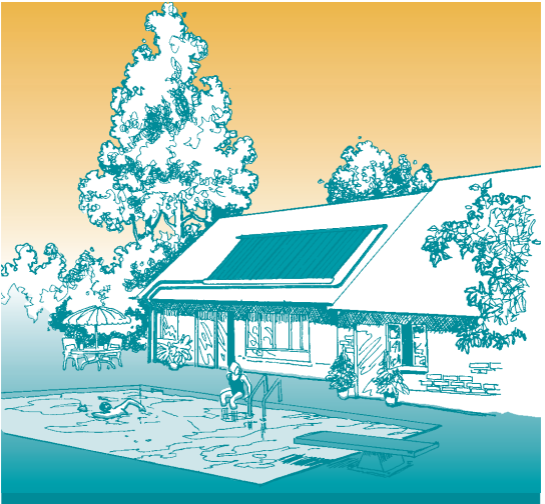




An Introduction to

Solar
Pool
Heating
Systems



Natural Resources
Canada

Ressources naturelles
Canada

Canada

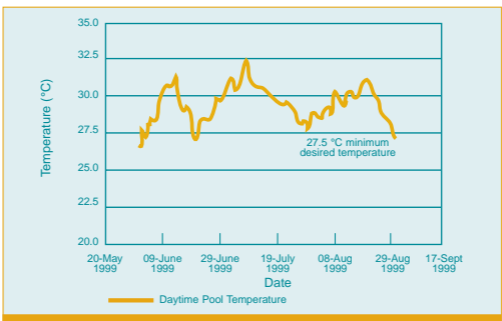
Solar pool heating systems

A solar heating system for your pool is an economical alternative to conventional heaters.

Solar collectors capture free energy from the sun and use it to heat your pool. They can extend your swimming season and reduce monthly fuel bills, without depleting non-renewable resources such as fossil fuels.

In fact, solar pool heating for your home is the most economical solar application in Canada today. Solar heaters already make up over 10 per cent of all new pool heating equipment sales.

Because of our climate, many Canadian consumers are sceptical that there is enough sunlight to support a solar pool heater. In fact, there is more than enough solar energy for pool owners across Canada to heat their pools without a back-up heater from May through September. The chart below shows what daytime temperatures a solar heater can provide for an in-ground pool in Ontario during the swimming season. A solar heater in Ontario will have no difficulty keeping a pool well above the desired temperature.



▲ Typical temperature profile for a solar heated pool in Ontario.

Five good reasons for using solar heating

From Victoria, British Columbia to St. John's, Newfoundland, Canadians are using solar energy to heat their pools. Here are five good reasons why:

No. 1: Solar saves on pool heating costs

In the last two years, the price of natural gas has more than doubled. On the other hand, the sun's energy is free.

Over a 15-year period, you could spend five times or more on heating with gas what you would spend on installing a solar heater today. Once your solar system is installed there are no more heating bills to pay.

Many pool owners switch to solar because it meets all of their heating needs. But even if you continue to use a gas or electric heater as a backup, solar is a smart investment that will save you money, year after year.

No. 2: Solar extends your swimming season

Whether or not you have an existing heater, you can keep your pool warmer and open longer with free energy from the sun.

In most areas of Canada, a solar heater used in combination with a solar pool cover can add two to four weeks to the beginning and end of the swimming season. You get a longer swimming season for free.

No. 3: Solar equipment is durable

Solar equipment often lasts longer than gas or electric heaters. With proper yearly maintenance, you can expect fuel heaters to last seven to 10 years. Most gas heaters have a two-year warranty, and well-made heat pumps carry a two-year warranty with five-year warranty on the compressors. Solar panels have a minimum 10-year warranty and generally last 15 to 20 years or longer.

No. 4: Solar requires less maintenance

Unlike gas and electric heaters, which should be serviced by a technician every year, a solar heater requires very little servicing. Again, that means less cost and less hassle for the pool owner.

