

A photograph of a modern building's exterior, featuring a complex arrangement of glass panels and metal structural elements. The image is partially obscured by a large white circular shape on the right side, which serves as a background for the text.

Business priorities for responsible critical mineral supply chains

Policy paper



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About this policy paper

This policy paper sets out what businesses need from policy frameworks to ensure that critical mineral supply chains are responsible, resilient, inclusive and fit for purpose in the context of the energy transition and broader industrial transformation.

Specifically, it focuses on the sustainability dimensions of critical mineral supply chains: the standards landscape taking shape across jurisdictions, the traceability and data infrastructure being developed to enable trusted sourcing, the circularity measures needed to improve long-term resource security and the investment conditions required to mobilise private capital at scale.

Introduction

The International Chamber of Commerce (ICC), representing more than 45 million companies in over 170 countries, is well-placed to bring **global business perspectives** to discussions on mineral supply chains. ICC's membership spans the **full minerals value chain** – including producers, processors, traders, manufacturers, financiers, technology providers and end-users – across both producing and consuming economies.

ICC recognises that there is **no universally agreed definition of “critical minerals”** and that countries, institutions and stakeholders may apply differing criteria, perspectives and methodologies, depending on strategic, economic, technological or geopolitical considerations.

While definitions vary across jurisdictions, ICC refers to ‘critical minerals’ as those **essential to modern economic systems and the technologies underpinning the energy transition, digital infrastructure and advanced manufacturing**.

As demand for these materials continues to grow, ensuring responsible supply chains will become an increasingly important policy priority.

As policy attention to these supply chains increases, approaches to defining and governing “critical minerals” are evolving across jurisdictions. Different national strategies reflect varying economic structures, industrial priorities, resource endowments and security considerations. From a business perspective, **greater international coordination and policy coherence will be important** to avoid unnecessary fragmentation, market distortions and duplicative regulatory requirements across global supply chains.

Responsible and inclusive project development is not peripheral to resilience – it is a core precondition for it. Insufficient attention to environmental stewardship, biodiversity, community engagement, robust governance and local benefit-sharing can translate directly into supply disruptions, project delays and heightened uncertainty for businesses and governments alike. Consequently, businesses across critical mineral value chains are increasingly investing in responsible sourcing practices, due diligence processes, traceability systems, emissions reduction strategies and broader sustainability initiatives.

ICC, therefore, supports **policy frameworks that promote responsible, transparent and inclusive mineral supply chains while enabling investment and innovation**. This includes approaches that encourage **regulatory coherence, support capacity building, facilitate responsible investment and integrate sustainability considerations** across the full mineral value chain.

Against this backdrop, ICC sets out below key business priorities for a coherent, inclusive, responsible global approach to critical mineral supply chains:

- 1** Recognise the full range of interests at stake
- 2** Harmonise existing standards
- 3** Strengthen trust through interoperable traceability
- 4** Advance sustainability through circularity and material efficiency
- 5** Enable responsible critical mineral investment and development
- 6** Close the policy gap between critical minerals and the global climate agenda
- 7** Protect biodiversity and ecosystems integrity

1 Recognise the full range of interests at stake

Critical mineral value chains encompass a **wide range of actors**, operating across different economic, regulatory and geographic contexts. These include large multinational mining companies, junior exploration firms, state-owned enterprises, commodity traders, downstream manufacturers, recyclers and artisanal and small-scale mining operators. **Policy frameworks should recognise this diversity** and must avoid one-size-fits-all approaches that may be difficult to implement across different operating environments.

Effective governance frameworks should therefore be **flexible, risk-based and proportionate**, taking into account differences in scale, technical capacity, access to finance and regulatory infrastructure, whilst drawing upon well-established responsible business practices. International, regional and national initiatives should work in a **complementary manner**, while supporting capacity building and practical implementation, particularly for smaller operators and developing economies.

Countries participating in critical mineral supply chains may prioritise different policy objectives depending on their position in the value chain. Consuming economies often emphasise supply chain resilience, responsible sourcing and transparency, while producing economies may place greater emphasis on economic diversification, value addition, industrial development and local beneficiation.

From a business perspective, **durable and effective governance frameworks should seek to accommodate these different priorities in a balanced and cooperative manner, while maintaining attractive investment conditions and avoiding unnecessary market distortions**. Frameworks that promote broad participation, transparency, responsible practices and standards and shared ownership are more likely to attract long-term investment, support responsible production and provide the predictability needed for stable supply chains.

2 Harmonise existing standards

Businesses operating across critical mineral value chains increasingly face a **complex landscape of overlapping due diligence, sustainability and traceability requirements**. The United Nations Environment Programme (UNEP) and Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF) identified more than 100 sustainability standards and initiatives applicable to the minerals and metals sector.¹ While these initiatives reflect growing attention to responsible sourcing and sustainability performance, the proliferation of frameworks may also create unnecessary complexity and implementation challenges across supply chains.

