BIZCOMMUNITY

Importance of solar literacy as renewable energy adoption increases

By Ryno Bosman

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The latest statistics show that that South Africa's installed rooftop solar PV capacity increased from 983MW in March 2022 to 4,412MW in June 2023. This represents a whopping 349% increase in a little over a year. Other data shows that in the first quarter of 2023, we imported five times as many batteries as we did in the entire 2022, as trade and industry pursue energy security during load shedding.

Supplied image: Nicolway NSE solar system

South Africa’s import of solar panels has also hit a new record. R12bn worth of solar panels have been imported by South Africans so far in 2023. Since 2010, we have imported R35bn worth of panels. Largely driven by private sector consumption, the value of imports in the first half of 2023 equates to more than the entire value imported in 2022, which was R5.6bn.

Research from Morgan Stanley suggests that the decline in South Africa’s coal generation, coupled with the boom in private power supplies, means electricity generated from the private sector could well exceed output from Eskom by 2025.

The boom in rooftop solar in the country not only helps consumers achieve electricity independence, and lower energy costs in the long term, but also softens the blow of relentless load shedding.

New legislation paves way for future growth

Earlier this year, government announced its support for the adoption of new rooftop solar capacity with policy measures, including a new rebate scheme, which enables individuals who install new panels onto their homes to claim rebates equal to 25% of the cost of the panels. This rebate scheme is effective from 1 March 2023 to 29 February 2024.

This is just one of the many legislative reforms introduced in the past few years to trigger reform in the energy sector and encourage self-production as government grapples with the ageing fleet of 15 coal-fired power stations that currently generate more than 80% of the country's electricity. The science makes sense as our climate is ideal for solar, with most areas in the country average more than 2500 hours of sunshine per year, among the highest in the world.

What this means for the solar industry

Alongside this urgent sense of adoption and race for energy autonomy, the solar industry in South Africa is on an upward trajectory, fast outpacing almost every other sector in industry. From residential, to commercial and industrial, all the way to utility scale providers, few can keep up with the demand. Initially, the mines were the early adopters. Now we see every sector of industry scrambling for autonomy, with a focus on behind the meter energy production.

The space has become highly competitive from a skills perspective with the sharpest minds being highly sought after as solar players seek to retain their edge. Simultaneously, the banks have increased their appetite to finance solar installations, providing further impetus for growth.

The quest for longevity

However, beyond the move towards adoption, the focus must extend to the longevity and quality of solar assets. A solar PV plant's lifespan can span decades, but this durability hinges on meticulous development, thorough planning and quality workmanship. Building solar systems with a 20-25 year life expectancy demands attention to detail at every stage of implementation.

Mitigating risk

Mitigating the risk of and unstable grid is another critical facet of solar energy integration. The inclusion of battery energy storage system (BESS) solutions and microgrids improves energy production by creating grid stability.

The consolidation of energy production through a single point also alleviates administrative complexities and unnecessary admin fees associated with multiple connections. This is coming to the fore particularly in the agricultural sector and is a valuable learning for all.

The importance of solar literacy

Yet, beyond the technical aspects lies a vital aspect of this transformation: solar literacy. As the solar revolution flourishes, organisations must invest in building an informed workforce.

If you don't have engineering skills in house, contracted external engineers can provide invaluable insights and aid in intentional decision making for your organisation's transition towards sustainable energy management. This entails understanding not only the technical intricacies but also the sensitivities particular to your site and your unique requirements.

Prioritise operations and maintenance

We are seeing an influx of trophy solar systems being built that add appeal to modern architecture and reflect high tech brands, but I emphasise caution where this is prioritised. While aesthetics are fun, the novelty wears off when energy efficiency crashes.

It is critical to prioritise the long term operations and maintenance of the system. Things like easy access for cleaning, solid monitoring systems and support structures are essential. If they aren’t factored into the design, the system’s output will suffer, with the result that the predicted yields won’t be reached.

Efficiency is everything when it comes to solar. Spend time interrogating the best ways to maximise output. It sounds so simple, but too often, short term costs get prioritised over long term yields. However it is the latter where even 1% represents substantial savings in the long term. Solar trackers, for instance, increase the yields of ground mounted systems significantly.

In this journey towards energy independence, there's a lesson to be learned from South Africa's abundant sunshine: just as the sun endures, so should our commitment to creating a resilient, efficient and sustainable energy ecosystem. Every solar panel installed today isn't just about immediate gains; it's about paving the way for a future where energy reliance is anchored in clean, renewable resources that last.

The journey has begun, and the destination is clear: a brighter, cleaner, and more resilient energy landscape that will empower all South Africans to thrive.

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