



## Mt Dennison

### The Setting

This Fact Sheet provides information about the Bushlight Household System installed at Mt Dennison community. The system provides power to a large shed. The system was commissioned on 22 January 2008.

### Background

Mt Dennison is approximately 300km north west of Alice Springs, off the Tanami highway. Prior to the Bushlight system being installed, the community used a generator which was owned by Yuendumu Council. When the generator was working, the community would use power leads to connect to their appliances. When the generator was in operation, it provided electricity for around two hours a day.

### 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 6.1kWh/day. There are no DC loads. The system comprises the following major components:

- Roof mounted PV arrays of 2.24 kWp (28 x 80W panels).
- Battery bank – 1200Ah @ 24VDC each providing 2 days of storage at a 25% average daily depth of discharge.
- Inverter – 1.6kW @ 40°C. The expected peak and surge loads are 1.3kW and 3.8kVA respectively.
- The total project cost was \$113,531. This included system installations, data logging equipment, two service visits in the first year and additional works such as reticulation and installing a streetlight. The Northern Territory Government Renewable Energy Rebate Program provided a rebate of approximately \$48,054 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.
- A sunset switch controls the operation of the street light.

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.

## 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 Mt Dennison, it was agreed that the use of the washing machine would be deferred until excess power is available.

## Generator Use

The following situations where the generator may need to be run have been identified:

- During extended periods of cloud cover and when there are many visitors
- When residents want to use appliances with high energy demand

## 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
- Solar hot water
- Solar bore pump for water supply

### Contact Bushlight

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