solar & heat pump hot water

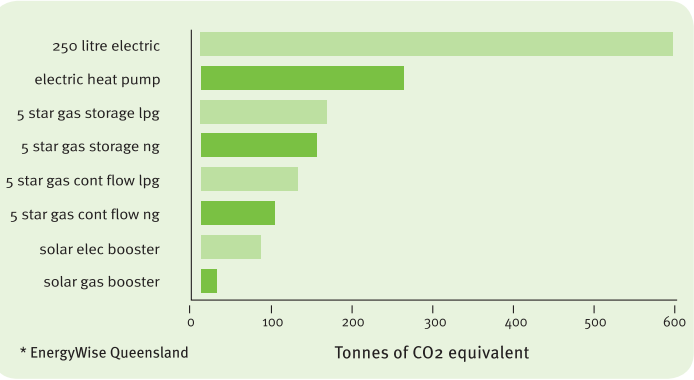
green at heart
Your one-stop shop
for building sustainability

Replacing your hot water system with a solar or a heat pump hot water system is one of the most effective way to reduce your power bills. 35% of Queensland householder's annual energy use is for hot water. By using the sun to heat water the average household can reduce it annual hot water costs by around 85%.

Solar Hot Water facts:

- Electric water heaters will be phased out in all existing homes from 2012.
- Avoids 3,000 kg of CO_2 per year (equivalent to a small car).
- Saves 30% of your household greenhouse gas emissions.
- Saves up to $700 off your energy bill each year.
- Reduces the impact of ongoing electricity price increases
- Can pay for itself in around 5 years.
- Over the life of the system (15-20 years) you can save up to up $12,000 and up to 60,000kg CO_2.*

A comparison of hot water systems and their greenhouse emissions over 15 years:



* EnergyWise Queensland

Solar Hot Water Systems

Solar hot water systems use the sun's energy to heat water that flows through the collectors, this water, once heated, passes into an insulated storage tank. There are two types of solar hot water systems those with tanks can be located on the roof (thermosiphon system) or Split Systems with the tank at ground level.

The thermosiphon hot water system is where both the storage tank and the solar collector panels are mounted on the roof. Due to the weight of the water, it is important to ensure that your roof can carry the load, or that you can reinforce the roof if necessary (may be needed in older houses). This system utilises the thermosiphon effect where heat naturally rises and can circulate the water from the panel to the tank without a pump.

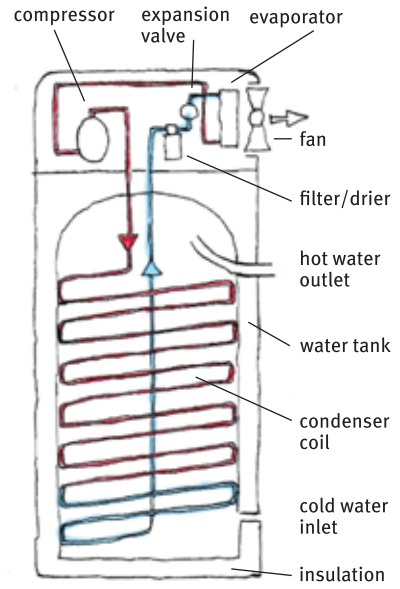
Split system solar hot water systems have collector panels located on the roof and a ground level tank and are easier to install and preferable in locations where weight of the system or the look is an issue. A small electric pump is required to circulate the water from the tanks to the roof.

For optimum effect the solar hot water system panels should be placed in a sunny location on a north facing roof at an angle as close to the latitude as possible (Cairns 16 degrees), but they can also work well on east or west facing roofs. Many solar hot water systems are fitted with an electric or gas booster which heats the water inside the storage tank to increase the supply of hot water when it may otherwise be inadequate. This booster can be operated manually or be automatically controlled by a thermostat which activates when the temperate drops to a certain level. A timer may also be useful in managing this system. More information on managing your booster system is overleaf.

