



The Indian state of Rajasthan has already begun delivering impressive installation figures for its solar PV industry, and will be boosted further by the Rajasthan Solar Energy Policy, which is targeting 25 GW of capacity.

State of the nation

Rajasthan: The Indian state of Rajasthan is on course to clinch top spot in the hot pursuit of solar growth thanks to new policy incentives that are transforming the market, writes Michael Wekezer of Rödl & Partner.

India has ambitious solar plans. After taking office in May 2014, the new government of Prime Minister Modi has announced that it wants to quintuple the previous government's target of 20 gigawatts (GW) by 2020 to 100 GW by 2022. The government of Rajasthan (a state in western India, bordering Pakistan) intends to install 25,000 MW of solar capacity in the near future. The newly introduced Rajasthan Solar Energy Policy of 2014 aims to create an investor-

friendly environment to achieve this target.

As per the data recently released by the Ministry of New and Renewable Energy (MNRE), Rajasthan has already become the new leader in solar energy with an installed capacity of 1,167 MW against previous leader, and geographical neighbor, Gujarat, which has around 1 GW installed. Rajasthan receives India's maximum solar radiation intensity and has very low average rainfall. It also has

abundant desert land – its Thar Desert is the biggest in India and the 17th largest worldwide.

The Rajasthan Solar Energy Policy of 2014, which came into force in October 2014, hopes to achieve the 25,000 megawatt PV target through public or private enterprises or public-private partnerships. Since in India power generation is strictly separate from power distribution, the policy offers incentives for setting up solar power projects that will sell solar

Technology type and size of land use permitted	
Crystalline technology	2.5 hectares per MW
Crystalline technology with tracker	3.5 hectares per MW
Thin film/amorphous silicon technology	3.5 hectares per MW
Solar thermal (CSP) tower/trough or other technology: Up to PLF of 21% For every 1% increase in PLF	3.5 hectares per MW 0.15 hectares per MW additional land will be allotted

Penalties for delayed projects	
For delay up to 1 month	INR 25,000 per MW
For delay up to 3 months	INR 50,000 per MW
For delay up to 6 months	INR 100,000 per MW
For delay up to 9 months	INR 150,000 per MW
For delay up to 15 months	INR 200,000 per MW

energy to power distribution companies (so-called “Discoms”) based in Rajasthan, and to third parties in other states. The policy also promotes the development of Rooftop PV solar installations.

Allocation procedure

The key issues faced by developers when constructing solar parks in Rajasthan or elsewhere in India are allotment of land, grid connectivity, and the feed-in tariff (FIT), i.e. the purchase price guaranteed for solar energy generated.

As a first step, the investor submits an application to Rajasthan Renewable Energy Corporation Limited (RRECL). RRECL is a state agency for promoting and developing non-conventional energy sources. Along with the application, processing fees at the rate of INR 5,000 (\$78) per hectare of relevant land (plus service tax at a rate of currently 14%) are due. The fees are capped at a maximum of INR 1 million (\$16,000). RRECL’s target is to approve such applications within a period of 30 days of submission. Under this process investors are permitted to purchase agricultural land directly from the respective owner of the land.

Land designated as agricultural has – obviously – a lower value and so the purchase price compared to land designated for commercial or residential use is cheaper. In India it is generally mandatory to convert agricultural land before using it for any commercial purpose. This is often a tedious and cumbersome process.

However, under the Rajasthan Solar Energy Policy, the government has cre-

ated an exception for solar power plants and solar farms. Both can be set up without the requirement of land conversion.

Furthermore, solar power plants of all categories receive preferential treatment in respect to the issuance of environmental permits and clearances required for the installation and operation of a plant. Solar installations have been classified under the so-called “green category” of the applicable legislation by the Rajasthan State Pollution control board. This means that consent to establish and consent to operate projects shall be given within 15 days of application.

Additionally, land owned by the government will also be allotted to the investors based on the recommendation made by RRECL. The investor is required to pay a security deposit of INR 500,000 (\$7,800) per MW in order to be recommended for the allotment of government land. This amount is refundable following the execution of the lease in respect of the land. The maximum size of government-owned land that can be allotted for solar power projects depends on the technology used in respect of the installation to be built on such land (see Table above).

Grid connection issues

The network for the required grid connectivity shall be arranged and maintained by the government of Rajasthan-owned discom Rajasthan Rajya Vidyut Prasaran Nigam Limited (RVPN) and additional discoms from the private sector. The minimum capacity and voltage level of a solar power project being connected to a grid sub-station shall be 5 MW at 33 kV. In

order for grid connectivity and the construction of the required power line to be arranged by a discom, the investor must submit a time frame for construction of their plant along with a bank guarantee and an undertaking to the effect that the plant will be operational within the prescribed period. This system is designed to incentivize the timely completion of projects and penalize delays: In case there is any delay in the utilization of a system, a penalty at the rate of 12% per annum on the amount of bank guarantee will be levied by the relevant discom in respect to the period of the delay. The bank guarantee will be returned to the investor once the project has been commissioned.

The price for purchasing solar power from private generators shall be as per the PPA between the producer and the relevant discom. The prevailing price for purchasing solar from private generators in Rajasthan is between INR 6 and 7 per kilowatt hour. However, as mentioned earlier, the exact purchase price will ultimately be governed by the respective power purchase agreement between the contracting parties.

It is also important to note that the investors are obliged to complete their projects within the prescribed time schedule. The time line for completion is different depending upon the nature of the project. However, the penalty is the same for all projects (see Table above left).

If the delay in commissioning the project is beyond 15 months then the investor shall approach the State Level Empowered Committee for further extension. The Committee may consider the request of extension if there is a reasonable certainty of commission of projects.

Due to its natural conditions, Rajasthan is pre-destined to become one of the hubs of solar energy in India. The Rajasthan Solar Policy 2014 aims to create a framework to tap that potential and contains important easements and incentives for investors.

However, investors also have to factor in the intrinsic uncertainties and cumbersome realities of doing business in India. In view of the important role expected to be played by new and renewable energy sources and the commitment shown by Prime Minister Modi’s government to make India a solar power leader, investors should pay close attention to further developments in Rajasthan. ♦

Michael Wekezer