



Lamatha

The Setting

This fact sheet provides information about the Bushlight Household system at Lamatha. The system was commissioned on the 5th of September 2005.

Background

Lamatha is located on Mornington Island in the Gulf of Carpentaria. The community previously used a small RE system with two small batteries which powered lights for about 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 in making informed decisions about their specific energy needs, including generation and consumption, which ultimately influences the design of appropriate systems.

Basic Technical Information

The system has been designed for a maximum daily AC load of 8.9 kW hours. There are no DC loads.

The system comprises the following major components:

- Ground mounted PV array of 4.2 kWp. There are 34 panels of 123W capacity.
- Battery Bank with 2400 Ah capacity at 24VDC, providing ~3 days of storage at 16% average daily depth of discharge.
- Inverter rated at 2.2 kW @ 40°C. The maximum expected peak and surge loads are 1.8kW and 6.0kVA respectively.
- The total cost was approximately \$128,386. This includes installation, data logging equipment, two service visits in the first 12 months, a customised remote user interface and additional works including reticulation and installing a streetlight.

Monthly Load Variations

The maximum daily power consumption is expected to occur from October to April. The most significant contributors to the higher load are:

- Ceiling Fans: It is assumed that fans will be used significantly during the build up and wet season.
- Refrigeration: These appliances will use more power during the hot, wet season.



Technical Demand Side Management

To minimise the risk of excessive power usage the following strategies have been implemented:

- Low amp circuit breakers are used to prevent the usage of high power demand appliances
- Circuits for fans and general power outlets have been fitted with centrally controlled timer switches. The duration of these timers have been set to meet residents' needs
- Individual device timers have been fitted to fans and lights.

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

Appliance Acquisition & 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 Lamatha Bushlight is assisting with the purchase of a new, energy efficient refrigerator and freezer to replace old, inefficient ones.

Agreed Deferred Loads

During the Community Energy Planning process it was agreed with each household 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. At Lamatha, it was agreed that use of the washing machine would be deferred until excess power is available.

Generator Only Circuits

A generator only circuit was installed for times when the community wants to use appliances which use a lot of energy, such as power tools.

Other Energy Services

In addition to the energy being supplied by the Bushlight system, the community continues to rely on these additional energy sources:

- Firewood for cooking and warmth
- Gas for cooking
- Solar thermal for hot water



Contact Bushlight

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