

PRESS RELEASE

Grid management could mitigate SA power crisis

Better management of the power distribution network and harnessing of smart grid technology could deliver faster, more cost-effective solutions to the power crisis than building new power plants, say power sector experts.

Speaking ahead of the DistribuTECH Africa power distribution conference to be held in Cape Town in July this year, industry experts said focusing exclusively on generating more power is not enough to end South Africa's load shedding woes.

Dr. Willie de Beer, Chairman of the DistribuTECH Africa Advisory Board, says while adding generation capacity is necessary, the distribution network should not be overlooked. "In the end, we still need to get that energy to the customer. This is where we could become unstuck in the next round. There is a massive shortfall on distribution maintenance and infrastructure, so even if we normalize generation capacity, there is pressure on the distribution network causing unplanned outages," he says.

De Beer notes that effective demand response is the key to minimising load shedding, and that the distribution network is where this demand response begins. He explains: "Utilities in South Africa and the rest of Africa need to be more proactive in terms of managing the demand profile. If we can shift loads and better manage demand, we can reduce the pressure on the grid and limit outages. This implies using smart grid technology to implement measure such as increasing rates during peak times, communicating automatically with customers when demand is exceeding generation capacity, or automatically limiting each user's available capacity when the grid is under pressure. In this way, load shedding could be minimized at lower cost and within months."

DistribuTECH Africa Advisory Board member and GM; Engineering Information System Sales at Powertech System Integrators Lafras Moolman notes: "Effective demand response is critical to hedge against load shedding. The challenge, however, is getting the right technology deep enough into the distribution network to enable finer grained control of what loads gets switched off when. The underlying technologies exist, but the question remains whether we can afford them, especially taking into account the maintenance and electrification backlogs we are currently facing."

Scott Foster, CEO of Delta Energy & Communications and fellow DistribuTECH Africa advisory board member, says an investment in smart grid and associated technologies delivers significant returns: "Throughout 2013, \$1.6 trillion was invested in energy supply – nearly two-thirds of which was in emerging markets like those in Africa. And the region continues to demand more. In fact, according to a [recent report](#) by McKinsey & Company, Sub-Saharan Africa's electricity sector will need capital investment of about \$835 billion by 2040 in order to meet the continent's increasing demand for electricity.

The South African Government – as well as any African nation anticipating this substantial investment – should be looking for a way to assure that it is well-spent. By leveraging big data, government and utilities can assure the optimization and impact of improved energy systems. For example, with data analytics, utilities can determine the most efficient operation of distribution equipment, which includes benefits like optimizing voltage settings to

maintain specified voltages at customer meters while minimizing delivery system losses and power acquisition costs,” says Foster.

“In the same vein, utilities could correlate blink counts at meters to identify fault locations or analyze outage reports to locate tripped circuits – again, resulting in lower costs and maximizing efficiency of any investments in the region. Further, analytics may be used to pre-emptively identify points of failure, messaging these events and identifying specific assets for preventative maintenance,” he says.

“Although most utilities in South Africa are working with decades old infrastructure, leveraging the cloud provides easily configurable computing power so that data storage can be easily added, at almost any level, to store the data needed for the analytics. Utilities that are able to implement the cloud should look for solutions with a relatively low initial implementation cost and a fast return on investment.”

How and why to harness smart grid solutions and better manage demand will come under discussion at DistribuTECH Africa, which will be staged alongside POWER-GEN Africa at the Cape Town International Conference Centre from 15 – 17 July 2015. This co-located conference and exhibition will be presented by PennWell Corporation. The events bring together the world’s leading power equipment suppliers along with companies developing power infrastructure in Africa. For more information and to register, go to www.distributechafrika.com and www.powergenafrika.com

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