

# City of Vancouver

## Solar Home Pilot FAQ

### What are the benefits of solar hot water systems?

Solar hot water systems use the sun's energy to heat water for domestic use. Tapping into this free, abundant natural resource reduces reliance on fossil fuels such as natural gas. Installing a solar hot water system will reduce the cost of your hot water heating bill. You will also be directly reducing greenhouse gas emissions thereby contributing to a healthier environment.

### How effective are solar hot water systems?

On average, 25-30% of a home's energy is devoted to water heating. Solar hot water systems in Vancouver can supply up to 60% of energy needs for water heating. Over the course of the year, this adds up to significant savings.

### Will my home be suitable?

A typical system requires up to six square meters of roof space for collectors, and a sloped, south-facing collector orientation is ideal for installation with minimal shading from nearby trees and buildings.

A free survey of the site and orientation of your home is available online, courtesy of SolarBC at <http://www.solarrating.ca/>. This simple, free service will help determine whether your building site and design are suitable for a solar hot water installation.

### What does a solar hot water system consist of?

In general, solar hot water systems consist of three main components:

1. Solar collector, which converts solar radiation into useable heat.
2. Heat exchanger/pump module, which transfers the heat from the solar collector into the potable water.
3. Storage tank to store the solar heated water.

### How does it work?

Solar hot water systems convert sunlight into heat through solar collectors mounted on the roof. Water, or a water/antifreeze solution, carries heat from the collectors and pumps it through a heat exchanger to a tank for storage and subsequent use. The storage tank acts as a pre-heat tank for the existing hot water tank. As hot water is being drawn from the existing tank, hot water from the pre-heat tank replaces it.

### Does this technology work in Vancouver's climate?

Yes. Although the heat output of the solar collector is reduced on overcast days it will still be able to provide heating. Approximately 25-30% of the sun's energy actually gets through the clouds. Modern solar water heaters are well suited for the Canadian climate because they have the ability to produce energy when the outside temperature is well below freezing. They also have mechanisms that protect them from freezing in the winter and from overheating on hot sunny days. Many European countries that have similar climates to BC's are world leaders in solar hot water.

### Is this technology reliable? Will we always have hot water?

Yes it is reliable, but, since the solar system will not always supply 100% of daily demand, your conventional hot water heating system will operate as a back-up in order to ensure hot water can be supplied at all times.

### Does it make economic sense?

Over its lifetime, a solar hot water system easily pays for itself and further provides proofing against a trend of rising energy costs. Solar hot water systems can save the home owner or business a substantial amount of money and reduce GHG emissions.

### How long will it take to install a solar system?

For new solar-ready homes in Vancouver, installation can typically be completed in one day.

### What is the life expectancy of a solar system?

The life expectancy of a solar system is between 25 and 30 years. If a solar system receives regular annual maintenance checks, they can last over 30 years. It is recommended that a service contract be made with your qualified solar installer.

### How much maintenance and service is required?

Solar hot water systems require minimal maintenance but should receive an annual service check so that they can function at their optimum level. Check with your service contractor.