

## Contents

Suitability of Climate	pg. 1
Installation	pg. 1
RECs and rebates	pg. 2
The economics of solar hot water	pg. 3
Warranty	pg. 3
Evacuated tubes	pg. 3
General questions	pg. 4

Most frequently asked questions about solar hot water are answered on this page as a brief summary. If you have any other questions, please contact us and we will assist you through one of our solar consultants.

## Suitability of Climate

### What happens if there is not enough sun?

Every solar hot water system is fitted with a booster (either electric or gas). They work automatically on a thermostat, coming on when the sun's heat does not produce enough hot water.

### Can I use solar hot water in a frost-prone area or a cold climate area?

Yes, a closed-circuit solar hot water system protects the panels and tank when temperatures fall below zero. Many solar collectors are installed in very cold climates such as Europe, USA and Canada. When you talk with our solar consultants, tell them about your local climate and the correct system will be configured for your needs.

## Installation

### What if I do not have a north facing roof?

A new generation of highly efficient collectors produce enough hot water if your roof faces anywhere between north-east and north-west. If your roof faces another direction, or is shaded for a lot of the day, a heat pump might be a better solution for you.

### Why are installation costs higher for flat roof?

For maximum efficiency, solar collectors need to be angled to face the sun. If we install on a flat roof, we add a bracket to make that possible. Where brackets are needed, we include the additional costs in the installation costs.

### How do I select the right size system?

A hot water system stays with a house when it is bought and sold. That's why we generally recommend a system size that takes into consideration the following information:

- the number of bedrooms in your home
- how many people live in your house
- the local climate
- your household water demands
- the quality of the water in your area.

If you can afford a larger tank, it is a worthwhile investment. It stores more hot water for days without sun, reducing the need to use the booster.

## How long does it take to install a solar water heater?

Depending on the type of system, it takes 4-7 hours. During part of that time, your water has to be turned off. The electricity also needs to be shut down for a few minutes.

## Can I retrofit a solar collector with my existing hot water system?

Normally you can, however, the complexities of warranties, RECs and labour mean that in most cases we recommend the installation of a complete system.

## Do I need an electric- or gas-based booster in addition to my solar system?

Yes you do. The booster acts as a supplement to the energy coming from the sun and ensures all water is heated sufficiently to kill any potential pathogens, including legionnaires, in the water. The booster allows you to enjoy hot water when you want it, even on overcast days or at night.

## RECs and rebates

### Renewable Energy Certificates (RECs): what are they?

A Renewable Energy Certificate (REC) defines how much energy you displace or avoid using by installing a renewable energy system. Each REC represents one megawatt hour of electricity generated from an accredited renewable energy source. Each Ingenero-installed system has been assigned a REC value based on intense efficiency testing. RECs have a monetary value that changes weekly based on supply and demand within the renewable energy industry. Ingenero takes into account the value of your RECs and reduces the price of your system accordingly.

### Where do the rebates come from?

The Australian Federal Government is providing a \$1600 rebate to eligible households. To be eligible, the hot water system must:

- be installed by a suitably qualified tradesperson who could be either an electrician or a plumber
- replace an electric storage hot water system
- be purchased and installed on, or after 3 February 2009
- be a solar hot water system or a heat pump that attracts at least 20 Renewable Energy Certificates (RECs) at the time and place of installation.

Furthermore:

- the dwelling where the hot water system is installed must be a principal place of residence
- the household must not have already accessed the insulation offer under the Homeowner Insulation Program for the same home.

### Is there more than one type of rebate available?

Yes, there is, but it depends upon which state you live in. Both NSW and Victoria have additional incentives and are based on different parameters. Your Solar Consultant will be able to explain these rebates to you. As with the Federal rebate,

Ingenero takes care of all the paperwork for you and reduces your system's price accordingly.

## The economics of solar hot water

### What will I save on electricity by using solar hot water?

This depends on the number of people in your house, the amount of hot water they consume and the size of the system installed. Having said that, savings are generally between \$300 and \$700 each year. (Source: Department of Environment and Natural Resources)

### What is my payback period?

The time it takes the system to pay for itself will vary depending on your location, water use and the cost of energy in your area. Given the current generous rebates and the significant energy savings expected, it is not uncommon to recover your initial investment in within five years.

## Warranty

### How long does a solar water heater last?

Generally you can expect your solar hot water system to last 15-20 years, double the life of an electric system. (Source: Qld Environmental Protection Agency).

### What is the warranty?

All systems are covered by manufacturers' warranties which differ according to the component. For Apricus products, your manufacturer's warranty is 15 years for the mounting frame and heat transfer header, and 10 years for the evacuated tubes and heat pipes. All other components have a five year warranty. Please see your proposal for details or talk with one of our Solar Consultants.

