Solar panels effect on environment



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According to an article from the Department of Energy, "As a renewable source of power, solar energy has an important role in reducing greenhouse gas emissions and mitigating climate change, which is critical to protecting humans, wildlife, and ecosystems."

Solar energy reduces our carbon footprint by generating energy through the sun, a completely free and renewable energy source. This process is unlike energy produced from non-renewable sources, like fossil fuels, that release large quantities of carbon dioxide into the environment when burned.

Additionally, solar energy again emerges as a far more environmentally benign alternative when examining air and water pollution of other energy sources. The extraction and utilization of fossil fuels often involve substantial water usage and can lead to the contamination of water bodies through the discharge of pollutants, such as heavy metals and chemicals.

Solar energy's inherent cleanliness stems from its mode of electricity generation, which is devoid of the combustion processes characterizing traditional energy sources like coal and natural gas. These combustion processes release an array of pollutants into the atmosphere, including sulfur dioxide, nitrogen oxides, and particulate matter. By contrast, solar power operates without such combustion, thereby eliminating the direct emission of harmful pollutants that contribute to respiratory diseases, smog formation, and acid rain.

As reported in an article on climate change from SEIA, "Solar energy is a renewable, carbon-free resource available in every geographic region of the U.S., with enormous potential to reduce our nation"s GHG emissions." Solar energy is not only available globally but also affortable, allowing us to minimize our environmental impact while powering our homes, cars, and lives alike.

Solar installations, whether in the form of solar farms or rooftop solar panels, generally utilize already existing spaces such as rooftops, brownfields, or open fields with low ecological value. This strategic utilization helps to maximize the efficiency of the land without contributing to habitat destruction or significant alterations to the landscape. In contrast, traditional energy sources like coal or natural gas often necessitate extensive land use for mining, extraction, and infrastructure, resulting in habitat fragmentation and degradation.

As we strive for a cleaner, greener future, adopting and supporting clean energy initiatives, such as solar power, becomes increasingly vital. Here at Everlight, we believe going solar should be accessible and hassle-free, making it easier than ever to opt for solar in the interest of a healthy planet and increased savings. See if solar is right for your home by scheduling a no-cost consultation with one of our knowledgeable consultants today!

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The utilization of solar energy harnesses the sun's power through sophisticated technologies, transforming solar radiation into electricity via photovoltaic systems. This section will discuss the core concepts and components that make solar power a viable energy source.

Solar radiation is the energy emitted by the sun, which reaches the Earth's surface as light and heat. It is both the primary natural source of energy for our planet and the catalyst for solar power production. Solar energy systems are designed to capture this radiation, with solar panels and solar collectors serving as the mediums that convert sunlight into usable energy forms.

Photovoltaic systems include an arrangement of components that convert solar radiation into electrical power. At the heart of these systems are solar cells, which are semiconductor devices that generate electricity when exposed to sunlight. Multiple cells are interconnected within a frame to create a solar panel, which then connects to an electrical grid or battery storage system, thus forming a complete solar PV system.

Solar collectors, distinct from photovoltaic panels, are used mainly for heating purposes. These include flat-plate and evacuated tube collectors, which are typically applied in residential solar hot water systems.

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