

Out of the coal age and into the stor-age

By [Seydou Kane](#)

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Fossil fuels accounts for 91.2% of South African generation capacity according to the 2019 Integrated Resource Plan. While the country is likely to continue turning to coal as its main source for generating electricity, plans are well underway to diversify South Africa's energy mix.



Seydou Kane, managing director for South Africa, Eaton

With multiple [solar projects](#) already operational, along with numerous [wind farms](#) producing energy too, it's clearer than ever before that South Africa is well on its way to sourcing as much as [25% of its energy mix](#) from renewables by 2030.

If the future of South African energy is going to depend increasingly on renewables, effective storage will be vital to better connect these energy sources to the grid. Energy storage will also be key to making our national energy infrastructure more resilient and, importantly, enabling it to increasingly rely on clean energy sources.

Learning to rely on renewables

Renewable energy has long been treated with scepticism. Some policymakers argue against renewable energy sources as unreliable, and this has resulted in a roller coaster market for renewables as policies sometimes shift rapidly – seemingly without consideration for the impact to benefits such as jobs and energy independence. Yet, the ever decreasing cost of renewables as technology advances has kept the South African market growing, albeit more slowly than is required to meet stated commitments for carbon reduction.

One major argument against renewables is that they do not produce a consistent baseload power like fossil fuels. The common refrain is that the wind does not always blow, and the sun does not shine at night. Of course, these are true, but it must be remembered that we are in a transition to a cleaner future – it is not an overnight change. It will take time, but the day will come when we run completely on renewable and clean power.

This is being accelerated by the falling cost of battery storage which helps optimise the use of intermittent renewable energy on the grid – further opening up the possibility of powering South Africa with clean, renewable energy while shifting further away from our reliance on fossil fuels.

When renewable energy sources generate more energy than businesses or homes require, the excess can be stored securely. This energy can then be released during times of peak demand, which means less need for conventional fuel generation. This reduces the carbon footprint of South Africa's energy supply. Even better, this energy can be located anywhere on the grid or in private consumer homes, so that businesses and houses can help eliminate harmful emissions and save costs.

To meet global emissions [reduction targets](#) and drive forward a nationwide low carbon economy, we will need to learn to rely on renewables. The deployment of pioneering energy storage solutions will be crucial in this process as we attempt to embed sustainability within the national energy grid.

Creating a more resilient grid with a behind the meter economy

Another increasingly interesting application of storage is in [microgrids](#) which can efficiently and economically plan for local energy generation and distribution, while increasing reliability. The implementation of local, distributed power generation and storage can be designed to allow portions of the grid and critical facilities to operate independently of the larger national grid when necessary, helping reduce the potential for unforeseen blackouts. The storage systems that are part of these microgrids – whether large or small – can also provide ancillary services to the grid, again strengthening performance and reducing the use of carbon generation.

Energy storage gives businesses and consumers the power of choice to optimise their energy costs and provides them with flexibility for the future. We are already seeing advanced aggregators working with businesses to educate and inform them on the extra money to be made while supporting the transition to a smarter, environmentally-friendly energy grid.

The investment opportunity

Investment in storage still needs to increase to ensure renewable energy sources can fully step into the breach created by the decline in coal use. The ever-falling price of energy storage technology today is creating an increasingly viable and attractive investment opportunity – but many South African businesses are still not aware of this potential.

Energy storage technology can be complicated to understand from a commercial perspective when it comes to exactly how it will save money for a particular site. However, the option to sell surplus energy back to the grid through ancillary services opens up new revenue streams that help offset the cost of electricity and dramatically strengthen the business use case. Adapting the South African regulatory framework to remove barriers to entry in the ancillary services market will facilitate this option and better support the development of a healthy energy grid.

The shift to a cleaner future is already taking place as South Africa moves away from coal and towards renewables. Eskom CEO Andre de Ruyter affirming that renewable energy will have to have a place in the country's energy portfolio if the utility is ever to provide reliable energy, along with recognising that the company cannot continue to violate environmental laws. Energy storage will accelerate this trend and help ensure a clean, stable, and cost-effective supply of electricity for the country.

ABOUT THE AUTHOR

Seydou Kane is the Eaton's managing director for South Africa.

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