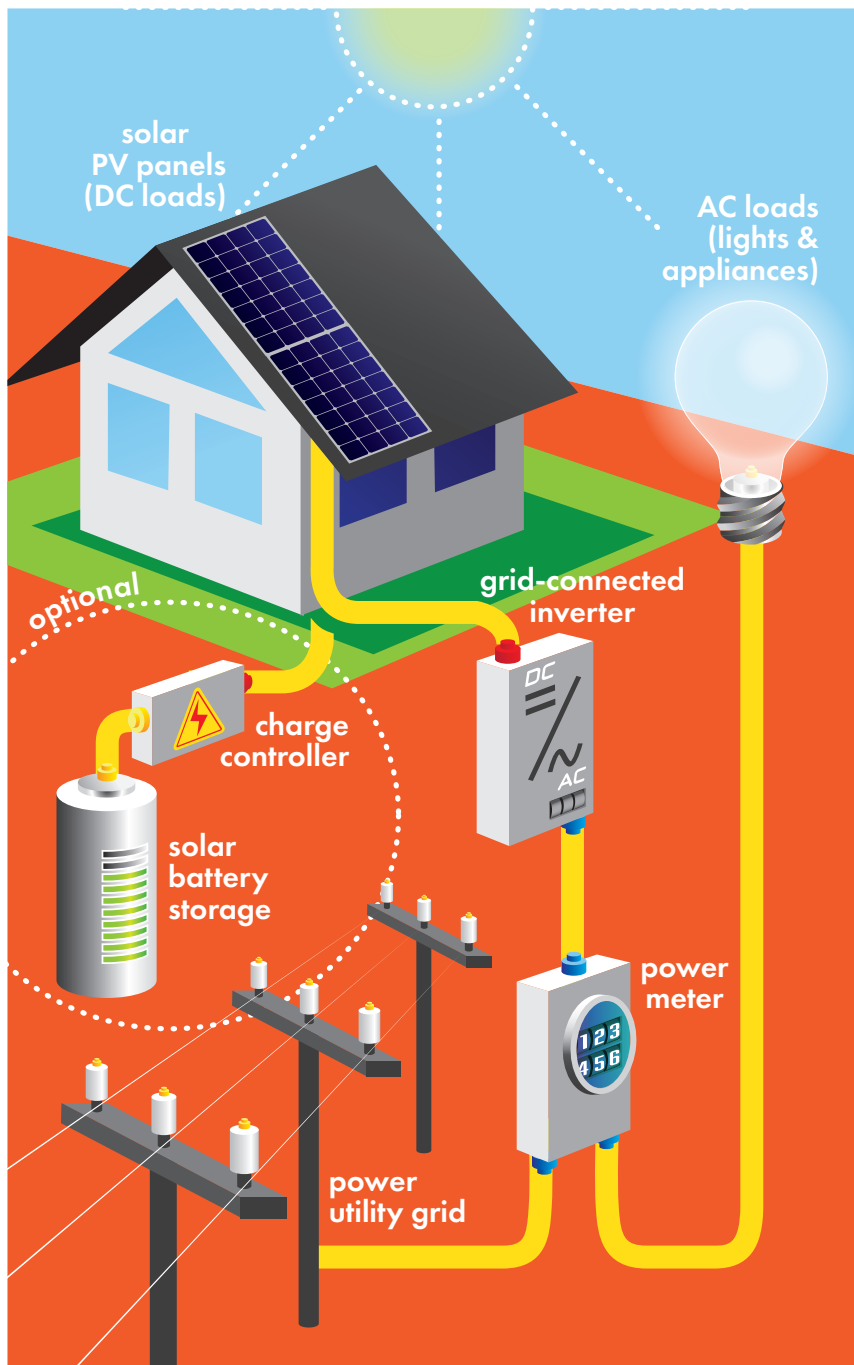


About Solar Power Systems

Alice Springs Town Council

ASALC solar array, installed 2018



The solar heart of Australia

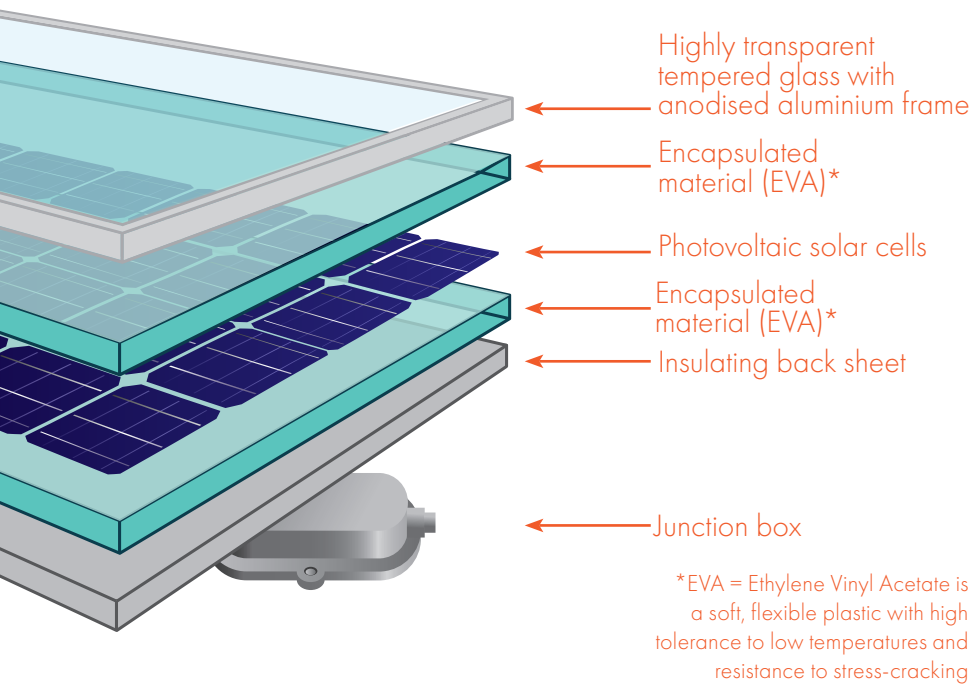
Situated at the heart of Central Australia, Alice Springs receives a daily average of 9.5 hours of sunshine and is mostly cloudless; perfect conditions for solar power systems. As such, many global manufacturers test their solar power products in Alice Springs.

