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Non-State Actors Leading a 'Just Transition' towards Responsible, Rights-Based & Nature Positive Critical Energy Transition Mineral Production in Africa



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Executive summary

The purpose of this case study inventory is to highlight Non-State Actor leadership and best-practice across the African Critical Energy Transition Mineral (CETM) value chain. The inventory presents case-studies that provide concrete examples of how environmental, social, and economic practices can be part of a just transition that balances CETM production on the continent with responsible mineral supply chain management.

There is, and will continue to be, a significant growth in global demand for CETMs which are essential for a range of clean energy technologies required to meet global net zero emissions goals by 2050. Africa is positioning itself as a major global player in CETM supply chains, holding 30% of the world's known reserves, including 6% of copper, 53% of cobalt, 25% of bauxite, 21% of graphite, 46% of manganese, 35% of chromite, 79% of phosphate rock, and 92% of platinum group metals (AfDB, 2023¹).

Between \$18 billion and \$22 billion is expected to be invested in the mining of CETMs in Africa between 2022 and 2030 (Atlantic Council, 2024²). CETMs will play an important role in global decarbonisation efforts, and when managed responsibly have the potential for regional economic development and inclusive growth

Non-State Actors have a key role to play to drive upstream and downstream value chain development, empowering Small and Medium Enterprises, and supporting countries to capitalise on the economic opportunity available. Non-State Actor leadership is imperative to achieve a just and equitable transition that balances scaled CETM production with responsible business that protects environmental and social values.





Context setting

The mining sector is at the centre of the climate, nature and society nexus.

The ongoing rush for Critical Energy Transition Minerals (CETMs) presents an opportunity for African nations to attract investment and foster sustainable economic development. Yet, substantial socio-economic and environmental challenges need to be factored into the development of resources. Considerations about the local effects of CETM extraction cannot be superseded by or considered a necessary 'trade-off' against concerns about the urgent need to secure a 500% increase in supply by 2050 (World Bank, 2022³).

Non-State Actors must be an active ally: balancing CETM demand with responsible mineral supply chain management. Special attention needs to be paid to manage climate and nature impacts, and support downstream value-chain enhancement, empowering nations and communities to capitalise on CETM endowment and imagine their future at the centre of a new climate-compatible economy.

Revenues from resource extraction have not created consistent socio-economic benefits for host jurisdictions.

Africa has a long history of industrial mining activities, however, estimates show that African countries generate only about 40% of the revenue they could potentially collect from these resources (UNCTAD, 2024⁴). The focus is often on the extraction and exportation of raw critical minerals, which offer less economic value compared to processed materials. For example, while raw Guinean bauxite is priced at \$53 per ton, processed aluminum fetches \$2,487 per ton (Institute of Rare Earths & Strategic Metals⁵, 2024; London Metal Exchange, 2024⁶).

Beneficiation is the transformation of a mineral, or a combination of minerals, into a higher-value product which can either be consumed locally, or exported (Anglo American, 2024⁷). Significant opportunity lies in increased beneficiation, increasing Africa's potential for economic growth, creating jobs, fostering entrepreneurship and empowering SMEs in downstream and sidestream industries. Localising and co-locating manufacturing and processing also reduces supply chain emissions, resulting in a reduction in the carbon transportation footprint of CETMs (UNECA, 2021⁸).

Key challenges need to be addressed to unlock beneficiation, these include; skills shortages, power, water and transport infrastructure constraints. Non-State Actors need to look for innovative solutions to overcome challenges, and facilitate the expansion of economically-feasible beneficiation initiatives in-country including: collaborative enterprise development, training, research and development, new technology and building of partnerships.

CETMs are a key 'ingredient' powering the energy transition, however, there is a very large decarbonisation challenge to be solved across CETM value chains as they scale up to meet demand.