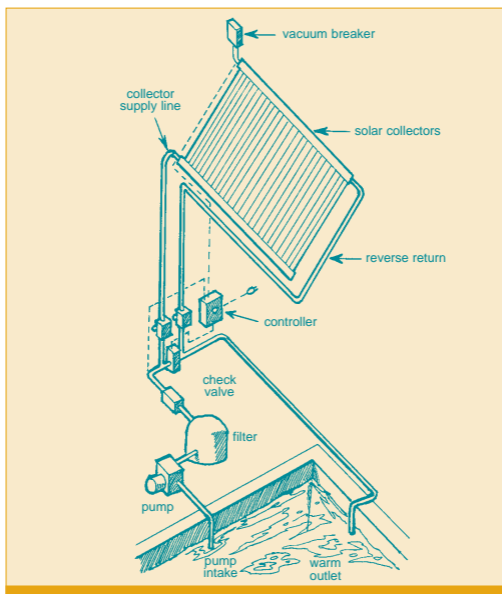
No. 5: Solar energy is good for the environment

These days we hear a lot about the damaging effect that burning fossil fuels is having on the environment. Burning fuels releases nitrogen oxides that cause the formation of smog in urban areas. Using solar energy instead of fossil fuels can help reduce this smog.

Burning fuels also releases carbon dioxide, the main cause of climate change. Replacing a natural gas or propane heater with a solar heater could stop three to 10 tonnes of carbon dioxide from entering the atmosphere each season. That's about the same amount produced by operating your car for one year!

How does a solar heater work?

A solar pool heater is simple to operate and doesn't change the way you operate standard pool equipment.



▲ *Schematic of a solar pool heating system.*

Solar collectors are usually mounted on the roof of your home or another structure such as a shed or a garage. This is the least expensive option and doesn't take up extra space on the property. When suitable roof space is not available, collectors can be ground-mounted on a rack.

The existing pool pump is used to circulate water from the pool through the solar collectors and back to the pool. On sunny days, an automatic or manual controller diverts the water to the roof.

Cost comparison of solar heaters, gas heaters and heat pumps

A solar heater is generally more expensive to install than a gas heater and less expensive than a heat pump. But, once a solar heater is installed and paid for, the energy to heat your pool is free.

The table below shows what a pool owner can expect to pay to install and maintain a gas heater, heat pump and solar heater for 15 years. An owner installing a solar heater would experience significant savings over time.

Solar heating systems are very easy for the homeowner to maintain – the only expense is your time. These costs are based on a natural gas price of \$9.13 per gigajoule and an electricity price of \$0.08 per kilowatt-hour.

| Type of Heater | Installation Cost | Annual Cost (Fuel & Maintenance) | Total Cost After 15 Years |
|-----------------------|--------------------------|--|----------------------------------|
| Natural Gas | \$2,300 – \$4,900 | \$350 – \$1,200 | \$7,550 – \$22,900 |
| Heat Pump | \$3,100 – \$6,400 | \$160 – \$500 | \$5,500 – \$13,900 |
| Solar | \$3,100 – \$5,000 | \$0 – \$50 | \$3,100 – \$5,750 |

Further information

If you would like more information on solar pool heaters or are interested in purchasing one, obtain a copy of Natural Resources Canada's *Solar Pool Heating Systems: A Buyer's Guide* or speak with a Canadian Solar Industries Association representative.

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To order a copy of the *Solar Pool Heating Systems: A Buyer's Guide* or other renewable energy publications, please call Natural Resources Canada's toll free line at 1 800 387-2000. You can also download a copy from our Web site at <http://www.nrcan.gc.ca/redi>

Find out more about how you can benefit from solar water heating systems or other types of renewable energy technologies by visiting NRCan's Canadian Renewable Energy Network (CanREN) Web site at <http://www.canren.gc.ca>

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Aussi disponible en française sous le titre:
Introduction aux chauffe-eau solaires pour les piscines.