



Solar Powered Desalination System

Uleveu Island - Vanuatu



Uleveu Island is situated within the islands of Vanuatu and is approximately 3km long by 1500 metres wide.

With a population of over 1800 people, residing in three main villages: Pelong, Pescarus and Lupus, the people of Uleveu were heavily reliant on water wells which were often polluted with seawater and bugs.

In 2012 Advanced Eco Solutions NZ, were commissioned to design a solar power solution suitable for powering a desalination plant located near the school at Sangali on the north side of Uleveu Island. The key purpose of this plant was to provide the local community with enough water to sustain their needs during the droughts common in the Pacific.

The system was designed to make up to 3000 litres of water per day during the 3 month dry season. With the addition of the water storage facilities the new system is capable of delivering 4 litres of water per person for 1500 locals. The people on the island had historically used water from wells which had been dug into the coral. This water is filtered water from the sea but is often contaminated with bugs, and ultimately results in many locals suffering from illness.

The aim of the distilled water is to give the locals clean water to drink and prepare food. During the non-drought seasons the water at the facility is available for showers to reduce skin related diseases and wash basins for clothes laundering.

The solar powered panels driving the water desalination system often produce excess solar power which is presently being used to make block ice. The ice is used to keep market fish cool and extend the fishing period by a couple of days. The ice is also sold to the villages and the money raised is to be used for maintenance and surplus funds set aside for further projects.

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Operation:

The system uses salt water from the nearby lagoon and is pumped into a filter system which is then pressurised by a high pressure pump and sent through the reverse osmosis membranes. The water is stored in two large water tanks and pumped out to be used

The unit uses 2.0KW and is operated for 10hrs a day. The solar is 5.6KWpeak and during the drought there is 4.5hrs to 4.8hrs peak sunshine. The system is producing significant water with this setup.

System specifications

Water system

- High Pressure water pump
- Water membranes
- Salt water pump
- Poly filter kit
- Carbon Filter kit
- LP fresh water pump
- Simple automated control box
- 240litres per hour

Solar Plant

- 5.6KW Solar PV system
- 8KW inverter charger
- 60KW battery bank



The Desalination system is simple to use and is operated and maintained by the locals.



To find out more about the full range of Advanced Eco Solution's sustainable energy products contact:

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