people the opportunity to be self-employed. The prevention of child labour, part of the ILO's fundamental labour rights, is a particularly pertinent concern in ASM mining (ibid.). Companies should develop positive relationships with existing ASM miners through technical assistance and formalisation of work.

Social dialogue

Workers must be consulted and protected in both the transition out of coal and the transition into ETM mining. Coal mine closures should be underpinned by continuous social dialogue, consultation with all stakeholders to determine the timing of closure, and support for workers both before and after layoffs are made, through temporary income support and re-employment services (World Bank, 2018). On the transition into ETM mining, the unique circumstances brought about by the low-carbon transition will affect workers and must be carefully managed. For example, price volatility in ETM commodities is expected due to rapidly increasing demand and various mineral supply constraints, such as long lead times for new mine approvals. Periodic price spikes and volatility have historically characterised the markets for minerals, and also crude oil (IEA, 2021b). Commodity price volatility can cause job precarity – not only for those employed in mines but also for indirect and induced jobs in other sectors like construction and accommodation services, as has been shown in the oil and gas sector (Scheer et al., 2022). Support for workers affected by the transition of the mining sector should therefore go beyond those directly employed in mining to include related sectors.

Developing local economies

Economic opportunities from ETM mining

There is an opportunity for mining activities to support economic development that benefits host countries and local communities, particularly those in the Global South. Recognising that the low-carbon transition is urgent and requires increased mineral extraction, lower-income countries with endowments of mineral resources should have the opportunity to benefit from the associated economic activity. Although mining does represent a potential source of economic growth for host countries, this does not always translate into reality: the localised nature of resource extraction can create enclave effects, which weaken the sector's contribution to sustained economy-wide development (Deonandan and Dougherty, 2016). Commodity-dependent developing countries are more likely to struggle with these effects as they often export raw materials with little value added; enabling environments are required that foster linkages between extraction and other economic sectors (UNCTAD, 2017). More data-driven analysis is needed to explain why mining often has limited benefits for economic development and how this can be changed. In addition, companies involved in resource extraction may engage in corruption, fraud and tax evasion which inhibit local development.

Harnessing the economic opportunity from minerals extraction requires dedicated policymaking. Countries can maximise the domestic benefits of ETM mining through taxes and royalties on extraction, and by creating state-owned enterprises (SOEs). Countries that mine minerals can also establish local processing, refining and manufacturing industries (IRENA, 2023). Dedicated financing and long-term incentives and planning are needed, for example through export taxes or restrictions. Such a strategy has

been employed by China, now the world's mineral processing superpower, controlling 70% of cobalt and 60% of lithium processing (ibid.). Ensuring that resource extraction benefits citizens requires public and corporate governance and accountability to prevent corruption; transparency on licences and contracts; social and environmental impact regulations; and transparent and effective revenue collection, as outlined in the [Extractive Industries Transparency Initiative \(EITI\) Standard](#).

Challenges of achieving economic benefits

The extraction of mineral ores and their midstream refining and processing often do not overlap geographically, especially within developing countries. This limits possibilities for sustained economic benefits through exporting higher value-added intermediate or final products like copper cathodes and batteries. Localising mineral refining can increase tax revenue, while spurring development and creating jobs. Key barriers to this strategy in emerging markets include a lack of infrastructure, technical capacity and access to low-cost electricity, all of which can result from colonial legacies.

Indonesia has tested the approach of localising mineral refining through a recent export ban on raw nickel, which has affected industrial incentives sufficiently to encourage an increase in the number of nickel smelters from two to 13 (IRENA, 2023). However, much like mining, industrial sites that process mineral ores can have devastating environmental impacts. In particular, (in Indonesia) high-pressure acid leaching creates dangerous waste, the storage of which can easily be destabilised in a country with frequent earthquakes and landslides (Tan et al., 2023). This reality makes it all the more important for investors, regulators and corporations to adopt safe, fair and responsible approaches to mining and processing.

Increased demand for minerals required for the low-carbon transition could support development goals in African nations in particular, but there are geopolitical barriers to overcome. Many African nations are economically dependent on the export of raw commodities. For example, in Botswana and the Democratic Republic of Congo over 75% of export revenue is from minerals (IEA, 2021b). The scramble by China and Western-based corporations for mineral contracts with African countries presents an opportunity for the continent to leverage its resources for economic development (Andreoni and Roberts, 2023). To improve their bargaining power under the evolving geopolitics of the low-carbon transition, there is scope for cooperation between African nations. For example, the UN Economic Commission for Africa has recommended building regional value chains for battery minerals and electric vehicle manufacturing that link central, eastern and southern Africa (Pedro, 2021). Regional integration is among the pillars of the Southern African Development Community's Industrialization Strategy and Roadmap to 2063 (SADC, 2015).

Local businesses and regional economies

In addition to benefitting host countries at a national scale, mining and associated economic activities can be organised to benefit local regional economies. This can come in the forms of direct support to local SMEs involved in the mining value chain or through corporate policies that establish minimum local content requirements for procurement of materials and equipment. In the context of early coal mine closures, local suppliers and sub-contractors of coal mining operations must be considered in corporate transition plans and government diversification policies.

Both local businesses and regional economies can be supported by co-ownership arrangements. For example, local Indigenous Peoples might acquire equity stakes in industrial projects on their lands. Such arrangements must be tailored to the needs of each Indigenous group, many of which may seek economic independence, self-determination and project control, which may or may not be achieved through equity participation (Kung et al., 2022). ETM mines can also draw on the example of shared prosperity models used by some renewable energy projects. For instance, Indigenous Massai custodians negotiated a 5% share of Kipeto Energy's windfarm in Kenya, with proceeds going to a community trust (Carling and Bloomer, 2023). For investors, understanding the need to reshape mineral supply chains to benefit host countries and local economies can help guide investments into projects with stronger social and development co-benefits.

