



ABB SOUTHERN AFRICA

A Global Powerhouse

PRODUCTION: Timothy Reeder

A global leader in power and automation technologies, ABB in Africa provides solutions to improve the efficiency, productivity and quality of its customers' operations, constantly providing world-changing innovations while retaining a focus on diminishing environmental impact.



//MICROGRID SOLUTIONS PROVIDE STABLE AND COST EFFECTIVE CONTINUITY OF POWER SUPPLY WITH MINIMAL ENVIRONMENTAL IMPACT//

automation to water EPC contracts and power plant automation. On the industries side of business, meanwhile, is the provision of systems, products and services in the areas of pulp and paper, mining, metals and minerals, cement, chemicals and petrochemicals. These are bolstered by further expertise in manufacturing and customer industries.

At the forefront of ABB's operations remains, steadfastly, the concept of innovation, and has seen it pioneer many of the technologies that drive society today. To date, these have included robots capable of printing cars, light switches and huge electrical transformers right through to control systems that manage entire power networks and factories. Perhaps the most recent beneficiary of this policy of continuous development was ABB's Longmeadow facility in Johannesburg, which was in June of 2016 the target of notable investment from ABB.

The company commissioned a new 750kW integrated solar photovoltaicdiesel microgrid at the 96,000 m2 site. Such innovative solar-diesel solutions serve to provide continuity of power supply to this premises, while in turn helping to fulfil a major target of ABB's, namely reducing carbon emissions. With South Africa holding the dubious title as the biggest consumer of electricity in the sub-Saharan region and with demand continuing to outstrip the available supply, an ever increasing focus is being placed on renewable energy sources like wind

and solar. Factors such as power shortages, fossil fuel price volatility and environmental concerns, meanwhile, entail a ramping up of this search for sustainable solutions.

This is where microgrid systems prove their worth so fully. They are pre-designed modular containers, and with only 26% of sub-Saharan Africa connected to the grid network, it is a unique system designed to be easily deployable to rural areas that have poor infrastructure, thus increasing the rate of access to their inhabitants.

Given the numerous short to medium term challenges currently faced, microgrids are a viable solution to address some of these, and ABB Southern Africa Managing Director, Leon Viljoen, was keen to espouse their many virtues.

"Microgrids is one of the areas that ABB internationally is focusing on," he stated. "It's one of four growth projects in the 2020 strategy for ABB and very applicable to the African continent. With microgrids, we take solar, wind and other renewable types of generation, and also diesel, and we make sure that it works effectively. It's easy to install renewables but it is extremely important to control the mix and within ABB we have excellent products for this." ABB has already shown this final point to be true, having performed more

ABB has been growing the African arm of its operations since the establishment, in 1926, of its first office in Cairo, Egypt. Now, some 80 years later, it has spread its influence to possess major offices in some of the region's key countries: in Algeria, Morocco, Tunisia, Libya, Côte d'Ivoire, Cameroon, Nigeria, Mali, Ghana, Senegal, South Africa and Kenya, to name but a few. A world leader in power and automation engineering, the company provides solutions for secure, energy-efficient transmission and

distribution of electricity, seeking to increase productivity across a broad range of industrial, commercial and utility operations.

In South Africa, ABB's three manufacturing sites in Gauteng help to maintain a leading local manufacturing presence, with all its various elements coming together to comprise the group's staff complement of 1200 people. Its South African head office, logistics and manufacturing centre are all found in Longmeadow, Johannesburg, where ABB is able to perform several manufacturing

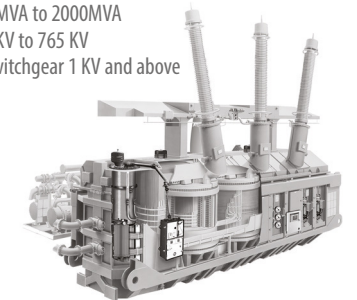
operations, while at its Alrode, Johannesburg premises ABB has an AC machines factory, that specialises in the manufacture of medium voltage electric motors for both local and export markets.