Heat Pump Hot Water Systems

Heat Pumps work particularly well, all year round in warmer climates, offering big savings (up to 80%) on your hot water bills. They work on a similar principle to a refrigerator in reverse, by drawing external air into the system and processing it through a heat exchange system to heat the water stored inside the system. They use the natural heat energy in the air for this process, so are in effect a solar powered system.

The benefit of heat pump over solar is that they work well even on cloudy days, do not rely on the sun and are installed at ground level, meaning that they are easier to install and do not affect the look of your roof. Heat pumps work well in locations where the roof space is not available of suitable orientation, the roof is too shady for solar or where there are not many sunny days in the year.



Heat Pump Hot Water System

Heat pumps can produce some noise, similar to the sound of an air-conditioner, so it is best to place them a couple of metres away from windows if possible. These can be very efficient as they use very little power and have a low carbon footprint, especially if used in combination with PV Cells or if you purchase green power.

For more information contact Green at Heart on 4038 3558 or info@greenatheart.com.au

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What size hot water system should I choose?

Household Size	System Size
1-2 people	160-200L
2-3 people	200-300L
3-6 people	300-400L

Managing your Solar Hot Water Booster System

All solar hot water systems have automatic gas or electric boosters that are controlled by the thermostat for periods where the sunshine is inadequate.

You may switch this booster off when not needed to further reduce energy bills especially in North Queensland where showering temperatures do not have to be as hot as in cooler climates. Booster temperature should be set at around 60 degrees.

Manual boosting is only usually needed for periods without sunshine and usually only for a few days a year. Alternatively you may wish to install an electric timer to manage this process and further reduce bills.

Heat pump hot water and solar booster systems and can be connected to your offpeak tariff to further reduce your power bills. Please ask us about this additional service.

Hot water systems brands, warranties and additional information

We recommend Dux, Rheem, Quantum and Saxon systems as they are proven to be of excellent quality. Some installers offer cheaper systems, which are often unknown brands. Many of these can be questionable and not last as long or have poor warranties.

Solar hot water systems typically have a product warranty for up to 5 years. Please ask us for more information on the warranty for your preferred system.

In Far North Queensland all tanks must be fitted with a cyclone frame to withstand extreme winds.

REBATES & RECs

Government rebates

There are a number of discounts available to those looking to upgrade their hot water systems including: the Federal Government Rebate ($600 for Heat Pumps and $1000 for solar hot water systems), the Queensland Government Solar Hot Water Rebate ($600 for either Solar or Heat Pump systems, $1000 for eligible pensioners and low income earners), and RECs credits.

To be eligible for the Federal and Queensland Government rebates the solar or heat pump hot water system installed must:

- replace an electric storage hot water system.
- be purchased and installed on, or after 3 February 2009 for the Federal Government rebate, and after the 13 April 2010 for the Queensland Government rebate.
- be a solar or heat pump hot water system that is eligible for at least 20 Renewable Energy Certificates (RECs) at the time and place of installation.
- be installed by a suitably qualified person (for example an electrician or plumber).

Eligible households include:

- An owner-occupier, landlord or tenant can apply for the rebate as long as the dwelling where the hot water system is installed is a principal place of residence.
- You must not have applied for this rebate already for insulation for this dwelling- only one rebate per dwelling is applicable.

RECs

RECs are Renewable Energy Certificates that are created to help Australia meet its 2020 Renewable Energy Targets requiring that 20% of all electricity be generated by renewable sources. Electricity suppliers need to source increasing amounts of renewable energy through the surrender of RECs to meet these targets and these can be sourced from home owners who have installed various forms of renewable energy.

RECs are created for each system determined by where you live, and therefore the amount of available sunlight hours, and the type of solar hot water heater. The price per REC varies as it is market based, and therefore changes with supply and demand. A full list of the RECs values for hot water systems is available from our office but they usually range from 25-35 RECs per system. The value of RECs has dropped recently due to the dramatic increase in PV and hot water systems being installed so please check current rates. RECs can be offered as a discount at point of sale.

Call Green at Heart to get a quote on the best system for your hot water requirements.

For more information contact Green at Heart on 4038 3558 or info@greenatheart.com.au