

OECD Briefing Note: Responsible is reliable

How responsible sourcing can address disruption factors and geopolitical risks in the supply of transition minerals

Key messages

- Minerals are critical to the world's energy and digital transitions and demand is increasing. Mineral demand for clean energy technologies is set to grow 3.5 times by 2050 to meet the globe's net zero goals (IEA 2023a). **Despite increased technological development and recycling, meeting this demand requires substantial increases in investment in the extraction and production of key minerals.**
- The extraction, production and processing of many of the minerals critical to the energy and digital transitions are geographically concentrated in certain countries. Considering the magnitude of the mineral resources that will need to be extracted in the future, investments will increasingly need to flow into jurisdictions where corruption, conflict, security and human rights violations present significant risks. This comes at a time when conflict and resistance to mining is increasing globally. Political violence increased by 27% in 2022 alone (ACLED 2023), with resistance to mining operations also rising. Over 500 allegations of human rights abuses have already been recorded in relation to six key transition minerals between 2010 and 2022 (BHRRC 2023). **Nonetheless, the secure supply of transition minerals cannot be contingent on investment only in low-risk environments.**
- **Companies must endeavour to source minerals from areas with higher risk profiles in a way that mitigates, not overlooks, these risks.** Any perceived benefit in deprioritising short-term or localised risks is likely to diminish over time as the increased costs of ad hoc deal-making and corruption manifest into larger conflicts, impede investment, adversely impact communities and lead to unpredictable supply disruptions. This represents a significant cost, with a major mining project estimated to suffer costs of roughly US\$20 million for every week production is delayed (Davis and Franks 2014; Franks et al. 2014). Without taking appropriate steps, the booming demand coupled with increased levels of tension and conflict globally will mean that it will become more difficult for companies to find accessible sources of supply of transition minerals and widen the investment gap.
- Governments developing strategies to secure supplies of minerals also face challenges. Greater involvement by governments in securing minerals may help foster an enabling environment for due diligence by companies to mitigate prevailing risks. **However, if governments prioritise short-term access to resources at the expense of mitigating governance risks, it could worsen legal uncertainty, cycles of renegotiation and the often precarious investment climate faced by companies, transposing these risks to a much larger scale.**

- In an increasingly competitive and contentious geopolitical context for mineral resources, it is important to recognize that these risks and accompanying disruptions affect mineral producing and destination countries alike. **A zero-sum approach to securing mineral supplies can lead to a race to the bottom, involving heightened trade tensions, bidding wars, resource nationalism, protectionism and lowering of environmental, social and governance (ESG) standards that ultimately can undermine the security of these supply chains.**
- There is a compelling argument for cooperation on promoting due diligence in mineral supply chains, including between countries that are seeking to secure these resources or are in competition for them. **Such cooperation could help promote a stable global supply of these minerals and enhance the mining sector's contribution to sustainable development.** Fostering a global level playing-field around shared standards on the initiative of countries and companies with longer-term interests will also help avoid unscrupulous actors from undercutting advances in responsible sourcing, while countering illicit and ad hoc mineral trading practices that are prone to disruptions.
- The OECD Due Diligence Guidance for Responsible Supply Chains of Minerals helps companies navigate this complex landscape and engage in conflict-affected and high-risk areas. The Guidance provides a detailed, practical set of recommendations for all companies involved in mineral supply chains, helping them understand and mitigate risks linked to individual supplier relationships, rather than avoiding high-risk areas altogether. **Supply chain due diligence can therefore help unlock responsible, reliable and diversified global supplies of transition minerals and support a global rules-based approach to mineral resources.**
- **Governments of producing, processing and consuming countries can support the development of responsible supplies in various ways**, such as ensuring sourcing strategies and supply chains integrate due diligence standards and ESG expectations, fostering the alignment and harmonization of different supply chain initiatives with due diligence standards, support capacity-building for institutions in producing countries, investing to promote local-value addition and working with companies to develop risk mitigation strategies.

Minerals are critical to the world's energy and digital transitions and demand is increasing

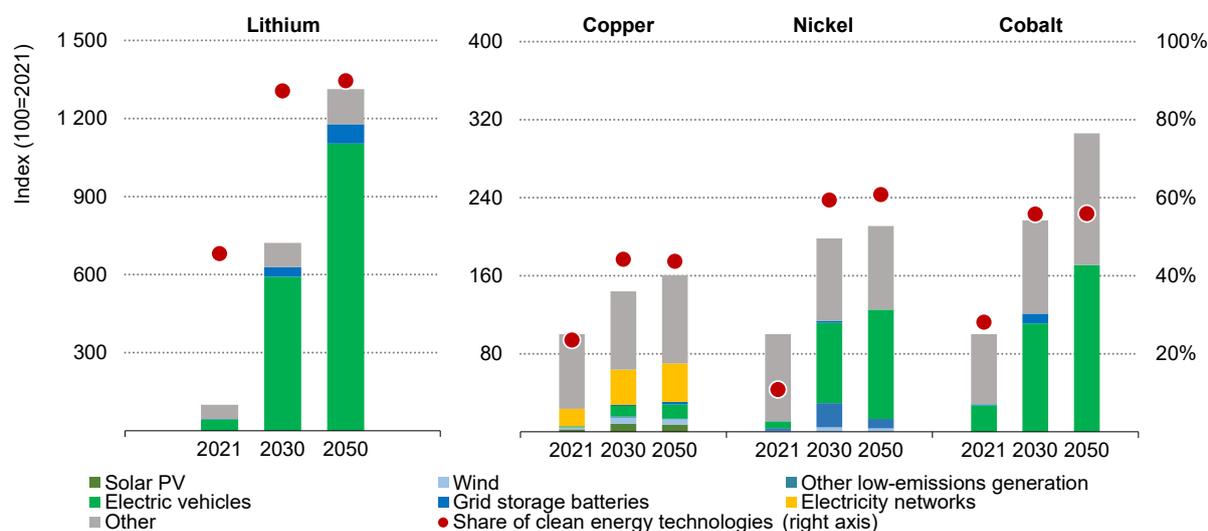
The world's energy and digital transitions are dependent on the vast expansion of renewable energy and the electrification of the global economy. Wind and solar should account for 40% of power generation by 2050 to meet the world's net zero goals (IEA 2023b). Global production of electric cars is forecast to increase six-fold by 2030, with the European Union and several countries already moving to ban the sales of non-electric cars (IEA 2023b). The development of this infrastructure and production capacity is dependent on large amounts of minerals and other critical raw materials.

