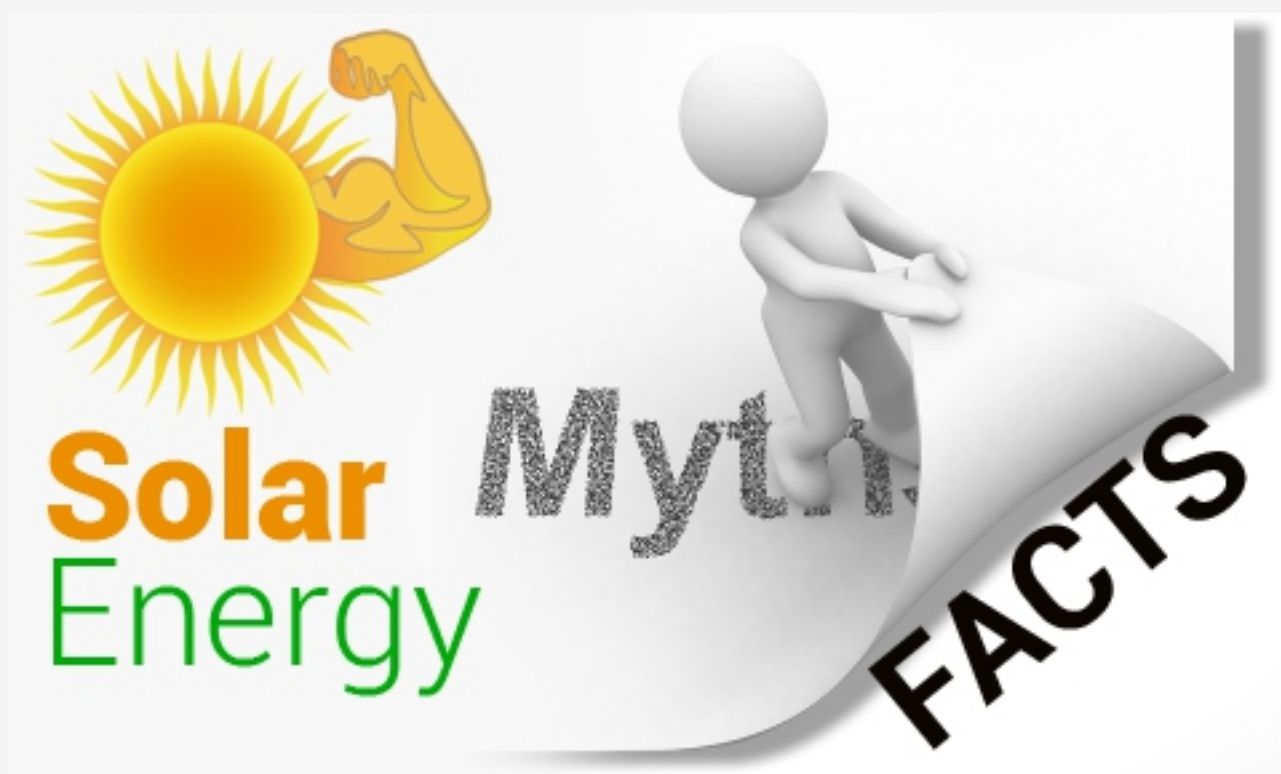


# Experts Outreach for Solar Energy Myths and Facts

As we stand at the junction of electricity road, from there we can find two ways to go for getting electric power: one with time-dependent non-renewable resources and the other with future dominated renewable energy resources.

We are much fascinated about using various fossil fuels like coal, petrol, diesel, etc., for getting electricity for our utilities, but these are depleting day by day and, eventually, these will be vanished in the next several years. This is the reason for the explosive growth of solar power utilization during the recent years.



Solar power is much more reliable source of electrical power than the coal and other non-renewable resources. Even though solar energy is available freely in nature, still most of the people are not using it due to some of the misconceptions and myths that make this energy concept undervalued in various perceptions. This is high time to rethink and reconsider the facts about solar energy and make our minds more receptive to the facts about solar energy rather than myths. Some of these myths are as follows:

**MYTH:** Solar energy initial system installation is too expensive.

**FACT:** Solar energy is available free of cost in nature, but needs little expenditure initially on the system cost comprising of solar panels, electronics and storage devices etc. A decade back the system used to cost 1 million rupees per Kilowatt but now it is tending towards 0.1 million rupees per KW. Thus the price has fallen to one tenth.

**MYTH:** Solar insolation peak power is available for a few hours in the day so usable power availability in a day is quite low.

**FACT:** With the use of MPPT (Maximum power point tracking) system along with high efficiency grid tie inverter arrangement, it can feed consistent solar power from the early morning to late afternoon. Thus, the full utilization of the solar energy from dawn to dusk is possible.

**MYTH:** Batteries needed for storing solar energy need maintenance & replacement periodically.

**FACT:** The inverter that gives AC by converting DC from solar panels can be either off-line or grid-tie inverter. The off line type system needs battery to store the energy that is used for stand alone operation generally for non electrified areas. But the grid-tie type solar installation never uses battery that feeds the power directly to the grid as long as the sunlight is available.

