



Snake Well House 4

The Setting

This Fact sheet provides information about the Bushlight Household System installed at Snake Well. The RE system provides power for one house. This system was commissioned on the 18th of May 2006.

Background

Snake Well outpost is situated North East of Alice Springs. Prior to the Bushlight RE System being installed the community use a small portable Honda petrol generator to provide power.

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 of the system is 8.1 kWh/day.

There are no DC loads.

The following major components are used:

- PV array - roof mounted with a capacity of 2.72kWp
- Battery bank - Capacity of 1700Ah @ 24VDC providing 2 days of storage at 18% average daily depth of discharge.
- Inverter – 1.5kW @ 40°C, with expected peak and surge loads of 1.4kW and 4.0kVA respectively
- The total project cost was approximately \$84,950. This included system mobilisation and installation, two service visits in the first year and additional works such as reticulation, installation of ceiling fans. The Northern Territory Government Renewable Energy Rebate Program provided a rebate of approximately \$37,153 on the total cost.

Monthly Load Variations

The design load allows for the maximum daily power consumption to occur during the summer months when fridges and freezer are cycling more frequently and ceiling fan use is greater.

Demand Side Management

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

- A Remote User Interface (RUI) has been installed at the house. Each RUI incorporates an intuitive user interface to aid energy management and is installed inside the house



Remote User Interface

- Low amp circuit breakers have been installed to prevent the usage of high power demand appliances
- Individual device timers have been installed for certain lights. The duration of these timers have been set to meet residents' needs
- Centrally controlled timers have been installed for light, fan and general power circuits. The duration of the timers have been set to meet residents' needs

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

During pre-installation discussions residents agreed to use certain appliances, such as washing machines, only when there is enough power available. The best time to use them is in the morning, when there is

plenty of sun and when excess power is available.

Appliance Acquisition & Replacement

As part of the overall approach to demand side energy management, inefficient appliances are identified and replaced as the community is able to do so. At Snake Well H4 an old, inefficient refrigerator was replaced with an appropriately sized new energy efficient unit.

Generator Use

The existing generator can be run through the Bushlight RE System.

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

- During extended periods of cloud cover
- When the community wishes to use power tools, kitchen appliances and other heavy load appliances.

Other Energy Services

In addition to the energy being supplied by the Bushlight Systems, Snake Well House 4 residents continue to rely on the following additional energy sources:

- Firewood for cooking outside
- Gas for cooking inside
- Solar Bore Pump



Contact Bushlight

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