Critical raw materials refer to the minerals and other raw materials assessed from a forward-looking perspective to be essential for the economic and national security of states, especially in advanced manufacturing and technologies, and that are at risk of supply chain disruption amongst other factors (IEA 2022; IRENA 2023; Franks et al. 2023). There is no definitive list of what a critical raw material is. Nonetheless, it typically includes minerals with specific uses such as cobalt, lithium and rare earth metals and can also include minerals of broad use that are central to the energy transition like copper and nickel (IEA 2022; IRENA 2023). This paper uses the term transition minerals to refer to this concept.

A mineral's assessed criticality can change over time and between countries. Lists of "critical minerals" can only provide a snapshot of current needs of a specific country, but are inevitably destined to evolve over time. Thus, it is important to also consider resources that may not yet be classified as critical minerals or raw materials. For example, sand and silicates are the world's most extracted raw materials and are essential to all renewable energy technologies and infrastructure, while also raising an increasing number of concerns in relation to the impact of their exploitation on people and nature (United Nations Environment Program 2019; 2022).

Mineral demand for clean energy technologies is set to grow 3.5 times by 2050 to meet the globe's green transition goals (IEA 2021). The use of transition minerals solely for clean energy technologies has already increased by around 20% between 2016 and 2021 (IEA 2023b). Heightened demand and rising prices have meant that the market size for key transition minerals has doubled in the past five years to US\$320 billion (IEA 2023a).

Figure 1: Forecast global transition mineral demand by end use in the IEA's Net Zero Scenario



Source: (IEA 2023a)

Although the development of approaches for a circular economy for minerals through recycling and technological progress will assist, **developing the necessary supply to meet the anticipated mineral demand will require substantial increases in the mining and production of key transition minerals** (IEA 2021). While there are ample identified supplies of transition minerals, there remain gaps between the current anticipated investments to extract transition minerals and global net zero goals, particularly in relation to lithium (IEA 2023a). To meet the net zero scenario, the IEA projects a required additional investment need in transition mineral mining capacity of between US\$360-450 billion by 2030 (IEA 2023b). While investment in transition minerals rose significantly in 2021 and 2022, the IEA noted that there are three layers of challenges needing to be addressed:

- i. whether future supplies can keep up with the rapid pace of demand growth in climate-driven scenarios to avoid a potential mismatch between demand and supply
- ii. whether those supplies can come from diversified sources, and
- iii. whether those volumes can be supplied from clean and responsible sources (IEA 2023a).

Risks associated with transition minerals are manifold and dynamic

Recent crises, such as the Covid-19 pandemic and the Russian Federation's war of aggression against Ukraine, have shown how external shocks can disrupt international supply chains, with severe economic, social and governance (ESG) impacts on a global scale. This is particularly relevant in supply chains of transition minerals, which face a range of risks to their reliable supply.

Importantly, transition minerals are not equally distributed between countries. The Democratic Republic of the Congo supplies 70% of cobalt; the People's Republic of China supplies 60% of rare earth elements and Australia supplies 55% of lithium, with China the dominant player in the processing of copper, cobalt, lithium and rare earth metals (IEA 2023b). Limited progress has been made so far in diversifying supply, with the geographical concentration of some minerals becoming more pronounced in recent years (IEA 2023b). This means that **the production today of key transition minerals is more geographically concentrated than oil and gas** (IEA 2023b).

Importantly, a significant proportion of resources, particularly cobalt, graphite, copper and rare earth metals, are located in conflicted-affected and high-risk areas¹ or regions with low governance scores (Nygard 2022; IEA 2021; IISD 2018). At least 70% of cobalt, graphite and rare earth element resources are in states perceived to be corrupt or very corrupt (Nygard 2022), with the majority of minerals extracted in countries that are labelled as extremely unstable or unstable in the Worldwide Governance Indicators (IRENA 2023).

Considering the magnitude of the mineral resources that will need to be extracted in the future, investments will increasingly need to flow into jurisdictions where corruption, conflict, security and human rights violations are significant risks. This comes at a time when conflict around the world is intensifying. Driven by a multiplicity of factors, political violence increased globally by 27% in 2022 alone, exposing an estimated 1.7 billion people to its effects (ACLED 2023). Resistance to mining operations specifically is also rising across the world (Kivinen et al. 2020; Andrews et al. 2017; Conde and Le Billon 2017; ICMM 2015). Unfortunately, there is little to indicate that conflict situations, at a local, national or international level, are likely to decrease significantly in the foreseeable future.

Therefore, **companies sourcing or looking to source transition minerals need to factor in the likely increase of risks** that may be connected to their purchasing decisions in the foreseeable future. This ranges from localised tensions at the community level which can manifest into broader conflicts, to national and transnational conflicts between countries, and how such conflicts may be made more intense by the broader geopolitical context.