3. Investor leverage points for a just transition

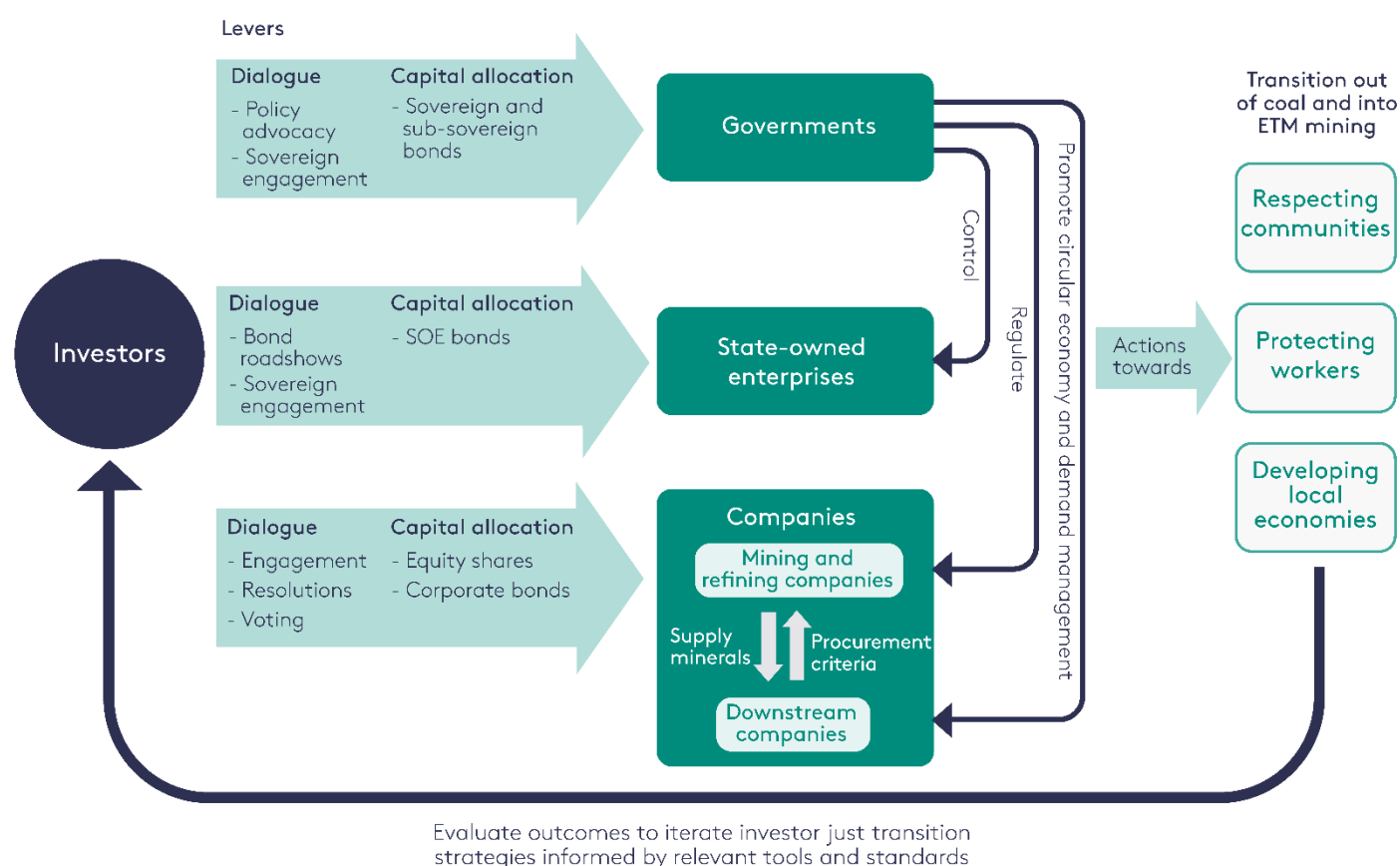
Investors are well-placed to support a more responsible future for the mining sector. Their opportunities to influence are presented in our framework for a just transition in mining.

To deliver progress towards the three just transition priorities for mining set out in Section 2, investors have two main levers at their disposal: dialogue and capital allocation. These can be harnessed to influence the actions of three principal types of decision-makers: national or sub-national governments; publicly-traded companies; and state-owned enterprises (SOEs).

Investor action towards a just transition is not limited to decisions around the assets they hold, such as whether to purchase bonds or invest in companies or projects that have characteristics aligned with a just transition (e.g. community co-ownership models). They can also engage in dialogue with stakeholders to encourage system-wide changes to drive the just transition, such as policy advocacy around the stringency and interoperability of responsible mining standards.

Figure 3.1 presents a framework of investors' leverage points with governments, companies and SOEs, also recognising the main interactions between these actors. Using this framework, investors can develop a just transition strategy specific to the mining sector, engage relevant actors and evaluate social outcomes against just transition priorities, which can then be used to iterate and refine their strategy.

Figure 3.1. A framework of investor leverage points to drive a just transition in mining



Source: Authors.

The investor leverage points applicable to each stakeholder are discussed in turn below, with examples of how the framework might be applied in particular contexts. An understanding of local realities is critical to a just transition, so investors should always be informed by the relevant local historical, political, social and environmental context. Investors will then be able to identify specific opportunities for action that are brought about by the low-carbon transition, and determine which leverage points to employ.

Governments

Given the system-wide scale of the mining sector's role in the low-carbon transition, government decision-making across various policy spheres is crucial. Investors can use the lever of sovereign engagement to encourage governments to better regulate the social and environmental impacts of the mining sector. They should also take a systemic view of the transition by advocating for broader policies related to mineral demand management. Investors can integrate just transition priorities into their capital allocation by considering the social realities of extractive activities in a country or region in their decisions to purchase sovereign or sub-sovereign bonds.

Investors can advocate that governments:

1. **Integrate just transition goals.** Governments' macroeconomic, environmental and mining-specific policies need to include specific just transition goals to influence decision-making, behaviour and outcomes. Investors can develop an understanding of emerging good practice by referring to the global stocktake of just transition policies in Chan et al. (2024).
2. **Control the standards of operation of SOEs.** Mining sector SOEs are accountable to governments and should be held to the highest standards when it comes to respecting human and labour rights, reducing environmental impacts and implementing genuine community consultations.
3. **Regulate corporate activity.** Governments should tighten and enforce strict standards and regulations on mining companies operating within their territories and companies headquartered domestically that operate abroad.
4. **Manage mineral demand.** Governments can manage total demand growth for raw minerals in the low-carbon transition through a range of strategic policies that affect downstream businesses using ETM commodities. This can involve regulatory and infrastructure incentives that promote circularity in material supply chains.
5. **Invest in social outcomes.** Governments should provide financial and/or educational support to citizens and communities affected by coal phaseouts and ETM mining.

These actions encompass both direct and indirect policies for the scaling up of ETM mining and the phasing out of coal. Regulations for extractive entities engaged in coal or ETM mining can explicitly centre just transition considerations, while the adverse social impacts of the transition can be indirectly mitigated through broader demand management and social welfare policies.

A just phaseout of coal mining

Just transition policies may focus on compensating affected coal workers or developing broader structural adjustment assistance which may include efforts such as local public investment in infrastructure and economic diversification (Green and Gambhir, 2020). Other indirect systemic policies that help to advance just transition aims without necessarily being labelled as such include robust labour laws that promote decent work, poverty reduction programmes and social safety nets.

Just transition policies should be built on a foundation of meaningful tripartite social dialogue between governments, employers and workers. For example, Spain's planned closure of all coal mines by 2025 is accompanied by a legal requirement for the government to publish a [Just Transition Strategy](#), and update them every five years. To manage the short-term impacts of the mine closures, the government agreed with trade unions and the main regional coal mining employers to guarantee immediate support measures for workers and for municipalities to make efforts to reactivate local economies.

Beyond domestic policies, high-income countries can advance a global just transition out of coal by contributing to international climate finance. The Just Energy Transition Partnerships (JETPs) establish funding arrangements between donor countries and coal-dependent emerging economies to justly manage the phasing down of coal. Financing arrangements like the JETPs can help enable coordinated transitions that benefit citizens, workers, communities and businesses in recipient countries. JETPs in South Africa, Indonesia, Vietnam and Senegal could be blueprints for other funding programmes, but their success hinges on donor governments delivering on their financial commitments and the ability of recipient countries to undertake subsidy reforms, develop robust transition and diversification plans, and deliver just transition solutions (Seiler et al., 2023).

