

Manufacturing energy storage south africa

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South Africa is searching for solutions to achieve economic growth and a sustainable future writes Tshwanelo Rakaibe, Senior Researcher: Energy Centre, Council for Scientific and Industrial Research, South Africa.

The global energy transition towards renewable energy sources presents a unique opportunity for the country to address its "triple challenge" and potentially gain a competitive edge.

This transformation hinges on robust energy storage solutions, particularly lithium-ion and vanadium flow batteries, which are poised to play a pivotal role in ensuring grid stability and enabling the integration of more renewable energy into the power system.

However, these sources have an inherent variability, meaning their output fluctuates depending on weather conditions. This presents a significant challenge for grid stability, as traditional power plants can no longer provide the necessary flexibility.

Battery storage systems offer a solution by storing surplus energy generated during peak production periods and releasing it when demand is high, ensuring a consistent and reliable power supply.

The South African government has acknowledged the potential of battery storage and has set ambitious targets for its deployment. The 2019 Integrated Resource Plan (IRP) and Eskom's Transmission Development Plan (TDP) project a need for 2GW to 6.6GW of battery storage capacity to be installed by 2032.

This translates to a substantial investment opportunity, estimated at R24 billion by 2030, showcasing the potential economic benefits of developing a strong domestic battery storage industry.

To overcome these challenges and unlock the potential within the battery storage sector, South Africa needs a multi-pronged approach that must include: investment in refining and processing infrastructure; focusing on existing strengths; fostering collaboration; developing attractive investment incentives; and embracing innovation.

The energy transition presents a unique opportunity for South Africa to not only address its internal challenges, but also become a global player in the battery storage industry.

By leveraging its existing resources, strategically focus on key areas of development and address critical

challenges, the country can unlock its potential in this rapidly growing market.

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