At the **local level**, risks can relate to **security issues (such as armed conflict over access and control of a mine site), bribery and corruption, local grievances, including conflict related to labour conditions and the pollution and environmental impacts** of a mine site (IRENA 2023; EITI 2022). Over 500 allegations of human rights abuses have already been recorded in relation to six key transition minerals between 2010 and 2022 (BHRR 2023). These risks have a direct impact on individuals, communities and societies and there is already substantive literature exploring this in detail (IRENA 2023; Nygard 2022; IEA 2021; ISTT 2018).

At the **national and transnational level**, transition mineral deposits can be located in areas on **contested borders and/or where there is already armed** conflict, with the need to secure access to raw materials being a major motivation for states seeking territorial expansion (IRENA 2023). For example, India has recently identified a potential 5.9 million ton lithium deposit in the region of Jammu and Kashmir, an area of long-time dispute between India and Pakistan (Slate 2023). The inequitable distribution of mineral deposits can also lead to conflict between different regions within a country. At least 40% of all intrastate conflicts between 1950 and 2009 were linked to natural resources (United Nations Environment Programme 2009).

It is important to keep in mind that these **risks are not static and hence fluctuate as political and environmental dynamics change**. For example, the race to secure transition materials could extend to currently undeveloped sources, including the Arctic, the ocean and outer space (Fox 2022). This could lead to new inter-country conflict over mining sites particularly where there are overlapping or contested claims (IRENA 2023) and new forms of conflict, such as mining-related piracy in the ocean (Jenisch 2012). As explored in Box 1, rising demand can also lead to different kinds of mining activity which can underpin conflict dynamics.

¹ The OECD defines conflict-affected and higher-risk areas as areas ‘identified by the presence of armed conflict, widespread violence or other risks of harm to people. Armed conflict may take a variety of forms, such as a conflict of international or non-international character, which may involve two or more states, or may consist of wars of liberation, or insurgencies, civil wars, etc. High-risk areas may include areas of political instability or repression, institutional weakness, insecurity, collapse of civil infrastructure and widespread violence. Such areas are often characterised by widespread human rights abuses and violations of national or international law’ (OECD 2016).

Box 1: The artisanal and small-scale mining sector (ASM) at the convergence of risks and opportunities for the supply of transition minerals

In addition to other contributing factors², rising commodity prices are likely to lead to an increase in ASM activities. ASM can provide economic and development opportunities for local communities. ASM can also support the smooth functioning of commodity markets due to the sector's role as a swing producer, being able to ramp up production much more quickly than conventional industrial mines, and switch between different minerals in the same region based on global prices. However, artisanal miners are particularly vulnerable to adverse impacts and serious abuses associated with their activities. They are also often manipulated by local and/or international individuals and networks with political connections and motivations. Where poorly managed, ASM activities can also drive conflict, contribute to community-level tensions and quickly pollute and damage the environment (Dou et al. 2023; EITI 2022). Inevitably, the multiplication of medium and large-scale mining operations, in particular in remote areas, will increase the likelihood of direct interactions with ASM communities. Here again, if poorly managed, risks around large-scale mining sites are likely to increase, potentially leading to operational disruptions.

Accordingly, efforts to diversify supply chains of transition minerals should consider the specific risks and opportunities posed by ASM in the energy transition. ASM activities already represent a significant share of the global production of cobalt, tantalum, tungsten and mica, which is increasingly used in electric batteries (EITI 2022; OECD 2019). As set out in Box 3, the OECD Minerals Guidance can help companies engage responsibly with this often-informal sector, supporting actions to mitigate risks and progressively formalize it, instead of ignoring or avoiding it.

Connected to rising levels of interstate conflicts, **economic sanctions**, or the potential for future sanctions, can also lead to substantial consequences for transition mineral supply chains. For example, following Russia's war of aggression against Ukraine, the United States, in coordination with the G7, expanded sanctions on Russia to specifically target the metals and mining sector in 2023 (U.S. Department of the Treasury 2023a). Sanctions can also indirectly impact mining projects by limiting access to equipment and financing, as occurred with a planned copper mine in Russia (Udokan) (Economist 2022).

In addition, as mining activities further expand globally and the likelihood of tensions around mining operations develop, mining operators may increasingly use the services of **private security contractors**. Some contractors have been linked to alleged human rights violations and abuses (OHCHR 2019). Similarly, direct and indirect interference by private military and security companies in the production and trade of mineral resources, sometimes supported by foreign interests, are also increasingly reported and documented (CSIS 2023; U.S. Department of the Treasury 2023b; OHCHR 2019). The OECD Minerals Guidance provides recommendations for company due diligence to prevent and mitigate the risk that security contractors may be further fuelling conflict around sites in their supply chains, but this issue is often overlooked.²³

² In particular climate change, which is impacting traditional livelihoods in rural areas (Bansah et al. 2023).

³ See the Voluntary Principles on Security and Human Rights for further information (<https://www.voluntaryprinciples.org/>). Further information on promoting coherence between OECD Due Diligence Guidance and the Voluntary Principles is available here: <https://mneguidelines.oecd.org/OECD-guidance-and-voluntary-principles-on-security-and-human-rights.pdf>.

Finally, the likely increase in commodity prices, associated with massive investments in mining operations and associated provision of goods and services, creates a risk of a significant rise in **criminal organisations** interfering in mineral supply chains. This may, in turn, put the security and stability of these supply chains at risk (Global Initiative 2022).

