New power supply model to transform SA's energy market

By Niveshen Govender

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A new private power supply model is transforming South Africa's power market and the trend is expected to accelerate over the next few years. Our energy system, which has been centred on the state utility, is opening up to not only allow but support a new era that will be defined by a private generation off-taker market.

Niveshen Govender, CEO, Sawea

Advantages of an off-taker market for the economy

A liberalised energy market will connect customers who need energy and IPPs who are able to supply energy – typically through renewable energy (RE).

This will reduce the burden, risk and dependence on Eskom and the national purse while increasing the much-needed generation capacity.

The South African Wind Energy Association (Sawea) has noticed a trend of an increase in private off-takers (simply put, these are private purchasers of power) sourcing RE, typically wind and solar PV. We believe that this will drive a competitive market able to provide new generation capacity in a cost-effective manner.

Intensive users have made public commitments to reduce their carbon footprint and one of the best ways to achieve this is by procuring clean renewable power. This could be done through upfront capital investment or power purchase agreements and could be built on-site or off-site and wheeled.

The system operator remains the enabler to provide wheeling through its network of power generated in the regions of highest wind resource to consumers in large load centres. We expect to see the framework for wheeling agreements being updated in the near future, as well as the expansion and strengthening of the national grid to allow for increased wheeling through the network.

Role of wind power in the decentralised market

Technical characteristics of wind energy are usually favourable as compared to other generation technologies, given the high energy availability factors, low cost and short build times. Wind projects are usually more viable at large scale. Given the shift in national policy considering the removal of generation license caps, wind projects are considered a lot more feasible.

Coupled with energy storage systems, wind energy continues to provide holistic solutions for energy security through sustainable means.

Benefits for end users from reduced tariffs

This is certainly a key benefit – as with increased competition, over time we hope to see a reduction in tariffs as the processes are made clearer by government and as the market matures. We are certain that the cost of electricity from wind power plants will be lower than the conventional generation plant.

Current large user tariffs from the national utility are in the range of R1.00/kWh to R1.20/kWh whereas several of the

publicly procured wind projects achieved in the region of R0.43/kWh to R0.57/kWh – considering market conditions, privately procured projects may have slightly higher tariffs.

Although the trend of consistently reducing tariffs under REIPPPP may have plateaued, it is expected that through the unlocking of the market, the private off-taker projects may provide further reduced tariffs which will certainly be lower than the existing tariffs from the national utility.

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Taxing energy-intensive users and the financial rewards of using RE resources

The Carbon Tax Act of 2019 was signed into law by the president in May 2019 and came into effect from the 1st of June 2019. The Carbon Offsets regulation was gazetted in November 2019 with grace periods for certain industries to reduce their emissions or pay the taxes are defined in the act. The first phase of the Act has been in implementation from June 2019 and was supposed to end in December 2022 with energy-intensive users (EIUs) paying R120/tonneC02 equivalent for 2019 which increased to R127/tonneCO2 equivalent for 2020.

The first phase has now been extended to 2025 with the rates increasing from R134/tonne CO2 equivalent for 2021 to R144/tonne CO2 equivalent. Energy-intensive users have typically sourced the bulk of their power requirements from Eskom, which has been exempt from the carbon tax regime until the first phase exemption expires in 2025.

Renewable energy sources provide an opportunity for off-takers to utilise the Section 12L tax incentive under the Income Tax Act, 1962 (Act no 58 of 1962) which enables a business of any kind to claim a tax deduction for the efficient use of energy and for investing in modern energy efficient equipment. This deduction is calculated at 95 cents/kWh equivalent for every kWh which has been saved by the use of more efficient technology or equipment.

How this new model compares

The permitting and due diligence requirements for the development of power plants for private off-takers would not be drastically different or shorter than the development for REIPPPP projects. The environmental authorisation requirements would not change and the same can be said for the legal or financial requirements which must be tightly controlled to ensure a viable project.

The procurement process may be shorter for private off-takers compared to public procurement in cases where the off-taker already owns the land on which the power plant will be built. A key area where the development of private-offtake plants may be longer than REIPPPP is for complex wheeling projects - due to the agreements that must be in place between the IPP, Eskom and the off-taker.

Global examples of this type of power system

Germany obtains a large proportion of its energy from distributed generation facilities from consumers. This allows consumers to sell surplus electricity generated from their own small PV plants to be sold back into the grid. Eskom and several municipalities have procedures for purchasing power back from consumer small-scale embedded generation facilities.

Northern European countries, specifically the Scandinavian countries of Norway, Sweden and Denmark have a fully interconnected grid. This means that these countries have the ability to share energy and sell power to one another depending on the level of resources available in the different regions at any given time.

Southern Africa has instituted a similar model by the establishment of the Southern African Power Pool (SAPP) – which is certainly to our advantage. The SAPP was created as an initiative by the Southern African Development Community (SADC) in 1995. Countries in the SAPP include: South Africa, Zimbabwe, Mozambique, Namibia, Zambia, Angola, DRC, Swaziland, Lesotho and Mozambique.

There is existing transmission infrastructure between these countries which allows energy to be bought and sold in the market depending on each country's consumption and supply requirements. Surplus energy generated in one country can be sold to another country in an online marketplace.

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Social and economic benefits of this new energy market system

It is evident that in order to assist to end the prolonged bouts of load shedding, our country needs access to an increased level of clean power generation urgently. The development of this clean power will provide new job opportunities in typically remote areas of the country, therefore boosting local economies.

A utility-scale generation system reduces the pressure on the Eskom generation fleet thus reducing the potential for load shedding. A stable electricity supply boosts the local economy since manufacturing and operations of commercial users can be planned and predicted. Together with a stable and reliable electricity supply, energy security is a key factor which boosts investor confidence in a country.

Should South Africa solve its electricity supply issues, there is a lot of potential for foreign investment. Off-takers have the balance sheets that can support these PPAs hence providing another method for investment into the local economy.

This new system will deliver electricity generation that is diversified, thus reducing the strain on the national utility and provide a more stable power supply and national grid. Furthermore, increased competition in the market will allow for lower electricity prices for commercial and domestic consumers.

Wind IPPs paving the way forward

Wind energy has only been operational in South Africa for the past decade hence the largest IPPs are those that have submitted and been awarded projects as part of REIPPPP. There are too many examples to mention though Sawea's members are amongst the largest wind energy IPPs operating in Southern Africa and are thus industry leaders who are paving the way forward in this new private generation and private off-taker market.

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