

All about Solar Water Heating

Why we need clean energy

Australia's stationary energy sector, which includes electricity derived from coal-fired power, is responsible for around 50 percent of our greenhouse gas emissions. Australia's environmental, economic and energy security is at risk from climate change unless we can compete in a low carbon world. Any successful climate change solution must first target the energy sector.

Energy Efficiency has proven to be the most cost effective method for reducing Australia's greenhouse gas emissions. Smart energy solutions, solar water heating help to stimulate domestic manufacturing, while saving money, energy and the environment.

Solar Water Heating – how it works

A solar water heater uses energy from the sun to heat water. Water is heated by the sun as it passes through collectors located on the roof of a house. The main solar collector types are flat plate, evacuated tube and heat pumps.

Heat pumps use the reverse of a refrigeration process, transferring heat from the air to the water stored inside the hot water tank. The heated water is stored for use in an insulated storage tank just like a conventional hot water system.

Did you know? Even in cooler parts of Australia, solar energy can still supply up to 80 percent of annual hot water energy needs and almost all houses should have a suitable roof area for collectors.

Greenhouse gas savings

One megawatt hour of solar-derived electricity avoids approximately one tonne of CO₂. Water heating accounts for one quarter of the energy used in the average Australian home and is responsible for 23 percent of total household greenhouse gas emissions.

The installation of a solar water heater will reduce the greenhouse pollution associated with water heating in the average Australian home by between 60 and 90 per cent (depending on the location).

In Australia

According to the Australian Bureau of Statistics, 7 per cent of Australian households used solar energy for heating water in 2008, an estimated 600,000 homes. This represents a 61 per cent increase on 2005, when only 4 per cent of households had solar hot water and the installed solar water heater capacity was just 429MW. By the end of 2007, the International Energy Agency measured solar water heater capacity at 1300MW.



Australia has at least nine major suppliers of solar water heaters with annual domestic sales of about 100,000 units valued at \$400 million.

Potential

With only 7 percent of Australian homes currently fitted with solar water heaters, there is considerable potential for market growth. As awareness towards the benefits of installing solar water heating and heat pumps increases, so too will the proportion of Australians adopting the technology.

Government policy and grants are expected to provide a considerable boost to sales over the next few years. Even before these initiatives were announced, the Government forecast that the proportion of solar water heater systems would grow from 7 per cent to close to 12 per cent nationally by 2020. The current incentives are expected to see the figure well surpass that estimate.

Global View

Solar hot water heating technologies are becoming widespread and contribute significantly to the water heating markets in countries like China, Europe and Israel. Dozens of other countries have smaller markets. In countries with similar levels of sunshine to Australia, such as Spain, Israel and Turkey, solar water heating is standard practice in all homes. Globally solar heating capacity was 145GW at the end of 2008, double the capacity in 2004.

Current Issues

In 2007 the Government committed to ensuring that 20 percent of Australia's electricity supply would come from renewable energy sources by 2020 by establishing the expanded national Renewable Energy Target (RET) scheme. Draft legislation on the design of the expanded RET was released in December 2008 and the final legislation was passed in August 2009. Solar water heaters and heat pumps are an important part of this expanded target.

In early 2010, the Australian Government announced its Renewable Energy Bonus Scheme to assist households to reduce their carbon emissions. Part of this includes a rebate which provides existing homes with \$1000 for a solar hot water system or \$600 for a heat pump hot water system.

The Australian Government as part of its National Strategy for Energy Efficiency has also announced a phase out of greenhouse intensive electric hot water systems from new buildings from 2011.



About the Clean Energy Council

The Clean Energy Council is the peak industry body in Australia, creating a united strategy built on strong policy and direction in the clean energy sector.

We aim to find solutions that deliver abundant and affordable clean energy and efficiency solutions to Australia, as quickly as possible. For more information please visit www.cleanenergycouncil.org.au