Overlooking risks in the short-term is likely to lead to longer-term supply disruptions

One of the main challenges the mining industry is currently facing is the ability to secure both the legal and the social license to develop economically viable deposits. This, in turn, greatly depends on the extent to which companies producing, trading and processing mineral resources are able to demonstrate how they mitigate potential impacts deriving from their activities on host communities and countries. This is even more challenging in complex environments and conflict-affected and high-risk areas. As set out below, the failure to address risks could lead to significant disruptions in the supply of transition minerals, deter investment from a diverse range of sources and thus undermine the security of supply for these minerals.

In the short-term, it can be readily apparent how conflict and local tensions can disrupt transition mineral supply chains. For example, when the Angolan civil war spilled over into Zaire (now the Democratic Republic of the Congo) in the 1970s, the price of cobalt surged sevenfold in a two-year period over fears of a global cobalt shortage (Gulley 2022). Countries in Latin America, which are leading copper producers, have seen labour unrest and strikes in recent years, which led to shutdowns in production, postponed investments, disruption of the global copper supply and volatility in copper prices (IRENA 2023). Climate change, pollution, land degradation, loss of biodiversity and environmental stress can also lead to conflict. For example, 50% of lithium and copper production sites are located in areas with high water stress levels, raising risks of potential future conflict between mining companies and local communities over access to water (IEA 2021; IRENA 2023).

As demand increases and new conflicts emerge, these risks are likely to intensify. This may result in greater willingness to tolerate or overlook these risks when seeking to secure supplies, particularly for companies further downstream in supply chains. However, **any benefit in seeking short-term expediency over a responsible supply of minerals is likely to diminish over time as the increased costs of ad hoc deal-making and corruption impede investment, undermine the rule of law, adversely impact communities and lead to unpredictable supply disruptions.**

Extensive research and literature have evidenced the strong relationship between the failure to adequately address ESG impacts and project delays, being associated with increased development costs and increased levels of tension (potentially leading to local conflicts) around extractive sites (NRGI 2022; Khan et al. 2016; Davis and Franks 2014; Franks et al. 2014). One study has indicated that if African countries had a quality of governance like that of Chile, they could shorten mine lead times by an average of two to three years (Khan et al. 2016). This represents a significant cost, with a major mining project estimated to suffer costs of roughly US\$20 million for every week production is delayed (Davis and Franks 2014; Franks et al. 2014).

Put simply, **the failure to address ESG risks in the sourcing of minerals is a risk in itself to the security of supply.** As set out in Figure 2, the failure to address a short-term risk can escalate into a local conflict and inflame pre-existing social, ethnic and political tensions, resulting in country-wide implications for mineral supply chains.

Figure 2: Overlooking short-term risks can manifest in longer-term disruptions to supply chains



In particular, risks in relation to corruption and governance may too frequently be seen as the ‘cost of doing business’ for accessing transition minerals. This is a misconception. **Corruption is not a victimless crime, but instead is an enabler of adverse impacts and conflict and can lead to longer-term political instability.** Substantial profits and revenue are at stake in the minerals sector for companies and governments, which then can lead to tensions over the management of such financial flows and significant corruption and bribery risks. This, in turn, can lead to long-term opposition to mining by local communities and a fraying of the social license to operate when revenues are diverted by corruption rather than used for development. This can then risk the future supply of transition minerals from that country, particularly if production is concentrated in that country (as is the case for many transition minerals) (NRGI et al. 2022).

Unfortunately, this has been the experience of several countries in the past. Instead of bringing sustainable development, the exploitation of resources has led to corruption, human insecurity and conflict, and environmental degradation. As set out in Box 2, the experience of certain countries with oil and gas resources is illustrative of how governance and corruption risks can manifest and undermine

the development potential of producing countries in the long-term. In the rush to develop and source transition minerals, some countries risk following the same path, particularly those that have not had experience in managing large extractive rents.

Box 2: What the history of oil and gas could mean for transition minerals

The history of the oil and gas sector shows how the exploitation of natural resources can lead to conflict and disrupt supply. Oil and gas lead to substantial rents, are concentrated in certain areas and are critical inputs into the global economy. In the 1970s, the potential for these substantial rents led to the reinforcement of state presence and control in the production and trade of oil and gas. Several oil-producing countries nationalized assets and controlled production, including through National Oil Companies. In some of these countries, the substantial profits led to vast governance and corruption risks. Different political factions sought to control the rents, including through bribery and corruption as well as military and paramilitary action. This, in turn, fuelled inequality, political instability and armed conflict. Economies became dependent on just one source of revenue, leading to further crises as governments could not deliver on public spending commitments in boom-and-bust cycles (EITI 2022). Instead of bringing sustainable development to these countries, the oil and gas resources led to inequality, instability and conflict.

However, there are significant differences between oil and gas and mineral resource production. The potential for rents from mineral exploitation is probably not as lucrative as those for oil and gas, thus potentially limiting the impact of the risks associated with the mismanagement of their extraction (but not eliminating them). Similarly, transition minerals can be recycled and re-used – allowing countries to reduce their reliance on producing countries over time (IEA 2021). Nonetheless, countries with significant transition mineral deposits could risk following a similar path to the oil and gas-rich states without strong management of governance and corruption risks.

Another dimension of corruption risks and their **potential to undermine security of supply for transition minerals comes back to the business and investment climate**. While some may indeed see corruption as simply a cost of doing business, the full scope of that cost only emerges over the long-term. Corruption in the mining sector appears to be associated with unpredictable renegotiation of contracts, lack of secure tenure and arbitrary enforcement of the regulatory framework, leading to periodic shutdowns and shake-downs of mine operators, resulting in supply disruptions in a tight market (Financial Times 2018). Companies that enable or tolerate such activity by their suppliers can undermine the rule of law and make these cycles of disruption and uncertainty more likely to continue and, in turn, make attracting more diverse sources of investment to mineral production exceedingly difficult (Financial Times 2023).

