



**CAIRNS
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PASSION IS IN OUR NATURE

RENEWABLE ENERGY FACT SHEET

With an abundance of natural resources, Cairns is fortunate to have access to renewable energy sources such as wind, water and the sun. It is the perfect location to facilitate the development of technologies that reduce our reliance on fossil fuels.

With many communities in Queensland being remotely situated, advances in technology thanks to specialist knowledge, means that reliable energy sources which are clean and safe, are more accessible than ever before.



“I enjoy contributing to the transition from fossil fuels to renewable energy technologies.”

DAVID SMYTH
DIRECTOR AND PRINCIPAL ENGINEER,
AC SOLAR WAREHOUSE



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Renewable Energy in Far North Queensland

Solar Power Technology

AC Solar Warehouse is a national solar and storage distributor with head office in Cairns. They specialise in the latest solar and energy storage technologies with their engineering team working with global manufacturers to develop products that deliver higher levels of safety, performance, reliability while reducing energy costs for homes and businesses in Australia, New Zealand and the Pacific.


Solar and Storage technologies are widely used for residential and commercial applications to meet the challenge of transitioning from fossil fuels. The price and performance of these technologies are delivering lower cost reliable electricity in many locations throughout Australia and around the world.

Wind Farms

People have been utilising the power of the wind as an energy source for hundreds, if not thousands of years, but only recently has this option gained traction as one of the fastest emerging renewable energy solutions in the world.

Windy Hill was Queensland's first wind farm when construction was completed in 2000. Located near Ravenshoe, the highest town in the state, it has 20 turbines and a 12mW capacity.

Mount Emerald Wind Farm began operating in 2018 and comprises of 53 wind turbines with a 180.5mW capacity. Located 5km west of Walkamin in Far North Queensland, it was the state's largest wind farm when it began operating. Over the course of its 25 year operating life, it will average between 500 and 600 million KWh of safe, clean, renewable electricity every year.

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Transportable Energy Solutions

Off-grid Energy Solutions

The large scale Portagrid units have been designed by Jason Pyne, Director of Cairns-based Australian Sustainable Energy to provide energy generation and storage with optional additions of water filtration, CCTV, Wi-Fi capabilities and remote monitoring and controlling.

Portagrid consists of a modular, transportable container with the latest battery, inverter and generation technology to ensure a continuous supply of power that can be shipped anywhere around the world. Once delivered to site, Portagrid systems can be ready and operational within hours. What this means is that remote locations can have access to a fully self-contained system which delivers continuous power.

Versatile Energy Solutions

In times of natural disasters, powerlines and networks are destroyed, unavailable or damaged. Portagrid systems provide portable power solutions, installed and up and running within hours. Systems can be relocated and stored away whilst not in operation and re-activated when required.

For the farms that require power at multiple sites and locations across their land, Portagrid is easily relocated. Systems can significantly reduce the reliance on noisy, costly diesel generators.

Portagrid can provide alternative solutions for SWER (Single Wire Earth Return) support and Fringe of Grid alternative, reducing costs to Energy Utilities for maintenance of existing infrastructure. Product solutions include; Grid support unit (GSS), Stand Alone Power Systems (SAPS), Utility Scale Energy Storage systems (USS) and Uninterruptible power supply (UPS).

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Expansive Network

The Australian Photovoltaic Institute data shows 25.6% of eligible dwellings in the Cairns local government area have rooftop solar panels, which is above the average of 21% for Australia.

Going for Growth

Transmission lines between Cairns and Townsville are being upgraded and will support new projects that tap into world-class wind resources in the region, improving the security of energy supply to Cairns.

The Sky's the Limit

According to the Department of Energy and Public Works, Far North Queensland has some of the strongest wind and solar resources in Australia. Wind is often blowing while solar farms are ramping down, helping to balance the system.

Hydro Power Stations

Whilst harnessing the power of the sun and wind are increasingly popular (and accessible) energy options, there still needs to be an environmentally friendly solution on days when the weather conditions aren't conducive to these sources. This is where hydro power stations come in.

CleanCo was created with Queensland's most flexible low-emissions options in mind. By integrating renewables and preserving reliability, CleanCo is supporting the transition to clean energy whilst also driving economic growth through regional job creation and putting downward pressure on energy prices. Hydro power stations in the Cairns region include Barron Gorge (66MW), Kareeya (88MW) and Koombooloomba (7MW).

Micro-hydro Solutions

Hydro-electric power harnesses water flow which is then captured and converted to electricity. Whilst this can be done on a large scale through dams and powerplants, this doesn't necessarily have to be the case.

Micro-hydro solutions are ideal for remote, sparsely populated places found in Far North Queensland which have a small river or creek and only require a tiny amount of electricity to power equipment.

By working with pressure, water can be collected and converted into energy, which is also storable. Maintenance is usually low with only standard cleaning of pipes and regular checks, required to keep the system running.

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