Despite contributing only 4% of cumulative CO₂ emissions, Africa is the most vulnerable continent to climate change, facing risks to its economies, infrastructure, agriculture, and livelihoods (AfDB, 2023⁹; World Meteorological Association, 2024¹⁰). CETMs typically require much more energy to produce per unit of product than other commodities, which results in higher emissions intensity (IEA, 2021¹¹).

Due to low production volumes, emissions from CETM production today are relatively small, however, emissions will grow alongside projected growth in demand and dwindling ore quality (IEA, 2021¹²).

Nature is an essential ally to tackle climate change, contributing one third of the necessary solutions by 2030, however, there is no escaping that mining directly impacts nature (Nature4Climate, 2024¹³).

Mining potentially influences 50 million km² of Earth's land surface, with 8% coinciding with Protected Areas, 7% with Key Biodiversity Areas, and 16% with Remaining Wilderness (NIH, 2020¹⁴). Beyond the mine site, mine waste residuals may lead to poisoning through food and water, affecting animals, vegetation, micro-organisms and overall public health of local communities (NIH, 2023¹⁵).

With approximately 23% of Africa's GDP created in economic sectors highly dependent on nature, biodiversity loss and environmental damage poses significant long-term risk to Africa's financial and economic stability (AfDB, 2022¹⁶). Nature-based solutions (NbS) are emerging as essential climate change mitigation and adaptation strategies in Africa, protecting African nations' shared natural endowment and meeting the acute needs of the people.

Investment in NbS is insufficient and needs to triple by 2030, and fourfold by 2050, to support global climate and biodiversity objectives (UNEP, 2021¹⁷). Non-State Actors have a key role to play to turn the tide on mining-related nature loss, directing finance into both protection and rehabilitation initiatives, as well as nature-positive production and consumption models.

Increases in global demand for CETMs is likely to impose unprecedented pressure on Indigenous Peoples and local communities, with 33% of CETM projects in Africa located on or near both Indigenous Peoples' and 'Peasant' lands (Owen & Kemp, 2023¹⁸).

Indigenous Peoples are inextricably linked to the land on which they live and the natural resources on which they depend. They are therefore particularly vulnerable if their land and resources are transformed, encroached upon or significantly degraded with climate change displacing Indigenous Peoples at seven times the rate of the global average (WRI, 2019¹⁹).

Projects may also undermine language use, cultural practices, institutional arrangements, and religious or spiritual beliefs (World Bank, 2018²⁰). The crucial role and rights of Indigenous Peoples and local communities must be recognised to achieve Nationally Determined Contributions. Despite constituting only 5% of the world's population and stewarding between 13% and 20% of global lands, Indigenous-held territories contain an estimated 80% of globally remaining biodiversity (World Bank, 2023²¹).

Responsible development of CETMs can only proceed by respecting the rights of Indigenous Peoples, including upholding their right to Free, Prior and Informed Consent (FPIC) prior to the approval of any project affecting Indigenous Peoples or their lands, territories, or resources. Despite this, the involvement of Indigenous Peoples as potential investment leaders, and ecological knowledge-holders has often been limited, with less than 1% of funding reaching Indigenous Peoples (Rights and Resources, 2022²²). Non-state actors need to collectively think about how best to engage with and include Indigenous Peoples and local communities, consulting with Indigenous Peoples as rights holders and repositioning Indigenous Peoples and local communities as central beneficiaries and key actors in developing policies, standards, and benefit-sharing opportunities.

CETM development must be grounded in regional socio-ecological considerations. Non-State Actors must recognise the legacy and impact of industrial mining in Africa, addressing risks to optimise benefits from CETMs, while ensuring robust environmental and social protections.



Looking forward

Based on desktop research and conversations with leading initiatives and Non-State Actors across the African CETM value chain, five mutually-reinforcing priorities have emerged.

The following case studies illustrate how Non-State Actors manage the adverse impacts of operations and optimise opportunities to deliver net-positive impacts for natural ecosystems and people, tackle climate mitigation and adaptation, and contribute to the social, economic and institutional development of African nations and its peoples.