ABB's dealings can be divided into two distinct, broad categories. On the one hand, it offers complete solutions to utilities, among which are electrical power infrastructure for transmission and distribution networks and associated products and systems these can include anything from substations, reactive power compensation and utilities



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than 30 global installations across a diverse range of applications which have successfully served remote communities, islanded grids, utility grid support and industrial campuses, and continue to do so.

ABB's microgrid installation in Johannesburg is made up of its compact and versatile PowerStore™ battery-based grid stabilising system, which has been developed to address frequency and voltage fluctuations. Also included is a Microgrid Plus distributed control system, or DCS, which both manages the supply of power and balances the fossil-fuel and renewable energy sources in accordance with loads. By doing so in a coordinated manner, greater access to utility grade power is enabled.

"This innovative microgrid solution helps address a real-world challenge by providing stable and cost-effective continuity of power supply while minimising environmental impact," reinforced Claudio Facchin, President of ABB's

Power Grids division. "Penetration of growth markets like Africa and leveraging innovative technologies like microgrids to improve power reliability are key elements of ABB's Next Level strategy," he said, further underlining the importance of this aspect to ABB's forward planning. South Africa is far from alone when it comes to power shortages and outages and as such several other emerging economies in Africa, Asia, South America and other parts of the world face similar challenges. Implementation of such technologies could be pivotal here, given the existence of thousands of similar facilities that could leverage a microgrid solution to address the matter in the same way.

Forming part of a multi-million Rand order to City Power's new Sebenza intake substation, ABB delivered its largest high voltage

gas insulated switchgear (GIS) board earlier this year, with the plant set to strengthen City Power's distribution network growth. "ABB is a leading innovator in GIS technology especially in the areas of ratings, operations, switching technology, smart control and supervision, and compactness," explained Confidence Mabulwana, Product Group Manager High Voltage Products, ABB South Africa. "As a result, ABB's GIS offers outstanding reliability, operational safety and environmental compatibility." The 132kV GIS board is formed of 38 bays, making it the largest such high voltage board ABB has supplied to date in Africa. GIS is used where space is limited, for example, extensions, in city buildings, on roofs, on offshore platforms, industrial plants and hydro power plants.

"The project has been successful because of the partnership involving different stakeholders including the consultant, enduser and contractor working together on the technical issues," says Faith Magobolo, Project Manager at High Voltage products for ABB South Africa. "The sheer size of the project we have been able to execute places us in a good position for similar projects."

Slightly further afield, ABB has also taken on the management of power at the Grand Egyptian Museum (GEM), the largest archaeological museum in the world. The renowned architectural masterpiece is equipped with ABB's reliable power and automation technologies, with the project requiring the company to furnish the complete electrical package; this included an Extended Automation System to manage

the power, as well as transformers, medium-voltage switchgear, low-voltage panels and retractable supply post panels, installed for the first time in Egypt. "We are very proud that ABB has been given the opportunity to supply power and automation technology and expertise to one of the most prestigious tourist attractions in Egypt," summed up Naji Jrejiri, Manager for ABB in Egypt and Central Africa.

ABB continues to benefit hugely from its solid African foundations, having recorded sustained margin growth even in tough recent markets. "We delivered the eighth consecutive quarter of margin accretion through our continued focus on execution," said CEO Ulrich Spiesshofer. "With our enhanced cash culture, we have delivered more than 30 percent higher cash flow so far this year with a much steadier


cash generation profile." With net income of \$568 million, basic earnings per share rose by 2%, as ABB's policy of holistic delivery looks set to remain for the foreseeable future. "We continue to run the company with discipline, realising growth opportunities where possible whilst driving earnings and cash growth. We are committed to unlocking value for all shareholders as a more focused, agile company building on our industry-leading digital offering." 

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