**MYTH:** When it's cloudy and snowfall solar panel doesn't work.

**FACT:** Solar panels work based on the radiation, but not depending on temperature. Therefore, during winter, cold and cloudy weather it also works. Snow slides easily on solar panels; as these panels are mounted at an angle and with sun, snow gets melted easily.

Despite a number of myths, beliefs, criticisms and false statements, solar energy usage accounts for some fraction of the total electricity generation and also finds usage in home and industrial heating and powering applications.

Here we have collected some of the expert opinions on the solar facts and myths, which will be helpful for you to remove all the misconceptions and criticism of solar energy.

# Expert Advice on Solar Energy Myths and Facts

## UC Patnaik, MTech (Electronics) & BTech (Electrical)

Chief Technology Officer at Edgefx Technologies Pvt Ltd

**Myth:** *Although the prices have fallen to one tenth it is still not affordable for general use.*

**Fact:** *It is not correct if one takes into consideration the payback period which could be as low as 10 years while the system has a minimum life of 20 years with negligible recurring expenses by free solar energy as the only input.*

*The payback period is the amount saved in electric billing for those many years that compensates for the initial investment and the interest component thereof. Thereafter, it is total saving. This fact is not clearly understood by general public. For domestic grid-tie installation, the volume of units generated through solar energy gets automatically deducted from the total units consumed from the utility company.*



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## Issak.N, PG Diploma in Industrial Automation

Content writer at Edgefx Technologies Pvt Ltd

*When we start to consider a solar energy system for generating the electricity, one of the most common perceptions of people is that the solar panels are inefficient.*

*Efficiency measures the electric output per square foot. High efficiency solar panels can produce more energy by occupying less surface area. In fact high efficiency doesn't mean that those solar panels are highly reliable but, use less space on the roof. Most of the solar panels have efficiency between 11-18%. Scientists have developed 40% efficiency panels, but manufacturers not yet figured out to design that type of panels. Thus, the main consideration of solar panel is that how much power it will generate when it is installed in optimal position. Factors to be considered for getting high power from solar panels are panel orientation, roof, panel pitch, shade, etc. However the most efficient solar panels cost a little more, that's why they're a less common choice.*



## Sunanda.T, M.tech in VLSI

Content writer at Edgefx Technologies Pvt Ltd

*Often people may think that solar installation and equipment cost is expensive. Even though the cost of installing a solar electricity system at homes or solar appliances like: solar water heaters, solar cookers, etc. depends on the capacity of system, government-backed subsidies make this system cost-effective. In India, under the scheme of "Jawaharlal Nehru National Solar Mission" offered 60% capital subsidy or loan at 5% interest on 80% of the benchmark cost for domestic and commercial users. So the cost of the solar system is not an immense aspect of using it.*



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## Ch. Sampath, M.tech in VLSI

Content writer at Edgefx Technologies Pvt Ltd

**Myth:** Manufacturing of solar panels requires more energy than they produce in their lifetime

**Fact:** According to NREL (National Renewable Energy Laboratory), a solar panel will produce more energy than it consumes over its lifetime. Energy input and output ratios for concentrating solar panels are more favorable even with their simple manufacture. This myth has its roots in the early history of PV power, when solar panels were essentially custom-fabricated for space, military, and research markets.



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## Viswanath Prathap, M.tech (Electrical Power Engineering)

Content writer at Edgefx Technologies Pvt Ltd

**Myth:** Solar manufacturing results in more pollution than is saved by solar usage.

**Fact:** On average, generation of 1000 kWh of electricity with solar energy will reduce emissions by approximately 8 pounds of SO<sub>2</sub> (sulfur dioxide), 5 pounds of NO<sub>x</sub> (nitrogen oxides), and 1400 pounds of CO<sub>2</sub> (carbon dioxide). Thus, pollution caused while manufacturing of PV systems is negligible compared to pollution avoided by using PV system clean energy production. This shows that PV is evidently a clever energy investment with enormous environmental benefits!



*In fact, "Even a glittering star can be visible only in dark sky", I think "Human will recognize the importance of solar energy and utilizes resourcefully by the day when there are no fossil fuels exist"*

## Naresh.S, M.etch in Embedded Systems Design

Project Guide at Edgefx Technologies Pvt Ltd

**Myth:** Some may think that the solar panels are easily getting damaged by hails.

**Fact:** The solar energy is the most readily available sources of renewable energy by which electricity is produced by the solar panels. The solar panel consisted array of solar photovoltaic cells that convert the sunlight into usable electricity. The solar panels placed on the roof of homes or free standing remote locations. Solar panels are designed to work even in extreme weather conditions with laminate, glass, or acrylic casing to protect the crystalline cells. Thus, the solar module substrate is made with a flexible plastic material and highly resistant to damage from rocks or hail pellets.