PRIORITY 1

Facilitating meaningful engagement of Indigenous Peoples and local communities and upholding the right of Indigenous Peoples to Free, Prior, and Informed Consent prior to the approval of any project affecting Indigenous Peoples or their lands, territories, or resources, and repositioning Indigenous Peoples and local communities as central beneficiaries and key actors in developing policies, standards, and benefit-sharing opportunities.

01

PRIORITY 2

Implementing practical nature-based solutions and biodiversity protection measures (e.g. respecting mining no-go zones). Mobilising finance for nature including: conservation, rehabilitation and sustainable management initiatives, nature-positive production and consumption, and leaving the biodiversity of an area in a better state than before.

02

PRIORITY 3

Unlocking local beneficiation opportunities for downstream value addition. Recognising the challenges that stand in the way of beneficiation in Africa, Non-State Actors are looking for innovative solutions to overcome challenges, and facilitate the expansion of economically-feasible beneficiation initiatives to add value in-country including: collaborative enterprise development, training, research and development, new technology and the building of partnerships.

03

PRIORITY 4

Investing in circular R&D, building recyclability into products to maximise resource efficiency, and secure reliable, secondary (repaired, recycled) sources of CETM supply, minimising waste and lessening environmental impacts. Unlocking side-stream industries (e.g. recycling, reprocessing), creating new avenues for job creation, entrepreneurship, and community empowerment.

04

PRIORITY 5

Deploying innovative financial structures to diversify risk and create platforms into which capital can flow. Non-State Actors are tackling financing barriers in Africa: providing catalytic finance (e.g. longer tenor loans), de-risking instruments (e.g. guarantees) as well as expertise and partnerships to mobilise additional capital.

05



PRIORITY CASE STUDY 1

The Initiative for Responsible Mining Assurance (IRMA)

Strengthening Free, Prior and Informed Consent in the Mining Sector

The Initiative for Responsible Mining Assurance (IRMA) hosts a multi-stakeholder-governed standard and independent third-party assurance system for industrial-scale mines.

IRMA's voluntary Standard for Responsible Mining applies to industrial-scale mining companies of all sizes. It is used for independent third-party assessment and reporting focused on site-level practices across a holistic set of topics covering four key areas: Social Responsibility, Environmental Responsibility, Business Integrity and Planning for Positive Legacies. IRMA is proactively working across sectors to strengthen and implement Free, Prior, and Informed Consent (FPIC) in the mining sector.

The IRMA Standard includes a critical requirement that new mine sites must obtain FPIC from Indigenous Peoples where any mining-related activities may affect Indigenous rights or interests, including those that may impact Indigenous lands, territories, or resources, require physical relocation of people, cause disruption to traditional livelihoods, impact critical cultural heritage, or involve use of cultural heritage for commercial purposes.

Existing mine sites are required to obtain FPIC or demonstrate that they are operating in a manner that fosters positive relationships with affected Indigenous Peoples and provides remedies for any past impacts on their rights and interests.

Both new and existing mines must obtain FPIC from Indigenous Peoples for proposed changes to mining-related activities that may result in new or increased impacts on Indigenous rights or interests. IRMA recognises four levels of achievement for mine sites. IRMA Transparency applies to any mine that agrees to an independent audit by IRMA-approved auditors and publicly releases the results. Beyond this, IRMA 50, 75 and 100 represent progressively higher achievement levels of performance against the IRMA Standard.

Meeting the FPIC requirement is essential for mine sites to achieve an IRMA achievement level of 50, 75, or 100. IRMA employs a continuous improvement approach including reviewing and updating its standard every 3 to 5 years. Revisions to the IRMA Standard are currently underway, including updates to the FPIC chapter, to incorporate best practices, address emerging challenges, and respond to feedback from stakeholders and Indigenous rights holders.

