

Volkswagen South Africa Optimizes Solar Production with SolarEdge

Volkswagen Group South Africa (VWSA) used SolarEdge technology for its first Solar PV installation on the rooftop of its Engine Plant.

The primary driver for VWSA to invest in a solar installation was to offset the electricity expenses incurred in operating the manufacturing plant on a three-shift basis. Increasing energy stability, and reducing delays and production losses caused by load shedding were also important motivations. In addition, the company wanted to support its sustainability objectives by reducing CO2 emissions.

Why SolarEdge

VWSA sought well-known, highly reputed PV suppliers with a strong global experience. Their top priority was reliability and a long warranty period, and this, along with the ability to increase yield to reduce the ROI period of the project, were important factors in selecting SolarEdge. VWSA aims for ROI within 4.5 years.

“While other EPCs proposed string inverters, Blackwood Power proposed innovative SolarEdge technology at a competitive price with the expectation of added energy, and therefore higher revenue, and a shorter ROI period. Additional advantages of design flexibility, module-level optimization, exceptional safety, and lifetime system monitoring, made SolarEdge the obvious choice.”

Murray Thalrose, Operations Officer for the main contractor, Blackwood Power

Installation Date:
November 2017

Uitenhage,
South Africa

EPC :
Blackwood Power
Dorman Projects

Peak Power:
984kWp

Modules:
3030 x 325w

Power optimizers:
1515 x P700

Inverters:
31 x SE27.6 kW



SolarEdge inverters offer technology at a competitive price and added energy

As the installation is on the rooftop of the engine plant which accommodates over one hundred employees, safety played an important role in the choice of PV supplier. SolarEdge systems come with built-in SafeDC™, and comply with VDE-AR-E-2100-712 safety standards. This requires that DC voltage is automatically reduced to a touch-safe level within 15 seconds if a building is disconnected from the grid, or the inverter is turned off, so that maintenance workers or first-responders will not be exposed to the risk of direct contact with high-voltage DC cables. As SafeDC is integral to the system, no additional hardware or fireproof constructional measures are required, leading to increased safety and a reduction of installation costs. In addition, SolarEdge inverters have built-in protection designed to mitigate the effects of some arcing faults that may pose a risk of fire, in compliance with the UL1699-B arc detection standard. Errol Dorman, CEO of Dorman Projects, contracted by Blackwood to install the solar PV said, ***“SolarEdge power optimizer technology offers a huge advantage in the ability to reduce voltage. Safety for on-site maintenance staff and first-responders is a vitally important consideration.”***



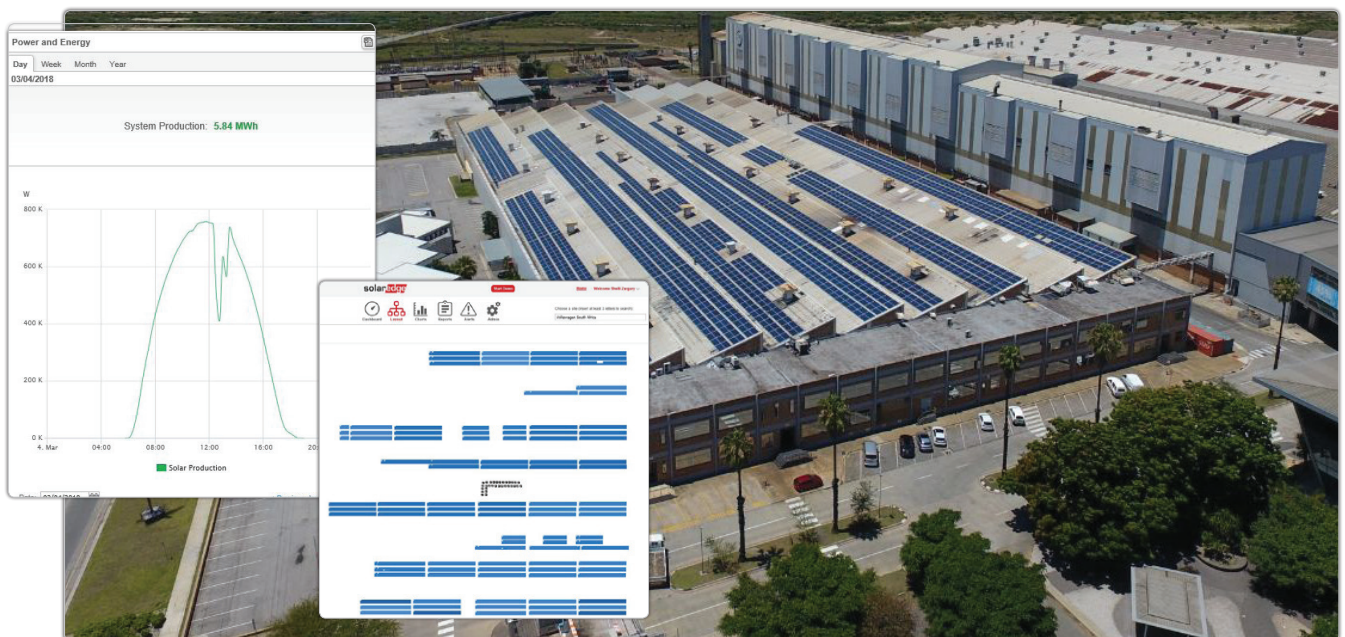
Design and Installation

The saw tooth roof of the facility presented considerable challenges. The roof has multiple extrusions, and achieving the targeted energy yield with traditional string inverters using the agreed-upon design would have been difficult. Errol Dorman explained, ***“Without the design flexibility of SolarEdge, we couldn’t have installed as many modules, or placed them as close to the obstructions that are shaded at different times of day.”***

Continued Mr. Dorman, ***“Connecting the 31 inverters to the modules via only 93 strings of 32-34 modules saved a third of the DC cable length. Reducing the number of strings resulted in far less installation time and labor cost than would a comparable 200 string inverter installation. From our experience, by installing SolarEdge we saved some 12% on Balance of System (BoS) costs.”***

Advanced Monitoring for Maximum Power

Integrated with the plant’s IT and energy management system, the SolarEdge monitoring platform tracks module performance in real-time, facilitating efficient preventative and corrective maintenance to ensure long-term optimal system performance. By choosing SolarEdge, VWSA has ensured maximum power harvesting from each module to maximize lifetime PV production. Mr. Chapman, Project Leader for VWSA, said, ***“For generations, Volkswagen Group South Africa has led in key areas of transformation. VWSA is committed to reducing carbon emissions at our production site, and the use of solar power reduces our use of electricity sourced from coal-fired power stations and will have a lasting, positive impact on the environment.”***



Aerial view of the saw tooth roof of the engine plant