The discounting of corruption and governance risks is a particularly acute issue. Buyers of transition minerals for clean energy technologies have tended to have ‘tunnel vision’ towards environmental issues in supply chains, while neglecting governance requirements (EITI 2022). Simultaneously, recent years have seen a growing number of corruption cases associated with transition mineral mining (BHRC 2023). This underscores the need for **companies to focus more specifically and devote more resources to the identification and mitigation of corruption and governance risks** when seeking responsible and reliable supply chains of transition minerals.

The role of supply chain due diligence in enabling reliable, predictable flows of transition minerals

The world faces a monumental challenge in creating the enabling conditions for the steady and timely increase in production of transition minerals in a responsible way. Without taking appropriate steps, the booming demand coupled with increased levels of tension and conflict globally will mean that it will become more difficult for countries and companies to find accessible sources of supply of transition minerals. At the same time, heightened expectations around ESG and emerging regulations on due diligence will mean that it will become increasingly more complex to demonstrate that these sources of supply meet international standards.

In response to these standards and expectations, downstream companies may gradually become more prone to suspending sourcing from suppliers as soon as they are connected with any allegations. This behavior, whereby companies are more eager to avoid risks rather than managing them, in turn, creates risks to the reliable supply of transition minerals, particularly if companies are competing to secure supply from the same 'conflict free' or 'low-risk' sources (EITI 2022). Consequently, this may deter investment and slow down the pace of the globe's energy and digital transitions.

The secure supply of transition minerals cannot be contingent on investment only occurring in risk-free or low-risk environments. Instead, recognising and addressing risks through a forward-looking and risk-based approach is key to unlocking the global supplies of transition minerals and developing diversified supply chains, including from conflict-affected and high-risk areas.

For companies sourcing transition minerals, the [OECD Due Diligence Guidance for Responsible Supply Chains of Minerals](#) can help ensure that global supply chains for minerals function sustainably and address outstanding vulnerabilities (see Box 3). The Guidance is a detailed, practical set of recommendations for all companies involved in the minerals supply chain, from extraction through production to final consumer. It was designed to enable investment to flow in fragile contexts, providing the needed flexibility for companies to implement tailored risk mitigation strategies and ensure the production and trade of mineral resources do not contribute to conflict financing, human rights abuses, serious economic crimes and environmental degradation. While being sensitive to the overall political economy of a country, the Guidance helps focus companies on understanding and mitigating risks with individual supplier relationships, rather than avoiding higher-risk areas altogether.

The OECD Minerals Guidance and framework for due diligence can **help foster security of supply and strategic diversification of mineral supply chains, while ensuring that rules-based trade and investment and broader sustainability and resilience objectives are not undermined.** However, to be impactful whilst allowing investments to flow in these areas, responsible sourcing requirements need to be supported by meaningful risk mitigation and development-oriented strategies involving all relevant stakeholders, including companies in the supply chain, host governments and communities and international donors and organisations. If expectations are set unrealistically high, financiers and investors that abide by these standards will refrain from unlocking the needed investments. End-buyers will also avoid sourcing from high-risk countries. Conversely, if the risks are not understood and mitigated, they could deter investment, undermine sustainable development opportunities, disrupt supply and damage local communities, human rights and the environment.

Box 3: The OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas

First adopted in 2011, the OECD Minerals Guidance provides detailed recommendations to help companies respect human rights and avoid contributing to conflict through their mineral purchasing decisions and practices. This Guidance is for use by any company potentially sourcing minerals or metals from conflict-affected and higher-risk areas. The Guidance is global in scope and applies to all mineral supply chains. The Guidance focuses on prevention and mitigation, promotes a whole value chain approach, supports stakeholder engagement, applies to a broad range of risks and provides practical support in remediating adverse impacts.

Importantly, the OECD Minerals Guidance does not prescribe that businesses should disengage from all higher-risk areas. Instead, it assists businesses to recognize and address these risks following a risk-based approach. It also includes specific considerations on how to minimise risks in the ASM sector to create economic and development opportunities. Further information on how to address bribery and corruption risks in mineral supply chains is set out in a separate FAQ.

The Guidance has now been widely integrated into regulatory frameworks, notably in the United States of America and the European Union, as well as in producing and trading countries like the Democratic Republic of the Congo, Rwanda and the United Arab Emirates. The Guidance has also been integrated into industry guidelines and market requirements, including by the China Chamber of Commerce of Metals, Minerals and Chemicals Importers and Exporters and the London Metal Exchange. As a result, hundreds of companies and industry initiatives across the supply chain now implement to various extents the OECD's due diligence framework to ensure they produce and source responsibly.

In addition to mitigating conflict-related risks, supply chain due diligence can also assist companies meet other objectives and regulatory requirements. For example, it can be a valuable source of business intelligence for a company. For instance, it can help identify the beneficial owners of companies in the supply chain. Companies may use this information to better understand the security or insecurity of their supply chain, particularly if companies in the supply chain have ownership links with different jurisdictions. For example, China's share of global cobalt production increases from 2% to 14% for cobalt and from 11% to 33% for cobalt intermediate materials when Chinese-owned firms are included (Gulley et al. 2022).

