

# HOW TO WARM OURSELVES WITHOUT WARMING THE PLANET

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How much environmental impacts do you think are caused by the simple act of turning on your heating in the winter? Are you a big producer of harmful emissions? At the end of the day, it all comes down to the type of heating you use along with the habits you embrace.

Did you know that, per year, each family in Spain may end up producing 4 tons of greenhouse gases? Those gases, within coal emissions, have far-ranging environmental and health effects.

They cause climate change by trapping heat, and they also contribute to respiratory diseases from smog and air pollution. Extreme weather, food supply disruptions, and increased wildfires are other effects of climate change caused by greenhouse gases.

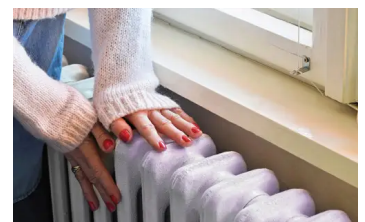
As a result of these impacts, lots of ecosystems are dying and health problems due to CO<sub>2</sub> are really going up and harming living things. Nevertheless, reducing these 4 tons to only 1,8 per year is an effortless task.

The key is to be well informed and choose a type of heating that does not consume that much.

→On one hand, for example, pellet heating is the most harmful known. It's based on a system in which wood pellets are combusted. This produces carbon

emissions. Burning coal generates soot, smog, acid rain, global warming and produces more pollution than any other source of energy. Fortunately, this type of heating today is almost no longer used.

→Other more common types are gas and oil heating. Their basic function is to heat the water in a boiler and pass it through radiators, which will dissipate the heat through the space needed. -Gas central heating utilises carbon monoxide, an odourless, colourless, poisonous gas. Faulty household boiler systems may emit gas and present a major potential pollution hazard. When in contact with other pollutants it can form 'bad' ozone which is damaging to our health and to the environment. -As with other methods, oil presents its own set of pollution problems. If the storage tank it is contained in is not well maintained, then any leakage can seep into the groundwater, contaminating the local area and harming delicate organisms. If a problem develops with a pipe leading to a shared tank, then the polluting effects can be devastating and difficult to clear up. This kind of pollution is considered very seriously, if it happens, you could be liable for a heavy fine.



→On the other hand, we have electric heaters. In Spain, these types are used in 18,6% of homes that have heating. For example, individual boilers (3,5%), electric radiators and accumulators (14%), radiant wire and underfloor heating (1%). Electric heaters are a type of heating that consumes electricity for its production, as well as hot water. One of the advantages of electric heaters is that it's clean energy. We do not run the risk of gas leaks or other toxic substances for health and we do not depend on cylinders, since the electricity supply is continuous. However, although these types of heating have good performance, the insulation of the home must be assessed. Its main disadvantage is the price, since although its installation is cheap and simple, the increase in the bill is considerable.

In addition, the environmental impact we cause depends not only on the type of heating we use but also on the type of energy we use. Non renewable energies need fossil fuels to function, which makes them limited and environmentally damaging.

Fossil fuels are a source of energy that comes from the decomposition of organic matter from animals, plants and microorganisms, the transformation process of which takes millions of years. As there is no time for them to be recreated, the resources are depleting and its price becomes more expensive; this is very dangerous, especially for our future. One day they will be exhausted and we will lose our main source of energy, not only for heating but also for the production of food, drinking water, clothing, etc ....

That's why we need to rely on energy that never runs out and is environmentally

friendly. The good thing is that such energies already exist, they are called renewable energies, and as the name says, they are unlimited.

Renewable energies do not emit toxic substances produced by burning fossil fuels which then reach the atmosphere, fuelling global warming and the destruction of our planet.

However, not many people use this type of energy to heat their homes; although they may be an expensive investment, in the long run they save money and are also followed by state subsidies for the contribution of environmental care.

