

SOLAR POWER
DECEMBER 2, 2014
DAILY POST

Solar power



Details

Parent Category: [Comments](#)

Category: [Columnists](#)

Published on Tuesday, 02 December 2014 13:56



Solar power is going to be a viable energy source in coming years.DP

The world will have to completely phase out fossil fuels in electricity generation by the end of century and reduce their use by 20 per cent by 2050 if disastrous consequences of climate change are to be avoided, as has been pointed out by the UN backed inter-governmental panel on climate change in its synthesis report. Indian government has also come up with a number of measures to boost solar power. India was the first country in the world to set up Ministry of Non- Conventional Energy Sources (MNES) in 1980. Today India's cumulative grid tied renewable energy capacity, excluding large hydro, has reached around 31,692 mega watt (MW). Jawaharlal Nehru National Solar Mission was launched in January 2010 with an ambitious target of deploying 20,000 MW of grid connected solar power by 2022. Solar power is going to be viable energy source in coming years.

The thermal generation in the country account for 69 per cent of total generating capacity followed by 15.75 per cent in hydro generation. The share of non renewable energy sources is around 12.2 per cent. The solar energy's share is less than 10 per cent of renewable energy sources.

India has an average annual temperature that ranges from 25°C to 27.5 °C because of its location between the tropic of cancer and the equator. The average sunny days in country are about 300 and this implies that India has a very high potential of generating solar energy as the availability of solar radiation in various parts of the country is quite good. To gather a solar energy at national level, we need about 45000 square km of land area. There would be natural motivation to use available land closer to load centers for the collection of solar energy but for large scale generation of solar power the focus should be on barren non-cultivable areas and deserts away from population. Most of the areas where there is adequate insolation are likely to be water stressed. Ability to minimise dependence on water should thus be an important criterion for technology choices.

The new BJP government's first Budget has given high priority to renewable energy sector with an allocation of Rs 1,000 crore for the development of ultra large solar power plants and solar parks. Union Ministry of New and Renewable Energy has planned to develop 25 solar parks at an estimated cost of Rs 4,050 crore under the Jawahar Lal Nehru Solar Mission. These solar parks will be developed in collaboration with the state governments and the private sector players. Each project will be completed in a period of 18 months. The proposed solar parks shall be set up at locations with sufficient insolation levels and where at least five acres per MW land is available towards the installation of these projects. To keep the project cost low and attract private sector, the use of waste or non-agriculture land will be preferred.

Similarly, the advantages of roof top solar power plant include low gestation period, saving in transmission and distribution losses, utilisation of vacant roof tops for power generation and there is no requirement of additional land and amount towards operation and maintenance, safety, security and up keep will be the responsibility of solar power generator. The plant can be mounted on flat roof or sheds having south facing shadow free area. The roof or sheds should be capable of holding weight of 20 kilogram per square meter.

The new BJP government's first Budget has given high priority to renewable energy sector with an allocation of Rs 1,000 crore for the development of ultra large solar power plants and solar parks. Union Ministry of New and Renewable Energy has planned to develop 25 solar parks at an estimated cost of Rs 4,050 crore under the Jawahar Lal Nehru Solar Mission. These solar parks will be developed in collaboration with the state governments and the private sector players. Each project will be completed in a period of 18 months. The proposed solar parks shall be set up at locations with sufficient insolation levels and where at least five acres per MW land is available towards the installation of these projects. To keep the project cost low and attract private sector, the use of waste or non-agriculture land will be preferred.

Similarly, the advantages of roof top solar power plant include low gestation period, saving in transmission and distribution losses, utilisation of vacant roof tops for power generation and there is no requirement of additional land and amount towards operation and maintenance, safety, security and up keep will be the responsibility of solar power generator. The plant can be mounted on flat roof or sheds having south facing shadow free area. The roof or sheds should be capable of holding weight of 20 kilogram per square meter.

The solar capacity in India is expected to grow at a rapid pace in the coming years. With power tariff increasing every year and to keep pace with rising power demand, the opportunities in solar energy will see manifold rise despite challenges.

The existing REC framework provides that each certificate shall represent one MW hour of electricity generated from renewable energy source and injected into the grid. In order to support solar power, the Central Electricity Regulatory Commission (CERC) had fixed the forbearance price of Rs 17 per unit with floor price of Rs 12 per unit for the period up to March 2012 and for the next five years up March 2017, these are Rs 13.40 and Rs 9.30 per unit. Now CERC has proposed further reduction in rates in view of lowering installation cost. Solar Energy Commission of India has prepared the revised draft power sale agreement at the fixed rate of Rs 5.50 per unit for long term power purchase agreements.

The government of Rajasthan has come up with the Rajasthan Solar Energy Policy, 2014 to create an enabling environment for development of solar power. Union Ministry of New and Renewable Energy has planned to set up grid connected rooftop solar power plants with aggregate 250 MW capacity in Delhi and has sought around Rs 636 crore from the National Clean Energy Funds. Punjab government has also notified the net metering policy for the installation of grid interactive rooftop solar power projects in homes, institutions, commercial, private, governmental buildings, warehouses and industries in the state. According to the Punjab Energy Development Agency (PEDA), the state government's nodal agency for promotion of renewable energy, there is a potential to generate over 100 MW of solar power from rooftop solar projects. Tata Power Solar, a JV between Tata Power and British Petroleum (BP) Solar has commissioned a 2 MW solar power plant in Tamil Nadu, considered to be the largest rooftop facility in south India. All this is just a beginning!