India - A Hot Destination for Solar Market

Current Outlook:

Let us look at few latest numbers and facts relating to Indian energy sector. Today India is the third largest consumer of electricity in the world with a yearly consumption of around 1,100 TWh. The electricity consumption is bound to increase on an exponential scale looking the plans for the rapid growth and developments through industrialization under new national agendas in coming years. The consumption is expected to grow by a CAGR of over 4%'. As per the recent data, the per capita consumption of electricity in India has just crossed 1000 kWh, keeping India still amongst the countries having lowest per capita consumptions. Per capita consumption of electricity in China is 4,000 kWh and in US is around 15,000 kWh. At the prevailing rate of growth, Indian population is set to surpass China by mid 2020s. Indian is still an electricity deficit country with an average deficit of 6.4% for last six years; thought the deficit was narrowed down to below 3% during last year 2014-2015.

As per the report of Power Ministry, as on July 2015, India has 275.9 GW total installed capacity og power including all the sources. This capacity includes 28% share of Renewable energy. As on June 2015, the total installed capacity of solar power in the country was 4GW, which makes just 1.5% to total installations. If we look at the actual supply side of solar energy, it is merely 1% of total. If installation of 100 GW solar power target is completed by 2022, the contribution of solar power will raise to 10% of the total. It is difficult to arrive on the exact number, the solar power potential in India is estimate it to be between 800 – 1000 GW by industry experts.

Going by the estimated demand, India needs to install between 4 - 5 times more capacities in next 20 years to fulfil the requirements. Obviously, the thermal power plants could not the leading option from the viewpoints of unclear supply base for coal, gas and oils and the environmental sustainability. India had been using the coal as the main source of energy generation for years, it is not expected that the thermal power share shall fall below 50% in one-and-a- half to two decades to come. Indian needs to have a mix of at least 50 % power from renewable sources that too majorly from Solar. Solar PV has been the fastest growing segment in renewable energy with average growth of 40% for last 5 years in India. Considering a share of total renewable energy to be 50 % of total capacity installed; and within the renewable energy, a share of 60% from PV solar, the estimated total installed capacity of only Solar PV shall be over 500 GW by 2035.

The Gov. at the centre has taken many serious steps towards providing conducive environment to convene this long journey. Agenda of 'Make-in-India', 100 GW Solar Power Installation by 2022 are few to name. '

Indian solar market has unique advantages. It has having one of the highest potential markets, good solar irradiation, cheap manufacturing cost, sufficient barren land for installation and politically stable and supportive government. This brings enormous opportunities to the domestic and International industry players to participate and grow. Many overseas big companies have already announced investment in India either setting-up green filed projects or through M&A.
However, India needs to work harder to establish a robust network with a fool proof mechanism to enable developers, government authorities and financial institutions to work in synergy all the time. India also needs to acquire leadership role in Technology, Knowledge and Skill developments to meet above ambitious targets. The country has capable Institutes and Technocrats to carrying out R&D and publications activities provided they are funded and supported by industry along-with Government, There is an urgent need to bring institutes in the country like 'National Energy Research Lab' in the US or the Fraunhofer Institutes in Germany to shoulder the responsibility of providing knowledge and technical input's to the industry.

Predominantly, India uses c-Si solar technology modules with the range of cell efficiency from 17.2 – 17.6% for most of the installations for mega power projects. The trend of using higher efficiency cell modules is picking up momentum for roof top installations. Unlike current global trend, India market is not envisaging entry of PERC or PERT cell modules sooner, at least in coming one year or so in significant quantities.