

Renewable Energy Power Plants

We are aware about types of renewable sources that are used for generating power. To increase the knowledge about how power is generated from popular sources of renewable energy a brief description about different types of power plants is worth discussing. Solar Power Plants Solar Power is converted into Electrical Energy mainly by 2 techniques – PV Systems (Photovoltaics) and Concentrated Solar Power (CSP) Systems. a) PV Systems – In these systems an array of solar panels produce DC power from which in turn is converted into usable AC power with the help of inverter. This is the basic concept of PV systems. These systems can produce power on domestic scale for houses and can also attend to the needs of large consumers when installed in large solar farms. PV systems can be connected back to grid or can be work as stand-alone systems. Largest PV power plant of Australia is Nyngan Solar Plant which has a capacity of 102,000 KW. b) CSP- This technology involves heating of a working fluid to drive the turbines from steam produced. The working fluid is heated by focusing the sunlight by large mirrors, lenses and tracking systems. One of the most prominent CSP plant of Australia is located in NSW and has capacity of 3000 KW. Wind Power Plants/Wind Farms A wind farm consists of large number of turbines present in vast expanse of land. Each turbine present at the wind farm is connected to communication networks and medium voltage power collection networks. To harness strong winds, offshore wind power plants are installed in seas or oceans. Such power plants have less social land issues and can exploit readily available strong winds more frequently. Largest wind farm in Australia is Boco Rock Wind Farm in NSW, it has a maximum capacity of 113 MW. Biomass Power Plants A biomass power plant burns forest products, degradable wastes, sewage, manure etc. to produce steam which in turn is used to rotate the turbine and produce electricity. This technology is relatively older than solar and wind power and has been around in Australia for quite a while now. Maryborough and Sunshine Coast Gold plants located in Queensland are the prominent Biomass Power plants of Australia. This was a basic overview of Solar, Wind and Biomass Power Plants and their presence in Australia.

References

1. Vattenfall. Biomass Energy [Online]. Available: <http://corporate.vattenfall.com/about-energy/renewable-energy-sources/biomass/how-it-works/> [Accessed 25 March 2016]. AGL. 2015.
2. Renewable Energy [Online]. Available: <https://www.agl.com.au/about-agl/how-we-source-energy/renewable-energy> [Accessed 25th March 2016].
3. SINGH, G. K. 2012. Solar Power Generation By PV technology: A Review. Elsevier, 8.