

# Solar SETuP

## NAUIYU (DALY RIVER) SOLAR/DIESEL HYBRID PROJECT



*Power and Water Corporation is building on 20 years' experience incorporating solar energy technologies into remote and regional communities to deliver the Northern Territory Solar Energy Transformation Program (Solar SETuP).*



Solar SETuP is a four-year, \$55 million program that will integrate solar energy systems into existing diesel power stations in over 30 remote Indigenous communities across the Northern Territory. Solar SETuP is a world first program of its kind: the largest isolated off-grid solar rollout in a regulated environment. It will lower reliance on diesel fuel that is subject to volatile fuel prices and unpredictable supply chains.

### What will Solar SETuP do for Nauiyu (Daly River)?

Nauiyu is the first Northern Territory community to be chosen. This is because Nauiyu was the focus of a feasibility study into solar/diesel hybrid technology in 2012, which produced the Solar/Diesel Mini-grid Handbook. Other communities will be selected according to program criteria.

The Nauiyu Solar SETuP project will use a 'high penetration' system that incorporates advanced technologies such as cloud forecasting, energy storage and load management. Effectively, this maximises the solar intake and supplements the solar output with diesel generation on cloudy days.

During the day, community electricity demand will be met using mostly the solar power system. This will achieve approximately 50 per cent diesel fuel energy saving.

This experience will guide future projects aimed at delivering even greater fuel savings across other communities.





## Project partners

- Australian Renewable Energy Agency (ARENA)
- Charles Darwin University
- Centre for Appropriate Technology
- University of Alaska
- University of New South Wales

## Technology snapshot

The system will incorporate the following technologies:

- Flat Plate Solar Modules – this style of module is considered standard solar technology and is currently used in remote communities such as Kalkarindji, Ti-Tree and Alpururulam (Lake Nash).

- Control System Integration – the solar system will be integrated into the existing diesel power station control system and allow for further solar expansion in future.
- Energy Storage – an energy storage system will be integrated into the system to supplement solar power output during cloud events.
- Cloud Forecasting – will be tested to monitor cloud events which lower solar system efficiency.

Through this project, Power and Water Corporation will determine the most effective combination of technologies to deliver cost-effective, reliable and safe electricity services to remote Indigenous communities across the Northern Territory.