These challenges are **particularly significant for smaller operators, including artisanal and small-scale mining operators and businesses in developing economies**, which may face more limited administrative, technical and financial capacity to navigate multiple overlapping systems simultaneously. Excessive duplication can also divert resources away from practical sustainability improvements and operational performance.

ICC supports greater alignment, interoperability and mutual recognition across existing sustainability and due diligence frameworks. From a business perspective, improving coherence between standards and regulatory requirements can reduce unnecessary compliance burdens and support wider participation in responsible supply chains.

Concretely, this includes:

- **Supporting convergence initiatives.** Efforts such as the Consolidated Mining Standard Initiative (CMSI), bringing together four established and widely applied responsible mining standards into a single global standard under a shared multi-stakeholder governance framework, represent an important step towards greater coherence and simplification within the sector.
- **Promoting mutual recognition and interoperability.** Governments and regulatory authorities should seek greater recognition of equivalent sustainability, traceability and due diligence frameworks across jurisdictions, reducing duplicative reporting and certification requirements for companies operating internationally.
- **Encouraging inclusive processes.** The development and convergence of sustainability frameworks should involve broad participation from producing and consuming countries, industry, financial institutions, civil society, workers' representatives and affected communities. Inclusive processes can help support wider uptake and long-term credibility across global value chains.
- Governments and international organisations should **avoid creating new sustainability, due diligence or traceability standards** unless a clear market gap has been demonstrated and should first assess whether existing credible standards can be recognised, aligned or made interoperable.

¹ United Nations Environment Programme (2025), Stocktake of Sustainability Standards and Initiatives for minerals and metals: Leveraging synergies between Sustainability Standards and Initiatives and public instruments to enhance environmental governance. Nairobi. <https://wedocs.unep.org/20.500.11822/48989>

3 Strengthen trust through interoperable traceability

Traceability – the ability to verify the provenance, movement and relevant sustainability information associated with minerals across supply chains – is becoming increasingly important for regulators, investors, downstream industries and consumers.

Well-designed traceability systems can support **responsible sourcing, strengthen supply chain transparency, facilitate due diligence and improve confidence** across global markets. At the same time, traceability approaches should remain **practical and proportionate** across diverse operating environments to avoid creating unnecessary barriers to participation in global value chains.

ICC welcomes **initiatives aimed at improving digital interoperability and trusted data exchange across mineral supply chains**, including the UN Transparency Protocol and related initiatives developing common approaches to supply chain data sharing. These efforts should prioritise interoperability with existing systems, strong data governance, cybersecurity and confidentiality protections, leveraging existing standards and reporting frameworks and accessibility for operators across different regions and levels of technical capacity.

ICC supports **the development of shared digital infrastructure** to facilitate trusted and interoperable exchange of traceability and sustainability data across supply chains, including through its co-leadership of the **Global Materials Data Hub (GMDH) initiative**.² This work is not intended to create a new standalone traceability platform, but rather to promote interoperability and connectivity between existing data systems.

Such approaches should avoid unnecessary duplication, be developed through inclusive multi-stakeholder processes, support voluntary and interoperable data-sharing practices, **ensure that data owners retain control over their own data**, provide appropriate safeguards for commercially sensitive and confidential information and build on open protocols and standards.

Traceability requirements should be **risk-based and proportionate**, building on existing standards and reporting frameworks, taking into account the characteristics of specific minerals, supply chain segments, operating contexts and identified sustainability risks. Flexible approaches can help avoid disproportionate compliance burdens, particularly for smaller operators and businesses operating in developing economies.

Clear governance frameworks for traceability-related data are essential. Companies should have confidence regarding data ownership, access rights, confidentiality protections and the treatment of commercially sensitive information, while enabling appropriate transparency and accountability for regulators, investors and other stakeholders.

² The GMDH initiative is being advanced by ICC in partnership with UNEP, Systemiq and a broad group of industry, government and stakeholder partners. The initiative aims to explore how interoperable, open-protocol solutions can connect and enhance the development of a trusted and globally accessible data infrastructure to improve the availability, comparability and exchange of sustainability and traceability information across critical minerals and materials value chains.

Greater international coordination on traceability approaches will be important to reduce fragmentation across jurisdictions and minimise duplicative reporting and compliance requirements for globally integrated supply chains. ICC supports the work of the United Nations Task Force on Critical Energy Transition Minerals, launched in December 2025 to coordinate UN activities and advance implementation of the UN Panel's principles and actionable recommendations across critical minerals value chains. ICC is participating in both the traceability and the circularity and material efficiency technical clusters, contributing private sector expertise and supporting the development of practical, interoperable and internationally coordinated approaches.