Governments play a critical role in developing responsible and reliable supplies of transition minerals in a sustainable and equitable manner. Recognizing the criticality of these supply chains, recent years have seen the development of multiple individual country-based strategies, legislation, alliances and diplomatic partnerships, such as the Minerals Security Partnership, Sustainable Critical Materials Alliance and the European Raw Materials Alliance (IRENA 2023; IEA 2022). These partnerships and alliances recognise that the development of transition mineral supply chains globally requires a balancing of interests between different countries. **A zero-sum approach to securing mineral supplies can lead to a race to the bottom, involving trade warfare, bidding wars, resource nationalism, protectionism and lowering of ESG standards that ultimately can undermine the security of these supply chains.** Ensuring these initiatives are coordinated and, ideally, aligned and harmonised around internationally agreed due diligence and ESG expectations is paramount. This is important not only for governments, but also for companies who ultimately will be the ones implementing those expectations throughout their operations and supply chains.

In an increasingly competitive and contentious geopolitical context for these resources, it is also important to recognize that these risks and accompanying disruptions affect all mineral producing and destination countries alike. There is therefore a compelling argument for **cooperation on promoting due**

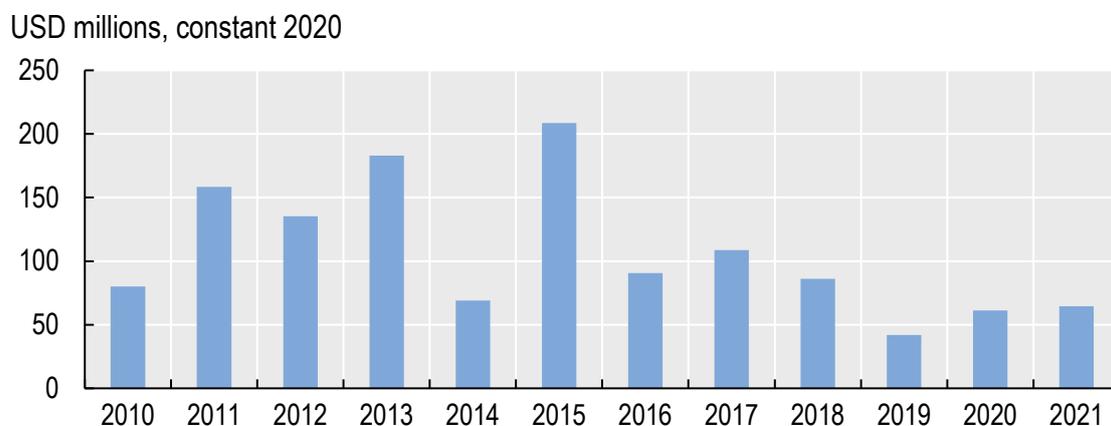
diligence in mineral supply chains, including between countries that are competing for these resources. Such cooperation could help promote a stable global supply of these minerals and enhance the sector's contribution to sustainable development. Fostering a global level playing-field around shared standards on the initiative of countries and companies with longer-term interests will also help avoid unscrupulous actors from undercutting advances in responsible sourcing, while countering illicit and ad hoc mineral trading practices that are prone to disruptions and helping encourage investment from diverse sources.

Greater involvement by governments may help foster an enabling environment for due diligence by companies to mitigate prevailing risks. However, if governments prioritise short-term access to resources at the expense of mitigating corruption risks or enhancing minerals sector governance, it could worsen the legal uncertainty, cycles of contract renegotiation and precarious investment climate often faced by companies, transposing these risks to a larger scale, and increasing their impact on security of supply.

Therefore, governments developing transition mineral sourcing strategies need to include elements pertaining to the progressive mitigation of risks associated with the production and trade of mineral resources. They need to emphasize the positive role companies can play, through their investments, to work with governments to improve security, uphold human rights, minimise environmental impacts, work towards formalisation of the ASM sector and combat bribery and corruption.

Local political economy may be a challenge to making governance and risk mitigation a priority, with elite capture of some institutions or chronic corruption risks impeding efforts to foster an enabling policy environment for due diligence. In the context of international agreements on the supply of transition minerals, governments may consider the financing of infrastructure, geological research or other projects to enhance local value addition. A range of projects and investments in the extractives sector may be well positioned by appealing to elite interests while also being in the public interest and in line with development objectives. Accordingly, besides helping diversify mineral sourcing and processing, they may also serve to encourage genuine engagement by a range of local institutions to take steps in support of an enabling policy environment for responsible business conduct. Particularly critical, in that respect, is support to mineral/mining policy and administrative management, as it contributes to the fight against illicit financial flows in minerals and extractives. Nonetheless, official development assistance (ODA) support in this sector has remained small in the past decade. In 2021, it represented no more than 0.03% of total ODA commitments (Figure 3).

Figure 3: OECD Development Assistance Committee bilateral ODA to mineral/mining policy and administrative management



Source: OECD Creditor Reporting System (CRS). Purpose code 32210 'mineral/mining policy and administrative management' in the CRS was used, covering "mineral and mining sector policy, planning and programmes; mining legislation, mining cadastre, mineral resources inventory, information systems, institution capacity building and advice; unspecified mineral resources exploitation."

In conclusion, there is a range of actions at the international and national level that can be taken to develop supplies of transition minerals in a sustainable and equitable manner. In particular, there is a need to:

- undertake more detailed **research** into the specific risks and disruption factors faced by transition mineral supply chains, particularly in conflict-affected and high-risk contexts
- ensure transition mineral sourcing **strategies integrate internationally-agreed due diligence standards and ESG expectations** and promote whole-of-supply chain responsible sourcing
- foster the alignment and **harmonization** of industry, government and multi-stakeholder supply chain initiatives with international due diligence standards, while pushing for a broader and more meaningful implementation by companies of due diligence for transition minerals through global markets
- further expand **support and capacity-building** of public administrations in producing countries, particularly to address extractive governance risks
- invest in local infrastructure to promote **local value addition** in transition mineral supply chains as a way to contribute to supply chain diversification and help producing countries more quickly realize economic benefits from efforts to enable responsible business conduct through local policy, and
- work with companies to develop investment **in risk mitigation strategies** rather than risk avoidance, including through long-term incentives like public procurement to promote responsible sourcing and strategic investment support. For downstream companies, this implies renewed commitment to increasingly support, both financially and from an economic/industrial standpoint, enhanced engagement by the mining industry in higher-risk areas.

