

# Importance of Solar Energy in Day to Day Life

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## ABSTRACT

The natural world has used the sun's energy since the beginning of time, and while there has been lots of discussion about this, the truth is that the sun is both a problem and a solution. Solar energy is an unchanging constant – a staple in Earth's very existence. The sun may not have changed, but our understanding of it has.

We are now harnessing its energy to replace traditional methods that have taken a toll on the planet. Instead of burning fossil fuels like coal and natural gas, consumers can take advantage of the infinite energy of the sun to power homes, cars, and appliances. Explore these five everyday uses of solar energy to see how this resource can transform your future, not just the future.

**KEYWORDS:** *Natural world; traditional methods; harnessing; appliances*

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## INTRODUCTION

Energy is defined as the capacity to do work and the rate of doing work is called power. The forms of energies are Heat energy and Work energy. The demand for energy and Electricity increases steadily. Due to increased demand of Energy consumption at various sectors like Domestic sector (houses and offices): increased population growth, urbanization changing life style and civilization, more and more number of offices established to meet the requirement of public causing usage of more power.

Transportation sector: increased road connectivity to the rural areas, transportation facilities are increased and fuel consumption increased. Now a day's rural villages are electrified and consuming power so usage from village side also increased. Due to increased population, to meet the requirement transportation also increased like more number of train's .due to increase demand drastically the transportation sector is really consuming more power.

Agriculture sector: due to in sufficient rains for cultivation, for crops water is required and it is to be lifted from wells and bore wells so number of agriculture pumps increased, consumption also increased Industrial Sector: to meet the demand of increased population to supply essential commodities more industries are established and in other way creating employment to the public, energy consumption demand increased.

Due to greenhouse effect caused by the emission of CO<sub>2</sub> owing to burning of fossil fuels, the earth's temperature will increase if it increase by 40 C as a result many low lying areas near the sea will be drowned owing to melting of glaciers. So Efficient use of energy could be achieved on the basis of genuine energy strategies without releasing much CO<sub>2</sub> and the future of energy should be linked to the more efficiency less impact on environment.

## SOLAR ENERGY

### What Exactly Is Solar Energy?

Solar energy is exactly what it sounds like: the energy we can harness from the sun. The sun's energy comes to us in the form of thermal energy, basically heat, but solar cells collect the thermal energy and transform it into the electricity we use to power our world. Solar cells are typically panels that face the sun to harness as many rays as possible. These cells can power buildings, homes, cars, and now even outdoor appliances! Think of the possibilities: an entire city powered solely from solar energy, down to water heaters, coffee roasters, cars, and watches! Solar energy is really that powerful and versatile.

### How Does Solar Energy Help the Environment?

Solar energy has been powering nature since our planet was formed. Every living thing uses it to survive, including human bodies! Plants use the sun's energy to produce the important nutrients they need to grow and convert carbon

dioxide to oxygen; humans use the sun's energy to produce vitamin D in their bodies.

It is also a clean energy source, meaning solar energy causes no damage to the environment. It doesn't cause pollution, greenhouse gases, or any threat to ecosystems like other energy sources do. An oil spill can kill entire species and threaten our oceans, but the sun's energy doesn't.

### **Why Should You Pay Attention to Solar Energy?**

The sources of energy we use now are not going to last; they are not renewable like solar energy is. Once we run out of the fossil fuels (oils and gas), we will either need to come up with new sources of energy or find ourselves back in the Stone Age without any of our technological advances. Fossil fuels also pollute the air, the water, and the food we need to survive.

And the problems with unclean, nonrenewable sources of energy go beyond our daily lives and our health, they extend to our finances as well. These energy sources are very expensive to extract from the environment and cost a lot to use. Wind and solar energy cost a fraction of the amount and do not cause the same environmental harm.

Switching to solar energy has so many benefits, both for the environment and for our quality of life, that it is no wonder solar energy is receiving so much attention. With an overall healthier world, we may be able to have our technology and our planet co-exist in harmony.

