

SOLAR

(PHOTOVOLTAIC)

INFORMATION

Sunlight can be converted into electricity using a solar cell. A solar cell is made from silicon alloys. Sunlight is composed of photons, or particles of solar energy.

The performance of many connected solar cells is dependant upon sunlight. Climate conditions (e.g., clouds, fog) have a significant effect on the amount of solar energy received by solar cells and, in turn, its performance.

The simplest solar systems power many of the small calculators and wristwatches used everyday. More complicated systems provide electricity to pump water, power communications equipment, and even provide electricity to our homes. Historically, solar cells have been used at remote sites to provide electricity.

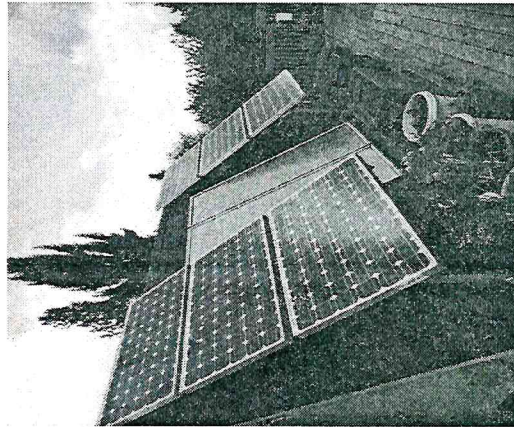


Photo Credit: The Society Promoting Environmental Conservation

ADVANTAGES/USES

- The sun is a permanent energy source. Once a system is purchased, the resulting energy is free.
- Can be installed in unused spaces like roofs.
- Operation does not produce greenhouse gases that contribute to climate change- produces no air or water pollution.
- It works well in remote areas where there are no transmission lines nearby.
- Can meet basic human needs such as pumping water and refrigerating medicines in remote areas of the world.
- Costs have decreased more than ten fold.
- Can be used by individuals and businesses.

DISADVANTAGES/LIMITS

- Electrical production is less in areas with more cloudy days than sunny days or in areas with short daylight hours in winter.
- Currently solar panels are costly to produce.
- Not as cost-competitive as other sources, given production costs and current government policies.
- Manufacture of solar panels consumes some resources and produces some pollution.
- Requires storage to meet demand at night.

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