Light and Life in the Bush

BUSH LIGHT

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Illya Pinu

The Setting

This Fact Sheet provides information about the Bushlight Household System commissioned on 13th October 2005 at Illya Pinu community. The system provides power to one house and an ablution block.

Background

Illya Pinu is approximately 300km north west of Alice Springs, 12km east of Yuendumu community. Prior to the Bushlight system being installed, the community used an old solar system to power lights, television and a DVD player during daylight hours.

Community Energy Planning Process

Bushlight has developed a participative approach to energy planning called the Community Energy Planning Model. Facilitated by regional Bushlight staff, this process assists householders to make informed decisions about their specific energy needs, including generation and consumption, which ultimately influences the most appropriate energy service options.

Basic Technical Information

The maximum daily AC load is 6.3kWh/day. There are no DC loads. The system comprises the following major components:

- Roof mounted PV arrays of 1.92 kWp (24 x 80W panels). Twelve existing PV modules were also connected to supplement the new array.
- Battery bank - 1,200Ah @ 24VDC each providing 2 days of storage at a 23% average daily depth of discharge.
- Inverter - 1.5kW @ 40°C. The expected peak and surge loads are 0.9kW and 3.7kVA respectively.
- The total project cost was $87,026 (ex GST). This included system installations, data logging equipment, two service visits and additional works such as reticulation, installing a streetlight, and connecting the existing PV panels. The Northern Territory Government Renewable Energy Rebate Program provided a rebate of approximately $37,458 on the total cost.

Monthly Load Variations

The design load takes into account an increased use of ceiling fans and greater refrigeration load during the summer months.

Technical Demand Side Management

To minimise the risk of excessive power usage the following strategies have been implemented in consultation with the community:

- Low amp circuit breakers have been installed to prevent the usage of high power demand appliances.
- Centrally controlled timers have been fitted to certain light and power circuits.
- Individual device timers have been fitted to certain lights and fans.

In addition to the technical demand side management measures, Bushlight staff have facilitated a range of education and training activities to assist the residents to manage their power consumption appropriately.

Appliance Replacement

As part of the overall approach to demand side energy management, Bushlight assists the community with identifying inefficient appliances, which can be replaced as funds become available.

At Illya Pinu, an old, inefficient refrigerator and freezer were replaced with appropriately sized, energy efficient models.

Agreed Deferred Loads

During the Community Energy Planning process it was agreed with the householders that some specific appliances would be treated as deferred loads. This means the appliances will only be used during those periods when the batteries are fully charged and excess power is being generated. In the case of Illya Pinu, it was agreed that the use of the washing machine would be deferred until excess power is available.

Generator Use

The RE system is equipped with a caravan plug for generator connection, so a generator can be used to back-up the system.

Other Energy Services

In addition to the energy being supplied by the Bushlight Systems, the community continues to rely on the following additional energy source:

- Firewood for warmth and cooking

Contact Bushlight

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