

How Africa can get more from its minerals

The Covid-19 pandemic has highlighted the need to build a stronger economy that is resilient in the face of future threats. One of the key areas where South Africa can maximise its potential for economic growth is the beneficiating extracted minerals.



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“Historically, exports of extracted minerals have been predominantly with low levels of value addition – we’ve allowed Africa’s mineral wealth to be stripped and shipped, without maximising direct benefit to the countries. If we as a continent beneficiated our own raw materials, growth would emanate through a number of avenues, including industrialisation, which would result in greater returns,” says Dr Hudson Mtegha, mining engineer and mineral economist.

Beneficiation is the process of improving or adding economic value to extracted raw materials, transforming them into higher value products, which can then be consumed locally or exported. The process itself is energy intensive, and requires a consistent supply of low cost energy in order to be effective. This presents the largest barrier to local beneficiation in South Africa – and the rest of the continent.

The African Union Infrastructure Outlook 2040 report suggests that energy demand in Africa is expected to increase at the rate of 5.1% annually through to 2040. “This implies that generation must increase by 6% per annum to keep up. In the meantime, the continent will continue to rely on fossil fuels for some time, growing at only 3.7% per annum. It’s imperative that we focus our efforts on securing a clean, environmentally stable and predictable supply of energy,” he says.

Small practical steps

While wind and solar-based energy production are suitable for general power purposes, they may be insufficient for powering beneficiation, since they rely on external factors. Nuclear energy could provide a more viable option, provided local policies are put in place to facilitate a closed nuclear fuel cycle in the future, to ensure the energy produced is renewable and sustainable.

“Promoting local beneficiation across the continent would have direct, positive impact on the economies. Local beneficiation would create more jobs, foster industrialisation as new industries grow to supply inputs from these activities and result in an overall diversification of the economies,” says Mtegha.

However, large-scale local beneficiation will not happen overnight. African countries will have to begin by taking small, practical steps towards building an economic environment that is conducive to local beneficiation.

“We need to begin by undertaking mineral value-chain analyses to identify opportunities and costs along the various stages of production, account for the existence of potential local and regional markets for beneficiated products, and emphasise industrial policies that focus on removing constraints, including skills, finance, energy, transport, water and legislation.

“Mining in itself is not a sustainable sector, since deposits deplete with time, while at the same time compromising the environment. Beneficiation, which is technology driven, is the key to continued growth across the continent. It would allow us to process lower quality deposits, for example, thereby extending the lives of the industry. Once competencies are developed, the industry can be linked to global chains by processing from other jurisdictions or indeed benefit from intellectual property developed for use elsewhere,” says Mtegha.

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