A just expansion of ETM mining

Just transition policies include those that specifically aim to minimise the social impacts of mining through strengthened mining regulation. Regulating the mining sector in line with a just transition would involve mandating robust consultations as part of resource permitting processes, requiring integrated social and environmental assessments and ensuring that the local economic benefits of mining are lasting, for example through resource royalties.³ The legacies of mining companies in the locations they operate can be improved if their revenues contribute to local and national government incomes. For developing countries that host mining activities, building processing capacity domestically can help to capture value added and improve development opportunities. Mining should also be well-regulated internationally –Canada’s well-documented failure to regulate its mining companies operating abroad illustrates what can happen in the absence of adequate international regulation (see Box 3.1).

The Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) has a [Mining Policy Framework](#) to guide the development of mining regulations. It includes advice on the requirement of community consultations in permitting processes, the submission of integrated social, economic and environmental assessments, the implementation of revenue generation and local socioeconomic planning (IGF, 2013). Upon request from a country, IGF conducts independent assessments of the implementation of the Mining Policy Framework to highlight areas that could be improved. Tailored policy guidance can help countries with ETM endowments to best harness the economic opportunities of the low-carbon transition.



Photo: Opla/iStock.

³ Revenues collected from tax and royalties placed on mineral production can directly contribute to economic development. However, commodity price volatility can lead to procyclical public spending which may undermine lasting growth. As such, national governments should manage fiscal revenues from mining strategically to support economic diversification (IEA, 2021b).

Box 3.1. Canadian mining companies and the need for regulation

Investors can harness sovereign engagement with Canada to address the harms of Canadian mining companies operating abroad.

Context

Canada has a significant domestic extractive sector and extensive mining activities abroad: Canadian mining companies operate in more than 100 countries around the world. It is also a leading global centre for mining finance, with nearly half of the world's publicly-traded mining companies listed on the Toronto Stock Exchange and TSX Venture Exchange. Mining companies are attracted to establishing their headquarters in Canada because the country has few domestic laws that apply internationally.

Canada has put in place Foreign Investment Promotion and Protection Agreements which protect mining investors and allow them to sue local governments for regulations that affect their profits. Such agreements are intended to directly benefit investors and mining companies, but they undermine the long-term sustainability of the transition to a low-carbon economy and violate just transition principles. The Canadian Ombudsperson for Responsible Enterprise (CORE) was established to investigate allegations against Canadian companies operating abroad, but its independence, powers and mandate must be expanded (Human Rights Watch, 2024). For example, it should be granted the ability to compel document disclosure and testimony (Robertson, 2024).

Opportunities for a just transition

Canada has the potential to contribute to the improvement of global mining practices internationally. With the expected growth in mining for low-carbon technologies, this becomes only more crucial. The Canadian Government can learn from laws like the EU's [Corporate Sustainability Due Diligence Directive](#), which aims to ensure that European businesses address sustainability and human rights impacts across their international supply chains.

Canadian mining companies have been involved in serious court cases that could have been prevented by the enforcement of more proactive due diligence on human rights. For example, 11 Maya Q'eqchi' women are suing Hudbay Minerals, a Toronto-based mining company, accusing it of complicity in their brutal gang rape by security personnel at the Fenix nickel mine in Guatemala (Business & Human Rights Resource Centre, 2011). This lawsuit is the [first case](#) in which foreign claimants have been granted access to the Canadian courts to pursue a Canadian company for alleged human rights abuses abroad.

Investor leverage points

Bondholders of Canadian sovereign debt can align their policy advocacy with a just transition in mining by advocating for the development of stronger regulations for mining companies operating abroad. This would result in reduced pressure on mining communities affected by irresponsible practices and weak enforcement of environmental laws. Alongside, shareholder engagement with companies like Hudbay Minerals can be used to address and prevent further human rights abuses. Many of the mining companies headquartered in Canada tend to be small junior mining firms, but they should be identified in investment portfolios for engagement.



Mineral demand management

Countries that use and import ETMs should implement policies to minimise demand, to limit the devastating impacts of mining activities. The meteoric growth in demand for minerals necessary for the low-carbon transition will drive a dramatic increase in mining activities. Unfortunately, there is no such thing as ‘sustainable’ mining: any mine, however responsibly it is managed, will have unavoidable ecological impacts. However, mining and resource management can be conducted much more *responsibly*. This uncomfortable truth should be confronted as decision-makers consider the difficult trade-offs between climate collapse and local environmental devastation. Indigenous leaders have been arguing this point, highlighting the trend of accelerated mining activities in their territories (Edmo, 2023).

Governments of countries that expect to consume vast quantities of ETMs can lessen this demand growth with policies that drive circular economy principles like material efficiency, educational campaigns to tackle consumerism and waste, and [right-to-repair policies](#). In this vein, the European Environmental Bureau has recommended the EU sets a 65% material footprint reduction target (EEB, 2021). Improved public transport and increased uptake of active transport alongside a decline in private car ownership can minimise demand growth for lithium and cobalt needed for electric vehicle batteries (Dominish et al., 2021). Improving the material efficiency of batteries, the energy efficiency of vehicles, and a range of recycling solutions could enable a circular loop supply chain whereby demand for lithium, cobalt and nickel is met entirely by end-of-life batteries by the 2040s, limiting the need for continued mining (Walter et al., 2024).

Mineral demand management can help to stabilise commodity markets. There is a risk that demand for minerals will clash with supply bottlenecks, causing dramatic commodity price fluctuations (Miller et al., 2023). Mining companies, workers, communities and the wider transition would benefit from a softening of the projected growth in demand for ETMs to promote stabler prices. Mineral price fluctuations can worsen worker precarity in both extractive and non-extractive sectors, weaken the implementation of responsible mining practices and delay the permitting and financing of new mines, driving further supply constraints. Mineral demand management can alleviate the inevitable pressures of mining on local communities and environments while also easing the expected gap between supply and demand.

Companies

Mining companies must proactively align their activities with just transition principles by mitigating the harm caused by mining and promoting social opportunities. Investors can integrate just transition principles into their capital allocation by considering social impacts in their decisions to purchase equities or bonds of a given extractive company. Specifically, investors can advocate that companies do the following:

- **Develop a just transition plan.** Incorporating existing human rights and sustainability commitments, mining companies should make clear to investors how they will manage and mitigate the social harm resulting from coal phaseouts and new ETM mines. Respect for communities’ consent and adherence to labour and human rights are key. This can be achieved through a dedicated just transition plan or within a broader transition plan that includes a section on just transition planning.
- **Include workers and affected communities in decision-making.** At the foundation of just transition practice is the need to pay attention to the balance of power between communities, workers and companies. To be meaningful and legitimate, just transition plans and related decision-making should be co-created with affected workers and communities.
- **Manage demand and set responsible procurement criteria.** Companies operating downstream in mineral supply chains, such as battery manufacturers using cobalt and lithium, should harness innovation to reduce their demand for minerals. For the primary minerals they do purchase, they should establish strict expectations for the human rights and environmental impacts associated with upstream mining activities.

