



Renewable Energy Solutions

Solar heated swimming pools

1. General 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.

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?



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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.⁶

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 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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