

Africa's critical minerals role in the global energy transition

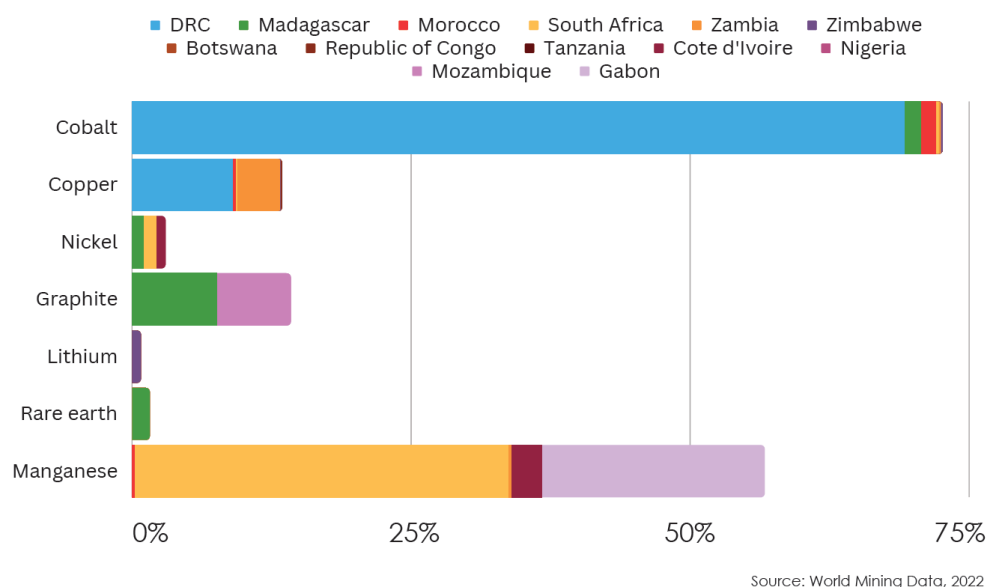
Africa's mineral resources have a central role to play in the global transition to renewable energy. Many African countries have large endowments of 'critical minerals' which include resources such as lithium, cobalt, copper, platinum, and manganese, and rare earth elements, that are essential inputs into technologies such as electric vehicles (EVs), wind farms, and Solar photovoltaic (PV) plants. The figure below represents Africa's share (by country) of the total global production of select critical minerals used in EVs and energy storage. As depicted, the Democratic Republic of Congo produced almost 70% of the world's cobalt and 9% of the world's copper while South Africa produced around one-third of the world's manganese.

The growing demand for clean energy technologies is expected to increase the production of minerals by nearly 500% by 2050¹. The International Energy Agency (IEA) projects that the mineral demand increase will largely be driven by EVs and stationary energy storage with the fastest growth in demand expected for Lithium (increasing by over 40 times if we meet the goals of the Paris Agreement) followed by graphite, cobalt and nickel (increasing by around 20-25 times). The demand for copper, to be used for grid lines in the expansion of the electricity network, is expected to more than double from 2020-2040². The prospect of soaring demand for critical minerals is raising concerns about the availability and security of supply. These concerns have been heightened by sanctions against Russia which is one of the largest suppliers of critical raw materials. Consequently, Africa's large deposits of critical minerals are in the spotlight.

¹ The World Bank. 2020. *Mineral Production to Soar as Demand for Clean Energy Increases*. <https://www.worldbank.org/en/news/press-release/2020/05/11/mineral-production-to-soar-as-demand-for-clean-energy-increases>

² International Energy Agency. 2022. *The Role of Critical Minerals in Clean Energy Transitions*. <https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions>

Share of total global production by African countries for select critical minerals (2021)



The extent to which African countries can benefit from their subsoil wealth depends on how much value can be captured on the continent. The bulk of the value lies in mineral beneficiation (adding value to the raw material through processes such as smelting or refining) and downstream activities such as battery manufacturing. The potential for a lithium-ion battery and electric vehicle value chain in Africa has received particular attention given soaring demand globally and the large reserves of lithium in Zimbabwe, DRC and Namibia. The value chain was identified as one of the high-potential VCs to be targeted for promotion by the AfCFTA secretariat³. The surge of imports of lithium-ion cells and accumulators in South Africa, as a consequence of load-shedding, has also increased the appeal of developing a regional value chain to meet South Africa's demand. South Africa's imports of lithium-ion cells and accumulators (HS 8506.50.00 and 8507.60.00) jumped from USD 208.8 million in 2021 to USD 740.1 million in 2022⁴. In 2022, 90% of South Africa's imports of lithium-ion cells and accumulators came from China.

However, value-added processing in Africa's mining sectors has historically been a challenge to get right. When viewed from a structural transformation perspective, the mining sector in most African countries has had a limited impact on driving transformative change. At present, Africa remains a highly extractive economy. A [tralac analysis](#) of 25 sectors finds that mining and quarrying is the continent's most important

³ AfCFTA Secretariat. 2021. *Which value chains?* The Futures Report 2021. <https://www.tralac.org/documents/resources/cfta/4669-afcfta-futures-report-2021-which-value-chains-for-a-made-in-africa-revolution/file.html>

⁴ ITC TradeMap

value chain in terms of global value chain (GVC) participation, however, it is the most heavily forward-linked, meaning that the bulk of the final product's value addition takes place in countries outside of Africa. Being primarily forward linked in its dominant GVC trade sector undermines the continent's prospects for achieving manufacturing industrialisation, the creation of high value-added production and the upgrading of technology and skills⁵.

The implementation of the AfCFTA is seen as an opportunity to reverse these patterns of global trade by driving regional value chain industrialisation, largely considered the continent's best hope for upgrading from the current role of raw materials producer. By reducing the time and costs of intra-African trade, the AfCFTA can incentivise more regionally integrated production. This has the potential to facilitate the development of a regional critical minerals value chain that could unlock greater domestic beneficiation and value-addition. The World Bank's recent publication, titled [Leveraging Resource Wealth During the Low Carbon Transition](#), makes the case that a regional approach to value-addition could overcome the infrastructure, capital and skills constraints that have hindered the development of mine-to-market value chains in individual African countries. Using Africa's mineral resources as input in industrial production would unlock job creation, enhance trade links and catalyse economic transformation on the continent.

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⁵ Stuart, J. 2022. *Value Chains Can Drive, and be Driven by the AfCFTA*. tralac. <https://www.tralac.org/blog/article/15868-value-chains-can-drive-and-be-driven-by-the-afcfta.html>