

Rooftop PV in SA on the rise

According to Ashley Maistry, associate director for Accenture Resources, increasing environmental awareness is driving South Africans to invest in a more sustainable future by installing solar photovoltaic (PV) rooftop panels.



© Martin Henke – 123RF.com

Moreover, “At current prices of R1.10/kWh to R1.20/kWh, residential PV can now generate electricity that is cheaper than that provided to customers by the national electricity provider (R1.5/kWh - R1.80/kWh),” Maistry said. “As such, the market for solar distributed energy has grown from 3MW in 2010 to 200MW in 2016 – a CAGR of 101.4%. This is expected to grow to 500MW per year, with novel financing models emerging and making it easier for prospective solar PV owners.”

The growing use of solar photovoltaic rooftop panels within South African homes is aligning the country with global trends toward distributed generation (DG). According to Accenture’s *Digitally Enabled Grid* research, now in its fourth year, utilities face the greatest risk of lost revenues from distributed generation. The uptake of residential solar photovoltaics and fuel cells is a major contributor.

Implications of distributed generation

The Accenture survey – of more than 100 utilities executives across more than 20 countries – revealed that 58% of distribution utility executives believe DG will cause revenue reduction by 2030.

Although the concern is particularly acute in North America and Asia Pacific (as vertically integrated utilities in these regions face both declining energy sales revenue and increasing network costs to support reliable energy delivery), the above growth figures show that South Africa will certainly not be left untouched.

Executives surveyed said the biggest DG-related stress on utilities' network hosting capacity will come from energy prosumers who are driving small-scale DG (cited by 59%), followed by medium- or high-voltage connected DG such as a large-scale solar plant (28%).

Grid faults expected to increase

Accordingly, nearly six out of 10 executives (59%) expect grid faults to increase by 2020, due to more volatile uses of their networks triggered by the deployment of distributed renewable generation. In fact, 59% believe they will exhaust their DG hosting capacity within 10 years, if they haven't already. After that, accommodating new DG on the distribution network will require increasingly high capital reinforcement costs. In the face of such disruption, only 14% of distribution utilities have a very clear forecast of their potential distributed generation network hosting capacity.

"The rapid evolution of the technology, better economics and the growing accessibility and environmental appeal of residential solar photovoltaics – or PVs – have pushed distributed generation from the fringe to a mainstream factor on the grid," said Stephanie Jamison, managing director, Accenture Transmission and Distribution.

"Combining solar PV with more economical options for battery storage, demand response, and energy efficiency will give consumers more power and require distribution utilities to provide more flexibility and different types of services. Despite the challenges the integration of these new technologies at scale bring, it is essential to meet the growing expectations of consumers in order to position utilities to provide services-based business models that could drive much-needed new revenue."

Smarter distributed generation integration can meet the challenge

Utility executives identified the integration of distributed generation as the business challenge that has grown the most over the last two years. In response to the disruptive network impact of DG, a majority of utilities anticipate deploying a broad set of new capabilities over the next 10 years in network capacity planning, storage support and distributed generation operations. But there is still a long way to go.

"A balanced, network-wide approach is required to successfully integrate DG and enable utilities to benefit from its proliferation," added Jamison. "The key will be to strike the right balance between prudent capital investments, optimising operations and maintenance spending, while managing regulatory constraints on deployment and investing in smart solutions. This investment offers the opportunity to reduce the anticipated capital spending on network reinforcement and operating costs, while maintaining the quality and reliability of the power supply."

Reduced capital spending

Complementing the survey, Accenture economic modelling revealed that, in the United States and Europe, deploying customer-facing smart grid solutions could reduce capital spending for small-scale DG network reinforcement by around 30% by 2030, equating to reductions of \$6bn and €16bn, respectively.

The reductions in cost would be enabled by technologies that optimise networks for greater efficiencies across a more dynamic operating range. For example, locational incentives could steer investment to parts of the network with higher reinforcement costs; curtailment of DG output could be made at critical times, and storage and demand response services could be deployed.

Indeed, smarter DG integration has the potential to be a foundational component of the smart grid for many distribution utilities to lead in this new space, providing cost-effective solutions to one of their most urgent challenges, according to

Jamison.

For more, visit: <https://www.bizcommunity.com>