Mining companies' transition planning

For a mining company, depending on the current and future commodities in its portfolio, a robust transition plan should address the social impacts of both the phaseout of coal and the expansion of ETM mining compelled by the low-carbon transition. The transition plan should address impacts on the stakeholders most important to a just transition in the mining sector: workers, communities, small or medium-sized local suppliers and host countries. The metrics used in transition plans to disclose action on the just transition can be qualitative or quantitative to reflect the nuanced nature of aspects like consultations and engagement with stakeholders (see Box 3.2). Investors can refer to the overview of key tools and standards presented in Section 4 when evaluating and researching mining companies' activities.

In their transition plans, mining companies with coal assets should set out specific commitments on how they will minimise harm to workers and communities and maximise social opportunities. Mining companies could in principle align with the 1.5°C global temperature target by either retaining and decommissioning coal mines through a managed phaseout according to a specified timeline, or gradually selling off their coal mine assets. Managed phaseouts involve the early retirement of high-carbon assets and can enable an orderly transition that avoids the financial marginalisation of high-carbon companies that have credible transition plans (GFANZ, 2023). Regardless of the chosen transition strategy, mining companies that claim to align with net zero should design phaseout plans for thermal coal mining in line with established deadlines for phasing out coal-based power generation: electricity sector emissions should reach net zero by 2035 in advanced economies, 2040 in China, and just before 2045 in the rest of the world (IEA, 2023b). These dates imply a complete phaseout of all unabated coal use in power generation and thereby mark the dates that nearly all thermal coal mining should be phased out.

Depending on their coal phaseout strategy, mining companies can integrate just transition considerations in different ways. Coal phaseout plans based on decommissioning mines should include just transition commitments such as retraining and relocation programmes for workers as well as land remediation. Coal phaseout plans that rely on selling off mines should establish requirements for buyers to set eventual closure dates. Just transition principles can also be integrated into sale agreements. In all cases, a credible strategy is underpinned by transparent disclosure: relevant just transition metrics will depend on companies' commodity portfolios and country contexts.

Box 3.2. Examples of disclosures for a just transition

Process metrics

- How remuneration takes account of sustainability measures including the just transition
- Percentage of workers participating in dialogue regarding the just transition
- Number of workers currently employed in coal mining
- Number of actual or expected jobs lost due to transition plan actions like mine closures
- Number of allegations of abuse raised by communities or workers

Outcome evidence

- Percentage of at-risk workers offered retraining or redeployment
- Number of sustainable jobs created as a result of transition plan actions
- Feedback from impacted communities and workers or trade unions
- Evidence of social dialogue and community input into transition plans
- Share of allegation submissions that were given access to effective remedy or compensation

Source: Adapted from Curran et al. (2022).

Box 3.3. Coal exclusion policies in South Africa

Investors' blacklisting of coal may be counterproductive as this can contribute to asset divestments without associated decommissioning plans – as seen in South Africa.

Context

During the oil crises of the 1970s, foreign oil companies established new coal mines in South Africa, prioritising export markets. After the democratic election of 1994, ownership of the coal mines was transferred to disadvantaged Black South Africans, resulting in higher levels of Black ownership than in other sectors (Minerals Council South Africa, 2023). In this way, coal has historically provided a route to socially just economic development in South Africa. However, global decarbonisation means that the coal sector is unlikely to support long-term development. South Africa has US\$120 billion worth of coal-related infrastructure including power plants, ports and railways that is at risk of becoming stranded and retired early if the world follows a path that limits warming to below 2°C (Huxham et al., 2019).

South Africa's coal mining industry employs over 90,000 people, primarily in the Mpumalanga region (Minerals Council South Africa, 2023). Unmanaged early mine closures by companies usually means that transition risks are passed on to workers and communities, leaving the government to support affected stakeholders (Huxham et al., 2019). In response, the South African Government has established the Presidential Climate Commission, which has recommended specific policies on skills development, industrial economic diversification and social protection, requiring significant capital mobilisation (Presidential Climate Commission, 2022). South Africa's Just Energy Transition Partnership (JETP), which will channel \$8.5 billion to the country, can contribute to transition finance by helping emitting activities to continue to provide essential services, such as electricity generation, while they are phased down (Tyler et al., 2022).

Opportunities for a just transition

Mining companies have two main routes to transition out of coal: (i) set ambitious coal mine closure dates ahead of the mine's expected economic lifetime; or (ii) sell coal assets to other companies. One emblematic example of this second coal exit strategy is Anglo American's spinout of its South African coal mines to Thungela. This demerger shifted its environmental liabilities and transition risk to Thungela, a pure play coal producer. While Thungela has set a moderate short-term emissions reduction target and aims to develop a pathway to net zero by 2050, it is unclear how it can develop a successful long-term strategy without having alternative commodities in its portfolio. This presents risks for the workers and communities that rely on continued coal mining. Pure play coal miners may be **less able** to finance responsible mine closures and land rehabilitation if revenues shrink due to decreased coal demand.

Investor leverage points

While there are various factors at play, the coal exclusion policies of many investors may have contributed to Anglo American's decision to offload its coal mines. These exclusion policies could have benefited from more nuance, for example by more specifically excluding *growth* capital for coal projects rather than any coal-related assets. In South Africa's context, where coal is the backbone of the economy, blunt coal exclusions are unlikely to drive just transition outcomes.

Alternative options for investors to contribute to a just transition have been suggested. These include targeted instruments such as 'just transition transactions', which would invest in a coal project subject to its verifiable adherence to an ambitious phasedown plan and the establishment of a dedicated Just Transition Fund to assist coal-dependent workers and communities (Renaud et al., 2021). Investors should seek ways to participate in such nuanced alternatives to coal exclusion policies, as the latter fails to incentivise mining companies to support workers and communities.

However, divestment still remains a potentially impactful strategy. Recent evidence shows that coal divestment can contribute to emission reductions as coal power plants owned by firms exposed to coal exit policies are more likely to be retired (Green and Vallee, 2024). Regardless of the chosen strategy, investors should develop careful local assessments of the potential social consequences.

Further considerations for corporate transition plans

Companies harnessing the low-carbon opportunity of ETM mining must uphold the rigorous protection of labour and human rights. A just transition plan should build on existing corporate standards to ensure labour rights, human rights, community rights and natural ecosystems are respected and protected in any mining project. Crucial to this are good governance, transparency and robust access to grievance mechanisms and remedy. There are also a range of standards and guidance tools developed specifically for the mining sector, including the International Council on Mining and Metals (ICMM) Principles, Initiative for Responsible Mining Assurance and the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (see Section 4). One-third of global metals and mining companies are members of the ICMM, suggesting a level of willingness across the sector to engage in more responsible practices.

Investors need to go beyond core best practice for a just transition to make sure that mining companies respond to the unique social challenges brought by the low-carbon transition. This means developing just transition strategies that remain robust even if extraction activities are accelerated and commodity prices are volatile. The scale of demand growth for transition minerals is expected to clash with supply constraints, which may lead governments and companies to accelerate consultation and permitting processes and backslide on responsible mining commitments. Companies' should account for commodity price risk in their just transition planning and reporting, as they do in their financial reporting.

Higher price uncertainty and volatility is expected for 'concentrated' minerals whose demand is tied to specific technologies since future demand depends on the commercial success of only one product (IEA, 2021b). For example, lithium, graphite and cobalt are all needed in specific types of batteries while indium is used in only one type of photovoltaic panel. Producers of these minerals face higher demand risk. In contrast, there is much less uncertainty in the demand projections of 'cross-cutting' minerals such as copper and chromium, which are needed across many technologies. These nuances affect the emphasis of a robust transition plan that is tailored to individual companies' commodity portfolios.

