



Background

Coca-Cola Beverages South Africa (CCBSA), a bottling partner to the Coca-Cola parent company, manufactures, packages, merchandises and distributes the world-renowned branded beverages to the organization’s vast network of vending partners. Worldwide, the organization is committed to sustainable practices and monitors its environmental impact closely.

In 2018, CCBSA embarked on a process of installing solar systems at its 11 bottling plants across South Africa, through a competitive solar engineering procurement and construction firm. A funding partner was brought on board to finance the systems and implement a power purchasing agreement (PPA) system. However, after commencing work on four sites none of which had reached practical completion, the EPC supplier exited the agreement.

Objectives

NSE was onboarded to this project to complete the four brownfields sites and install the seven greenfields sites from scratch. The objective was to ensure minimal disruption to the process, ensure quality management, and complete the process so that the vision of realizing solar energy at all eleven sites could be achieved.

All eleven sites would be rooftop developments, with grid-tied connections. Certain sites were envisaged to have generator integration, which NSE would complete.

Additionally, NSE would manage the operations and maintenance of the portfolio, with a total capacity of 11 MW, for a two-year period.

Portfolio overview

Devland:	<ul style="list-style-type: none"> • 2890 x 335 Wp & 135 x 455 Wp panels (total 3025) • 17 ABB inverters • 850 kW AC • 1 029.575 kWp DC 	Midrand:	<ul style="list-style-type: none"> • 3060 x 335 Wp, 120 x 330 Wp, 60 x 325 Wp panels (total 3 240) • 18 ABB inverters • 900 kW AC • 1084.2 kWp DC
Elgin:	<ul style="list-style-type: none"> • 2340 x 405 Wp. panels • 16 ABB inverters • 800 kW AC • 947.7 kWp DC 	Polokwane:	<ul style="list-style-type: none"> • 3393 x 360 Wp panels • 20 ABB inverters • 1000 kW AC • 1221 kWp DC
Gutsche:	<ul style="list-style-type: none"> • 3400 x 335 Wp & 192 x 405 Wp panels (total 3502) • 20 ABB inverters • 1000 kW AC • 1216.76 kWp DC 	Pretoria North:	<ul style="list-style-type: none"> • 3400 x 335 Wp panels • 20 ABB inverters • 1000 kW AC • 1139 kWp DC
Premier:	<ul style="list-style-type: none"> • 1467 x 360 Wp panels • 9 ABB inverters • 450 kW AC • 528 kWp DC 	Tannery:	<ul style="list-style-type: none"> • 3024 x 360 Wp panels • 18 ABB inverters • 900 kW AC • 1088.6 kWp DC
Phoenix:	<ul style="list-style-type: none"> • 3366 x 360 Wp panels • 20 ABB inverters • 1000 kW AC • 1212 kWp DC 	Wadeville:	<ul style="list-style-type: none"> • 2667 x 360 Wp panels • 16 ABB inverters • 800 kW AC • 960.12 kWp DC
Lakeside:	<ul style="list-style-type: none"> • 1989 x 360 Wp panels • 12 ABB inverters • 600 kW AC • 716 kWp D 	Total capacity 11 MW	



Solar solution

NSE commenced work on both the brownfield sites in 2019, and soon got to work on the greenfield sites. Where engineering challenges were picked up, these were rectified. The development work for the unbuilt sites were reviewed and corrected where necessary.

To date, 10 of the 11 grid-tied roof-mounted sites have reached completion and been commissioned. The last site, where the Eskom connection process is currently underway, is expected to reach completion shortly.



System performance

The performance of all of the systems are monitored and controlled through a master controller, which can also communicate with the inverters. All of the data is logged and saved in cloud-based storage. Furthermore, the performance can be monitored in real time via a smart phone app.

The performance of selected sites is represented below.



Operations and Maintenance

New Southern Energy manages the operations and maintenance of the full portfolio. The systems' performance is monitored daily and should any faults occur, technicians are dispatched to rectify it swiftly. The panels are kept clean at all times to ensure optimal performance.