(Source: IRMA)

The African Natural Capital Alliance (ANCA)

Catalysing a Shift to an Economy that Actively Supports Africa's Nature Agenda

The African Natural Capital Alliance (ANCA) is an African-led multi-stakeholder initiative, acting as the vehicle to drive coordinated action to catalyse a shift to an economy that actively supports Africa's nature agenda.

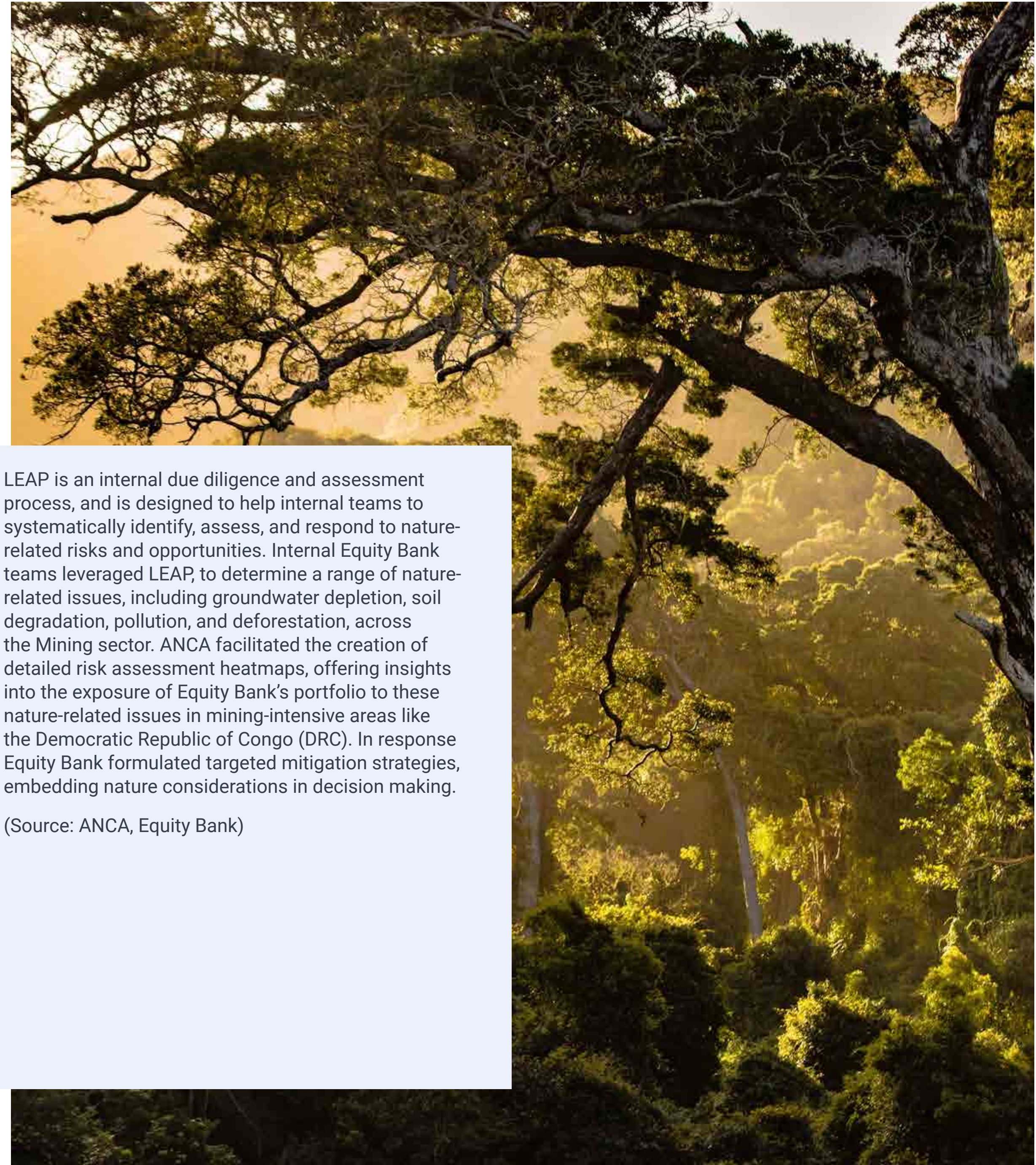
ANCA has advocated for the adoption of the Taskforce on Nature-related Financial Disclosure (TNFD) to address nature-related issues in sectors such as mining, encouraging policymakers, regulators, financial institutions and other companies to adhere to the TNFD and develop approaches to act on evolving nature-related issues supporting a shift in global financing flows from nature-negative and toward nature-positive outcomes.