Downstream companies' innovation and procurement

Companies operating downstream in mineral supply chains in low-carbon sectors include manufacturers of:

- **Electric vehicles**, which require copper, lithium, nickel, manganese, cobalt and graphite
- **Wind turbines**, which require copper, nickel, manganese, chromium, zinc and rare earth minerals
- **Solar panels**, which require copper and silicon
- **Electricity grid power lines**, which require copper and aluminium.

The transition plans of downstream manufacturers, especially those whose core business model is already aligned with net zero, should focus first on circular economy innovations, and second on robust sustainable procurement criteria. Circular economy innovations are those that improve material efficiency, recycling and repairability in manufacturing, reducing demand for minerals. Downstream manufacturers should also be pressured to end wasteful consumerist business practices such as planned obsolescence, which purposely reduces the lifetime of products. They should also implement sustainable procurement criteria for minerals they do purchase to ensure lower social and environmental impacts. For this they can draw on responsible mining standards (see Section 4).

Given the data gaps and transparency challenges in mining supply chains, procurement criteria can be tightened over time. Mineral supply chains are notably more opaque than other commodities, partly because there is no dedicated governance of the market, unlike oil for example, which has benchmark prices (IEA, 2021b). Mining companies and downstream processing and manufacturing companies can develop and participate in tracing initiatives that allow businesses and consumers to better understand sourcing and associated social risks. A complicating factor is that most mineral processing takes place in China, which is not a transparent market: this creates significant barriers for developing more transparent mineral supply chains (Calderon et al., 2021).

Adopting responsible mining standards can help prevent negative impacts from mining activities, but there is also a need to track trends and address specific cases of unjust practices. Instead of focusing exclusively on corporate commitments, research on extractive industries should capture actual cases of

irresponsible practices, their causes, and the power relationships that surround them (Kemp and Owen, 2022). Responsible mining standards set out aspirational norms, but these are frequently violated, making regulatory enforcement and independent audits key. An evidence-based approach that emphasises the importance of data on impacts and harm can be adopted by investors to complement their consideration of just transition planning. Such an approach can use tools like the Transition Minerals Tracker which compiles allegations of abuse brought forward by vulnerable groups. It is important to note that cases shown in the Tracker, much like high-profile events such as the failure of Vale's tailings dam in Brumadinho and Rio Tinto's destruction of Juukan Gorge, are only the tip of the iceberg.

Investors should consider the interactions between companies and other actors in their investment decisions and engagement. Corporate actors involved in coal mining, or those that mine, process or purchase ETMs, operate within regulatory contexts. If shareholder engagement on the just transition reaches its limit at the corporate level, investors may escalate their engagement to sub-sovereign or sovereign dialogue in collaboration with their sovereign analyst colleagues. This integration of corporate and sovereign engagement can enhance investors' understanding of regional nuances. Beyond governments, investors might also build communication channels with unions or communities to better hold companies to account on human rights and just transition commitments.

State-owned enterprises

Alongside governments and publicly-traded companies, the mining sector is dominated by a third type of actor that investors can influence to improve just transition outcomes: state-owned enterprises (SOEs). This type of entity sits at the interface of government and corporate action and accounts for a growing share of the global corporate landscape (OECD, 2020). In many emerging markets, SOEs represent a large share of gross domestic product (GDP) and many operate in the extractive sector.

Nationalising major extractive industries is a potential route for local economic development that can redirect the benefits of mining to host countries. This potential opportunity can also bring challenges around corruption if scope for external scrutiny is limited. When industries are nationalised, private investors have less influence and their more effective points of leverage may shift to policy advocacy or to integrating just transition conditions into decisions to purchase SOE bonds. Investors can communicate expectations on responsible mining to SOEs at bond roadshows.

Many of the expectations that investors have of publicly-traded companies can be applied to SOEs. As such, SOEs can be encouraged to develop just and robust transition plans, drawing on many of the recommendations set out above. Indeed, a handful of SOEs including Pemex of Mexico and Eskom of South Africa are assessed by the Climate Action 100+ Net Zero Benchmark (see Section 4).



Chuquibambilla open pit copper mine in Calama, Chile. Photo: Diego Delso/Wikimedia Commons.

Box 3.4. Nationalising lithium in Chile

Increased state ownership of copper and lithium mining in Chile alters the leverage points available to investors.

Context

Mining is one of the key sectors of Chile's economy, accounting for nearly 14% of the country's GDP (ITA, 2023). Chile has significant reserves of lithium, copper and cobalt and is the world's largest producer of copper, accounting for 29% of global production. Chile thus has an opportunity to become a key supplier of ETMs. Increasing demand for minerals used in electric vehicle manufacturing has already led Chile to significantly expedite its extraction of lithium and copper in recent years. The Chilean President, Gabriel Boric, has declared that lithium and copper are "strategic resources" essential to Chile's economy and has given the state a greater role in managing and regulating their extraction, processing and export.

Rising lithium demand raises concerns about water use in Chile's Atacama Desert. Lithium extraction in the country's northern desert uses significant groundwater resources, posing a risk of water supply shortages for local Indigenous communities and affecting farming and pastoral practices (Garces and Alvarez, 2020). Additionally, copper mining and processing emits toxic air pollutants, exposing the local population to carcinogens (Zanetta-Colombo et al., 2022). Mining companies have to date failed to obtain free, prior and informed consent to operate on the land of Indigenous communities, the need for which was established by the UN Declaration on the Rights of Indigenous Peoples, which Chile adopted in 2007.

Opportunities for a just transition

In 2023, Chile announced its plans to nationalise the lithium industry, aiming to merge the two industry giants SQM and Albemarle into a state-owned enterprise (Villegas et al., 2023). The Government also created the Office of Socio-Ecological Just Transition within the Ministry of the Environment with the objective of promoting better engagement with affected communities. Greater government control of lithium mining provides an opportunity to improve the sector's legacy – provided that Indigenous land rights are truly recognised and environmental challenges, including water stress, are addressed.

Investor leverage points

One potential implication of Chile's nationalisation of lithium mining for investors is that engagement with companies in the sector may become limited to bondholders of Chile's sovereign debt or investors in the SOE that will ultimately be established to manage the mineral resources. This may narrow the pool of investors that are able to promote responsible mining practices and sustainable development in Chile's lithium sector.

Further leverage points

In addition to engaging with governments, corporate entities and SOEs, investors can begin to build direct lines of communication with communities and unions. These groups have signalled interest in engaging with investors but generally lack opportunities for dialogue, unless disputes become especially high-profile. There is promise for this kind of dialogue in the context of investor initiatives like the [Global Investor Commission on Mining 2030](#), a collaboration seeking consensus on the role of finance in responsible mining. Visiting mine sites and the communities impacted by mining can help investors to gather a better understanding of the local context, and help to avoid well-intended but ultimately unhelpful solutions being imposed. In this way, dialogue with local communities and unions can help investors to evolve their just transition strategies.

