

PRESS RELEASE



HYBRID SOLAR PANELS IN THE HOTEL SECTOR

Faced with rising energy prices and the need to decarbonise, hotels are facing a big problem, but the solution is much closer than they imagined: the hybrid solar panel allows them to generate significant savings in their energy consumption while reducing their CO2 emissions by a factor of 4.

In recent years there has been a clear trend towards environmental sustainability, but as long as it is not combined with economic sustainability it will remain a letter of good intentions.

Europe has already set clear targets to decarbonise our continent in the coming years. This energy transition has been accelerated by rising energy prices at all levels due to our dependence on energy resources from third countries.

This decarbonisation is a major challenge in which we have to take into account that, of all final energy consumption in Europe, 50% is heat (hot water, heating, industrial processes, etc.), only 20% is electricity and 30% is transport. Therefore, if we want to decarbonise our cities, we have to put an important part of the focus and solutions on the thermal demand of our buildings.

One concept to keep in mind in this process is that you can electrify your consumption, but not your demand. This means that our building can consume energy from the outside only in the form of electricity and thus avoid the consumption of gas, but our shower will always produce hot water and not electricity. Therefore, the most important question is how we heat the water. Of the different equipment that allow us to heat water (electric water heaters, boilers, fan heaters, etc.) all of them have an energy consumption either in the form of gas or electricity that impact us every day more and more on our monthly energy bills. In fact, the most important costs of a hotel are: energy, raw materials and wages. And the big question is: to be more competitive, where do we cut back? Raw materials, in many cases it is not up to us, wages... so the key is to reduce energy costs. And for that, the focus has to be on how much we are able to save with our roof and thus reduce energy consumption from outside.

The current trend is to install photovoltaic panels, but this technology has a limitation in that its efficiency is only 20%, which means that of all the solar irradiation that a photovoltaic panel receives, it is only capable of converting 20% into electricity (the rest is not used). Nor does it make much sense to generate electricity and then convert that electricity into heat to heat water for showers or swimming pools.





However, there are other lesser-known technologies such as hybrid solar technology. A hybrid solar panel (also known as Photovoltaic/Thermal PVT) is a technology that not only generates electricity but also heats water at the same time, achieving an efficiency of 89%. This means that of all the solar radiation received, 89% is converted into energy which allows us to save on our electricity, gas and diesel bills. It is therefore a technology that allows maximum savings to be made with the building envelope.

If we add to this the fact that our buildings have a limited roof, i.e. we do not have enough roof to generate the energy we consume, the more efficient our roofs are, the more economic savings we can achieve with them. Therefore, the more available roofs a hotel has, the more savings it can make and the more competitive it can be.

As an example, let's assume a 4-star hotel with 250 beds located in Madrid where the hot water for its showers, laundry and/or swimming pool is heated by a gas boiler with a gas price of 0.085 €/kWh and 0.17 €/kWh for electricity. If for reasons of limited roof space this hotel were to install 100 photovoltaic panels (35 kWp), it would achieve an annual saving of €10,171/year on its electricity bills, and would not see a reduction in its gas consumption bill. However, by installing the same area of hybrid panels (100 panels) the savings on electricity and gas bills would be €31,532/year. Therefore, the hybrid panel allows the hotel to save 3 times more on its bills than if it installs photovoltaic panels, losing an opportunity cost to make the hotel more economically sustainable. In addition, the additional savings in emissions allow the hotel to be more environmentally sustainable, because if with those 100 photovoltaic panels it would stop emitting 23,691 kgCO₂/year into the atmosphere, with 100 hybrids it stops emitting 87,022 kgCO₂/year, i.e. almost 4 times the reduction in emissions.

In recent years, there has been an increase in the awareness of hotel sector clients, who value the sustainability of the hotel they choose more highly, and this indirectly makes it a very positive value for the hotel to work towards sustainability.

In any case, the instability of energy prices that we have suffered in Europe in recent years means that price stability is increasingly valued and any investment made in renewable energy allows for a lower price than that consumed from the grid, but also stable for the next 25 years, which is the estimated useful life of this type of installation. Continuing with the example of the hotel mentioned above, with these 100 hybrid panels, the cost of the energy generated by the panels is 0.041 €/kWh, which is much lower than what is currently paid for both gas and electricity.

In the hotel sector there are also numerous solar thermal collector installations in operation and in many cases there is also a desire to save on electricity bills but the roof is already occupied to save on hot water. In these cases, removing the solar thermal collectors means no more gas savings, but replacing them with hybrids allows you to continue to save on gas and also achieve the desired electricity savings.