ANCA partnered with the TNFD to pilot the framework in Africa, coordinating a forum of leading financial institutions to provide structured feedback and input into the TNFD regarding the appropriateness of its management and disclosure framework within an African context. As part of the pilot, ANCA supported African financial institutions to understand and manage environmental and biodiversity risks, particularly in Southern and Central Africa, regions critical to the global supply of CETMs.

Equity Bank, a financial services company headquartered in Kenya, offering integrated financial services through banking, insurance, technology and philanthropy, leveraged ANCA's support to apply TNFD's LEAP (Locate, Evaluate, Assess, Prepare) approach across its mining portfolio.

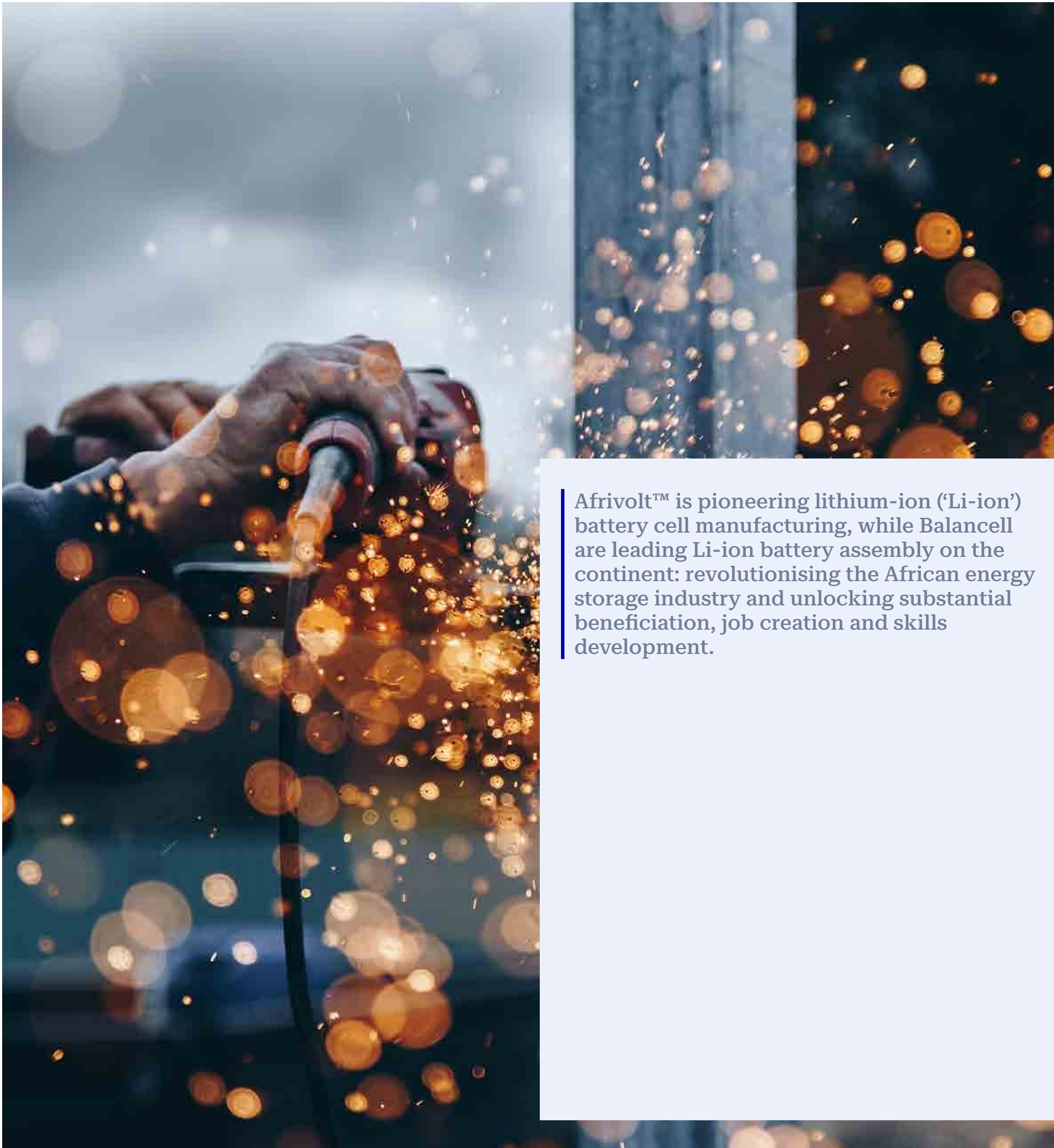
LEAP is an internal due diligence and assessment process, and is designed to help internal teams to systematically identify, assess, and respond to nature-related risks and opportunities. Internal Equity Bank teams leveraged LEAP, to determine a range of nature-related issues, including groundwater depletion, soil degradation, pollution, and deforestation, across the Mining sector. ANCA facilitated the creation of detailed risk assessment heatmaps, offering insights into the exposure of Equity Bank's portfolio to these nature-related issues in mining-intensive areas like the Democratic Republic of Congo (DRC). In response Equity Bank formulated targeted mitigation strategies, embedding nature considerations in decision making.