4 Advance sustainability through circularity and material efficiency

ICC considers circularity and material efficiency as essential components of resilient and responsible critical mineral supply chains.³ Increased recycling and recovery of critical minerals can reduce emissions and environmental impacts, help protect biodiversity and strengthen long-term resource security. However, achieving a circular critical minerals economy will require **sustained investment, enabling policy environments as well as closer cooperation across governments, industry and financial institutions.**

While recycling capacity is expanding, significant structural challenges remain. Collection infrastructure, end-of-life management systems and secondary material markets are still underdeveloped in many jurisdictions. In addition, recycling feedstock will only materialise progressively over the coming decades as larger volumes of batteries, renewable energy technologies and other clean energy assets reach end of life. At the same time, given current and anticipated demand for critical minerals, they will need to be complemented in the near and medium term by responsible approaches to primary production, processing and refining. Policy frameworks should therefore support a balanced approach between both.

ICC encourages governments and international institutions to:

- **Prioritise investment in collection and recovery infrastructure**, recognising that effective collection systems are fundamental to scaling secondary supply chains and improving resource efficiency.
- **Develop coherent and predictable regulatory frameworks for end-of-life management**, including extended producer responsibility schemes, harmonised definitions related to “end-of-waste” criteria and interoperable recycled content standards that support well-functioning secondary materials markets. Achieving this requires incorporating technical expertise into policymaking to allow for greater granularity in regulatory design, and bringing all key stakeholders and organisations to the table. ICC also recognises the important role of the Basel Convention in governing the transboundary movement of hazardous and other wastes, but notes that its framework was not designed with circular economy objectives in mind. ICC therefore encourages efforts to move the Basel Convention beyond linearity – notably by distinguishing between wastes shipped for disposal and those shipped for recovery or recycling – so that implementation supports both environmental protection objectives and the development of efficient, responsible and circular secondary materials value chains.⁴
- **Support the mobilisation of long-term capital for recycling and material recovery** infrastructure through appropriate public finance instruments, including blended finance structures, guarantees and demand-side mechanisms where appropriate.
- Encourage public procurement approaches and market-based incentives that provide **clearer and more stable demand signals** for responsibly sourced secondary materials.

³ ICC / EY (2024), Putting the circular economy into motion: From barriers to opportunities, <https://iccwbo.org/news-publications/report/putting-the-circular-economy-into-motion/>

⁴ ICC / EY (2024), Putting the circular economy into motion: From barriers to opportunities, <https://iccwbo.org/news-publications/report/putting-the-circular-economy-into-motion/>

- Promote **international cooperation and regulatory coherence** to avoid fragmentation, reduce unnecessary trade barriers affecting materials destined for recovery and recycling and facilitate the development of efficient circular value chains. In this regard, ICC provides common business-to-business definitions for sixteen of the most widely used circular economy terms,⁵ offering a practical basis for consistent interpretation of regulatory requirements and clearer communication across jurisdictions and sectors, helping to align terminology and scale circular economy models across global value chains.



5 ICC (2026), ICC Ecoterms® on Circular Economy, <https://iccwbo.org/news-publications/business-solutions/icc-ecoterms-on-circular-economy/>

5 Enable responsible critical mineral investment and development

Meeting the material needs of the global energy transition will require **substantial investment across mining, processing, refining, recycling and related infrastructure**. At the same time, investors, governments and communities increasingly expect projects to demonstrate strong environmental, social and governance performance alongside economic viability.

In practice, delays in permitting, regulatory uncertainty and fragmented standards remain key barriers to capital deployment. Addressing these constraints is as important as mobilising new financing instruments.

ICC believes that mobilising sufficient private capital will require **stable investment environments, predictable regulatory frameworks and credible approaches to sustainability, transparency and community engagement**.

ICC therefore calls for:

- **Clear and predictable long-term policy signals** that support investment in responsible critical mineral supply chains, including through public procurement policies, strategic partnerships and public-private cooperation mechanisms.
- **Financing frameworks that recognise and reward projects** demonstrating strong environmental performance, responsible sourcing practices, adherence to robust standards and meaningful engagement with local communities.
- **Efficient, transparent and predictable permitting frameworks** that support timely investment decisions while maintaining robust environmental and social safeguards and appropriate stakeholder consultation.
- Expanded use of blended finance instruments, political risk insurance, technical assistance and other catalytic financing mechanisms by **multilateral development banks and development finance institutions**, particularly in emerging and developing economies, while ensuring alignment with responsible investment principles.
- **Greater international cooperation** to strengthen investment conditions, improve interoperability across policy frameworks and support resilient and diversified supply chains.

