

Robben Island turns to the sun for power

Robben Island has gone green with a [solar energy microgrid](#), which will produce almost 1m kWh of electricity annually.

The system comprises a photovoltaic farm, a lithium-ion battery storage facility and smart controllers to ensure a seamless electricity supply, while significantly reducing the island's fossil fuel consumption.

Robben Island's energy usage profile includes residential needs, desalination, harbour and offices; in total, the island uses almost 2m kWh of electricity annually. Commissioned by the Department of Tourism, the solar PV project, significantly reducing costs of buying diesel and transporting it to the island.

The microgrid consists of three power production elements. The solar PV farm consists of 1960 mono-crystalline modules with a total of 666.4kW power supply. The battery bank, consisting of 2,420 lithium-ion battery cells, is able to store 837kWh and output a maximum of 500kVA. The third power production element is the diesel generators, which are used when no solar or battery storage is available. Multiple controllers between these power production elements balances the power supply and creates a smart microgrid, ensuring a seamless supply of power.

Reducing fossil fuel consumption

"The microgrid on Robben Island is the largest combined solar and lithium-ion storage microgrid system in South Africa," says Dom Wills, CEO of Sola Future Energy. "The solar microgrid will reduce fossil fuel consumption by 235,000 litres of diesel per annum or 50% of previous usage. This will result in a carbon emissions reductions of at least 820 tons. The island's microgrid is also a very good example of how non-electrically connected Africa will be powered in the next 20 years."

The island is a World Heritage Site, and therefore a sensitive area for construction. Environmental and historical considerations meant that the site for the PV farm was carefully chosen. Sola staff were sent for training to handle penguins, snakes and wildlife as well as archaeological artifacts that might be uncovered

Sola Future Energy believes that Africa's future relies on affordable, clean, reliable and accessible energy. Besides financial savings, Robben Island's transformation is symbolic: it shows that an affordable and clean energy future is possible for off-grid communities.

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