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THE PROS AND CONS OF SOLAR ENERGY IN POLAND

Solar energy is radiant light and heat from the Sun that is harnessed using a range of ever-evolving technologies such as solar heating, photovoltaics, solar thermal energy, solar architecture, molten salt power plants and artificial photosynthesis. Solar power is energy from the sun that is converted into thermal or electrical energy. Solar energy is the cleanest and most abundant renewable energy source. It is an important source of renewable energy and its technologies are broadly characterized as either passive solar or active solar depending on how they capture and distribute solar energy or convert it into solar power. Active solar techniques include the use of photovoltaic systems, concentrated solar power and solar water heating to harness the energy. In the other hand passive solar techniques include orienting a building to the Sun, selecting materials with favorable thermal mass or light-dispersing properties, and designing spaces that naturally circulate air.

Solar power is the conversion of sunlight into electricity, either directly using photovoltaics (PV), or indirectly using concentrated solar power (CSP). CSP systems use lenses or mirrors and tracking systems to focus a large area of sunlight into a small beam. PV converts light into electric current using the photoelectric effect.

The global atmospheric carbon dioxide concentration now is almost certainly higher than it has been for one million years. The immediate challenges in energy is to minimise or eliminate any further increase. However, in addition to environmental sustainability, to ensure a sustainable energy future, nations around the world face two further challenges: energy security and energy equality.

Solar Energy in Poland. In recent years, the use of natural energy sources to obtain electricity and heating is also becoming more and more popular in Poland. One of the most commonly used sources of natural energy is solar energy. Photovoltaic farms producing electricity using solar energy are created too. Very often, there are solar panels on the roofs of houses. This solution is possible in every single-family home.

Solar energy resources in Poland are at a very high level. It is a natural and clean source of energy. It is widely available. It can be used locally and meet the demand for heat and electricity.

The most important parameter of solar energy is insolation, which is the annual value of insolation. It expresses the amount of solar energy that falls on a surface unit at a given time.

The technical potential takes into account the geographical location, the efficiency of available technologies, and energy storage in order to make the best use of solar radiation intensity. It is estimated that in Poland, solar radiation energy has a potential 100 times higher than the energy demand. The economic potential is 750 times lower than the demand for energy in Poland. It is possible to obtain only 1.3 percent. total energy demand in Poland thanks to solar Energy. In Poland, the annual density of solar radiation on the horizontal plane has values in the range of 950 - 1250 kWh / sq m.

Advantages of Solar Energy. These solar energy pros and cons are some of the top-of-mind issues for solar shoppers. There are many benefits of solar energy. Here are our most important ones.

This top benefit of solar panels is pretty straightforward – when people install solar power at homes, they generate own electricity, become less reliant on electric utility and reduce your monthly electric bill. A solar panel system typically has a 25-35 year lifespan, which means that it cut electricity costs for decades to come by going solar. Installing a solar power system on home means: lock in a price of energy for at least the 25 year life of the solar panels.

Solar works in many climates. Solar panels actually work more efficiently in colder temperatures because excessive heat can reduce output voltage. While more hours of direct sun exposure will indeed help a solar system generate more electricity, modern panels are quite efficient and can still generate energy in low light situations. The climate in Poland is diverse. During diffrent seasons thera are sunny and warm days as well as cold and dark days.

Solar energy, as a renewable energy source, also has another very important advantage. It does not harm the environment, especially the climate. Another important advantage from the user's perspective is its independence from electricity suppliers. Solar energy ensures, thanks to the user's independence, a high level of energy security. Access to the energy source is then unlimited. Moreover, there are no moving parts involved in solar power systems so there is no noise associated with photovoltaics. This compares favorably to other renewable technologies such as wind turbines. Also, because there are no moving parts there is no noise pollution from solar technologies.

In many regions of Poland, it is possible to receive funding for installation of solar system. It's worth mentioning that solar panels can increase home values too.

Disdvantages of Solar Energy. The main disadvantage of installing solar panels is high costs, in the absence of funding. It is an investment that returns after a few or several years. Furthermore, Solar panels don’t work for every type of roof. Certain

roofing materials used in older or historical homes, such as slate or cedar tiles, can be difficult for solar installers to work with, throwing up a roadblock for solar power.

Certain solar cells require materials that are expensive and rare in nature. This is especially true for thin-film solar cells that are based on either cadmium telluride (CdTe) or copper indium gallium selenide (CIGS).

During production proces of solars some manufacturing processes are associated with greenhouse gas emissions. Nitrogen trifluoride and sulfur hexafluoride has been traced back to the production of solar panels.

Poles pay attention to the appearance of houses. According to some Polish people, solar panels are unattractive.

Conclusions. Solar energy is becoming more and more popular in many European countries, also in Poland. Often, residents of single-family homes decide to use solar energy. Photovoltaic installations are installed for this purpose, thanks to which it is possible to produce electricity on their own. When implementing such installations, the advantages and disadvantages of solar energy should be analyzed.

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