Difference between solar and wind

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In this modern world striving to lower the dependence on fossil fuels, different renewable energy sources are gaining momentum. Wind and solar are the most talked-about sources. But are they the same? No. There are major differences between solar energy and wind energy. And, this blog will dig deep into these differences.

Solar energy harnesses sunlight to generate electricity during the day but wind power uses turbines and produces power anytime. Let us understand their working principles and differences in detail.

Solar energy is nothing but energy from the sun that is transformed into electrical or thermal energy. Different technologies are used to harness this energy, the most in-demand being solar panels. These panels have PV cells inside them and when sunlight hits the cells, they convert this radiation into electricity.

Technically, wind is also a form of solar energy caused by a blend of events. When the sun heats the uneven surface of the earth, hot air rises while cool air settles. This causes atmospheric pressure and thus results in the formation of wind (a kinetic form of energy). Wind turbines are employed to capture it.

When the wind blows over the turbine"s blades, its generator transforms the energy of the rotating blade into mechanical power. We can then use this power to provide electricity to homes, grind grain, and even pump water.

Their output varies according to various factors. Wind energy is capable of generating electricity even at night time, making it more flexible in terms of time. On the other hand, solar energy needs sunlight for electricity production. It is fully reliant on daylight hours.

As per the American Wind Energy Association, a small wind turbine will cost you anywhere around $3,000 to $5,000 for every kilowatt of power capacity. However the cost can fluctuate according to the height of the tower, the size of the system, and your equipment. Mostly, it costs more to buy larger and taller turbines.

In contrast, solar panel costs usually range from $8,500 to $30,500. You can get an average 6kW solar system for about $12,700. Unlike wind turbines, solar panels don"t come with many moving parts that can undergo more wear and tear. Thus their maintenance cost is also low compared to wind turbines.

This explained the cost of solar panels vs wind turbines for homes. There are a lot of components you"ll need to consider like the tax credits, installation cost, energy output, maintenance, etc. Wind power seems like the more affordable option on paper. However, solar panels are far more accessible and easier to install on residential properties than turbines.

Solar power is best for sunlight abundant areas with fewer obstacles. It"s cheaper and can be scaled in larger

areas. Wind power although more efficient needs a specific environment and is also less scalable. All-in-all, both are vital in our quest to transition to a cleaner world. To learn more about such energy sources, keep reading our blog posts.

Though hydro is king, wind and solar are heavy hitters in renewable electricity. They create jobs. They cut pollution. They provide power to the densest populations and the most rural regions of the world.

We’re betting on green energy’s top two producers to break our dependence on fossil fuels. But can they both stand up to the giants of non-renewable energy, or is one sector a more promising investment? Here’s a look at the pros and cons of wind and solar energy.

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