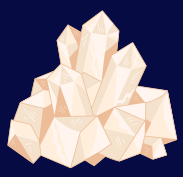
Executive Summary Prepared December 19, 2025

GBBC GSMI 6.0

SUPPLY CHAINS & CRITICAL MINERALS

KEY TAKEAWAYS

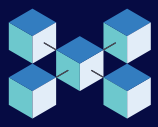


CRITICAL MINERALS MATTER

Critical minerals are processed into key components for electronics, infrastructure, renewable energy systems, and electric vehicles (EVs). Their long, complex, and multi-stage supply chains, from extraction to refinement and eventually recycling, create significant vulnerabilities and exposure to disruption

CHALLENGES

- Highly complex, multi-jurisdictional supply chains
- Persistent opacity beyond Tier 1* supplier, who provide parts for final products
- Geopolitical risks from resource concentration and global competition
- Systemic vulnerabilities including counterfeiting, informality, and limited data sharing
- Fragmented guidelines across jurisdictions and activities make due diligence difficult



USE OF TECHNOLOGY

Emerging technologies, especially blockchain, paired with AI, IoT, and basic connectivity, are a viable path to delivering the trust, traceability, and verification needed for resilient and ethical critical mineral supply chains

PURPOSE OF REPORT

The paper provides methodology and toolbox to help stakeholders:

- Build verifiable trust while protecting sensitive data
- Strengthen governance models
- Enhance due diligence, transparency, and accountability
- Support responsible sourcing and harmonized compliance

FOUNDATIONAL INSIGHTS

- Many global forums have not yet recognized blockchain's benefits for global supply chains, representing a major opportunity
- Provenance and visibility are essential for resilience and sustainability
- Blockchain is the secure home for provenance data, though capturing it reliably and consistently remains a challenge

FUTURE VISION

A future of transparent, secure, and trustworthy critical mineral supply chains that support:

Responsible sourcing & ESG outcomes

Geopolitical stability & fair economic participation

Data-driven compliance

A resilient global energy transition

ACCESS THE FULL REPORT

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**Categorize suppliers based on their relationship to the final product, creating a hierarchical structure that moves from direct suppliers to raw material providers (e.g., Tier 1 suppliers are direct partners who provide goods or services to a company, Tier 2 suppliers are the companies that supply Tier 1 suppliers, and Tier 3 suppliers supply the Tier 2 suppliers, etc.)*