



Renewable Energy Solutions

Solar heated swimming pools

2. Technical Information

Do your guests wish to swim in your swimming pool for a much longer season than you are now able to offer them? Have you been dismayed by the running costs and environmental impact of conventional pool heating methods? Then take a look at the alternative, a solar swimming pool heating system that will bring your hotel swimming pool up to a comfortable swimming temperature for an extended season. Get ahead of the competition and advertise the fact that your hotel comes with a solar heated swimming pool.



What are the basic components of a swimming pool solar water system?

Most solar pool heating systems include the following: Solar thermal systems Unglazed collectors can also be used independently for heating water in outdoor swimming pools. Designed for swimming pool heating, they are generally made of cheap materials, heavy-duty rubber or plastic. The pool water circulates directly from the collector to the swimming pool. Therefore, no storage tank neither heat exchanger are needed. The solar system is part of the circuit used to filter the pool water.

These systems are cheap, easy to install and very effective in warm and sunny conditions. They will then help achieve a longer bathing day or season without energy consumption. However, when either the outside temperature or the solar irradiation decreases, their efficiency drops rapidly.

Flat plate or Vacuum tubes can be used with solar domestic hot water systems, combi or combi+ systems so as to heat the swimming pools, using the heat stored into the hot water storage tank (Large DHW or Combi systems) or the rejection heat from the cooling process (Combi Plus systems).

Various efficient combinations can be offered according to the specific potential and needs.

What are the basic components of a swimming pool geothermal heated system?

Geothermal Heat Pumps are a modern technology for heating of **swimming pools**.

They make full use of geothermal energy (the heat stored beneath the earth surface) almost anywhere throughout Europe. Swimming pools with geothermal heat pumps are systems with 3 main components: the ground side to get heat out or into the ground, the heat pump to convert that heat to a suitable temperature level, and the equipment of the swimming pool transferring the heat into the pool.

The heat pump is a device which allows transformation of heat from lower temperature level to a higher one, by using external energy (e.g. to drive a compressor).

Shallow geothermal systems can be adapted to almost every subsurface condition. Ground systems can be classified generally as open (with ground water) or closed (with ground collectors) systems.

Recommendations

Solar thermal and geothermal energy technologies can be applied in different conditions to meet various requirements: these technologies can be used both for domestic hot water heating, space heating and cooling, heating of the swimming pools, valorising at a very low cost a no-cost energy throughout the year.

These technologies can be used in any climate and are almost maintenance free. If your site has unshaded East or south-facing areas, it is a good candidate for a solar thermal system. A professional installer can evaluate your roof as a location for the collectors. If your roof doesn't have enough space, you can also install the system on the ground. Geothermal solutions request a surface of ground available for the exchangers, should they be horizontal or vertical.

Link with other solutions

Swimming pool solar water/geothermal heating system are compatible with any other energy source as back-up or main energy source.



BENEFITS FOR THE HOTEL



COST REDUCTION

- The sun and the earth don't send monthly bills!!!

Swimming pool solar water/geothermal heating systems will insulate your hotel from rising fossil fuel costs and protect you from fuel-price inflation over time since your hotel will not receive any more monthly energy bills for heating swimming pool water.



STAFF INVOLVEMENT

Train your staff as guides to show guests the swimming pool solar water/geothermal heating system you have applied and explain them how it works, you can both attract more tourists and further involve your staff in order to get them feeling more responsible for their working place!



GUEST INVOLVEMENT

Install a demonstration diagram near the swimming pool to show your guests how the sun/earth are heating the swimming pool. Surprise your guests by showing them other ways to use solar/geothermal energy. By motivating your guests, they will also feel more responsible and involved in taking care of your hotel! Guests will value the fact that your hotel is environmentally conscious.

BENEFITS FOR THE ENVIRONMENT



CARBON EMISSIONS REDUCTION

The energy produced is clean and emission free. Swimming pool solar water/geothermal heating systems do not require fuel and produce any waste.

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