

Networks and Telecommunication

solar power technology



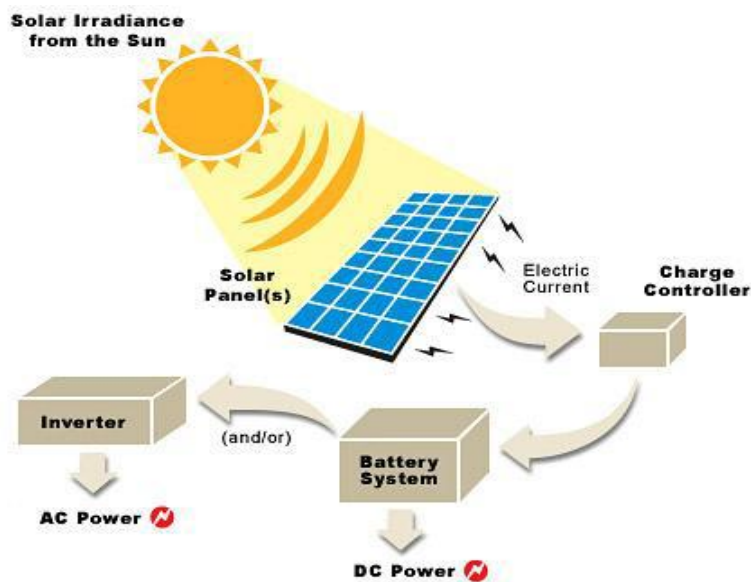
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Solar power is the conversion of sunlight into electricity, either directly using photovoltaics (PV), or indirectly using concentrated solar power (CSP). Concentrated solar power systems use lenses or mirrors and tracking systems to focus a large area of sunlight into a small beam. Photovoltaics convert light into electric current using the photoelectric effect.



Commercial concentrated solar power plants were first developed in the 1980s, and the 354 MW SEGS CSP installation is the largest solar power plant in the world and is located in the Mojave Desert of California. Other large CSP plants include the Solnova Solar Power Station (150 MW) and the Andasol solar power station (100 MW), both in Spain. The 97 MW Sarnia Photovoltaic Power Plant in Canada, is the world's largest photovoltaic plant.



Concentrating 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.



Development and Deployment

The early development of solar technologies starting in the 1860s was driven by an expectation that coal would soon become scarce. However, development of solar technologies stagnated in the early 20th century in the face of the increasing availability, economy, and utility of coal and petroleum.



Economics

The U.S. Energy Information Administration calculates that, all-told, electricity from a Solar PV plants costs 4 times that of conventional coal. Bloomberg New Energy Finance in March 2011, put the 2010 cost of solar panels at \$1.80 per watt, but estimated that the price would decline to \$1.50 per watt by the end of 2011.



Energy storage methods

Solar energy is not available at night, making energy storage an important issue in order to provide the continuous availability of energy. Both wind power and solar power are intermittent energy sources, meaning that all available output must be taken when it is available and either stored for *when* it can be used, or transported, over transmission lines, to *where* it can be used. Wind power and solar power tend to be somewhat complementary, as there tends to be more wind in the winter and more sun in the summer, but on days with no sun and no wind the difference needs to be made up in some manner. The Institute for Solar Energy Supply Technology of the University of Kassel pilot-tested a combined power plant linking solar, wind, biogas and hydrostorage to provide load-following power around the clock, entirely from renewable sources.



Advantages of solar energy

- Solar energy is free of cost. They don't need any kind of fuel. Moreover, there is also no need to maintain them. At present it is the proven and cheap energy source
- It is easily affordable and governing Federal bodies also offers high incentives for utilizing the solar energy and. In 2005 energy Act came out which stated the highly beneficial energy policy and reduce many essential taxes. You are just charged for the 30 percent of all the taxes on using solar energy and water.
- You can say that solar energy is cost free setup because it's just cost you the initial installation cost and rest of the working is almost free. A lot of time, money, bills and efforts could be saved. The demand for the solar system is rising to 50 percent every year which shows that its effective
- It minimizes the major health risks. The use of fuels such as diesel and petroleum could be very dangerous and can cause respiratory diseases and tuberculosis. Your eyes can get infected too. Big amount of gas which is used in the vehicles can also be saved.



Future of solar energy

Future of the solar energy seems to be bright .increased use and improved research could b seen which clearly shows the importance of solar energy .Many inventors are generating big funds for supporting the solar energy. In spite of hug fame the solar energy is still required to be advanced to mark it as an economic solution for the world. Scientists and inventors are still finding out the solutions to reduce the problems and risks involved in the solar energy. Many sponsored soar energy project are in progress. We can fore see that If established properly Solar energy systems would b eth best energy production resources in the future for the economic, business and living classes.

