

Case Study: Transforming Zambia's Copper Value Chain through Circular Economy and ESG Strategies

Project Summary

Insight Mining Experts played a pivotal role in advancing the copper value chain in Zambia by leveraging circular economy principles, ESG frameworks, and strategic policy recommendations. This overall project focused on creating sustainable pathways for copper production, fostering value addition, and strengthening partnerships between Zambia and the European Union (EU). It also emphasized policy improvements to attract investment and align the sector with global ESG standards.

Critical Mineral

Copper – a cornerstone of the green energy transition, essential for electrification and renewable technologies.

The Challenge

Zambia, a leading copper producer, faces declining ore grades, increasing waste generation, and fragmented downstream and recycling activities. The country struggles to add value domestically, leading to limited economic benefits and job creation. Additionally, inadequate ESG compliance and fragmented policies hinder access to international financing and partnerships.

Our Approach

Circular Economy Integration:

Conducted a market assessment to identify opportunities for reprocessing copper tailings, slag, and scrap.

Promoted recycling initiatives to minimize waste and reclaim valuable resources.

Advocated for the adoption of innovative business models, such as "products as a service," to enhance resource efficiency.

ESG and Sustainability:

Developed a roadmap to align copper production with EU's ESG and sustainable finance frameworks.

Provided strategies to integrate artisanal and small-scale miners (ASM) into the value chain under ESG standards.

Policy and Legislation:

Recommended reforms to stabilize regulatory frameworks, and enhance local content policies.

Proposed the creation of a copper-specific economic zone to incentivize circularity.

Partnership Building:

Fostered EU-Zambia partnerships to explore joint ventures and technology transfers.

Highlighted successful case studies, such as the collaboration between Jubilee Metals and Mopani Mines on tailings reprocessing.

Opportunities and Results

Economic Growth:

Identified over 7 million tonnes of copper in tailings, presenting opportunities for reprocessing and value addition.

Tailings and slag reprocessing for secondary copper recovery.

Development of a regional recycling hub for copper scrap.

Environmental Benefits:

Advocated for the reuse of slag in construction, reducing reliance on natural aggregates.

Highlighted the potential to minimize tailings and associated ESG risks through innovative waste management.

Social Impact:

Examples of integrating ASM operations into formal supply chains, providing access to markets and capacity building were discussed by Jubilee Metals.

Recommended policies to create green jobs and improve community engagement.

Policy and Legislation:

Proposed fiscal and regulatory reforms to make Zambia an attractive destination for critical mineral investments.

Encouraged harmonization with global ESG standards.

Strengthening Zambia's environmental management standards.

Supported financing mechanisms, including green bonds and biodiversity credits.

Advocated for stable, predictable mining regulations to attract long-term investments.

Proposed incentives for circularity across the copper value chain.

Conclusion

This project demonstrated the transformative potential of circular economy principles and robust ESG strategies in Zambia's copper value chain. By fostering partnerships, advancing policy recommendations, and emphasizing sustainable practices, Insight Mining Experts played a role to create a foundation for a greener, more inclusive mining industry in Zambia. This initiative aligns with global efforts to secure critical minerals for the energy transition while driving economic growth and environmental stewardship.