→The first renewable energy we can use for heating is solar energy. Panels are installed, usually on the roofs of houses, which capture solar radiation and convert it into thermal energy, that is to say, heat. The installation of these alternative energies for heating usually covers about 50% of the total energy demand. In Spain, a 100% installation is not necessary as there are not many cold months. They are also often combined with the installation of underfloor heating. These work at 40°C, being easy to heat they are an advantage compared to radiators, which work at 80° C and have a higher energy cost.



In 2021, the installed capacity for self-consumption of solar panels increased by 80% compared to the previous year.

→Secondly, we have wind energy, which is derived from the air currents that turn the blades of the machines installed to collect them and subsequently convert them into electricity.

Spain has been one of the pioneering countries in the production of wind energy. In 2007 it produced 20% of the world's wind energy and became one of the leaders in its research and development.

This type of energy for heating has an output of less than 10kW, and its greatest efficiency, as we have already said, is found in isolated, non-mountainous areas where the wind can circulate easily.



Wind energy avoided the emission of 28 million tonnes of CO2 in 2019.

→The following is one of the most environmentally friendly renewable energy sources for heating. Biomass uses natural resources, such as wood chips or olive pits to produce energy.

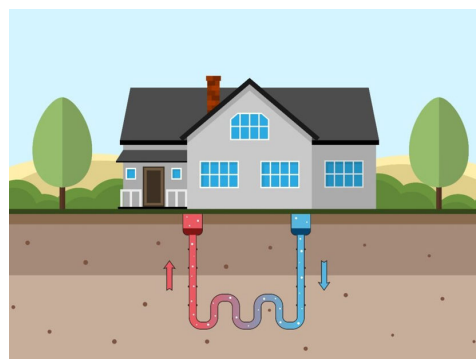
It burns the fuel and generates a flame, then the heat from the combustion is passed to a water circuit that converts it into energy.

In Spain in 2015 there were 160,036 biomass installations and although initially, it requires a high investment, like all other alternative energies, it pays off in the long term. However, its efficiency is only half that of an electric heater, which is why it is often combined with other systems such as floor or air radiators. In addition, although they are very

environmentally friendly, they are slow to heat up, especially in cold environments.

→Another very innovative heating system is the heat pump and aerothermal. Regarding the statistics of households in Spain, 6,3% of households have one. These systems, to work, obtain energy from the air, water or earth, and transport it to the interior of the house to heat it. This type of heating does not require too much energy to raise the temperature, so it is suitable if we want to heat a small space quickly. -Aerothermal energy is very efficient. Every 4 kW/h of heat, only 1 kW of them it's produced by electricity. The others are eco-friendly and take energy from the air.

→The last but not least heating we will talk about is geothermal. Geothermal energy is considered a renewable resource. Geothermal technologies generally take advantage of a much deeper, higher temperature geothermal resource to generate electricity than the other heatings. It would be an ideal heating thanks to its effectiveness and eco-friendly system. However, it's very difficult to obtain, which entails a very high cost.



Functioning of geothermal heating.

Equally, it is not only important to use a renewable option for heating, we also have to make sure that our house is well insulated as this keeps the heat in and therefore, we need to spend less on heating.

- Consider insulating wall cavities and draught-proofing doors and windows with weather stripping in the cracks, which reduce consumption by up to 15%.

- Make the most of the sunny hours by raising the blinds, and at the same time, when the sun is not shining, lower them.

- If you have north-facing walls in your home, it is more than likely that they will tend to cool down frequently. Place furniture such as shelves or wardrobes, and if there are windows, reduce heat loss by drawing curtains in cold weather.

- Finally, the floor is a fundamental part, one trick is to place carpets. For example, those made of wool are the most effective at insulating against the cold.

After reading this article, we hope that when you read the first two questions again, your perceptions and answers have changed. It's very important to be aware of the damage that each human can cause to the Earth, to the environment and to themselves. There are a lot of factors that produce these damages. However, heating is one of them. It is true that switching from non-renewable to renewable energy is difficult economically, as most of them are very expensive to install. But it is also true that in the long run the economic reward is greater, and not only the economic one, but also the environmental.

We have the power to save this beautiful planet we live in just by changing a few

habits, and if we all put our part, the change will be huge and we will feel the benefits.

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