

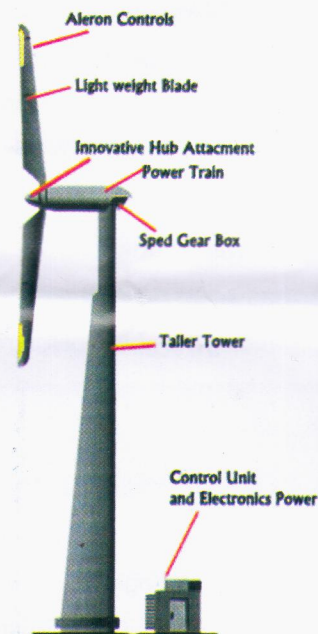
Wind energy potential in Rajasthan

Kinetic energy in the wind can be used to run wind turbines but the output power depends on the wind speed. Generally, it requires a wind in the range of 5.5m/s (20km/h). Across globe, India has the fifth largest installed wind power capacity (14158 MW) and in 2009-10 India's growth rate was highest among the other top four countries.

Installed capacity of wind power in India

S. No.	States	Capacity (MW)	Gross Potential
1.	Tamil Nadu	5904.4	5530
2.	Maharashtra	2310.7	4584
3.	Gujarat	2175.6	10,645
4.	Karnataka	1730.1	11,531
5.	Rajasthan	1524.7	4858
6.	Madhya Pradesh	275.5	1019
7.	Andhra Pradesh	200.2	8965
8.	Kerala	32.8	1171
9.	Orissa	-	255
10.	Others	4	-

▲ As on 31.03.2011.



Rajasthan's current wind power generation capacity is 1525 MW and its total wind energy potential is about 5400 MW. Rajasthan stands on the fifth position in India and is emerging as an important destination for new wind farms. New locations have been identified for Wind Power Generation in Rajasthan by MNES (Ministry of Non-conventional Energy sources) under Wind Power Survey programme:

Devgarh (Chittorgarh), Harshnath (Sikar), Jaisalmer, Khodal (Barmer), Mohangarh (Jaisalmer) and Phlodi (Jodhpur).

The State Government Nodal Agency Rajasthan Renewable Energy Corporation Limited (RRECL) is promoting & developing Non-conventional Energy Sources and working for conservation of energy. Cost per MW of wind power generation is approx Rs 4.5-5.25 Crore and levelised cost per Kwh is about (Rs/kwh) 2.5-3.7.

Wind electric generation is expected to accelerate in growth charts, as 97% of investment is from the private entrepreneurs.

Factors generating such interest are as follows:

- Attractive buy-back rates of more than Rs.3.00/kwh (levelized for 10 years) and accelerated depreciation of 80% on wind investments offers a good margin to the investor investing for sale to grid.
- Carbon credit benefits under the Kyoto Protocol for a decade from 2002.
- Increasing prices of conventional fuels, demand supply gap and high industrial tariffs
- With availability based tariff implementation at the state level, inflation free wind power offer considerable scope in trading, after debit repayment period.
- Declining cost due to improving technologies.
- CDM benefits and carbon trading offer a huge opportunity to improve payback period of investment.
- Low Gestation period.



Rajasthan is complacent enough to be an International Solar and Energy hub. In the western part of Rajasthan, there are bountiful natural resources such as wind and sunshine. In parts of Rajasthan like Bikaner (Solar), Jodhpur (Solar Wind), Jaisalmer (Wind, Gas Solar), Barmer (Petroleum, Gas, Solar) sunshine is for more than 325 days in a year. This princely state accounts for the highest solar radiation. These lands are sparsely populated, which helps in revenue land availability in opulence. The desert area constitutes of around 208,110 sq. km which is almost 60 per cent of the total area. The land required for 100,000 MW project will be around 60 km. **60 x 60 km = 3600 sq. km.**

To meet whole of the country's energy demand 5,000 sq. km desert and flat land will be enough. At present, the state government has approved 11 Solar Power Projects of 66 MW capacity. The technology used in these Solar plants are (a) Solar Thermal- Parabolic Dish, Stirling Engine, (b) Power Tower, (c) Solar Photo Voltic- Mono/ Multi Crystalline, Thin Film: Asci, Cdte, Cigs, Concentrated Photo Voltaic (CPV). There is a support of RERC-RRECL regulatory bodies to these energy power plants. The solar projects of 8110 MW capacity are already registered. There are more than 250 applications by the Solar Power producers, investors and new entrepreneurs which are registered with RRECL. Govt. land at 10 % of DLC for development of Solar Power projects is available. The Evacuation system from the Solar Projects is to be laid by the State Transmission Utility as per the norms of the regulatory bodies. There are various national and international funding agencies to finance the Solar project such as U. S. Exim, Kfw, JIFC and many more. The main requirements for the debt finance are (i) Firm PPA, (ii) Established technology (iii) Strong EPC and O&M team. The Jawaharlal Nehru Solar Mission is another initiative to promote ecological sustainable development in the country.

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Green Regulation updates

• The moratorium is extended for consideration of projects in Sindhudurg and Ratanagiri districts, Maharashtra upto 30th August, 2011 except for:

- (I) The projects of national importance,
- (ii) The projects which are located in the notified industrial estates, preferably with zero discharge and improved technologies which were received for TOR or EC before the moratorium was imposed in August, 2010.

Circular no: J.21011/58/2010-IA-I

Dated: 4th July, 2011

<http://moef.nic.in/downloads/public-information/ratnagiri-sindhdu.pdf>

□ To initiate the monitoring of the EC/ TOR issued by MoEF, it has been made mandatory to put the contact information along with email ids, fax nos, addresses of the concerned project in-charge based on Form -I shall be mentioned in the EC/ TOR letters.

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Dated: 18th July, 2011

<http://moef.nic.in/downloads/public-information/OM-dated-18-july.pdf>

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