

How greater investment in wind power can help tackle SA's energy crisis

By [Janek Winand](#)

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"Persistent load shedding is impeding our recovery... We know that without a reliable supply of electricity, businesses cannot grow, assembly lines cannot run, crops cannot be irrigated, and basic services are interrupted," said President Cyril Ramaphosa in his recent State of the Nation Address.

"Without a reliable supply of electricity, our efforts to grow an inclusive economy that creates jobs and reduces poverty will not succeed," he added.



Janek Winand, managing director for South Africa, Siemens Gamesa

There is no doubt that the South African power generation crisis is a tremendous challenge for the country and is endangering the country's economy as a whole. As President Ramaphosa expressed in his speech, the trickle-down consequences of a delayed response in addressing these challenges will be dire for businesses, jobs and livelihoods.

As the second biggest economy in sub-Saharan Africa, South Africa has been restricted for years in its development by constant power cuts, lasting hours at a time, undermining people's ability to develop their lives, businesses to grow and services to function. However, the worsening of this situation over the past 12 months has made the situation unsustainable.

This is a particularly challenging reality to accept, taking into consideration how rich South Africa is in energy resources, particularly renewable clean resources that can help the country expand its power generation capacity and, in doing so, support its move towards a growing and greener economy.



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Creating a resilient foundation for clean energy expansion

Wind currently represents the best response to address the blackouts that are crippling the nation and to mitigate the risk of a grid collapse. With the right incentives and policies, renewable energy sources, particularly wind power, could rapidly help to resolve some of the country's most challenging energy problems. By investing in dispatchable power, grid expansion, grid stabilisers, and energy storage, South Africa will create a resilient foundation for clean energy expansion.

These efforts will contribute to faster development and integration of new power generation plants into the national grid, addressing issues with the integration of intermittent power sources like solar and wind, while contributing to a reduction of the country's dependence on coal-fired power generation, representing today still more than 80%.

South Africa is endowed with tremendous potential for wind power generation, which is now the most economically competitive form of generation in the country, alongside photovoltaic solar power. Furthermore, it is the fastest to deploy. A wind project today takes from contract signed to production just 24 months compared to several years or even decades that nuclear or fossil-fuel power plants take to plan and develop, and at a fraction of the cost, with much more flexibility. This technology is also consistently becoming more competitive.



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Sindy Peters 3 Mar 2023



Considering the levelised cost of energy

We, at Siemens Gamesa, have seen this evolution happening in real-time. In recent years we have built 855MW of onshore wind power in South Africa, installing wind turbines with a maximum power output of 2.3MW per unit. Today, we already offer turbines in-country with an output of 6.6MW per unit. To put it into perspective, to produce 150MW of power, a wind power plant now requires only 23 turbines, in contrast to 61 just a few years ago. The levelised cost of energy (LCoE) at the end of the day is being decreased dramatically.

The future of the energy mix will inevitably be one of combined sources of power, and in a just transition scenario, we must consider all options available to ensure access to power and economic development for all, with sustainability as a central strategic objective. As solar produces its maximum output throughout the day and wind more energy in the mornings and the evenings, both sources are complementary by nature to have a seamless flow of power into the grid.

Also to be noted is that while coal and nuclear power generation might still be of strategic importance to South Africa, they use a very substantial amount of water to operate, which is a relevant concern in a country that battles regularly with water shortages.



Positive societal impact of wind farms

In our experience, wind power projects in South Africa have had a tremendously positive impact not only in adding low-cost electricity to the grid, but also directly and indirectly on the communities around the projects themselves, many of them quite remote. These projects require a number of services during development, many sourced from the local communities, stimulating the local economy with a trickle-down effect.

The growth of the industry has also stimulated interest in science, technology, engineering, and mathematics (STEM) fields by young professionals eager to work with and within a transition to a greener energy landscape. There are multiple opportunities for synergies and collaborations with the local communities in these developments, which we promote to a great extent in the development of our wind farms.



Kangnas Wind Power Station, Northern Cape. Source: Supplied

Political will needed to move forward

In terms of funding, the willingness to invest is already there. South African banks have sufficient funds to invest in renewable energies and are also very motivated to do so. All that is needed is the political will to move forward. The announcement of Bid Window 7 is very welcome news, as well as the private power purchase agreement (PPA) market picking up after the licensing cap has been lifted, but more needs to be done.

Auctions need to happen more regularly and with an established short-, mid- and long-term pipeline that can provide companies with predictability and opportunities to plan ahead. The timeframes for approval processes and evaluations need to be shortened and simplified in order to accelerate development of new capacity.

In sum, it is imperative that we implement all the possible means to tackle the energy crisis head on as well as, in the words of President Ramaphosa, “undertake our just transition in a way that opens up the possibility of new investments, new industrialisation and that, above all, creates new jobs”.

The answer is right there, blowing in the wind.

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