About the Robben Island project

Robben Island
For nearly 400 years Robben Island served as a prison - the strong currents around the 4.8 square km island, made it almost impossible to escape from. It became a symbol of non-violent anti-apartheid resistance during and after the imprisonment of Nelson Mandela, who led South-Africa through its transition as its president. Today one of South Africa’s most popular tourist sites, the Robben Island Museum receives more than 300,000 visitors a year, who are given guided tours of the by former political prisoners.

A World Heritage Site, Robben Island is located 9 km off the coast of Cape Town and relied on diesel generators as the only source of electric power, consuming approximately 600,000 liters of fuel annually.

Cloud-based remote operation
This enables management of the power supply, including energy storage and balancing of the fossil fuel and renewable energy in accordance with loads. The operations will be handled from the Nelson Mandela Gateway in Cape Town.

Benefits

High penetration of renewables
9 months of the year – minimum, solar power will be running by ABB’s Microgrid solution

Driving energy efficiency & sustainable growth
75% reduction of about 600,000 liters of annual fuel consumption and carbon emissions and supporting the Department of Tourism’s efforts to keep the heritage and spirit of this world renowned island alive

Power from the sun
667 kW peak photovoltaic field together with ABB’s solar inverters have been installed.

Secure communications
ABB Ability™ wireless network will connect the solar plant to the microgrid and provide reliable and secure communications to monitor and control the electricity infrastructure.
Reliable power where and when needed

PowerStore™ ensure reliable power availability, grid stability, highest possible penetration of renewable energy into existing grid together with intelligent control system for both grid connected and off-grid systems.

02 PowerStore™ Battery acts as a virtual generator
The battery used includes state-of-the-art inverters and virtual generator control software that work in concert to stabilize power systems.

03 PowerStore™ helps decrease dependency on fossil fuels, enabling a greener grid

Remote Operation
ABB’s cloud based remote operation and monitoring tool offers a comprehensive solution to increase productivity, improve energy efficiency and reduce operational costs. The microgrid operations will be handled remotely from the Nelson Mandela Gateway in Cape Town.

Facility details
<table>
<thead>
<tr>
<th>Location</th>
<th>6.9 kilometres (4.3 mi) west of the coast of Bloubergstrand, Cape Town, South Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microgrid solution</td>
<td>Containerized plug-and-play solution with 500 kVA/837 kWh ABB Ability PowerStore™ battery energy storage system</td>
</tr>
<tr>
<td>Mean Annual Rainfall</td>
<td>405 mm</td>
</tr>
<tr>
<td>Maximum elevation</td>
<td>29 m asl</td>
</tr>
<tr>
<td>Average minimum temperature</td>
<td>8°C</td>
</tr>
<tr>
<td>Average maximum temperature</td>
<td>23°C</td>
</tr>
<tr>
<td>Maximum relative humidity</td>
<td>100%</td>
</tr>
<tr>
<td>Coordinates</td>
<td>Latitude 33° 48' 015&quot; South, Longitude 18° 22' 336&quot; East</td>
</tr>
</tbody>
</table>

Fossil fuels

Renewables

PowerStore™