ICC welcomes ongoing **public-private initiatives** aimed at strengthening responsible and resilient mineral supply chains and encourages continued focus on practical implementation, investment mobilisation and meaningful participation from producing countries and industry actors across the value chain.

6 Close the policy gap between critical minerals and the global climate agenda

Critical minerals are indispensable to the **deployment of clean energy technologies**, including batteries, renewable energy systems, electricity grids and energy storage infrastructure. As countries move towards implementing the Paris Agreement and delivering on their updated Nationally Determined Contributions (NDCs) – including through efforts to accelerate renewable energy deployment, energy storage, electricity grids and industrial decarbonisation – critical minerals and their supply chains will become increasingly important.

In this context, climate, industrial, trade and resource policies must be **operationally aligned**, including through coordinated planning of supply, processing capacity and financing mechanisms to ensure that climate ambitions are matched by secure, responsible and resilient material supply chains.

ICC encourages governments and international organisations to:

- **Integrate critical minerals and material supply chain considerations more systematically** into international and domestic climate, environmental, energy, trade and development discussions, including within climate finance frameworks and national transition planning processes, while avoiding duplication with other processes, respecting existing mandates and ensuring high environmental, social and governance standards.
- **Recognise responsibly produced minerals and metals as important enablers of decarbonisation, energy access, digitalisation and responsible industrial development**, while also supporting broader just transition objectives, including economic diversification, skills development and local value creation in resource-producing economies.
- **Support balanced policy approaches** that address environmental and social risks associated with critical mineral supply chains, while also enabling responsible investment, innovation and long-term economic development in resource-producing countries.
- **Scale up climate finance and investment for emissions reductions across mineral supply chains**, particularly in developing economies where access to capital remains constrained, including through stronger technology partnerships, expanded blended finance solutions and enhanced mobilisation of public and private finance.

ICC also underscores the importance of ensuring that **sustainability-related requirements and traceability frameworks** remain interoperable, practical and supportive of open and inclusive global trade.

7 Protect biodiversity and ecosystem integrity

Mineral exploration, extraction and processing activities can affect biodiversity and ecosystem services, particularly in areas of high ecological value. As demand for critical minerals grows, safeguarding biodiversity is becoming an increasingly important dimension of responsible supply chain management, alongside climate, community engagement and governance considerations.

Businesses across the value chain are increasingly **mainstreaming biodiversity considerations across core decision-making processes that translate global biodiversity goals into real-economy outcomes.**

Such mainstreaming includes:

- integrating biodiversity into corporate governance and strategy;
- embedding nature-related risks and dependencies into financial and investment decisions;
- addressing impacts across operations and value chains;
- strengthening data, measurement and reporting systems; and
- investing in innovation and business models that support biodiversity restoration, business resilience and the sustainable use of natural resources.

ICC encourages governments and international organisations to:

- **Support consistent, risk-based approaches to biodiversity assessment and management** across jurisdictions, building on existing international standards, rather than introducing fragmented or duplicative requirements.
- **Integrate biodiversity considerations coherently with other sustainability and traceability frameworks**, avoiding standalone reporting requirements that add complexity without improving environmental outcomes.
- **Support the availability of high-quality, spatially explicit biodiversity data** to help companies identify and manage risks in and around operating areas, including through interoperable data infrastructure such as the Global Materials Data Hub.
- Promote **coherence between biodiversity, climate and mineral supply chain policy agendas**, including alignment with the Kunming-Montreal Global Biodiversity Framework and emerging nature-related disclosure frameworks such as the Taskforce on Nature-related Financial Disclosures (TNFD).

Conclusion

Critical minerals will play an increasingly important role in supporting economic development, industrial competitiveness, digitalisation and the global energy transition. Delivering resilient and responsible critical mineral supply chains will depend on **coordinated policy action, scalable investment frameworks and practical implementation across jurisdictions.**

From a business perspective, effective policy frameworks should support regulatory coherence, practical implementation, responsible investment, innovation and broad participation across the value chain. Approaches that are interoperable, risk-based and developed through inclusive multi-stakeholder processes will be better positioned to support both sustainability objectives and long-term supply chain resilience.

ICC remains committed to contributing a global business perspective to these discussions and to supporting collaborative international efforts that advance trusted, responsible and resilient critical mineral supply chains.



About the International Chamber of Commerce

The International Chamber of Commerce (ICC) is the institutional representative of more than 45 million companies in over 170 countries. ICC's core mission is to make business work for everyone, every day, everywhere. Through a unique mix of advocacy, solutions and standard setting, we promote international trade, responsible business conduct and a global approach to regulation, in addition to providing market-leading dispute resolution services. Our members include many of the world's leading companies, SMEs, business associations and local chambers of commerce.



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