(Source: ANCA, Equity Bank)



Afrivolt and Balancell

Pioneering the downstream African Lithium-ion Battery Manufacturing Value Chain



Afrivolt™ is pioneering lithium-ion ('Li-ion') battery cell manufacturing, while Balancell are leading Li-ion battery assembly on the continent: revolutionising the African energy storage industry and unlocking substantial beneficiation, job creation and skills development.

Afrivolt™, is working to develop a 5GWh p.a. lithium-ion cell gigafactory ('Afrivolt-1') in the Atlantis Special Economic Zone in Cape Town. Once commercialised, the facility will be the first gigafactory in Southern Africa, producing anodes, cathodes and lithium-ion batteries for stationary storage applications and, in the medium term, for electric vehicles (EVs). Unlocking substantial beneficiation, the project is expected to result in an import substitution of c.USD500m per year and create 600 jobs in a new industry (Afrivolt, 2024). Afrivolt's long term goal is to be one of the world's few vertically integrated battery manufacturers, by consolidating refining, processing and cell production in Africa. Afrivolt and its partner ecosystem, intend to accomplish the goal of producing Li-ion batteries with one of the lowest carbon footprints, globally. As shown in other examples, co-location of processing and manufacturing activities can result in significant reduction of the carbon transportation footprint of products (UNECA, 2021²³). Further, Afrivolt will also use renewable energy wherever possible and will choose processing technologies that minimise its carbon impact. Further, Afrivolt will also use renewable energy wherever possible and will choose processing technologies that minimise its carbon impact.

Balancell, is making strides in local battery module manufacturing: designing, engineering and manufacturing smart LFP batteries for multiple applications. Balancell designs and manufactures all its components locally (only the tier-1 automotive-grade lithium ferro-phosphate cells are imported), bringing the value of local content used to as high as 50%. Balancell is unlocking broad-based economic development: creating new jobs (employing 70 staff, 69% of whom are from previously disadvantaged backgrounds and 43% of which are women) and fostering entrepreneurship across the supply chain. In addition, Balancell battery modules are durable-by-design. Balancell's technology measures all battery parameters extremely accurately, which allows the battery management system to better protect the battery and optimise its performance. This extends the useful life of batteries significantly, limiting waste and virgin CETM resource extraction. A recent review of its first-generation batteries used in forklifts reveals that after 5 years and more than 20,000 hours of operation, Balancell batteries still have close to 90% capacity left (compared to 60% expected value from most other LFP batteries).

