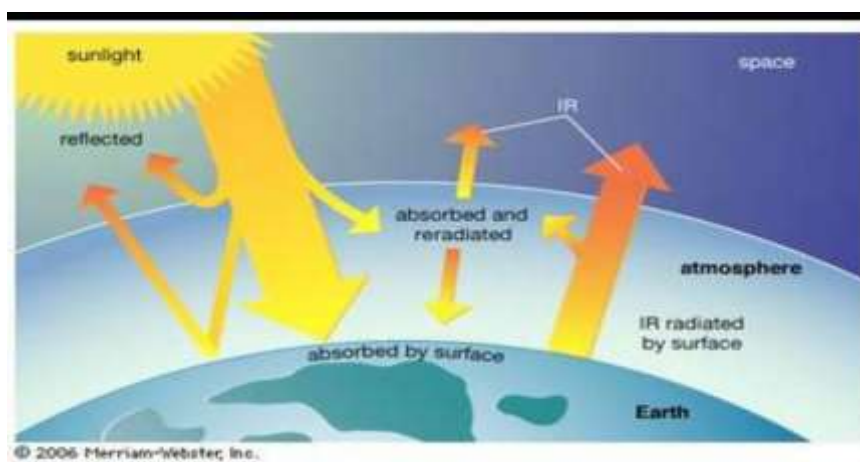


Solar Energy Is A Major Renewable Energy Source Of Maharashtra

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◆ INTRODUCTION:-

Maharashtra is a state in the western region of India and is the nation's third largest state in country. Maharashtra's area is 3,07,713 sq km. Its population makes it one of the largest energy users of the country. Electricity demand of Maharashtra is high, the state consumes 13.91% of the total installed electricity generation capacity in India.

There has been a constant increase in the setup of industries in Maharashtra. Maharashtra is an industrialized state of India, and urbanization growth is high. The main source of energy from conventional energy resources like water, coal, gas, and petroleum, etc. As oil prices have gone up and other energy sources remain limited, the state is increasingly searching for safe, reliable, long-term sources of power. In this scenario, solar energy proves to be an abundant energy source which can be put to use.

◆ Meaning Of Solar Energy:-

The sun is the source of all energy on the earth. Solar energy is our earth's primary source of renewable energy. It is a form of energy radiated by the sun, including light, radio waves, and X-rays, although the term usually refers to the visible light of the sun. Solar energy is defined as the sun's radiation that reaches the earth.

◆ Purpose Of Research Paper:-

- Study of Advantages of solar energy
- Study of types of solar power plants

- Study of major solar energy projet of maharashtra

◆ Advantages Of Solar Energy:-

1} Unlimited source of Energy:-

Solar power is the key to clean energy future. Every day the sun gives off far more energy than we need to power everything on earth . that's why we re investing heavily in solar plants .

2} Renewable:-

Solar plants produce electricity by transforming to continuous flow by energy from the sun to electricity.

3} Co 2 Free:-

No harmful emissions are released into the air when electricity is produced by solar panels .

4} Low Operating Costs:-

The photovoltaic process that transforms sunlight into electricity doesn't require any fuel and has no variable costs.

5} No Fuel to burn:-

After solar panels have been installed operational costs are quite low compared to other forms of power generation .fuel isn't required and this means that solar power can create large amounts of electricity without the uncertainty and expanse of securing a fuel supply.

◆ Solar Power Plant Types:-

There are two ways to use solar energy to generate electricity.

1} Solar Photovoltaic power plant:-

The sun illuminates the solar cells in the Pv Array .which converts light energy into electricity.the electricity goes into an inverter and into the power lines to your home.

Modes of generation:-



- conventional silicon based
- noncrystalline technology
- polycrystalline technology
- thin film technology
- concentrating Pv (cap) latest emerging

2} Solar Thermal Power Plant:-



The main principal involved is to focus sunlight on a receiver where the circulating fluid gets heated and there by drives a steam engine to generate electricity.

Modes of Generation:-

- Concentrating type (Cap)

- 1) Line focusing system
- 2) Parabolic Trough System s
- 3) Fresnel Trough Collector Systems
- 4) Point Focusing Systems
- 5) Dish Stirling systems / Concentrating Dish
- 6) Solar Tower using central Receiver system

- Non Concentrating Type:-

1 Solar updraft Tower power plants - solar chimney

2) Solar Pond Power Plants

◆ Major Solar Plant in Maharashtra:-

1) Sakri Solar Plant:-

Sakri Photovoltaic solar energy project is a 125 MW solar Photovoltaic power plant. The project was developed by Mahagenco in Shivaji Nagar in Sakri taluka of Dhule district in Maharashtra. This is the biggest project in India.

2) Shirdi Solar Plant:-

World largest Solar steam system has been installed at Sri Sai Baba Sansthan, Shirdi in Maharashtra. 10 MW solar energy by installing the solar powered cooker at a cost of RS 1.33 Crore. The organizer can cook food for 20,000 people per day incurring cheaper cost on fuel.

3) Tata Power Solar Plant Palaswadi:-

Tata Power India largest private power company's which has developed a 25 MW (28.8 Mwp) solar Photovoltaic (PV) Power project. The solar plant spread over 130 Acres is located at Palaswadi village in Man taluka in Satara district in Maharashtra.

4) Yedsi Solar Plant :-

Siddhivinay solar energy is planning to set up a 10 MW solar power plant in Yedsi in Osmanabad district of Maharashtra. The company has acquired 100 acres of land.

5) Malkhed Solar Plant:-

125 MW Mahagenco solar power project in Malkhed village in Yavatmal district. In the state which will entail an investment of Rs 11,000 million. The land required for the project is to be claimed from forest department paying compensation besides providing an equal quantum of productive land for the forest.

◆ Current Scenario in Maharashtra :-

Among the renewable sources of energy, solar energy has a huge potential for power generation in Maharashtra. There are 250-350 days of clear sun with an available average radiation of 4 to 6 kWh/sq.meter over a day. There is a capacity to generate 1.5 million units /MW /year through solar systems. Maharashtra is already in process to boost this enormous source and interested solar project development.

Maharashtra has 430 MW of cumulative capacity of solar energy as of January 31, 2017 with an extra 340 MW of works in progress according to market analysis Brigade to India.

◆ Conclusion:-

Solar energy has the capacity to provide all of the energy we will ever need. We have the ability to harvest this energy but we must invest more money and further develop and perfect the technology at hand. Therefore, we believe that solar energy is the future and can solve all of our energy demands, including eliminating the pollution caused by other forms of electricity generation.

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