



Panels Well

The Setting

This Fact Sheet provides information about the two Bushlight Household Systems installed at Pantharrpilenhe (Panel's Well) community. Each system provides power to one house. The systems were commissioned on Friday, 29th July 2005.

Background

Pantharrpilenhe is approximately 110km east of Alice Springs. Prior to the Bushlight systems being installed, there was an RE system on one house which was inadequate for the household's electricity needs. The second house had a portable generator only.

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 loads for the two systems are 6.0 and 7.0kWh/day. There are no DC loads. These systems comprise the following major components:

- Roof mounted PV arrays of 2.72 kWp (34 x 80W panels) and 3.04 kWp (38 x 80W).
- Battery banks - 1400 and 1700Ah @ 24VDC each providing 2 days of storage at a 24% average daily depth of discharge.
- Inverters - 2.2kW @ 40°C. The expected peak and surge loads are 1.2/1.1kW and 4.2kVA respectively.
- The total project cost was \$194,517. This included system installations, data logging equipment, two service visits in the first year and additional works including new reticulation & relocation of the existing RE system. The Northern Territory Government Renewable Energy Rebate Program provided rebates on the total cost of approximately \$86,670 on the total cost.

Monthly Load Variations

The design load takes into account the use of ceiling fans and a 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
- Individual device timers have been fitted to fans and certain lights.

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 Pantharrpilene, an old, inefficient refrigerator was replaced with an appropriately sized, energy efficient model. Incandescent lights were replaced with 15W compact fluorescent lights.



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 Panels Well, 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 the community wants to use power tools or machinery associated with a developing bush foods enterprise.

Other Energy Services

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

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

Contact Bushlight

Bushlight Administration
PO Box 8044, ALICE SPRINGS NT 0871
Tel (08) 8951 4344, Fax (08) 8951 4333
enquiries@bushlight.org.au