

Challenges and opportunities abound in power utilities sector



By [Godfrey Marema](#)

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Turbulent 2022 will live long in the memory for those of us who work in the power utilities sector. Load shedding dominated local headlines, adding fresh impetus to the drive to bring more renewables into the system.



Godfrey Marema, plant manager and managing director of Eaton South Africa

The energy transition has been high on the agenda for some time and momentum towards new patterns of energy generation will increase in 2023.

Challenges and opportunities abound, and these are the trends that I believe will shape the year ahead:

Load shedding continues

Eskom has already warned South Africans that 2023 is set to come with intensified load shedding as more of the national network suffers breakdowns and new plants struggle to fully come online due to construction delays and design flaws.

Pressure will be on government to deregulate the industry and allow for more private producers, including consumers themselves. Those traditionally described as 'behind the meter' – the households, businesses and industries that consume energy – are increasingly stepping 'in front of the meter' to generate some of their own energy from assets such as solar panels, as well as manage their own supply and demand with energy storage systems.

Known as prosumers, because they produce and consume energy, their increasing involvement in energy markets is recognised as the likely way forward in an energy sector that must back away from heavy dependence on fossil fuels to mitigate climate change.

For national economies, domestically generated energy, even in small packets, reduces reliance on imports thus boosting energy security too.

The attractions are evident, but decentralisation presents challenges to the utilities sector that centre on how to balance the variable energy inflow from prosumers and commercial renewables while maintaining steady supply, particularly at times of peak demand on the grid. What is not in doubt is that decentralisation will be a growing trend in 2023 locally and abroad.



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Digitalisation

A subsidiary of S&P Global Market Intelligence called 451 Research concluded from [international research](#) that the utility sector is at a critical transition point. It is challenged with keeping existing grid and service levels in place, despite

increasing demands and ageing legacy infrastructure, while facing the need to change service models and apply data insights to optimise operations.

Supporting the acceleration of new additions to South Africa's energy mix will be achieved through the adoption of digital technologies that increase and optimise available energy. Energy storage opportunities will flourish and abound considering these developments.

Digitalisation can be seen by utilities either as a key to success, or as a competitor to what they regard as more pressing challenges. The pressure to choose will be greater than ever in 2023 and beyond.

Green energy is still the key solution

The abundance of natural renewable energy in South Africa has massive untapped potential. For large South African companies in industries like mining and heavy industry, generating their own power from renewable sources such as solar and wind is more than just about protecting the environment. These new sources are critical in managing fast-rising electricity costs, as well as ensuring stability of supply while the state utility, Eskom, repairs its ageing and ailing infrastructure. Alternative power sources, like green hydrogen will also see greater emphasis as continued research unlocks water through electrolysis.



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Ending the use of SF6 switchgear

It is important to note that while the intended move away from coal-fired power generation is very positive, the choice of materials used in electrical systems for new power stations, especially those containing harmful gases, could also have a negative effect on the environment.

The EU, and other European countries including the UK, are set to ban the use of global warming SF6 gas in medium-voltage switchgear from the mid-2020s. Utilities, together with the many other sectors that use this type of switchgear, will need to select alternatives for future projects.

In South Africa, large data centres, some utilities and several shopping centres have already implemented SF6-free switchgear. The country's greenhouse gas emissions are among the highest in the world and SF6 gas in electrical switchgear is still widely used as it provides high-voltage insulation but is linked to a rise in sulphur hexafluoride emissions.

As a decentralised high renewable grid will require more frequent switching, the global switchgear market for new switchgear, as well as replacements, is growing. Fortunately, SF6-free medium-voltage switchgear technology is mature, and widely available in South Africa in the range up to and including 24kV. This should make the decision to go SF6-free an easy one to make in 2023, and the years to follow. A more sustainable future will benefit us all.

ABOUT GODFREY MAREMA

Godfrey Marema is plant manager and managing director for Eaton South Africa. In this role, he is responsible for managing and working with the team to meet and exceed operational results to grow the business, coordinate local leadership efforts and drive stakeholder engagement, improve profitability - mainly in sub-Saharan Africa, and ensure Eaton meets all legislative compliance.

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