4. Tools and standards for responsible mining

Responsible mining standards have aims that are complementary to the just transition. They set out what a responsible mining sector looks like and equip stakeholders with tools for capacity-building, engagement and monitoring – providing valuable resources for investors. But the landscape is complex and rapidly evolving, as this section explains.

The application of high-integrity standards for socially and environmentally responsible mining can deliver outcomes that are in line with a just transition. Existing standards shed light on how mining companies' social impacts and relationships with employees and local communities should be managed to realise a just transition. By setting out detailed guidance on best practice, providing independent assurance and publishing relevant data, these resources can support investment decisions into more responsible companies or projects and enable their performance to be monitored.

Broadly accepted mining standards are useful to all stakeholders, including investors, companies, governments and affected communities and workers. Companies need standards to help them improve mining operations, establish robust transition plans and signal compliance to investors. Policymakers may use existing standards to develop regulations for the mining sector. Standards can also empower other stakeholders, including workers, communities and downstream customers, to hold mining companies to account.

The landscape of standards in the mining sector is crowded, politicised and rapidly evolving. There is a wealth of existing standards for responsible mining, and these vary in their aims, scope and governance structures. Some aim to facilitate corporate due diligence while others provide criteria that are independently audited by third parties (IEA, 2023a).

Characteristics of credible standards include: a multi-stakeholder governance structure; auditing that involves independent third-party verification and transparent publication of results; and a whistleblowing mechanism for non-compliance (Erdmann and Franken, 2022). Given the benefits of harmonisation, key standards bodies including ICMM, Copper Mark, World Gold Council and the Mining Association of Canada have spearheaded the [Consolidated Mining Standard Initiative](#). Some standards have started to engage directly with the language of just transition. For example, the [ICMM Human Rights Due Diligence Guidance](#) recognises climate change and just transition, although the focus is on communities' vulnerability to physical climate risk rather than the more expansive justice issues surrounding the low-carbon transition considered in this report.

Relying on corporate disclosures and voluntary standards alone can result in a biased overall picture of mining companies' social and environmental performance. Tools that bring to light allegations by communities and workers against companies, such as the Transition Minerals Tracker and the OECD complaints database, offer crucial complementary insights to this information.

Table 4.1 below provides a non-exhaustive list of important standards and tools for the mining sector that can inform investor engagement with mining companies on topics related to the just transition. This is followed by a further exploration of three examples and how they can be used by investors: IRMA; the Transition Minerals Tracker; and the Climate Action 100+ Net Zero Standard for Diversified Mining.

Table 4.1. Selected standards and tools for evaluating mining companies' alignment with the just transition

General mining standards	Extractive Industries Transparency Initiative (EITI) Standard
	Global Reporting Initiative (GRI) Mining Sector Standard
	Initiative for Responsible Mining Assurance (IRMA)
	International Council on Mining and Metals (ICMM) Principles
	Responsible Minerals Initiative (RMI)
	Towards Sustainable Mining Standard (TSM)
Impact-specific mining standards	Global Industry Standard on Tailings Management
	OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas
Commodity-specific mining and manufacturing standards	Aluminium Stewardship Initiative (ASI) Standard
	Copper Mark
	Fairmined Gold
	Fairtrade Gold
	Responsible Steel
Other tools, frameworks and initiatives	Climate Action 100+ Net Zero Standard for Diversified Mining
	Global Investor Commission on Mining 2030
	Mining Policy Framework
	OECD Watch Complaints Database
	Transition Minerals Tracker
	Transition Plan Taskforce: Metals & Mining Sector Guidance
	United Nations Framework Classification for Resources (UNFC)

Note: A full description of each of these tools and standards can be found in the Appendix.

IRMA

The Initiative for Responsible Mining Assurance (IRMA) is a multi-stakeholder coalition that developed a comprehensive [Standard for Responsible Mining](#) in 2018, setting out best practice at the level of the mine site. IRMA is currently revising this standard and will soon include standards for chain of custody assurance, from mining exploration to development and processing. IRMA's assurance system includes offsite audit interviews to acquire a holistic view of mine performance. Audit reports are published online and freely available for review.

IRMA's governance is uniquely aligned with the just transition principle of centring the voices of affected workers and communities. Unlike the many standards that are industry-led, IRMA has a governance structure in which six stakeholder types have equal voting rights (organised labour; affected communities; non-governmental organisations; investors; companies that purchase minerals; and mining companies). Most other standards only involve stakeholders outside of the mining sector through consultation processes. A systematic overview of global mining standards found IRMA to have among the highest quality of governance structure, auditing and transparency (Erdmann and Franken, 2022).

Because the standard is voluntary, it represents an intervention point for investors. Mining companies can be encouraged to conduct independent IRMA audits across their mine sites. Investors can also engage with electric vehicle manufacturers and technology companies that use minerals to put similar pressure on upstream mining and processing companies.

The IRMA standard includes four categories of requirements:

Business integrity • Compliance with local and international laws • Community engagement • Human rights due diligence • Provide complaints and grievance mechanisms • Access to remedy • Transparency on revenue	Positive legacies • Conduct environmental and social impact assessments • Respect the right to free, prior and informed consent of Indigenous Peoples • Obtain community support • Deliver long-term benefits • Resettlement and compensation • Ensure emergency preparedness and response • Plan and finance reclamation and closure
Social responsibility • Respect international workers' rights • Occupational and community health and safety • Prevent contribution to harms in conflict-affected areas • Ensure security arrangements do not infringe on human rights • Develop positive relationships with artisanal and small-scale mining (ASM) entities • Protect local cultural heritage	Environmental responsibility • Manage waste to eliminate off-site contamination • Manage water to ensure current and future water supply to communities • Mitigate air and noise pollution • Reduce greenhouse gas emissions • Respect biodiversity and protected areas • Responsibly manage cyanide and mercury

Transition Minerals Tracker

The Business & Human Rights Resource Centre developed the [Transition Minerals Tracker](#) to document the hundreds of publicly reported allegations of human rights abuses made against the world's largest mining companies since 2010. The data on allegations can be downloaded and users can explore relevant allegations against specific companies and their subsidiaries.

Allegations of harm captured by the Tracker relate to topics including community health, right to peaceful protest, insufficient consultation, intimidation, water pollution, abuses by private security, occupational health and safety, work-related deaths, corruption and tax avoidance. Such allegations demonstrate the sector's failures to comply with key elements of responsible mining standards. The Transition Minerals Tracker thus fills an important gap by providing information on irresponsible and unjust practices that have not been voluntarily disclosed or audited. It also flags specific cases of abuse and accompanying evidence that investors can use in discussions with companies.

Analysis of the Tracker's dataset found that the most common type of allegation related to abuses against local communities, with many allegations overlapping with other categories of impacts such as water pollution. Over half of allegations were linked to just 10 companies, with the highest number associated with China Minmetals and Glencore (Avan et al., 2024). This demonstrates the potential for targeted investor engagement with a small number of companies to drive accountability and reduce harm. Companies can then be assessed on how they respond to allegations, including whether they have provided access to remedy and compensation for affected people and whether the number of allegations made are reduced over time.



Photo: agnormark/iStock.

