

SOLAR HOT WATER

OVERVIEW

A solar domestic hot water system heats the water for your home using the sun.

There are two main types of technologies.

- Passive system : The installation is mounted on the roof and water is distributed throughout the house by gravity.
- Active system: The system uses an electric pump to circulate the water through the panel collector, and does not need to be mounted on the roof.

There are also two different types of solar thermal collectors:

- Flat Plate consists of an insulated box containing a black sheet of metal with embedded pipes. The heat is absorbed by the sheet and transferred to the water in the pipes.
- Evacuated tube (or vacuum) consists of glass tubes with a layer of heat absorbent coating through which water pipes run. These are more expensive than flat plates, but their high efficiency(97% heat retention) makes up for their added cost. They are very well suited for cold climates.
- Heat pumps : These work like a refrigerator in reverse and use the heat in the air to heat the water.

ENERGY BENEFITS

A solar installation could generate roughly 95% of the summer load and 35% of the winter load. With a solar water heater, your water heating bills should drop 50%–80%, and reduce the carbon footprint of your home ! The sun is always free, and you're protected from the effects of future fuel shortages and price hikes (US Department of Energy).

FINANCING OPTIONS

There are several programs to help you to finance your photovoltaic project. Listed here are the different programs available for Cambridge residents .Installers must be SRCC (Solar Rating Certification Corporation) certified.

- **Commonwealth Solar Thermal :**
 - Base : \$25 per collector multiplied by the SRCC thermal performance rating of the collectors (ask to the contractor for more details)
 - MA component adder : \$200 per system

For more information about this program, please visit the Massachusetts Clean Energy Center website : www.masscec.com

- **Federal Tax Credit** : 30% of cost with no upper limit
 - At least half of the energy generated must come from the sun
 - The system must be certified by the Solar Rating and Certification Corporation (SRCC)
 - Can be for a principal or a second residence (existing home or new construction)

- **Renewable Energy Equipment Sales Tax Exemption** :
 - Massachusetts law exempts from the state's sales tax "equipment directly relating to any solar, windpowered; or heat pump system, which is being utilized as a primary or auxiliary power system for the purpose of heating or otherwise supplying the energy needs of an individual's principal residence in the commonwealth."

- **MassSave 0% heat loan** : the one-to-four family residences can apply for this 0% loan (loans up to \$25 000 depending on utility with terms up to 7 years) program developed by MassSave for different types of energy efficiency improvement, including domestic solar hot water.

For more information about this program, please visit the MassSave website : www.masssave.com