Finally, while much of the attention is currently focusing on “critical minerals”, it is important to acknowledge that risks occur, to various extents, in **all mineral supply chains** (OECD 2021). Risks in these supply chains also need to be identified and mitigated as they are likely to generate adverse impacts on the environment and societies and, in turn, fuel increasing resistance to mining operations. This perspective will also be relevant as notions of critical materials are subjective and may shift due to developments in trade, technical innovation or changing risk profiles for different commodities.

Please cite content as: OECD (2023) *Responsible is reliable – How responsible sourcing can address disruption factors and geopolitical risks in the supply of transition minerals*

ACKNOWLEDGEMENTS

This briefing note was authored by the OECD Centre for Responsible Business Conduct, which drew on expertise and input from the broader OECD and external feedback from representatives from international organisations, national governments, civil society and academia. The OECD Secretariat would like to thank all of those who dedicated their time and shared their knowledge and expertise.

CONTACT

OECD Centre for Responsible Business Conduct | rbc@oecd.org

References

- Andrews T, Elizalde B, Le Billon P, Oh C H, Reyes D and Thomson I (2017), *The Rise in Conflict Associated with Mining Operations: What Lies Beneath*, Canadian International Resources and Development Institute (CIRDI), https://www.researchgate.net/publication/316922130_The_Rise_in_Conflict_Associated_with_Mining_Operations_What_Lies_Beneath.
- Armed Conflict Location & Event Data Project (ACLED) (2023), *ACLED Year in Review: Global Disorder in 2022*, <https://acleddata.com/2023/01/31/global-disorder-2022-the-year-in-review/#1675164837853-30a56c16-745b>.
- Bansah KJ, Arthur-Holmes F and Assan E (2023), *Climate induced transformation of agriculture to artisanal mining economy in dry regions*, *Journal of Rural Studies*, Volume 99, <https://doi.org/10.1016/j.jrurstud.2023.02.005>.
- Business & Human Rights Resource Centre (BHRRC) (2023), *Transition Minerals Tracker: 2022 Analysis*, https://media.business-humanrights.org/media/documents/2023_Transition_Minerals_Tracker_JX5pGvf.pdf.
- Centre for Strategic and International Studies (CSIS) (2023), *Central African Republic Mine Displays Stakes for Wagner Group's Future*, <https://www.csis.org/analysis/central-african-republic-mine-displays-stakes-wagner-groups-future>.
- Conde M and Le Billon P (2017), *Why do some communities resist mining projects while others do not?*, *The Extractive Industries and Society*, 4(3):681-697, <https://doi.org/10.1016/j.exis.2017.04.009>.
- Davis R and Franks D (2014), *Costs of Company-Community Conflict in the Extractive Sector*. Corporate Social Responsibility Initiative Report No. 66, https://www.csr.uq.edu.au/media/docs/603/Costs_of_Conflict_Davis-Franks.pdf.
- The Economist (2022), *The transition to clean energy will mint new commodity superpowers*, <https://www.economist.com/finance-and-economics/2022/03/26/the-transition-to-clean-energy-will-mint-new-commodity-superpowers>.
- Extractive Industries Transparency Initiative (EITI) (2022), *Mission Critical: Strengthening Governance of Mineral Value Chains for the Energy Transition*, <https://eiti.org/sites/default/files/2022-10/EITI%20Mission%20Critical%20Report%202022.pdf>.
- Franks DM, Davis R, Bebbington AJ, Ali SH, Kemp D, Scurrah M (2014), *Conflict translates environmental and social risk into business costs*, *PNAS*, 111(21):7576-7581, <https://www.pnas.org/doi/abs/10.1073/pnas.1405135111>.
- Franks DM, Keenan J and Hailu D (2023), *Mineral security essential to achieving the Sustainable Development Goals*, *Nature Sustainability*, 6:21–27, <https://doi.org/10.1038/s41893-022-00967-9>.
- Fox S (2022), *Exploiting – land, sea and space: Mineral superpower' In the name of peace: A critical race to protect the depths and heights*, *Resources Policy*, 79, <https://doi.org/10.1016/j.resourpol.2022.103066>.
- Global Initiative Against Transnational Organized Crime (2022), *Organized crime threatens green minerals*, <https://globalinitiative.net/analysis/organized-crime-green-minerals-cop-27-climate-change/>.
- Gulley AL, McCullough EA, and Shedd, KB (2019), *China's domestic and foreign influence in the global cobalt supply chain*, *Resources Policy*, 62:317–323, <https://doi.org/10.1016/j.resourpol.2019.03.015>.
- Gulley AL (2022), *One hundred years of cobalt production in the Democratic Republic of the Congo*, *Resources Policy*, 79, <https://doi.org/10.1016/j.resourpol.2022.103007>.

Habib K, Hamelin L and Wenzel H (2016), *A dynamic perspective of the geopolitical supply risk of metals*, Journal of Cleaner Production, 133:850-858, International Council on Mining and Metals, <https://www.sciencedirect.com/science/article/pii/S095965261630590X#sec5>.

ICMM (2015), *Research on company-community conflict*, <https://www.icmm.com/en-gb/research/social-performance/2015/company-community-conflict>.