Climate Action 100+ Net Zero Standard for Diversified Mining

Climate Action 100+ (CA100+) is an investor-led initiative focused on engagement with the world's largest corporate greenhouse gas emitters. Its [net zero disclosure framework](#) is designed to inform engagement with these companies through dedicated assessments of companies across high-emitting sectors, including mining. Assessments involve a range of indicators covering topics such as target-setting, capital expenditure and just transition. Unlike voluntary standards, the CA100+ framework assesses companies based on public disclosure regardless of whether the company chooses to be assessed.

In the most recent results from 2023, three pure-play coal mining companies (China Shenhua Energy; Coal India; and PT Bumi Resources) and 10 diversified mining companies (Anglo American; BHP; Glencore; Grupo México; ANTAM; Rio Tinto; South32; Teck Resources; Vale; and Vedanta) failed on every just transition metric, with one exception: South32 scored positively on one metric (9.1.a) for having committed to decarbonise in line with just transition principles. This demonstrates the clear need to ramp up shareholder engagement to highlight the importance of dedicated just transition commitments and planning.

Deepening the sector-agnostic framework results described above, the [CA100+ Net Zero Standard for Diversified Mining](#) was developed to establish sector-specific metrics for assessing the climate alignment of diversified mining companies operating in both coal and ETM extraction. Both the sector-agnostic benchmark and the mining-specific standard include a set of just transition metrics (see Figure 4.1). The CA100+ mining standard's just transition indicators interact with both IRMA and the Transition Minerals Tracker. The standard [recommends](#) that IRMA is used by mining companies as the principal independent responsible mining assessment tool because of its multi-stakeholder governance system. It allows companies to nominate alternative mine assessments as long as they are undertaken by an independent third party. The CA100+ mining standard also pushes improvements in transparency by encouraging companies to disclose the actions taken to address human rights allegations, such as those compiled in the Transition Minerals Tracker.

Table 4.2. Climate Action 100+ just transition indicators

Metrics from the sector-agnostic net zero disclosure framework	Metrics from the mining specific standard
Indicator 9.1. The company has committed to the principles of a just transition.	
9.1.a: The company has committed to decarbonise in line with defined just transition principles, recognising the social impacts of its decarbonisation efforts.	9.i.a: As relevant, the company has committed to manage both its phaseout of coal mining (the transition out) and/or its efforts to increase transition material mining (the transition in) in line with defined just transition principles.
9.1.b: The company has committed to retain, retrain, redeploy and/or compensate workers affected by its decarbonisation efforts.	9.i.b: The company has disclosed an annual budget commitment to implement any just transition plans that it has published.
9.1.c: The company has committed that new projects associated with its decarbonisation efforts are developed in consultation with affected communities and seek their consent.	
Indicator 9.2. The company has disclosed how it is planning for and monitoring progress towards a just transition.	
9.2.a: The company has developed a just transition plan for how it aims to support workers and communities negatively affected by its decarbonisation efforts.	9.ii.a: The company has committed to communicate relevant decisions about the operation of mines or facilities that will have a material impact on workers, contractors, communities, and local authorities as soon as possible.
9.2.b: The company's just transition plan was developed in consultation with workers, communities and other key stakeholders affected by its decarbonisation efforts.	9.ii.b: The company has published mine closure and environmental rehabilitation commitments and provisioning as part of its just transition plan for new ETM mines and coal mines facing early closure dates.
9.2.c: The company discloses the quantified KPIs it uses to track its progress towards the objectives of its just transition plan.	9.iii.c: The company has committed to respect the internationally recognised human rights of Indigenous peoples, including to obtain free, prior, and informed consent before new mines or other projects are developed.

Source: <https://www.climateaction100.org/wp-content/uploads/2023/03/Climate-Action-100-Net-Zero-Company-Benchmark-Framework-2.0..pdf>; <https://www.climateaction100.org/wp-content/uploads/2023/10/Climate-Action-100-Net-Zero-Standard-Diversified-Mining.pdf>

Tools and standards to support investor engagement

Institutional investors generally invest in companies rather than individual mine projects, but just transitions happen in the context of a specific place. Therefore, information at the mine site level needs to underpin investor engagement strategies and investment decisions. Company-wide policies on the just transition are brought to light by tools like Climate Action 100+, while specific mine site assessments are provided by tools like IRMA. Meanwhile, individual allegations of abuse can be followed using the Transition Minerals Tracker.

5. Conclusions and recommendations

To put into practice their own net zero and responsible stewardship commitments, investors need to take more sector-specific approaches in their just transition advocacy. Through dialogue and capital allocation, investors can encourage increased respect for communities affected by mining, protection of mine workers and development of local economies – as our recommendations set out in detail in this section.

Efforts to align the mining sector with a just transition should build on the existing foundation of guidance on human rights and environmental, social and governance (ESG) practices. Investors can begin by drawing on responsible mining standards and tools as they navigate the specific challenges and fast-paced context of the low-carbon transition.

Without purposeful action to shape just transitions in different contexts, the future extraction of minerals needed for net zero will be as unjust as the extractive industry's past and continued legacy. Investors can play a role in changing this reality and we outline the steps they can take in the eight recommendations below.

Recommendations for investors to support a just transition in mining

- 1. Investor strategy:** Financing is needed to supply the global low-carbon transition with ETMs; it is important that this is done as responsibly as possible. Investors should create strategies that contribute to closing the financing gap while setting clear responsibility criteria, drawing on sector-specific standards and tools. Both individual investors and joint responsible investment initiatives should make commitments on how they will support a just transition, both out of coal mining and into mining for ETMs. Commitments should include clear recognition of their roles and responsibilities, an understanding of intended and unintended consequences, and transparency about their actions and how progress will be measured.
- 2. Corporate dialogue and allocation:** Investors should intensify their just transition engagement efforts with private companies in the mining sector whose equity and debt they own. They could focus on improving how companies incorporate social impacts into their transition plans (see Box 5.1 below) and test their performance at specific mine sites. Investors should conduct engagement in a way that is informed by data and research on the harm and socio-environmental risks that are particularly relevant in each case. For example, investors can draw on analysis by Lèbre et al. (2020) which quantifies the magnitude of different ESG risks such as water stress and social vulnerability by geographical location and by ETM commodity. Investors can conduct their own analysis on data related to the harm caused by mining to tailor engagement to particular companies, sites and countries. They could also signal their appetite for financial instruments like sustainable or other thematic bonds that are designed to generate outcomes that support social justice in mining contexts.
- 3. Government dialogue and allocation:** Investors should set out their expectations of governments on the just transition and engage in dialogue with them to achieve implementation. This can be guided by investor frameworks such as the Assessing Sovereign Climate-Related Opportunities and Risks (ASCOR) tool, which includes country-level assessments of just transition policies. Investors should signal their appetite for the issuance of sovereign bonds where proceeds or performance are at least partly focused on the just transition in extractive sectors.
- 4. State-owned enterprises – dialogue and allocation:** Investors should engage with SOEs to communicate their expectations for action on the just transition and seek adoption through strategies that are joined up with sovereign engagement. The results of this should be incorporated into long-term allocation of investments.

