



LONE PINE KOALA SANCTUARY - FIG TREE POCKET, QLD

Designed and installed by Springers Solar

INDUSTRY: PARKS & RECREATION

REQUIREMENTS:

Reduce existing electricity bill & reduce Lone Pine Koala Sanctuary's carbon footprint.

SYSTEM SIZE:

92.6kW

PRODUCT:

LG NeON® 2 330W

ESTIMATED ANNUAL OUTPUT:

142,000kWh approx.¹

INSTALLED:

June 2018



“Wildlife organisations should be leading the movement to environmentally friendly energy options.”

Robert Friedler – General Manager, Lone Pine Koala Sanctuary



Estimated annual savings on electricity usage fees approx \$23,000¹



More than 130 tonnes of CO₂ emission avoided per annum²



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BACKGROUND

Lone Pine Koala Sanctuary has been operating since 1927, and is a destination for local and international guests to not only see native animals, but to also connect and learn. Lone Pine aims to have visitors leaving feeling empowered to make positive changes in their daily lives to help protect native wildlife habitats.

Lone Pine is committed to maximising the positive environmental and social impacts of their operations, with the ultimate aim to become energy independent. This is being achieved through water and energy efficiency, biodiversity, communication and planning. Through cooperation with employees, suppliers and guests, they aim to set a new standard in environmental welfare management. Lone Pine strongly encourages all businesses to switch to alternative energy sources as it is a profitable option that has positive environmental outcomes.

CHALLENGE

This new facility is surrounded by a lot of trees thus posing a lot of shade onto the building and therefore onto the panels.

Removal of trees was not an option as they form part of a wildlife corridor for native wildlife as well as the sanctuary's environmental strategy.

The centre also experiences blackouts which are a problem for the 'Koala Biobank' fridges, which store invaluable koala genetics and need constant power. This needed to be taken into consideration in the overall design of the system.

Springers Solar was tasked with the design and installation of a highly reliable, quality system with long warranties and high performance.





SOLUTION

A suitable system size based on the Sanctuary's load and return on investment was determined to be 92.6kW.

Panels selected were LG 330W NeON® 2 panels due to their quality, high efficiency, long warranties and performance.

Due to the shade Enphase micro inverters were chosen. Tesla powerwall units were installed to provide back-up power for the 'Koala Biobank' fridges in case of blackouts.

WHY WERE LG PANELS CHOSEN

The LG 330W NeON® 2 panels were chosen due to their quality, long warranties and performance.

LG and other companies, including the Australian consumer organisation Choice have been involved in a number of comparison tests of the LG modules against many other brand panels. LG NeON® 2 panels are consistently one of the highest performing panels in these tests.

The LG NeON® 2 panels have a lower degradation of electricity production than many competing panels as the panels age. This is due to the low LID level, because of the use of N type treatment of the cells which uses phosphorous as a replacement for Boron.

LG NeON® 2 panels offer a 25 year product and performance warranty which includes parts and labour compared to the 10 year manufacturer's warranty offered by many other manufacturers.

¹ The estimated average annual electricity usage fee savings are estimates made by LG Solar™. The estimates made by LG Solar™ are based on the actual system size, estimated annual output of the system in the post code of the location with degradation of rated electricity production of 2% in the first year and 0.5% in subsequent years, as well as a lifetime of 25 years. We assume a flat electricity rate of \$0.25 per kWh, and a feed-in tariff of \$0.11 per kWh (with annual increases of 2.5% per annum). Based on the industry the end-customer is in, we assume 80% self-consumption of solar electricity generated (e.g. for end-customers in the manufacturing industry we assume 80% self consumption from Monday to Friday and 20% on weekends (with corresponding 20% and 80% being exported into the grid), while for leisure based clients we assume 80% self consumption everyday and 20% being exported into the grid). We do not apply a net present value discount on the estimated annual electricity usage savings. Of course actual annual electricity savings will vary on a wide-variety of factors including installation conditions, usage and self-consumption patterns, actual hours of sunlight, electricity rates, feed in tariffs, increases in electricity rates as well as other factors. For further details and other solar calculators, please see: <https://www.lgenergy.com.au/solar-calculators>.

² The estimate for CO2 emissions avoided assumes that the entire electricity output of the system is consumed and the emission factor used is the weighted average for all Australian States based on the calculator available at carbonneutral.com.au. For more information, please see: <https://carbonneutral.com.au/carbon-calculator/>.