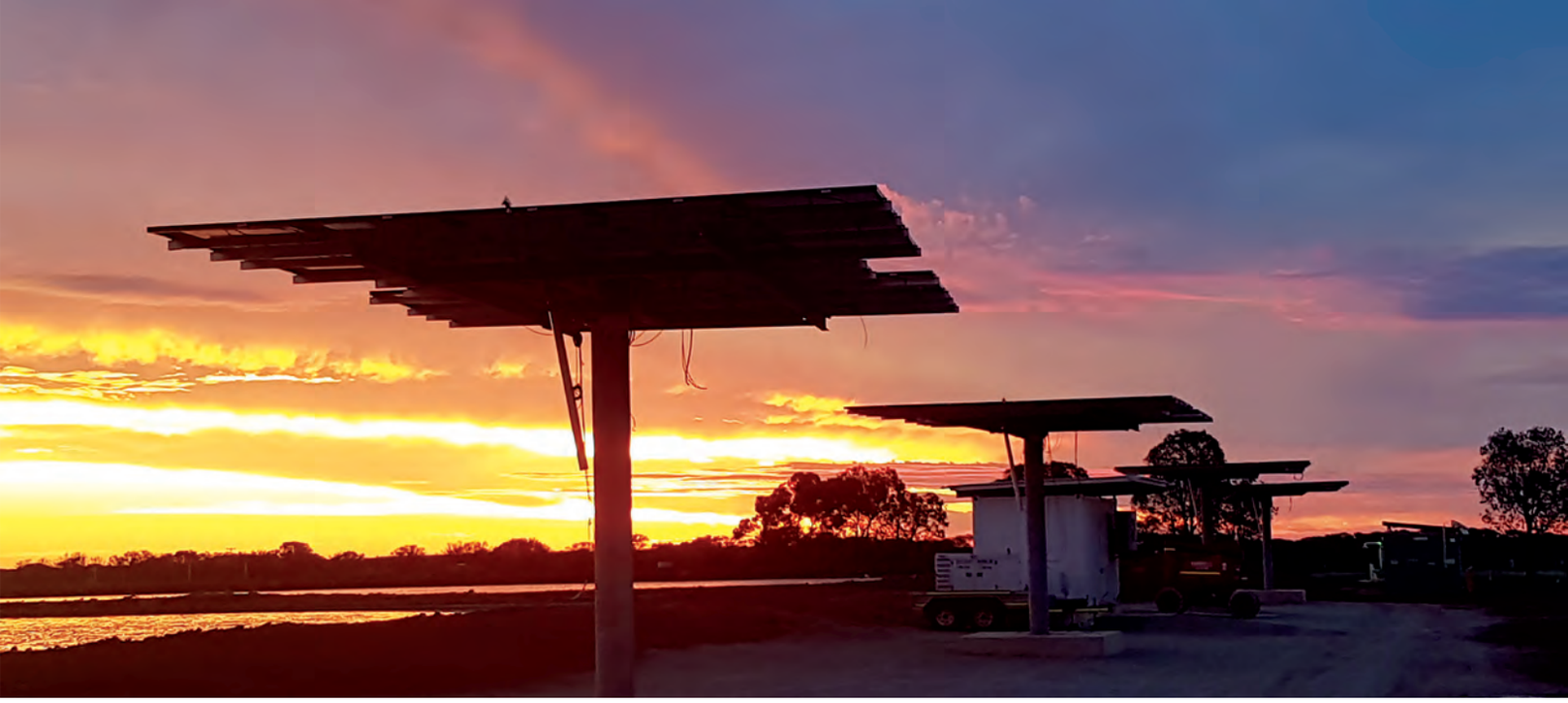

Leonora

Off Grid Solar Energy Bringing Water to the Western Australian Outback

Outback Western Australia is renowned for its hot and dry climate. While townships in the region bask in abundant sunshine, water is a scarce resource. Located 833 kilometres northeast of the state capital Perth, the town of Leonora has been looking for solutions to increase its water usage efficiency. Supported by Water Corporation's 'Water Forever: Towards Climate Resilience' 2060 strategy.

Balance was tasked to supply a solar powered source that provided sufficient energy to run the water treatment plant for not less than 8 hours on a clear sunny day and a sufficient battery storage for night time and overcast operations.

The recycled water was to irrigate the Biggs Street sporting oval, reducing the need to use drinking water for irrigation. Balance designed a 30.7kWp soar system mounted on twin axis trackers to get maximum yield and 45kWh of battery storage.

This system saves about 21 million litres of drinking water each year.

This project was a successful referral from previous work Balance conducted with the Water Corporation in Broom, Western Australia.

Location: Town of Leonora Western Australia

Project: Water Corporation Mirco-Grid Power Supply

Solution: Twin axis trackers with Solar PV (31 kWp) and Lithium Iron Storage Batteries (45 kWh)

Commissioned: February 2018

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Balance
BETTER ENERGY PLATFORMS FOR LIFE

Leonora

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BALANCE SOLUTION

Balance designed, supplied, installed and tested the system on site, which included;

- 31 kWp tracker mounted solar PV arrays using the LG Neon2-325 Watt modules.
- 2 x SMA Tri-Power 20,000 TL solar inverters. Innovative earthing system reduced the number of stakes required (consequentially reduces effort required for maintenance checks).
- 45 kWh of battery storage capacity using the Sinlion 5L-1 kWh LiFePO4 battery modules.
- 50 kW Siemens Sinamics S120 Voltage Source Converter
- Supply of SCADA database, mimics, software and RTU configuration.
- Programming of the software and configuration of the SCADA System (UWSS) including works on the Human-Machine Interface (HMI).

RESULTS

Shire of Leonora named WA's 24th Waterwise Council - The shire also uses recycled water to irrigate the Biggs Street sporting oval, which saves about 21 million Litres of drinking water each year.

Treated recycled water contains nutrients such as nitrogen and phosphorus that are necessary for plant growth. As a result, fertiliser applications can potentially be reduced in areas irrigated with recycled water.

Most importantly, the scheme provides a climate resilient water source for future irrigation of the sporting grounds, ensuring the community can have access to recreational areas. Future plan to expand the treated recycled water to the community golf course.

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