### **Commercial Power Generation**

A growing number of large solar installations generate power that augments electricity from conventional nuclear and fossil fuel power plants. For example, the Ivanpah solar power plant produces an estimated 377 megawatts of energy -- enough to supply the theoretical energy needs of 144,000 homes. In the United States alone, solar-based power plants accounted for 880 gigawatt-hours of electricity as of June 2013, an increase of 57 percent over the same period in 2012.

### **Hot Water**

Solar rooftop collectors use heat gathered from sunlight for hot water and building heat. These solar installations do not convert light into electricity; they use the sun's heat to increase the temperature of water or another fluid flowing through pipes in the collector. The building then uses the hot water for swimming pools, showers, laundry and other applications. In many cases, the heating system has a traditional gas or electric utility connection that heats the water in case of prolonged cold temperatures or cloudy weather.

### **Satellites in Orbit**

In space, without clouds or air to reduce sunlight, 1,300 watts of energy per square meter arrives from the sun. Satellites use solar cells to convert sunlight into electrical energy, powering sophisticated on-board radio and computer equipment and affecting your daily life through satellite radio, television and weather forecasting. Because they are expensive to launch, operate hundreds of miles above the Earth and are very difficult to maintain, satellites need a reliable source of power. Photovoltaic cells provide it for up to 20 years.

### **Pocket Calculators**

Some desktop and pocket calculators have miniature solar panels built into them, providing energy to run the electronics inside. The solar panel runs on both sunlight and artificial lighting, such as incandescent and fluorescent bulbs. Solar-powered calculators typically have a "button" battery in addition to the solar panel, allowing their use in dimly-lit settings.

### **Solar Energy Benefits**

Solar energy offers clean power. It doesn't present the risk of a nuclear spill, but it is in fact a release of radiation, only some of which is visible light. It can be scaled to any size or complexity, from warming a room through a window to powering a utility grid.

The Union of Concerned Scientists lists numerous benefits, beginning with solar energy being inexhaustible and free. The attractiveness of solar power production varies with the economics of investing in equipment, and cost competition from fossil fuels. Scientific American estimates the cost of solar power falling below the current average power cost by 2018 or 2020.

### **Common Ways to Harvest Solar Energy**

Solar radiant heat is easily captured by simple glass greenhouses, and through residential windows. "Concentrated" solar energy uses huge arrays of mirrors to focus sunlight on a central tower, which heats water to generate steam that can be used to generate electricity.

Photovoltaic (PV) cells convert sunlight directly to electricity through the photoelectric effect. NASA describes how the silicon semiconductors in the cells capture energy from sunlight's photons, which dislodge electrons in the semiconductor, creating a current. Groups of cells form modules, and modules combine into larger arrays. These can be configured to produce any combination of voltage and current.

### **Land Use**

Large utility-scale solar panels take up a lot of space, which can result in environmental degradation and habitat loss. Solar farms that cover a large amount of land are likely to have an impact on the local fauna and flora, particularly on birds. Solar farms can also inhibit local vegetation growth and damage agriculture. Unlike wind energy, solar panels aren't able to share the land they occupy for other uses.

Small-scale solar panels for domestic use don't require much land. However, at an industrial level, the sheer amount of required space for the panels to produce energy is a challenge. Also, many people feel that utility-scale solar panels create an aesthetic disturbance for the communities in the vicinity.

### **Future of Solar Power: Obstacles & Problems**

Solar power is one of the most promising renewable energy technologies, allowing the generation of electricity from free, inexhaustible sunlight. Many homeowners have already begun adopting solar electricity, and large-scale power generation facilities in the Southwest offer solar's advantages to thousands of customers. But solar still faces a number of hurdles before it can truly replace fossil fuels for power generation for most Indians.

### Conclusion

While solar generation is emission-free, the manufacture of solar panels and related technologies can involve some environmentally unfriendly substances. Nitrogen trifluoride is a common byproduct of electronics manufacture, including those used in solar cells, and it is a greenhouse gas 17,000 times more potent than carbon dioxide. In addition, many solar cells include small amounts of the toxic metal cadmium, and the batteries required to store generated electricity can contain a host of other heavy metals and dangerous substances. As solar technology improves, manufacturers may be able to move away from these potentially dangerous substances, but for now, they mar the otherwise impressive ecological benefits solar power offers.

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