



a joint initiative of the Australian,  
State and Territory Governments

1

Factsheet

# Water Heating, the Environment and You

**Water heating is the largest single source of greenhouse gas emissions from the average Australian home and accounts for about a quarter of household energy use.**

Currently about 50 per cent of Australian households use conventional electric hot water systems to heat water in their homes. These systems are three times less efficient than other technologies available and produce a great deal more greenhouse gas emissions. Other more efficient technologies include solar, heat pump and high efficiency gas.

Significant greenhouse savings can be made by switching from conventional electric water heating to low-emission alternatives. Householders may also save money on their electricity bills each year by switching to a low-emission water heater.

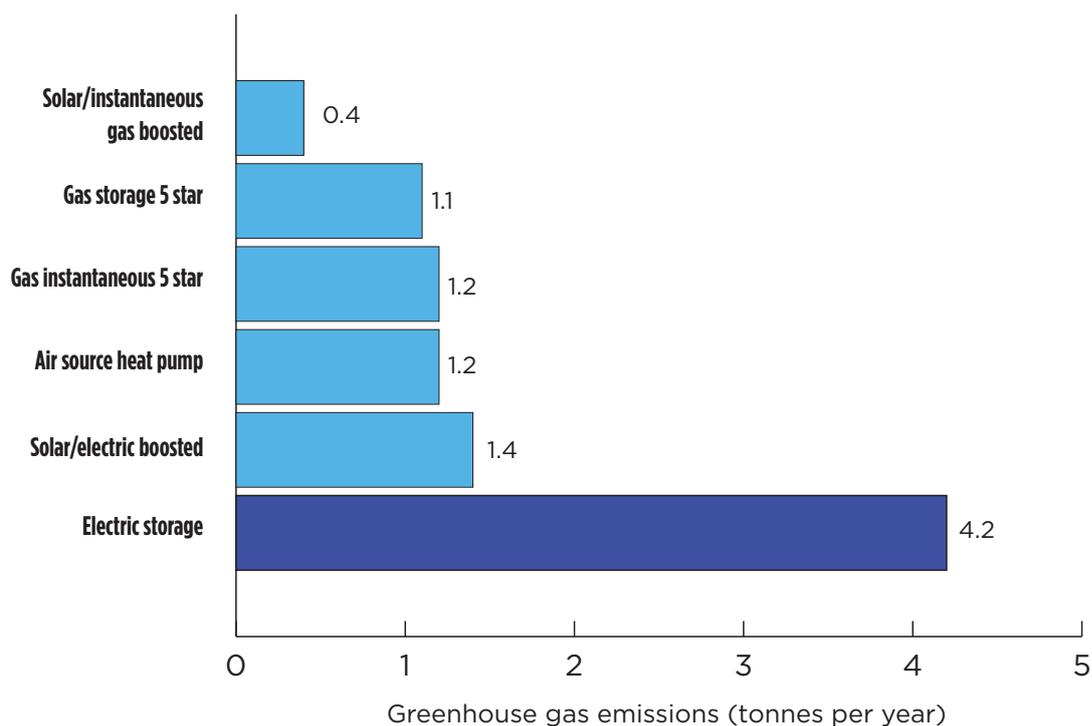
## Phasing out greenhouse-intensive hot water systems

The Australian Government and state and territory governments are working together to phase out greenhouse-intensive hot water systems, starting in 2010. The phase-out will apply in all states and territories except Tasmania.

Conventional residential electric hot water systems produce about four tonnes of carbon dioxide per year—up to three times that of more efficient technologies. By phasing out greenhouse-intensive water heaters, greenhouse gas emissions can be reduced by about 50 million tonnes in the period from 2010 to 2020. This is equivalent to taking 1.25 million cars off the road for 10 years. It may also help householders save money on their electricity bills.

You will not have to purchase a low-emission hot water system until your current one needs to be replaced.

The figure below shows the relative emissions intensity of different hot water systems.



## Comparison of greenhouse gas emissions produced by hot water systems

### Switching to low-emission technologies

A range of low-emission technologies are available for water heating in your home. When properly installed and used efficiently, low-emission hot water systems provide householders with an opportunity to reduce their greenhouse gas emissions and reduce their energy bills. Builders of new houses and households replacing an existing hot water system can choose from a range of low-emission alternatives to suit their home, climate and budget, including:

- heat pump
- gas
- solar (electric or gas boosted).

If you have access to piped/reticulated natural gas, you aren't limited to installing a gas hot water system; choose the option that best suits your needs.

For more information refer to the low-emission water heating technologies factsheet.

## Implementing the phase-out

The phase-out will be implemented in two stages.

### General schedule of phase-out—Stages 1 and 2

	New	Existing
<b>Detached, terrace and town houses and hostels</b>  <b>(Class 1a and b)</b>	2010 All dwellings	2010 Dwellings in a gas reticulated area
		2012 All dwellings
<b>Apartments and flats</b>  <b>(Class 2)</b>	2013 New dwellings with access to piped gas	2018-2020 All dwellings
	2013 – 2015 New dwellings without access to piped gas	

### Schedule of electric storage hot water system phase-out

The specifics relating to classes of buildings and their requirements will differ in each state and territory. Consult your installer, supplier and/or state or territory body for more details.

#### Stage 1

Starting in 2010, the phase-out of greenhouse-intensive electric hot water systems will be implemented on a state-by-state basis for new and existing homes where such requirements do not currently exist.

For hot water installations in **new homes**, requirements are specified in the Building Code of Australia and will be regulated through state and territory building regulations. Installations in **existing homes** will be regulated through state and territory plumbing regulations.

Standards for hot water installations in **new homes** are already in place in South Australia, Queensland, Victoria, Western Australia and New South Wales.

