



REPORT



Global critical minerals market is booming:
Africa can maximize gains through regional cooperation

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In the urgent global effort to combat climate change, there is a notable transition away from fossil fuels, and this shift is profoundly impacting the minerals industry. Many metals essential for electrification, renewable energy production, electric vehicles, and various energy storage technologies have become indispensable components of these burgeoning low-carbon sectors. Africa is richly blessed with a wealth of these critical minerals, and the increasing demand underscores the importance of responsible resource management. It is imperative that these resources are stewarded effectively to maximize their benefits for the continent and its sustainable development goals.

Critical minerals potentials and benefits in Africa

Africa has 85% of the world's manganese, 80% of the world's platinum and chromium, 47% of the world's cobalt, 21% of the world's graphite, and 6% of the world's copper. Rare earth elements (REEs) are mined in Angola and Burundi, with further projects in development in Malawi, South Africa, and Namibia, Tanzania, Madagascar, Morocco, and Mozambique. A substantial amount of lithium is mined in Zimbabwe and Mali. Namibia, Ghana, and the Democratic Republic of the Congo all have lithium, nickel, manganese, cobalt, graphite resources. Congo, South Africa, Zimbabwe and Madagascar have large deposits of Nickel, an important catalyst in the SMR process to produce blue hydrogen. Platinum Group Metals (PGMs) such as platinum, palladium, and rhodium are used in hydrogen fuel cells as catalysts. South Africa is one of the world's top producers of PGMs.



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Mineral resource production is already a key source of income for Africa, accounting for approximately 8% of government revenues in resource rich African countries. Minerals account for more than 30% of total product exports in 23 African nations. The mining industry has also been a major receiver of foreign direct investment in the region. Mineral production has a substantially larger potential economic contribution because demand for several important minerals is expected to rise rapidly as a result of global energy transitions. Exploiting these minerals has the potential to provide numerous benefits to African countries, including job creation, local economic and social growth, and enhanced infrastructure. Mining activities necessitate a variety of supporting infrastructure such as roads, trains, and electricity supplies



Increased global demand for critical raw materials

The production and trade of most critical raw materials has expanded rapidly over the last ten years, growth has not kept pace with projected demand for the metals and minerals required to shift the global economy away from fossil fuels and toward renewable energy technologies. Lithium, chromium, arsenic, cobalt, titanium, selenium, and magnesium experienced the greatest increases in production volume over the last decade, ranging from 33% for magnesium to 208% for lithium, but this falls far short of the four- to six-fold increases in demand predicted for the green transition. Simultaneously, global output of key critical raw resources, such as lead, natural graphite, zinc, precious metal ores and concentrates, and tin, has decreased over the last decade.

Manufacturing lithium-ion batteries will increase the demand for metals destined for energy storage, which includes copper, aluminum, phosphorus, iron, manganese, graphite, nickel, cobalt, and lithium. Batteries are expected to require 5.5 times more of these metals by 2030 than they did in 2021. Utility-scale energy storage is also becoming more popular as the cost of lithium-ion batteries continues to plummet, making them practical for



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coupling with variable renewable energy sources to assure dispatchable electricity supply.

As global demand for vital minerals rises, so will their ability to contribute to African resource holders' economic progress. The new value chains in place would provide a significant opportunity for Africa to benefit from the global energy transformation. Revenues from copper and key battery metals production in Africa, for example, are expected to over USD 20 billion in 2020, accounting for 13% of the global market. With increased demand for these minerals, African income from their sale could more than triple by 2030, assuming no growth in market share.



Opportunities for maximized benefits through regional cooperation.

Mineral development in Africa can potentially benefit the world by increasing the security of mineral supplies in the face of an impending mismatch between demand and supply. However, obstacles such as a lack of infrastructure, inconsistent regulatory frameworks, and a lack of value addition have prevented Africa from fully capitalizing on its natural wealth. Regional cooperation can aid in overcoming these obstacles and it is required to realize the benefits. African states can improve their competitiveness and attract global investment by combining resources, sharing infrastructure, and aligning regulations. A regional strategy can also promote long-term practices, environmental protection, and equitable economic distribution. It enables countries to capitalize on their distinct strengths, benefiting from each other's experience and reducing the negative consequences of resource extraction.

Mining operations often necessitate a variety of supporting infrastructure, such as roads, trains, and power supplies, they can serve as an anchor investor in the development of infrastructure that can be used by other industries and local



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people. By distributing the expense across numerous users, shared infrastructure can lessen the investment burden. Sharing of mining infrastructure has not been prevalent in Africa thus far because firms seek to avoid political risks by maintaining control of the facilities and find it difficult to coordinate various interests among multiple potential users. To change this, host governments and mining companies would need to work together more closely. Africa plays an important role in meeting the world's expanding need for essential raw materials. African nations can unlock their potential by developing regional collaboration, ensuring the responsible and sustainable utilization of these resources while maximizing economic advantages for their people and contributing to global supply security. This coordinated endeavor has the potential to transform Africa into a leading player in the essential raw materials market while addressing socioeconomic and environmental issues.

About IAP

Integrated Africa Power (IAP) is a multi-unit enterprise specialized in energy and infrastructure development on the African continent. We seek to solve Africa's energy deficits, through integrated systems solutions, resource pooling and cross-border cooperation. Our approach is based on our philosophies of tailored suitability, cost-effectiveness, sustainability and energy-development linkages.

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