

**Assisting the NT
in meeting its 50%
by 2030 renewable
energy target**



**Solving challenges
in one of our most
complex & isolated
power systems**

Off-grid power in the NT

The Northern Territory's land mass is 1.4 million square kilometres, with a population of little more than 200,000. Many people live long distances from regulated power grids, relying on off-grid systems for their electricity requirements.

A consistently viable renewable energy resource in the NT is solar, especially since Central Australia has some of the highest solar irradiance levels in the world. Stand-alone power systems (SPS) typically consist of solar photovoltaic panels with a battery, and a backup diesel generator.

Off-grid systems have been used across Outback Australia since the 1980s. Many systems suffered from reliability and maintenance issues, which prompted a federally-funded program called Bushlight. Bushlight ran from 2002-2013 and led the design, deployment and maintenance of hundreds of stand-alone power systems. Bushlight was highly regarded for its community engagement and thorough planning.

When designing community systems today, factors that should be considered include whether the generation will be centralised or distributed, hybrid (fully integrated with diesel) or non-hybrid, and with DC versus AC coupling. Cost recovery, system size, and load are also crucial; and ongoing maintenance costs should be factored into the budget.

Intyalheme worked with technical consultancy Ekistica to produce the Off-Grid Guide. The document leverages knowledge generated during Bushlight and is downloadable at the Intyalheme website.

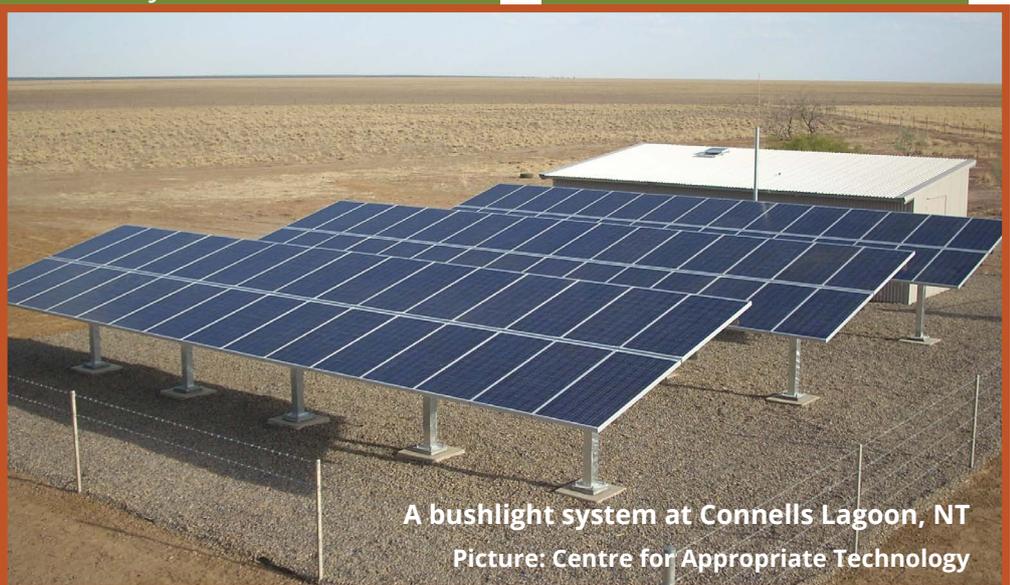
Quick facts

There are about 430 homelands/outstations in the NT.

These communities are home to more than 10,000 people.

130 stand-alone power systems were installed during Bushlight.

Off-grid systems are also used at tourist facilities, ranger stations and pastoral properties.



A bushlight system at Connells Lagoon, NT

Picture: Centre for Appropriate Technology



The Intyalheme Centre for Future Energy is helping to identify and coordinate the removal of barriers to further renewable energy penetration in the Alice Springs power system.

More details: intyalheme.dka.com.au