Standards for hot water installations in **existing homes are already in place** in South Australia and Queensland.

For more information about these programs:

### Queensland

New homes

[www.dip.qld.gov.au/resources/laws/plumbing/current/gpw-code-feb09.pdf](http://www.dip.qld.gov.au/resources/laws/plumbing/current/gpw-code-feb09.pdf)

Existing homes

[www.dip.qld.gov.au/sustainable-housing/electric-hot-water-system.html](http://www.dip.qld.gov.au/sustainable-housing/electric-hot-water-system.html)

### South Australia

New homes

[www.planning.sa.gov.au/index.cfm?objectid=1F05F9AC-96B8-CC2B-69EDFC96729A710F](http://www.planning.sa.gov.au/index.cfm?objectid=1F05F9AC-96B8-CC2B-69EDFC96729A710F)

Existing homes

[www.energy.sa.gov.au/waterheaters](http://www.energy.sa.gov.au/waterheaters)

### Victoria

New homes

[www.pic.vic.gov.au/www/html/249-5-star-standard.asp](http://www.pic.vic.gov.au/www/html/249-5-star-standard.asp)

Existing homes

[www.new.dpi.vic.gov.au/energy/policy/efficiency/water-heaters](http://www.new.dpi.vic.gov.au/energy/policy/efficiency/water-heaters)

### Western Australia

New and existing homes

[http://www.energy.wa.gov.au/2/3638/64/phaseout\\_of\\_electric\\_hot\\_water\\_systems.pm](http://www.energy.wa.gov.au/2/3638/64/phaseout_of_electric_hot_water_systems.pm)

### New South Wales

New homes only

[www.basix.nsw.gov.au](http://www.basix.nsw.gov.au)

### Australian Capital Territory

[www.actpla.act.gov.au/customer\\_information/community](http://www.actpla.act.gov.au/customer_information/community)

### Northern Territory

Stage 1 will not apply in the Northern Territory as less than 1% of the Territory has access to reticulated gas.

This fact sheet will be updated with information about programs in other states and territories when it becomes available.

### Stage 2

During 2012, the phase-out will be extended so that greenhouse-intensive electric hot water systems will no longer be able to be installed in any existing detached, terrace, town house or hostel.

## Exemptions

The implementation of the program in Stage 1 is being undertaken on a state-by-state basis. Each participating state is responsible for its commencement date, eligibility criteria and exemptions.

The program for existing homes will be extended during 2012 (Stage 2) to cover all detached, row and terraced houses and hostels. A set of common exemptions will be developed for this stage, drawing on the lessons from Stage 1.

### Class 2 Buildings

During 2013, greenhouse-intensive electric hot water systems will no longer be able to be installed in any new flats or apartments with access to piped gas, except where an exemption applies.

For new apartments without access to reticulated gas, the phase-out of electric resistance hot water systems is proposed to occur between 2013 and 2015, depending on further investigation into the feasibility of low-emission water heating options.

## Rebates and incentives for solar and heat pump hot water systems

Incentives in the form of rebates and Small-scale Technology Certificates (STCs) are available to encourage people to switch to low-emission water heaters.

### Getting advice on rebates

Consult your installer, system supplier and/or state or territory government for current rebate information and to determine your eligibility for rebates and incentives for solar and heat pump hot water systems.

### Small-scale Technology Certificates

The purchase and installation of a solar water heater (SWH) or air-sourced heat pump water heater may entitle householders to Small-scale Technology Certificates (STCs) if your system is eligible under the Small-scale Renewable Energy Scheme (SRES). STCs are sold and transferred to liable entities (usually electricity retailers) through a market based online system called the REC Registry, or via the ORER-managed STC Clearing House.

As of 1 January 2011 STCs are replacing Renewable Energy Certificates (RECs) for all eligible SWHs. All validated RECs existing at 1 January 2011, or certificates created for installations completed prior to 1 January 2011, will become Large-scale Generation Certificates (LGCs), which must be traded on the LGC market. They cannot be traded through the STC Clearing House.

Solar water heaters and heat pumps use less electricity than conventional hot water systems. This reduces the drain on the electricity grid and results in a reduction in the amount of electricity that has to be produced by coal and other non-renewable sources.

Solar water heaters and heat pumps are listed as renewable energy technologies under the Renewable Energy (Electricity) Act 2000.

Under the Act, an installed solar water heater or heat pump is entitled to a number of STCs, calculated by determining the amount of electricity the system displaces over a determined period (called a deeming period). An STC is generally equivalent to: 1 MWh of electricity deemed to be displaced by the installation of solar water heaters.

The number of STCs is also dependent on where the system is installed. The amount of sun a system receives each day varies from location to location. Each postcode is allocated a zone rating based on the solar radiation levels in Australia and the water temperature in the area. If the system has a higher zone rating, it has the potential to displace a greater amount of electricity and is entitled to more STCs.

Householders have two options for gaining financial benefit from their STCs:

- **Option 1 – Agent assisted** Your SWH system is entitled to a number of STCs. An STC agent (usually a SWH retailer) will offer you a financial benefit such as an up-front discount or delayed cash payment when you assign your STCs to them. A majority of owners take this option.
- **Option 2 – Individual trading** You create the STCs yourself once your system is installed, and sell and transfer them in the REC Registry or STC Clearing House. You will not receive a financial benefit for STCs from the retailer or installer on the purchase and/or installation of your system as you do not assign your STCs to them.

More information is available from the Office of the Renewable Energy Regulator website - [www.orer.gov.au](http://www.orer.gov.au) or call (02) 6159 7700.

The Office of the Renewable Energy Regulator has a register of approved solar and heat pump hot water systems and a list of the STCs they generate in different climate zones.