(Source: Afrivolt, Balancell)

Cwenga Technologies

Reducing Demand for Virgin CETMs, via Li-ion Battery Recycling

Cwenga Technologies, a distributor of activated carbon and ion exchange resins, is pioneering Li-ion battery recycling in the Southern Hemisphere: reducing demand for virgin CETMs, unlocking alternative, secondary sources of supply with lessening environmental impacts, while providing Africans with a avenue to recover and retain material value in a safe and responsible manner.

Cwenga Lib, a subsidiary of Cwenga Technologies, launched their first processing facility in September 2024, the first lithium-ion battery recycling facility in the Southern hemisphere. Cwenga Lib have developed a Lithium-ion battery recycling process over the last two years: recovering and separating metals within batteries to a quality where they can re-enter the domestic economy as raw materials in a more eco-friendly, safe and responsible way. The Cwenga Lib process is unique. Where mega-recycling plants, constructed to cater for mass markets abroad, often require significant energy inputs and utilise hazardous chemicals, posing significant occupational health and safety hazards (risk of fire, and high toxicity), Cwenga Lib utilises food grade and eco-friendly reagents at ambient temperature, reducing electrical energy requirements and minimising health and safety risks.

In addition, Cwenga Lib can be scaled to serve smaller communities or single manufacturers who want to locally recycle their own production, catalysing economic development and empowering SMEs.

Facilities are modular, and can be deployed around South Africa and across the continent. They are run by 2 to 4 operators and, depending on what the market area needs, produce oxides of various quality e.g. back into battery production, pigment grades or even agricultural uses.

(Source: Cwenga Technologies)



The African Climate Foundation (ACF)

Establishing a CETM Support Facility for African CETM Producers



The African Climate Foundation (ACF) is an African-led strategic re-granter working at the nexus of climate change and development (ACF, 2024²⁴).

ACF is supporting the design and development of a Critical Minerals Support Facility (CMSF) for African CETM producers (ACF, 2024). The facility will provide technical support to producing countries, empowering them to catalyse domestic and regional economic diversification.

The CMSF will serve the following four functions:

1. **Technical support:** providing generalised and bespoke technical support on a range of key issues related to CETM extraction and industrialisation
2. **Learning exchange:** serving as a peer-to-peer platform for African countries, and South-South cooperation

3. **Domestic and international resource mobilisation:** supporting the development of investment pipelines and identifying investment opportunities, potential investors and safeguards to protect host country interests
4. **Provision of support around ESG considerations:** identifying mechanisms to support greater accountability and enforcement of ESG considerations

(Source: ACF)

Endnotes

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Disclaimer

For this Case Study Index, the authors engaged leading initiatives and NSA actors to present insights on responsible CETM production in Africa. Statistics notes in this paper are based on publicly available information. Case studies have been solicited in conversation with Non-State Actors and leading initiatives across the critical energy transition mineral value chain in Africa. The document does not contain legal or commercial advice or guidance of any kind, nor does it set out firm and full instructions or guidance for action. This paper does not serve as an endorsement of the activities and programs showcased by these case studies but have been featured due to their potential scalable and replicable features. The material and underlying information included was provided on a voluntary basis with a clear understanding having been conveyed to them of the end use and purpose, namely, to facilitate information sharing amongst a broad set of public and private sector parties. It was clearly conveyed to and understood by those sharing the information that it should not be confidential or commercially sensitive, and that it would be made available for review by relevant interested parties and the broader public. The perspectives presented throughout this report represent views of various authors and are not necessarily attributable to all co-authors.

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