



The Indian Sunshine: The Solar Energy Landscape in India

Solar Energy: A Key Sector for the Government

India's focus on Renewable Energy ("RE") stems from the fact that the country's energy import bill of around USD 150 billion is expected to reach USD 300 billion by 2030ⁱ. India's solar power generation potentialⁱⁱ of 748 gigawatts ("GW") will utilise only 3% of the total waste land available. The current installed capacity of solar power of 5 GWⁱⁱⁱ, is less than 0.5% of the estimated potential; thus, suggesting that India has the potential of becoming a global hot-spot for solar. The Government of India (GoI) has increased its solar power capacity addition target five-fold, from the initial target of 20 GW to 100 GW by the year 2022. Of the 100 GW target for solar, 40 GW is expected to be achieved through deployment of decentralised rooftop projects, 40 GW through utility-scale solar plants and 20 GW through ultra-mega solar parks with installed capacity of 500 MW or more. This means an investment of approximately USD 100 billion which is not possible unless supported by international investors. Softbank of Japan, along with India's Bharti Enterprises and Taiwan's Foxconn Technology, plans to invest at least USD 20 billion in solar energy projects in India. US-based First Solar and China's Trina Solar are among other companies that are planning to set up module manufacturing facilities in India. Other companies interested in the sector include Sky Power East, Solairedirect Energy, SolarPack Corporation, Sun Edison Solar, Mytrah Energy and Fortum Finnsurya Energy, showing a strong overseas interest in the sector.

Initiatives to Achieve Targets

Formulation of Renewable Energy Act

The initiatives to attract the international investors necessary to turn the GOI's plans into reality include a new legislation to help achieve the ambitious target at both the national and state levels. Electricity is a concurrent subject (meaning both the national government and state governments have the right to frame laws) and while there are benefits of the concurrent structure that address state specific concerns and interests of beneficiaries, it also leads to lack of cohesiveness in the planning between the centre and the states. Development of transmission corridors, development of power generation projects and fund management require better coordination, which is expected to be strengthened by a national level Renewable Energy Act with provisions for National Renewable Energy Committee to enable inter-ministerial coordination relating to the implementation of the Act, National Renewable Energy Advisory Group for oversight on utilisation of funds and suggestions to the Central Government on effective implementation of the RE Act. The Act also envisages setting up a Renewable Energy Corporation of India to act as a national level RE procurement entity and support development of 'Renewable Energy Investment Zones' across the country.

Creation of Green Corridor

To achieve the target of 175 GW for all renewable energy technologies (including 100 GW of solar) by 2022, a strong and reliable infrastructure is a critical need to ensure evacuation of power from the generation sites. To support the supply of power from RE rich to RE deficient states, the GoI is working on a green energy corridor programme. The first phase of this program is designed to

allocate 33 GW of solar and wind power, while the second phase will cater to 22 GW capacity. The programme requires an investment of approx. USD 7 billion^{iv}.

