

# Alternative Energy- Solar Energy

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## ABSTRACT

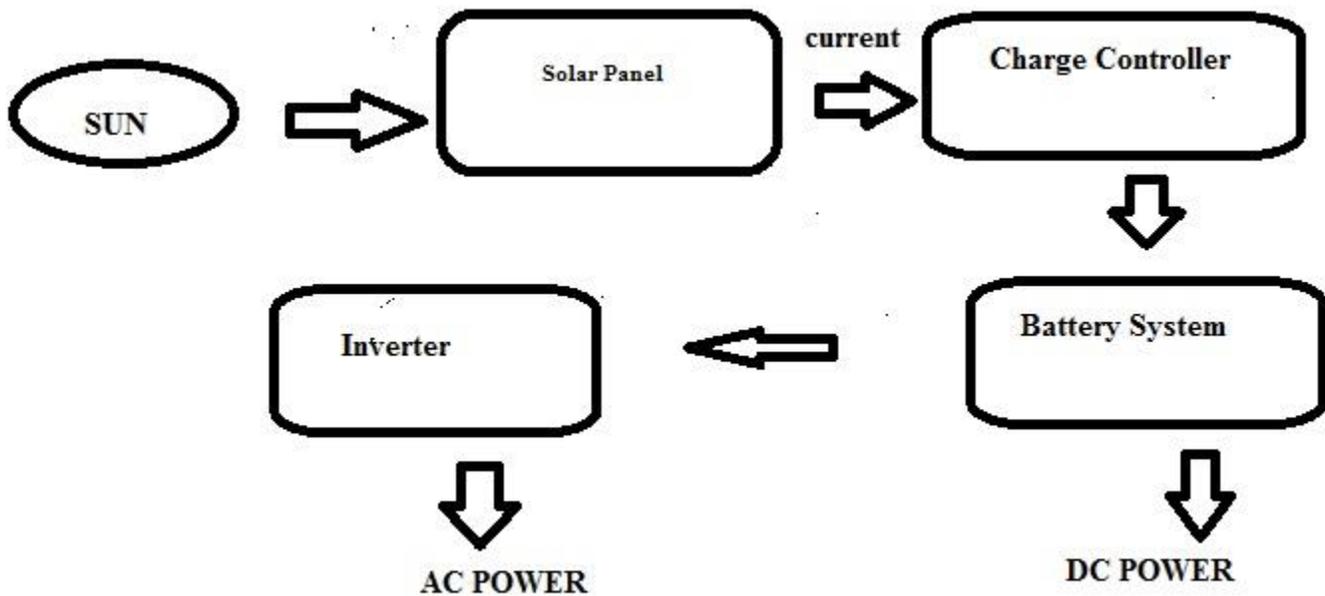
Solar Energy is the energy received from the sun that sustains life on earth. For many decades solar energy has been considered as a huge source of energy and also an economical source of energy because it is freely available. However, it is only now after years of research that technology has made it possible to harness solar energy.

A few industries have increased in size dramatically over a relatively short period. The computer trade is an obvious one. And now so is the solar energy trade. New manufacturers are appearing almost daily, new product innovations are announced just as fast, and existing products are ever more refined, improved, and lowered in price. It's an exciting time for the people involved in the various solar energy industries, and this heightened focus translates to better deals for the consumer, whether residential, commercial, government or other.

Some of the modern Solar Energy systems consist of magnifying glasses along with pipes filled with fluid. These systems consist of frontal glass that focuses the sun's light onto the pipes. The fluid present in the pipes heats up instantly. In addition they pipes are painted black on the outside so as to absorb maximum amount of heat. The pipes have reflective silver surface on the back that reflects the sunlight back, thus heating the pipes further. This reflective silver surface also helps in protecting everything that is on the back of the solar panel.

**INTRODUCTION:-**

We will explain solar energy with help of below figure 1.1



**Figure 1.1 Showing process of solar energy**

Energy from the sun can be categorized in two ways in the form of thermal energy and in the form of light energy. Solar thermal technologies use the solar heat energy to heat substances (such as water or air) for applications such as space heating, pool heating and water heating for homes and businesses. There are a variety of products on the market that use solar thermal energy. Often the products used for this application are called solar thermal collectors and can be mounted on the roof of a building or in some other sunny location. The solar heat can also be used to produce electricity on a large utility-scale by converting the solar energy into mechanical energy. So fossil fuels are actually solar energy stored millions and millions of years ago. Indirectly, the sun or other is responsible for all our energy. Even nuclear energy comes from a star because the uranium atoms used in nuclear energy were created in the fury of a nova - a star exploding.

**CONCENTRATED SOLAR POWER:-**

Concentrating Solar Power (CSP) systems use lenses or mirrors and tracking systems to focus a large area of sunlight into a small beam. The concentrated heat is then used as a heat source for a conventional power plant. A wide range of concentrating technologies exists; the most developed are the parabolic trough, the concentrating linear fresnel reflector, the Stirling dish and the solar power tower. Various techniques are used to track the Sun and focus light. In all of these systems a working fluid is heated by the concentrated sunlight, and is then used for power generation or energy storage.

### **SOLAR ENERGY ADVANTAGES:-**

- The power source of the sun is absolutely free.
- The production of solar energy produces no pollution.
- The technological advancements in solar energy systems have made them extremely cost effective.

### **SOLAR ENERGY DISADVANTAGES:-**

The primary disadvantage to solar energy is the upfront cost. Once installed, you can expect next to nothing on the system during the 40-year life span. The installation, however, can be price.

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