

India's challenges and opportunities in renewable energy - Mr. Manish Chourasia - CEO – Tata Cleantech Capital Limited

ROOT Category: Latest



New Delhi, November 03, 2016: Green Growth is now a necessity and no longer in the realm of “good to have”. Amidst growing concerns related to the ever-increasing global temperatures, mankind has pumped 66% of the maximum allowable carbon gases into the atmosphere to limit the temperature rise to 2° C – the target set by the United Nations Framework Convention for Climate Change (UNFCCC). But even with all the pledges made and cut-backs promised in the 21st meeting of the Conference of Parties (COP 21) of the UNFCCC, the global temperature rise is pegged at around 2.7°C. The key take away from this is that, we are going to see much higher cuts in emissions than what has been agreed as *it is inevitable to ensure the survival of mankind*.

Already the world's 3rd largest emitter of greenhouse gases, India has a responsibility to do something which is unique and which no nation has done before i.e. bring power to its entire population of 1.25 billion and grow at a rate of 6 to 7% per annum, without dramatically increasing carbon emissions, to provide better future to its citizens. Given its large population and current stage of development any deviation from this objective may significantly derail international efforts towards combating global warming.

Realizing this, the Government has come out with a comprehensive National Action Plan for Climate Change (NAPCC) as per which, it is targeting an increase in renewable capacity - from 35 GW (up to March 2015) to 175 GW by 2022 (Solar: 100 GW broken into 60 GW of ground mounted and 40 GW of solar rooftop; Wind: 60 GW). This is one of the largest renewable capacity expansion programs in the world. Further the Government has voluntarily communicated to UNFCCC, as part of its intended nationally determined contribution (INDC), inter-alia, to reduce emission intensity of its GDP by 33 to 35% by 2030 from 2005 levels and to achieve 40% cumulative power installed capacity from non-fossil fuel based energy resource by 2030.

Fortunately, this initiative has coincided with disruptive changes in solar power generation and storage technology, which may drastically reduce the cost of generating and distributing power in next 5 to 10 years, thereby helping our country in its journey towards “clean growth”. Already, the cost of generation has reduced in the solar segment from about Rs. 12 to 15 per unit in 2010 to Rs. 4.5 per unit today and is still on the decline. Apart from this, solar as a means of power generation has certain other benefits viz. lower gestation period of project implementation, no requirement of costly distribution network (for solar rooftop) and no requirement to build costly infrastructure for fuel supply, which are very important under the Indian context.

The above coupled with the fact that India is one of the largest recipients of solar radiation in the world, provides it with wonderful opportunity to not only catch up with developed countries for availability of power but also ensure that this objective is environment friendly.

Geared by favorable government policies and technology changes, the renewable sector (mainly wind and solar) have grown significantly from 17 GW in 2011 to over 40 GW as on date indicating that efforts of the country towards clean growth are on right track as of now. However, there are a number of challenges which need to be addressed on both the financial and regulatory front to ensure that this growth is sustainable.

1. Policy level issues

- **Land:** Installation of 60 GW of conventional ground mounted solar plants by FY 2022 would require ~3.6 lakh acres of land. While India has enough unused land for this, the process of land acquisition needs to be streamlined - the absence of which could derail the growth of solar segment. Secondly, the regulations need to evolve for ease of conversion of agricultural land into non-agricultural land, creation of security on forest land etc.
- **State Electricity Board (SEB) Reforms:** Reforms of State Electricity Boards have been attempted twice and failed and now, within 3 years of the last reform package, we have a new scheme called “UDAY”. Thought better than the other 2 packages in terms of putting penal provisions on respective state government for non-compliance, the key would be proper execution.
- **Enforcement of renewable power purchase (RPO) Obligation:** While the Central Government has given RPO obligation to each state, there are no significant penal provisions for non-compliance. This issue needs to be addressed.

2. Domestic manufacturing

100 GW of solar capacity would require corresponding solar panels, most of which are imported today since domestic manufacturing capacity is currently limited to just 3 to 4 manufacturers with an aggregate capacity of about 5 GW. Secondly, all the wafers required for manufacturing are imported. Domestic manufacturers are not cost competitive due to economy of scale (15-20% higher compared to Chinese counterpart). We need to develop the solar panel and wafer industry to reduce the dependence on high cost imported products.

3. Rational bidding

While competitive bidding needs to be encouraged, in the past in sectors like roads, conventional energy (UMPPs) and telecom, highly aggressive bidding has led to creation of unviable projects. Proper safeguards are required to ensure that the bids submitted for a project are mature and viable given the flux in the economic environment as we are already witnessing some aggressive bidding in the solar sector. Also, lenders need to devise a proper risk assessment mechanism to ensure unviable bidders are not encouraged.

4. Support from Capital Market

Historically, the infra sector in India has been funded by the domestic banking sector (58%) and the NBFC sector (42% including PSU NBFCs). However, going forward the banking sector may not be able to provide the required funding on account of both capital related issues because of challenged asset quality and high concentration risk, especially in the power sector. Fortunately, India has a vibrant pension fund, mutual fund and insurance fund sector that already collectively have an asset base of over USD 550 billion and are growing at a CAGR of 4.5% over the last 3 years. This Capital Market intervention has the potential to effectively bridge this gap through direct investments via the bond market or through specialized structures like Infra debt fund (IDF), Infra investment trust etc.

However, the above is likely to happen only if the distribution sector is reformed and financial health of SEBs improves significantly. Otherwise, the renewable energy (RE) bond's rating will get restricted to low investment grade based on counterparty risk of SEBs, making it ineligible for investment by pension/insurance/ MF sector. Secondly, IDF and Infra investment trust structures have significant tax and liquidity related issues, making them unattractive for investors as yield products, in its current form. If the issues mentioned above are resolved, most of the projects could see 2 stage funding: Greenfield stage financed at higher rate by banks and NBFCs and refinancing of these projects after 1 to 2 years of stable operations at lower rates, through capital markets with Banks / NBFCs acting as underwriters and distributors. The above has already started in a small way through partial guarantee structures but we are yet to see significant scale mainly because banks and IDFs continue to provide refinancing at a relatively low risk adjusted returns (around 10.5 to 11% for operating projects). We could even see participation of offshore funds in RE bonds provided distribution reforms in India are deep enough. Opportunistically, some domestic players may even tap international markets through investment trusts listed in locations like Singapore.

Thus the key imperative for development of debt capital market to foster green growth is the suitable implementation of "UDAY" for required reforms in the distribution sector. Apart from this, it is equally important to have fundamental debt capital regulations in place like a proper bankruptcy code, rational tax structure, removal of arbitrage on security related regulations (SARFESI benefits available to only certain financial players etc.) Otherwise, the growth will reach the upper cap soon since a scale-up of renewable energy is dependent to a great extent on the availability of cheap debt financing as that contributes over 70% of total project cost.

As mentioned earlier, India is blessed as far as harnessing of solar power is concerned since it has one of the highest irradiation in the world. With advancement in technology, it is currently sitting on an excellent platform to realize its dream of providing power to all but this wonderful opportunity could be derailed if positive steps as outlined above are not taken in time bound manner. As a country we need to be cognizant of the fact that in infrastructure sectors like transportation, thermal power etc. a lot of opportunities have been either missed in past or its full potential not realized on account of lax policy framework or poor enforce ability of contracts. It will be important to avoid those mistakes to realize our renewable energy dream.

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