International Energy Agency (IEA) (2021), *The Role of Critical Minerals in Clean Energy Transitions*, <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions>.

International Energy Agency (IEA) (2022), *Critical Minerals Policy Tracker*, <https://www.iea.org/reports/critical-minerals-policy-tracker>.

International Energy Agency (IEA) (2023a), *Critical Minerals Market Review 2023*, <https://www.iea.org/reports/critical-minerals-market-review-2023>.

International Energy Agency (IEA) (2023b), *Energy Technology Perspectives 2023*, <https://www.iea.org/reports/energy-technology-perspectives-2023>.

International Energy Agency (IEA) (2023c), *World Energy Investment 2023*, <https://www.iea.org/reports/world-energy-investment-2023>.

International Institute for Sustainable Development (IISD) (2018), *Green Conflict Minerals: The Rules of Conflict in the Transition to a Low Carbon Economy*, <https://www.iisd.org/story/green-conflict-minerals/>.

International Renewable Energy Agency (IRENA) (2023), *The Geopolitics of Energy Transformation: Critical Materials*, <https://www.irena.org/Publications/2023/Jul/Geopolitics-of-the-Energy-Transition-Critical-Materials>.

Financial Times (2018), *Copper and cobalt markets at risk of supply disruptions*, <https://www.ft.com/content/e15dafc0-4c6f-11e8-97e4-13afc22d86d4>.

Financial Times (2023), *Will Mongolia's crackdown on graft unlock its mineral riches?*, <https://www.ft.com/content/5e3a1ae5-e490-404b-8339-3aede148cbc7>.

Jenisch U (2012), *Old laws for new risks at sea: mineral resources, climate change, sea lanes, and cables*, WMU Journal of Maritime Affairs, <https://link.springer.com/article/10.1007/s13437-012-0018-1>.

Khan T, Nguyen T, Ohnsorge F and Shodde R (2016), *From commodity discovery to production*, World Bank Policy research Working Paper 7823, <https://documents1.worldbank.org/curated/en/573121473944783883/pdf/WPS7823.pdf>.

Kivinen S, Kotilainen J and Kumpula T, (2020) *Mining conflicts in the European Union: environmental and political perspectives*, Fennia 198(1–2) 163–179, <https://doi.org/10.11143/fennia.87223>.

Natural Resource Governance Institute (NRGI) (2022), *Triple Win: How mining can benefit Africa's citizens, their environment and the energy transition*, https://resourcegovernance.org/sites/default/files/documents/triple-win_how-mining-can-benefit-africas-citizens-their-environment-the-energy-transition.pdf.

Natural Resources Governance Institute (NRGI) et al. (2022), *Preventing Corruption in Energy Transition Mineral Supply Chains*, https://resourcegovernance.org/sites/default/files/documents/preventing_corruption_in_energy_transition_mineral_supply_chains.pdf.

Nygaard A (2022), *The Geopolitical Risk and Strategic Uncertainty of Green Growth after the Ukraine Invasion: How the Circular Economy Can Decrease the Market Power of and Resource Dependency on*

Critical Minerals. Circular Economy and Sustainability (Online), <https://doi.org/10.1007/s43615-022-00181-x>.

Mining.com (2023), Sizing up: The oil market vs Top 10 metal markets combined, <https://www.mining.com/web/sizing-up-the-oil-market-vs-top-10-metal-markets-combined/#:~:text=That%20puts%20annual%20crude%20oil,that%20of%20the%20oil%20market>.

OECD (2019), *Interconnected supply chains: a comprehensive look at due diligence challenges and opportunities sourcing cobalt and copper from the Democratic Republic of the Congo*, <https://mneguidelines.oecd.org/Interconnected-supply-chains-a-comprehensive-look-at-due-diligence-challenges-and-opportunities-sourcing-cobalt-and-copper-from-the-DRC.pdf>.

OECD (2021), *Trends in Stakeholder Reporting: Mineral Supply Chains*, <http://mneguidelines.oecd.org/trendsinstakeholderreportingmineralsupplychains.htm>

Office of the High Commissioner for Human Rights (OHCHR) (2019), *Relationship between private military and security companies and the extractive industry from a human rights perspective*, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G19/228/61/PDF/G1922861.pdf?OpenElement>.

Slate (2023), *One of the World's Most Dangerous Places Is About to Have One of Its Most Important Mines*, <https://slate.com/technology/2023/02/india-lithium-jammu-kashmir-mine-electric-vehicle-batteries-climate-change.html>.

United Nations Environment Programme (ed.) (2009), *From conflict to peacebuilding: the role of natural resources and the environment*, United Nations Environment Programme, Nairobi, <https://digitallibrary.un.org/record/649896>.

United Nations Environment Programme (2019), *Sand and Sustainability: Finding New Solutions for Environmental Governance of Global Sand Resources*, <https://wedocs.unep.org/handle/20.500.11822/28163;jsessionid=C420BF59C01A98E0078FD034CF05C639>.

United Nations Environment Programme (2022), *Sand and Sustainability: 10 Strategic Recommendations to Avert a Crisis*, <https://www.unep.org/resources/report/sand-and-sustainability-10-strategic-recommendations-avert-crisis>.

U.S. Department of the Treasury (2023a), *Targeting Key Sectors, Evasion Efforts, and Military Supplies, Treasury Expands and Intensifies Sanctions Against Russia*, <https://home.treasury.gov/news/press-releases/jy1296>.

U.S. Department of the Treasury (2023b), *Treasury Sanctions Illicit Gold Companies Funding Wagner Forces and Wagner Group Facilitator*, <https://home.treasury.gov/news/press-releases/jy1581>.