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.

How well developed are solar swimming pool heating systems?

Solar heated swimming pool systems are a mature and established technology. Manufacturers have produced and sold solar heated swimming pool systems for decades already and due to continuous innovation, they can supply products that work effectively. To compare product quality there are certificates that apply throughout Europe, as well as national commendations that test and confirm the efficiency and quality of solar heated swimming pool systems.

What can my hotel use a solar swimming pool heating system for?

Solar heated swimming pool systems can heat water for swimming pools, spas, jacuzzis and more.

How does solar heated swimming pool system work?

A solar swimming pool heating system heats water in solar water collectors.

The solar water collectors are placed in an area that receives a lot of daily sun. The swimming pool water pump sucks water out of the pool, pushes it into the solar water collector, and brings it back into the pool. The water that runs through the collector picks up the heat from the collector, which warms up the water.

How difficult is it to install a solar swimming pool heating system?

It is relatively simple to integrate a solar water heater since most pools require a pump, filter, and plumbing.
With a solar energy system, the pool’s water is pumped through the filter and then through solar thermal collectors instead of directly back to the pool. The sun heats the water in the collectors before it returns to the pool.

**Do I have to change the existing pumps?**

If you add a solar heater, you may need a pump larger than your present one, or a separate, smaller pump to pump the pool’s water to and through the solar collectors. Adding any heater, solar or otherwise, will preclude selecting the smallest pump. Nevertheless, you also may reduce pumping time to help cut costs. A pump driven by a solar photovoltaic panel is also a good idea.

**For what else can I use my solar swimming pool heating system?**

Solar collectors can also be used to cool the pool in hot climates or during peak summer months by circulating the water through the collectors at night. The collectors lose heat by radiation to the night sky.

**Should I install pool covers?**

A pool cover or blanket reduces heat loss and helps maintain warm temperatures for a longer period. Uncovered swimming pools lose heat during the cool nighttime hours. A pool cover helps to keep the heat in the pool during the cool hours.

**Is there enough sun in my region to install a solar swimming pool heating system?**

A solar swimming pool heating system can be installed anywhere in Europe; just the size of the solar system must be changed to achieve enough solar yield.

**Does a solar swimming pool heating system still operate when it’s cloudy?**

On a cloudy day when there is little or no direct sunlight, there is still solar radiation sufficiently enough to be usefully collected by solar collectors. While the highest amounts of monthly solar radiation are obviously experienced in the summer months, there is enough radiation coming from the sun in spring, autumn and winter to make a very useful contribution to your hotel’s energy needs.

**Are there special collectors used for solar swimming pool systems?**

Collectors for heating a pool normally do not require glazing or insulation because they operate during warmer months when solar radiation and ambient temperatures are relatively high. This allows for a simpler design that is usually less expensive than collectors for domestic hot water. Many pool collectors are made of heavy duty rubber or plastic treated with a UV light inhibitor to extend the life of the panels. The advantages of plastic collectors are that they’re usually less expensive and weigh less than metal collectors.

**Where do I mount the solar collectors in my hotel?**

Collectors can be mounted on roofs or anywhere near the pool that provides the proper exposure, orientation, and tilt toward the sun. For maximum daily output the collectors should face due south, be in the direct sun (no shading at all), and be mounted at an angle to the sun that will maximize their performance. A certified installer will be able to advise you on the best way to integrate a system into the space available in your hotel.

**How many collectors do I need for my swimming pool?**

The area needed for collectors to heat your pool depends on many factors.
A general rule of thumb is that the collector surface area should equal at least one half of the pool’s surface area. In a relatively sunny climate, this additional heating helps extend the swimming season into spring and autumn. In cooler and cloudier areas, you may need to increase the collectors’ surface area to equal the entire surface area of the pool.

Do I need any planning permissions in order to install a solar swimming pool system?

Most solar collectors generally not require permission. Nevertheless, it is worth checking with your local administration or authorities to find out about any local laws that may restrict solar collector placement, especially if you live in a listed building or conservation area.

How can I finance a solar swimming pool system?

You may fund your renewable energy system in several ways. Many financial incentives which can benefit your hotel are available for example. However, these have not been used to their maximum potential. Incentives can save you in some cases more than 50% of the cost of your solar swimming pool system. Check for national incentives and don’t forget that your local utility company or other local organization may also provide additional support. There also banks promoting the use of solar hot water systems by granting long-term, low interest loans.

Visit [www.iea.org/country/index.asp](http://www.iea.org/country/index.asp) under ‘related country and regional information’ for more information about available incentives in your country (available for IEA member countries only).

Who can help me with the paperwork for applying to receive financial incentives?

Installation companies are more and more taking over of the application paperwork to receive an incentive. Local energy agencies may also help you.

Should my hotel receive an energy audit?

Definitively yes. Doing an energy audit before investing in a solar swimming pool system is in your best interest, because it will help make the existing swimming pool hot water system as efficient as possible and if possible a solar swimming pool system can be recommended which will lower your monthly energy bills.
Who can install a solar swimming pool heating system for my hotel?

The proper installation of a solar swimming pool heating system depends on many factors. These factors include solar resource, climate, local building code requirements, and safety issues. A qualified installer or an Energy Service Company (ESCO) will estimate the overall cost, and will also inform your hotel about rebates and incentives for which you may qualify.

What is an ESCO?

An Energy Service Company (ESCO) reduce the hotel energy costs, by taking care of the investments involved of installing a solar swimming pool heating system and sharing the resulting future cost savings with you by letting the ESCO install the system in your hotel.

Follow the next steps to make your solar swimming pool heating system a reality:

- Learn as much as you can about solar swimming pool heating systems before you make a decision.
- Schedule an on-site energy audit
- Call an installer and obtain estimates
- Check zoning, permit and utility requirements, insurance, and other legalities
- Look for financing options
- Install and learn how to safely maintain your system

If you want more detailed information about the solar hot water system please click here!

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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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