### Does Ingenero provide any other warranties?

Yes, Ingenero provides a five year, whole-of-system installation warranty. In the unlikely event that there are problems with your system during this time frame, Ingenero takes the responsibility of fixing the system for you.

## Evacuated tubes

Are evacuated tube collectors more efficient than flat plate collectors?

Evacuated tube collectors show clear advantages over flat plate collectors. The key differences are:

- When averaged over an entire year, evacuated tube collector heat output per square metre of absorber area is between 25% and 40% greater than a flat plate collector.
- Due to the cylindrical shape of the evacuated tubes, they are able to passively track the sun throughout the day. Flat plate collectors only provide peak energy output at midday when the sun is perpendicular to the collector's surface.
- Air is evacuated from the tube to form a vacuum, greatly reducing conductive and convective heat loss from the interior of the tube. As a result, wind and cold temperatures have less effect on the efficiency of the evacuated tube collector.
- Evacuated solar collectors can be used in cold temperatures when flat plate collectors have limited or no heat output.
- Evacuated tubes are strong, long lasting and, should one be broken, inexpensive and easy to replace. If a flat plate collector panel is damaged the whole panel must be replaced.

- Due to its highly efficient absorption of solar radiation even during overcast conditions, combined with excellent insulating properties, solar tube collectors can heat water all year round. (Note however that you will still need backup from gas and electricity).
- Due to the various advantages of evacuated tubes over flat plate collectors, a smaller collector can be used to provide the same heating performance. For example, depending on your location, only 30 evacuated tubes would be required meet the hot water needs of a 4-5 person household all summer and a large percentage in other seasons.

## Does my roof need strengthening to accommodate the hot water system?

No. Unlike a lot of flat plate systems, Ingenero installs split systems. The collector weighing 96 kilograms dry goes on your roof, while your tank is placed on the ground.

## Are evacuated tubes strong?

Yes, evacuated tubes are very strong. Tube strength is important when considering wind loading and also snow loading.

## General questions

### How much CO2 is saved by using a solar hot water system?

Depending on your hot water needs and usage, a solar hot water system will save around 3,000 kilograms of CO2 per year.

### What is the difference between a solar hot water system and a solar power system?

A solar hot water system uses the heat of the sun to heat water directly. A solar power (photovoltaic) system uses the sun's energy to produce electricity.

### Will changing to solar hot water really make a difference in the scheme of things?

Electric hot water is the average household's largest contributor to greenhouse gases. Switching to solar hot water will cut yearly carbon dioxide production by about three tonnes. That's the equivalent of taking a small car off the road for a year. (Source: Department of Environment and Natural Resources).

#### Head Office:

Ingenero Pty Ltd  
Suite 6, 225 Hawken Drive  
St Lucia, Qld 4067

#### Postal address:

PO Box 4092  
St Lucia, Qld 4067

**Telephone:** +61 7 3371 1666

**Fax:** +61 7 3371 1699

**Email:** [enquiries@ingenero.com.au](mailto:enquiries@ingenero.com.au)

**Web:** [www.ingenero.com.au](http://www.ingenero.com.au)

**Residential Enquiries:** Free call 1800 99 33 34

#### New South Wales:

270 Moore Park Rd  
Paddington, NSW 2021

**Telephone:** +61 2 9331 1220

#### Sunshine Coast:

3, 5 Premier Cct  
Warana, QLD 4575

#### Postal Address:

PO Box 948  
Buddina, QLD 4575

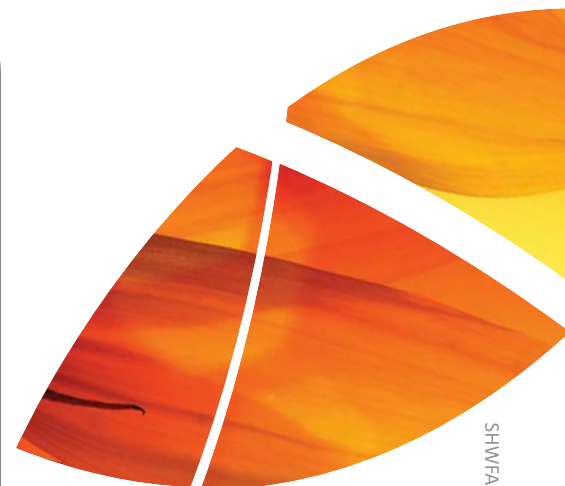
**Telephone:** 1800 99 33 34

**Fax:** +61 7 3371 1699

#### South Australia:

228 Beulah Rd  
Beulah Park, SA 5067

**Telephone:** +61 8 8364 5083



SHWFAQ-1Feb2010