POWER PLAY

Southern Africa can cash in on critical minerals… if it has power

First Quantum Minerals in Zambia turned to Eskom, led by CEO Dan Marokane, to help get through Zambia's power crisis. (REUTERS/James Oatway)

Power supply has emerged as a key constraint on Southern Africa's ability to maximise its natural resource endowment.

Improving the reliability of power supply will be key to Southern Africa's ability to fully exploit the opportunity created by global critical minerals demand, executives say.

Zambia's worst drought in living memory has forced the country's miners to seek new power sources outside the country. South Africa, which has been helping to power Zambia's miners via state-owned Eskom, needs its own solutions ahead of the end of gas supply to industrial users from fields in Mozambique in mid-2027.

Canadian miner **First Quantum Minerals** (FQM) adapted to Zambia's 2024 power crisis by importing gas and hydropower from Mozambique, as well as coal, gas and hydropower from Eskom, Zambia country manager Anthony Mukutuma tells *The Africa Report*. The recent **emergence of power traders in Zambia** had made imports easier, with about 65% of the company's 2024 power imports sourced via traders, he says.

> *"Two or three years of good rains would be needed to normalise hydropower production*

Zambia aims to more than quadruple annual copper production to 3m tonnes by 2030. Experts have questioned whether that can be achieved without a quantum leap in the reliability of power supply. A **strong start to the rainy season in October**, meaning better water availability for hydropower, was "quite encouraging", Mukutuma says. Two or three years of good rains would be needed to normalise hydropower production, he adds.

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The availability of new power options in 2025 gives "extra comfort" for FGM, Mukutuma says. The company has an offtake agreement with the Temane thermal power plant, which will be Mozambique's largest gas-fired power station once commissioned in 2025. The plan is to complement this with gas from an unnamed project in Namibia, as well as solar power from Zambian state utility ZESCO.

Copper refinery considered

FQM, led by CEO Tristan Pascall, is among the world's top 10 copper producers and has a market value of about $10bn on the Canadian stock market. In 2022, the company announced plans to expand its Kansanshi mine. The expansion, called the S3 project, involves building a copper processing plant designed to treat 25m tonnes of ore per year, as well as gold concentrator capacity.

Out of the total investment of about $2bn, roughly $600m has been spent, with the rest to be invested by 2029. The expansion is progressing well and is due to be completed by the end of the second quarter of 2025, Mukutuma says.

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Mukutuma is "very optimistic" on FQM's 2025 outlook in Zambia. The company may undertake further exploration at greenfield sites in the north of the country, he says. The company is also considering building a refinery that would produce cathode, the purest form of copper. The possible project would use the company's existing infrastructure at Kansanshi, which would reduce the cost to between $150m and $250m, Mukutuma says.

South Africa gas cliff

Reliability of power supply in coming years is a key issue facing miners in South Africa. The country's industrial power users have been relying on gas sourced from Mozambique's Pande and Temane fields. Sasol, the operator of the Rompco pipeline which brings the gas to South Africa, has said that supply will end in the middle of 2027.

Projects for new LNG import terminals at **Matola** in Mozambique and at **Richards Bay** in South Africa won't be up and running fast enough to avoid the risk of supply disruption. The resulting "gas cliff" is a "critical challenge" for sectors like mining and manufacturing, says South Africa-based mining industry veteran Tony Harwood. A scenario where reliance on coal increases could drive up operational costs and reduce productivity, Harwood says. A surge in coal demand would "likely put stress on the country's coal supply chain", including mining, transportation, and distribution networks, he adds.

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Harwood is a former executive chairman of South Africa's Universal Coal. He is now CEO of Montero Mining & Exploration, which is focused on gold exploration in Chile, South America. A South African shift to more coal, he says, would raise emissions, and would likely face opposition from environmental groups and international stakeholders. "This could lead to regulatory pressure to limit coal usage despite the gas shortage." In the longer term, Harwood sees the uncertainty caused by the gas cliff as heralding a shift towards cleaner energy. Industries such as mining may accelerate investments in renewables, battery storage, and hybrid solutions, he says.

DRC 'Garden of Eden'

Central Copper Resources (CCR), an Australian miner with an exploration portfolio focused on Democratic Republic of Congo (DRC), plans to provide its own energy when it undertakes drilling. The company's energy solution has yet to be defined, but is likely to include a mixture of solar and diesel power, CEO Luke Knight says from Kinshasa. "It's an extra capex cost you have to live with," he says. Greater connectivity of the region's energy infrastructure would support mining, by allowing countries with energy surpluses to export them, he adds.

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Governments in Southern Africa can do more to help the industry maximise the region's critical minerals potential, Knight argues. The focus on **in-country beneficiation**, or minerals processing, is being hampered by **lack of understanding of the mining industry in some governments**, he says. A deposit held by a single company may not be large enough to justify a smelter, he says. "Every project would want to produce finished metals if it was economically viable. A blanket 'you must beneficiate' is often not the best way to do it."

> *"There's a disconnect between government rhetoric and what really needs to happen*

Knight has spent years trying to raise finance for DRC copper exploration from investment funds. Many, he says, are put off by perceptions over **excessive bureaucracy** and **weak rule of law**. DRC, he says, should be fostering competition between investors in China, the Middle East and the West for access to its resources, but this has not yet been achieved. "There's a disconnect between government rhetoric and what really needs to happen."

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CCR has 14 exploration licences in DRC and a single licence in Zambia. The **costs for retaining DRC exploration licences have risen too much**, Knight says. Back in 2017, he was paying about $50,000 to retain a set of 12 licences. Increases in 2018 and 2023 mean that has now increased to $750,000. The company's permit in Zambia, meanwhile, costs only about $8,000 to maintain. In addition, there's "too much red tape", with processes for getting exploration permits too long, he argues. "Time is money in our industry."

The result is that the "barrier to entry in DRC is now too high" for junior miners, Knight says. "There's a lack of understanding in [the] government on how to encourage foreign investment." Despite the risks, Knight remains committed to DRC for a simple reason. "That's where the copper is. It's the Garden of Eden for mineral development."

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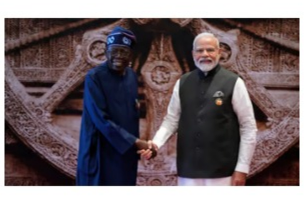

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