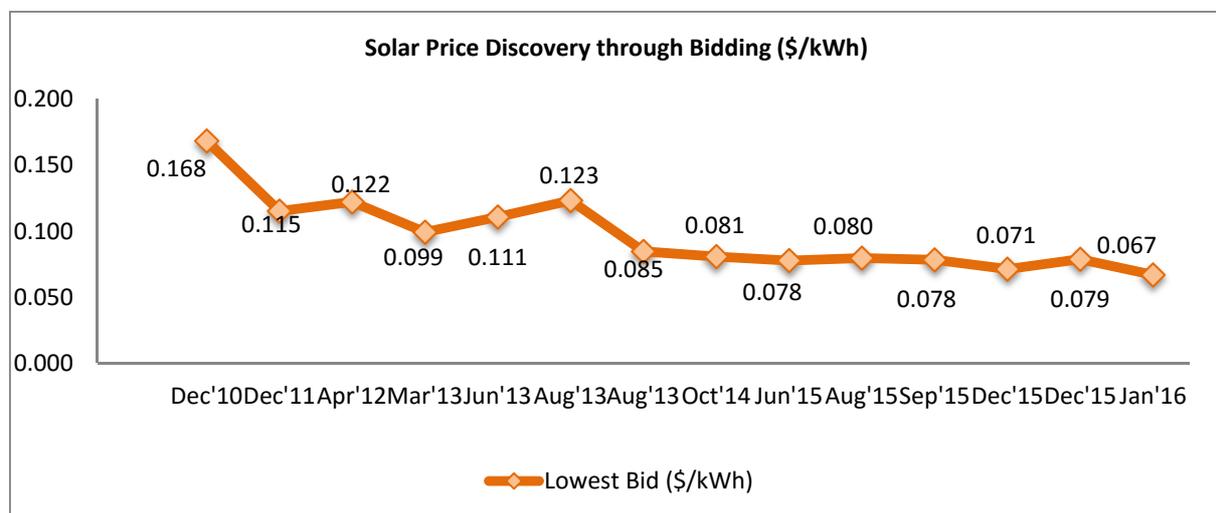
Solar Park Initiative

One of the prime requirements for development of solar projects is land identification and acquisition and to make it easier, Gol has identified large tracts of land and plans to develop 25 solar parks (for 20 GW) in various states. Further, some of the states have also taken up initiatives to facilitate land availability for solar projects, such as:

- Government of Madhya Pradesh in its policy “Implementation of Solar Power based Projects in Madhya Pradesh, 2012” (Policy 2012) has permitted to use government land, if available, up to 3 hectares/ MW to set up solar power plants in Madhya Pradesh. Further, it allows procurement of private land based on mutual consent;
- Government of Karnataka has facilitated permission for agricultural land conversion through amendment in Section-95 of Land Reforms Act; and
- Government of Rajasthan has allowed procurement of both agricultural land (based on Rajasthan Imposition of Ceiling on Agriculture Holding Act, 1973) and private land (based on Ceiling Act, 1973) to develop of solar power projects.

Moving Towards Grid Parity

It can be seen from the graph below that the solar industry has been fast maturing in the country and the solar tariff (derived under reverse bidding) has come down significantly in the recent past.



Development across the entire value chain, especially for modules, has also been one of the contributors in reducing the cost of generation. The price of solar module has come down by about 80 per cent in the last five years. Gol is also planning to invite bids for dollar-based solar power contracts with an aim to encourage foreign investment and create a fund to manage the currency risk. This is expected to reduce developers' borrowing costs by around one-third. These

developments contribute significantly to achievement of grid parity and making solar power viable for electricity distribution companies

Support to the Sector

Govt provides both financial and fiscal incentives to developers to promote solar energy. Some of the key benefits include:

- Income tax holiday- 100 per cent for 10 consecutive years – Minimum Alternate Tax (“MAT”) at 20 per cent;
- Accelerated depreciation benefits;
- Value Added Tax is either reduced or exempted for solar and other RE based projects;
- Tax-free grants; received from the holding company engaged in generation, distribution or transmission of power;
- Provision of feed-in-tariffs for procurement of green power by distribution utilities;
- Capital subsidy on solar projects – available either in direct form or through viability gap funding through reverse bidding;
- Inclusion of RE, including solar, as a priority sector with the availability of soft loans;
- Renewable Purchase Obligation has been set for all the states in India to generate domestic demand in the country; and
- Provision of Renewable Energy Certificate (“REC”) mechanism for solar projects, pegged at a higher value compared to non-solar RECs.

Meghraj Capital Advisors Private Limited (“MCAPL”) has been active in the Indian solar energy market for the last six years. We have been engaged in formulating policies and regulations for solar power projects. We have worked for the Regulators and the Ministry towards creating an enabling investment environment along with assisting the project developers in filing petitions, participating in competitive bids, selection of sites for project development, debt and equity syndication, and doing in-bound and out-bound transactions. MCAPL has been working on utility scale solar projects, development of solar parks including Technical, Environment and Social Impact Assessment in the solar parks. On the rooftop solar projects, we have been assisting many agencies on development of policies and regulations, transaction advisory to facilitate approx. 14 MW of rooftop solar projects. Presently, MCAPL is also engaged in development of mini-grid projects and assisting the Ministry in development of guidelines for these projects, development of regulations and business models, and assistance in allocation and development of these projects.

Sources:

ⁱ <http://www.livemint.com/Industry/v2sQEhgDCu8tjuRwljhBqI/India-starts-work-on-green-power-corridors.html>

ⁱⁱ No. 22/02/2014-15/Solar-R&D (Misc.) / Government of India / Ministry of New & Renewable Energy (Solar R&D Division) Subject: State wise Estimated Solar Power Potential in the Country

ⁱⁱⁱ <http://cleantechnica.com/2015/12/09/india-crosses-5-gw-solar-power-installed-capacity-milestone/>

^{iv} Power Grid Corporation of India Limited