Alice Springs was also an early adopter of solar power with more than 700 installations across local homes and businesses, including large-scale solar arrays and residential back-to-grid systems, as part of the \$40M Alice Solar City Project (2008-2013).

Today, the baton has been handed to Intyalheme Centre for Future Energy (established in 2018 by NTG), to enhance the renewable energy capability of the Northern Territory with an aim to achieve 50% renewable energy by 2030.

With a typical day in the Centre receiving around 1000 Watts of continuous energy (sunlight) per square metre, Alice Springs continues to be at the heart of Australia's solar technology research.

Anatomy of a solar panel



What is solar energy?

For a great explanation of solar energy generation, visit

Solar 101 – www.solarquotes.com.au

This 17 minute video is well worth viewing.

Solar power generation is comprised of:

- Solar panels that convert sunlight to electricity (at a low DC voltage) – the more panels exposed to sunlight, the more electricity the panels generate
- An inverter converts low DC voltage to AC mains voltage. It monitors how much electricity is being generated, as well as how much is being sold and bought from the power grid

Three ways to get solar powered!

1.

Off Grid

A stand alone solar energy system that produces power for folk who live a distance away from the main power grid.

Off-grid systems can be installed virtually anywhere there is sun and are completely energy independent.

Benefits include: avoiding main grid power outages, reduced electricity costs, easier installation, power source for remote areas, and is environmentally friendly.

Batteries store the electricity generated by the solar panels.*

2.

Grid connected

This is the most typical connection in Alice Springs. It consists of a roof-mounted solar energy system directly connected to the utility grid, with a solar-inverter that converts solar energy (DC) into main electricity (AC). Excess power is sold back to the grid (e.g. to Jacana).

At any time, if more electricity is required than the PV system generates, the household's electricity needs are supplemented by the main power grid.

3.

Optionally Grid Connected

This is a grid connected solar energy system with battery storage.

Batteries are often optionally connected to provide a source of back-up power in case of an interruption, or as a preference to rely on own power overnight, or during cloudy weather.

Excess power is stored in the battery, rather than sold back to the grid.

This is the most environmentally friendly solar energy system solution.

Selling back power

Feed-in Tariff

A **feed-in tariff** (FiT) is a credit that customers receive for any unused electricity that their solar power system sends back to the power grid.

Until recently, households in the Northern Territory were able to sell their unused solar-generated electricity for the same price they bought it for – 23.68 cents per kilowatt hour, or 1kWh-in = 1kWh-out.

Not only did the one-for-one deal restrict local power retailer Jacana Energy in growing its business, it also had an adverse affect on the uptake of residential energy-storage batteries.

To succeed as a business and as a clean-energy supplier, Jacana Energy sought to purchase the cheapest electricity it could securely source. A lower **FiT** would enable Jacana Energy to buy 'green' electricity from residential PV system owners and grow its customer base.

Since the **FiT** was lowered, the incentive for residents to invest in household batteries is now stronger than ever. Battery storage avoids the need to buy overnight electricity at a rate that is more than three times what might be earned from the **FiT**.

Jacana Energy is also incentivised to make greater use of residential PV systems to meet the energy demands of the Alice Springs community.

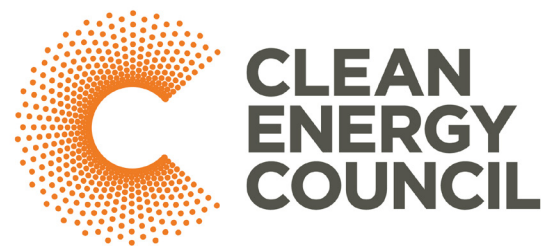
Feed in tariffs may come and go, but the sun is forever!

Current Tariff = 1kWh = 8.3 cents

Solar powered = value-added

Installing a solar power system adds value to a property by providing free electricity. An average Australian household consumes \$2600 per year in electricity, but this amount could pay off a solar power system within 4 to 7 years. After that, your electricity is totally free during the day!

Landlords could receive a higher return for 'electricity included' rental conditions, should they consider installing a solar power system in their rental property.



Before you install a solar power system...

- Look for accredited installers registered with a reputable authority such as the Clean Energy Council – www.cleanenergycouncil.org.au
- It is best to obtain three quotes, ensuring that installers visit your property for an onsite inspection:
 - if there are trees in your garden, your installer will be able to advise the best shade-free position for the system
 - confirm with the installer that they will manage all necessary approvals to enable the solar-power system installation to proceed
 - consider asking the installer: how long the company has been operating; what kind of warranty is offered; and, is after-sales servicing provided locally?
- All solar-power systems must be installed in compliance with the relevant legislation (National Construction Code, Australian Electrical Standards)
- A local, reputable company that has a longer trading history is considerably less risk than a new start-up from interstate
- Warranty is only as valuable as the company that stands behind it. Will the company still be here in 2 years, 5 years, 10 years? Consider these questions when evaluating your three quotes – the lowest price isn't always the best deal!



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