5. **Direct dialogue with workers, Indigenous Peoples and local communities:** Investors should advocate in their engagement activities with companies, governments and others the fundamental importance of trade unions, Indigenous Peoples and local communities being included in planning and decision-making for a just transition in mining. This needs to recognise communities' historic exclusion from mining decision-making and their often limited resources to participate. To complement this, individual investors and joint responsible investment initiatives can initiate dialogue with trade unions, Indigenous Peoples and representatives of local communities to jointly hold companies accountable to their sustainability and just transition commitments. Investors should explore how they can invest in transactions that develop local economies, such as via impact investing structures.
6. **Opportunities in minerals value chains:** Investors should identify opportunities to encourage other actors to promote a just transition in mining, for example with purchasers of ETMs in the energy, industry and transport sectors. Points of influence could also be found in financing networks, such as in bank lending and transactions.
7. **International frameworks:** Investors should support the implementation of existing high-integrity responsible mining standards and explore how these may need to be extended to respond to the scale and speed of the low-carbon transition. Where relevant, investors should contribute to the development of just transition frameworks for the minerals system at the international level to ensure consistency and effectiveness. For example, the UN Secretary-General's Panel on Critical Energy Transition Minerals was established to build trust between governments, local communities and industry by agreeing principles to guide the sector's transformation towards a more just future. Investors should follow such international fora and integrate resultant priorities into their own investment strategies.
8. **Opportunities and partnerships to contribute to sustainable development:** No single actor can alone deliver the change that is required to make the low-carbon transition just: system transformations are needed. Although in their early stages, the Just Energy Transition Partnerships have helped to stimulate domestic and international, public and private action. Investors could explore whether such vehicles for ETMs might help to deliver targeted action for a just transition. Overarching investor strategies must account for the development tensions in extractive sectors. This means supporting pro-development policies such as royalties and export tariffs, even if they may curtail corporate profits in the short term. Investors can also seek to invest in industrial projects that localise mineral processing in emerging economies.

Box 5.1. Example questions for investors' engagement with companies

The just transition priorities discussed in Section 2 and the tools and standards presented in Section 4 can be used by investors to set questions for their engagement with companies, such as:

- Has the company developed a just transition plan? On which specific assets and regions will the plan be applied? Is the plan accompanied by an annual budget commitment for implementing relevant actions?
- Has the company committed to undertake responsible mining audits for its mines? Which standard will it use? By when will the company publicly disclose audits for all of its mines?
- Has the company responded to any pending human rights allegations? Does the company have relevant grievance mechanisms that were used in private before any such case became public?
- What specific policies and mechanisms has the company put in place to ensure that local communities affected by mining are respected? If relevant, how has the company addressed and secured free, prior and informed consent for mine projects from local Indigenous Peoples?
- What specific policies and mechanisms has the company put in place to ensure that mine workers are protected? What share of employees are unionised?
- What specific policies and mechanisms has the company put in place to ensure that its activities contribute to local economic development? Does the company publicly support and advocate for contract transparency?

Appendix: Further details on mining standards and tools

Selected mining standards, tools and initiatives	Description
Initiative for Responsible Mining Assurance (IRMA)	A multi-stakeholder coalition that provides a comprehensive standard for responsible mining for voluntary use by mining companies, allowing them to receive independent third-party assessments for individual mine sites.
International Council on Mining and Metals (ICMM) Mining Principles	An industry body that established principles for ESG best practice in mining to support progress towards the UN Sustainable Development Goals. It incorporates site-level validation of performance expectations. One-third of global metals and mining industry companies are members of ICMM.
Towards Sustainable Mining Standard (TSM)	Supports mining companies in managing the environmental and social risks of their operational activities. The TSM's performance protocols focus on communities and people, environmental stewardship and energy efficiency at the facility level. TSM has been adopted by national mining industry associations around the world, including in Australia, Botswana, Canada and Colombia.
Global Reporting Initiative (GRI) Mining Sector Standard	The GRI standards enable companies to report economic, environmental and social impacts in a comparable and credible way, thereby increasing transparency. The Mining Sector Standard offers information for companies about material issues within mining operations. It includes topics such as human rights, anti-corruption and community engagement. A set of metrics is recommended to be used by companies in their impact reporting.
Responsible Minerals Initiative (RMI)	The RMI offers a number of tools for responsible mining. It defines standards for smelters and refiners that participate in the Responsible Minerals Assurance Process. Its Risk Readiness Assessment Criteria serve as a standard for ESG due diligence in mineral supply chains. The social aspects include respect for human and labour rights of workers, communities and other affected stakeholders.
Extractive Industries Transparency Initiative (EITI) Standard	A global standard for fostering transparent and accountable management of oil, gas and mineral resources. The standard requires the disclosure of information throughout the value chain of extractive activities, including how revenues from such activities benefit citizens. EITI operates through a collaboration of government corporations and civil society in over 50 implementing countries.
Impact-specific standards: Global Industry Standard on Tailings Management and OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas	These industry standards focus on particular sources of local environmental and social impacts of the mining sector, such as the management of waste tailings or interactions between extraction and conflict.

Commodity-specific standards: Copper Mark; Fairtrade Gold; Fairmined Gold; Aluminium Stewardship Initiative (ASI) Standard; and Responsible Steel	These standards set out criteria for best practice that are specifically designed for particular minerals, either limited to the mining or processing stage or more broadly applicable to the full value chain.
Transition Minerals Tracker	Documents hundreds of publicly reported allegations of human rights abuses made against the world's largest companies that mine six key ETMs. Allegations relate to topics including community health, right to peaceful protest, insufficient consultation, intimidation and work-related deaths. It can be used to explore potential complaints raised against mining companies.
OECD Watch complaints database	Contains information on cases raised by civil society organisation that violate the OECD Guidelines for Multinational Enterprises on Responsible Business Conduct. It can be filtered to search for mining-related complaints.
Global Investor Commission on Mining 2030	A collaborative investor-led initiative aiming to define a socially and environmentally responsible mining sector and the role of finance in this context. Its focus areas include climate change, artisanal mining, biodiversity and Indigenous rights.
Climate Action 100+ Net Zero Standard for Diversified Mining	Sets out metrics to assess the alignment of diversified mining companies with international climate goals, deepening the sector-agnostic Climate Action 100+ Net Zero Disclosure Framework, which is designed to inform investor engagement with the world's largest emitters. The Standard includes a set of just transition metrics.
United Nations Framework Classification for Resources (UNFC)	A universal, project-based tool that facilitates the effective management and utilisation of natural resources, including ETMs, while providing a holistic framework to address social, economic, and environmental challenges . In the context of sustainable resource management, UNFC can enable informed decision-making, sustainable practices and foster resource efficiency, which are key components of sustainable development.
Transition Plan Taskforce (TPT) Metals and Mining Sector Guidance	The TPT was launched by the UK Treasury in March 2022 with a mandate to develop good practice for transition plan disclosures for finance and the real economy. The Metals & Mining Sector Guidance adds further depth and detail for those that prepare transition plans operating in the metals and mining sector.
The Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) Mining Policy Framework	Designed to guide the development of mining regulations. It includes advice on the requirement of community consultations in permitting processes, the submission of integrated social, economic and environmental assessments, the implementation of revenue generation, and local socioeconomic planning. Upon request from a country, IGF conducts independent assessments of the implementation of the Mining Policy Framework in order to highlight areas for improvement.

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