

## Background

Doornkraal Agri plays a leading role in the Ceres region's fruit production capabilities in the Western Cape. Made up of various farms that have been integrated into the business over time, Doornkraal Agri farms an excellent assortment of high-quality fruit and vegetables.

The company also runs a cooling and packing facility, to ensure that the harvested produce is packed and shipped to local and international markets in optimal condition. Naturally a facility of this nature uses a high amount of electricity to ensure quality control and minimal waste.

## Objective

Doornkraal Agri approached New Southern Energy with their goals to become more independent, to operate in a more sustainable way and reduce interruptions caused by load-shedding. By adopting solar energy, they could reduce their reliance on the national grid and reduce the company's carbon emissions.



## Results

The site was commissioned early in January 2021.

The system currently generates 25 – 30 % of the sites total consumption

In its first year, the system is expected to generate 806 626 kWh, which, based on a tariff of 1.2 R/kWh, will save the company approximately R 1 million.

This solar plant has an estimated lifespan of 25 years



## Solar solution

New Southern Energy designed and a built a solar system made up of 1 536 x 330 Wp Canadian solar panels and 15 x 27.6k Solar Edge String Inverters. A phased approach was proposed, where the first phase completed was the 506.88kWp rooftop system with diesel generator integration and soft load transfer operation.

The panels are mounted on the roof of the packing warehouse, and the string inverters were installed inside the building within an identified space on site. The solar modules face N32°W and N55°E, with the same slope as the roof at 15°.

This solar system is also grid-tied, meaning that it is connected to the national electricity grid.

The system's performance is monitored and controlled through a master controller, which can also communicate with the inverters. A Solar Edge plant controller enables the PV system to synchronize with the diesel generator, reducing the fuel consumption during load shedding and power outages.

All of the data is logged and saved in cloud-based storage. The monitoring and controlling system also includes a weather station which measures the solar radiation and module temperature. Furthermore, the performance can be monitored in real time via a smart phone app.



## Team

**Business Development Manager:**

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