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## Venu.E, M.B.A

Local Area Manager at Edgefx Technologies Pvt Ltd

**Myth:** Solar is growing because it is subsidized but can't compete in the marketplace

**Fact:** Solar is growing because of declines in production costs and increasing consumer demand. All sources of electricity are subsidized and supported by government policy. Fossil fuel production continues to receive significant incentives at the federal level, and nuclear energy is the beneficiary of myriad state and federal policies like the SC Baseload Review Act and the federal production tax credit. The primary policy support for solar consists of state and federal tax incentives



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## Mohan krishna.L, B.Tech in ECE

Sales/Support Executive at Edgefx Technologies Pvt Ltd

**Myth:** Is It Solar Panels are only for the Rich.

**Fact:** In fact all of them thought that Rooftop solar can be afford in well developed families , but new research demonstrates this is no longer true; indeed, it is exactly opposite.

Data from the Office of Renewable Energy Regulator shows that households in low- to middle-income suburbs, regional areas and retirement belts have embraced solar in the highest numbers.





*“With respect to the price of panels many people see solar power as a way to save on their energy bills as well as do something for the environment”*

*In 21st Century,“ Solar panels are fast becoming the Hills Hoist”.*

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## **Dinesh.P, M.B.A**

Marketing Executive at Edgefx Technologies Pvt Ltd

**Myth:** *It requires a large area to collect sun rays by photo voltaic cells*

**Fact:** *For example, if we install solar panels in our home or agriculture land for irrigation or power generation. It can generate more energy at no pollution, not risk, reliable and cost efficient*



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## **Niveditha. Ch,B.Tech in ECE**

**Myth:** *Solar panels are often installed badly.*

**Fact:** *The solar industry is well regulated and safe.*

*niveditha Solar panels and inverters (the component that converts the power generated by the panels into a form compatible with the electricity system) have to comply with the relevant Australian Standards, and every solar installer must first be qualified as an electrician, and then undergo additional training and accreditation in solar systems.*



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## **Raji.A, B.tech in ECE**

**Myth:** *Solar power is not practical in urban areas.*

**Fact:** *Solar-powered lights eliminate the need to trench underground and dig up asphalt; thus, they are cost-effective alternatives to grid connections in many urban settings. Solar water heating is usually an economical replacement for electric heaters in any urban setting. Solar ventilation air pre- heaters are as often found in urban settings as well as remote locations.*



## Anil, M.B.A

Marketing Executive at Edgefx Technologies Pvt Ltd

**Myth:** Solar panels do not work in cold, cloudy places/states.

**Fact:** UV light is all that's needed and even the cloudiest of places have excelled. Germany, who ranks low in sunny days, is the solar energy capital of the world. In fact, when the solar panel are cold, they are able to better conduct electricity.



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## Dev Desai, B.Tech

Marketing Executive at Edgefx Technologies Pvt Ltd

**Myth:** Solar systems drive the need for expensive grid upgrades.

**Fact:** The need for grid upgrades is driven by rising peak demand and insufficient investment in the electricity network over the last 20 years.



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## Deepak Joshi, M.B.A

Marketing Executive at Edgefx Technologies Pvt Ltd

**Myth:** Solar manufacturing results in more pollution than is saved by solar usage.

**Fact:** A PV system meeting half of the electrical needs of a typical household would eliminate approximately half a ton of sulfur dioxide pollution from the air, and 600 lbs. of nitrogen oxides. In contrast, any pollutants produced in the manufacturing process are minimal and largely recycled. The National Renewable Energy Laboratory of the United States Department of Energy conclusively demonstrates through research at the National Center for Photovoltaics that Photovoltaic (PV) systems avoid far more carbon dioxide and other pollution through their clean energy production than are introduced by the manufacturing of PV systems.



## Bhaskar Singh, Graduate

Marketing Executive at Edgex Technologies Pvt Ltd

**Myth:** Solar is still so expensive that it will never be able to pay for itself. It is only for rich people and/or environmentalists.

**Fact:** Actually fact is that, solar is a very wise choice for people who could actually use the extra couple hundred bucks a month that they are currently paying in power bills. Modern financing options have all but eliminated the barrier to entry for solar, so many households are now able to go solar for little to no money down. Solar is one of the very few household purchases that will actually pay for itself. Studies show that on average, solar panels return two to four times their cost in saved electricity bills and typically pay for themselves completely within 7 to 15 years. If you live in a state with good incentives, the payback period can be as short as 2 to 4 years..



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## Sonachand Pradhan, M.B.A

Marketing Executive at Edgex Technologies Pvt Ltd

**Myth:** Solar Energy Is “Dirty”

It turns out that it takes a lot of power (and a lot of carbon) to build solar panels and wind turbines. the claim that solar “really doesn’t reduce greenhouse gas emissions” because the carbon savings from solar projects on desert land could be “negat” by disturbing caliche deposits that release carbon dioxide. claiming that “Solar cells do not offset greenhouse gases” because solar cell production emits gases that “make carbon dioxide seem harmless.”

**Fact:** Solar Energy Can Greatly Reduce Pollution

Solar Energy Emits Much Fewer Greenhouse Gas Emissions Than Fossil

Fuels. A special report by the International Panel on Climate Change’s

Working Group III examined hundreds of estimates of greenhouse gas

emissions, and compiled the results of the most thorough studies. Actually

renewable and nuclear energy have a substantially lower impact than fossil fuels over the lifespan of each power source:

