

Webinar On  
**INDIA'S POWER SECTOR**  
*The journey till date and going forward*

QUESTIONS AND ANSWERS FOR THE SPEAKERS – 9<sup>th</sup> JULY 2020

- 1. The gap between installed capacity and peak demand is increasing rapidly- and in the final year for a peak of over 350 GW, capacity is 840 GW- any particular reason for this?**

**Answer:** *While inferring this data, Yes, the country can be considered highly over capacitated. But the fact remains that over many years, India has been experiencing an evening peak demand, particularly when the sun is not shining and wind is highly variable. With increasing RE penetration in the grid, the system operators will require an even higher reserve margin to meet the rising peak load. This is because without storage options, majority of the RE plants (mainly solar) will not be able to contribute to the evening peak. Hence, the grid operators will need to maintain an optimum reserve capacity to not only meet the rising demand but also cover up for the decrease in RE generation output. Moreover, with a considerable percentage of conventional generation plants under renovation, maintenance, technical faults etc., only a resultant small percentage of the capacity is available to meet the peak load.*

- 2. What could be the reason for less RE generation in Tamil Nadu compared to Karnataka, though both the states have more or less the same RE installed capacity?**

**Answer:** *In 2019 September, October there was a sudden drop in wind flow in Tamil Nadu which resulted in having lower generation than Karnataka. Else most of the times Tamil Nadu is the leading generator of RE in the country.*

- 3. Any updates on carbon tax and trading mechanism to decarbonise and fund renewable energy?**

**Answer:** *There is no national market for carbon in India. India used to depend on the clean development mechanism (European market) to fetch some value for the carbon abatement from RE projects. However, with lower national targets adopted by the EU - the carbon market has already hit its low and there is very little chance for its revival.*

#### 4. How do you see solarization agriculture in this context?

**Answer:** *Solarization in agriculture will definitely have an impact on agricultural subsidies due to distributed RE which will in turn reduce the financial burden on utilities*

#### 5. Will DISCOMs really encouraging solar PV as they are losing revenue generations?

**Answer:** *If you observe closely - in long run, the DISCOMs will only gain by encouraging solar PV. Yes, in short run there is loss of sales but if there is a Utility led model to promote solar PV then it can actually be a business that can be practiced by a utility*

#### 6. In the past, we have seen that many developments have come on supply side. 1)Whether we are focusing less on demand side/distribution side in terms of technology implementation, efficiency improvement, etc. (2) what measures to be adopted on demand side (distribution side) to avoid financial stress happening every 4-5 years?

**Answer:** *I don't think we have been focussing any lesser on demand side. Yes, the initiatives have been few and sporadic. the main reason behind this is that demand side initiatives depend much on the willingness of the utility and its employees to be precise. SSEF in past have supported many initiatives on demand side be it BSES Rajdhani, Delhi or UP. However, they haven't been taken up at a scale by the utility.*

*A specific measure that can be adopted is to put value to the demand side initiative and bring it to market for example, Demand Response can be developed as a product that can also be brought to the market.*

#### 7. Any suggestions for better demand forecasting? Important points to be considered while building a forecasting model?

**Answer:** *Accurate demand forecasting is one of the significant challenges in managing demand and supply of electricity; since it is volatile in nature. This is because demand gets impacted with numerous variables such as weather variables, regional and seasonal diversity, GDP, income etc. Also; with the advent of Rooftop Solar Photo Voltaic, smart grid, Electric Vehicles; It is important to look demand as bidirectional and decentralised. Further; It is necessary to understand existing demand and appliance ownership patterns to project demand in the future. Hence; an adequate survey exercise should be done before making such projections.*

**8. The pandemic situation has also laid an extra emphasis on improving the operational performance of DISCOMs. Do you feel the bail out packages are sustainable unless the DISCOMS are operationally efficient?**

**Answer:** *Bailouts are never sustainable... bailout essentially means there is some inherent structural issue - be it any sector. to make the DISCOM operations sustainable fundamental changes in the power sector are needed. 1) reform the tariff structure 2) improve technical efficiency at DISCOM level 3) digitize distribution operations to reduce commercial losses 4) cultural shift in DISCOM for them to operate as profit centres.*

**9. How feasible is Wave and tidal energy in India?**

**Answer:** *India has a huge coastline and therefore the technical feasibility of wave and tidal energy would not be a question. the real question is the cost of producing energy from such projects. Second important consideration is the environmental - protection of the marine ecosystem.*

**10. Shouldn't our focus be more on behavioural energy efficiency programs rather than typical downstream DSM programs post COVID?**

**Answer:** *Behavioural EE programs are long gestation programs - case example - incandescent - LED, super-efficient fans and ACs. their results are also dependent on the availability of efficient appliances available in every nook and corner of the market (compare availability of an LED with availability of super efficiency fan across India). So yes, while behavioural programs are better, they need to sort out 2 important hurdles 1) not losing steam in the long gestation period 2) easy availability.*

**11. Pls give a brief of the power sector scenario of Leh and Laddak, where 7.5 GW Solar potential was projected? How is the generation & transmission system in this region?**

**Answer:** *Much has been said about potential in Ladakh. There has not been much of progress. The potential is of solar, wind and geo thermal. The challenge is mainly one of evacuation of power to load centres. I am told the government is trying to address it. Unfortunately, I do not have the details.*

**12. What could be the challenges in renegotiating existing PPAs, which are draining discom resources (for example in UP) and make the system less flexible?**

**Answer:** *Renegotiating the PPAs puts the sanctity of a PPA in question. No state Discom can unilaterally negotiate PPA. Also, when renegotiation is called for, this has to be done under the supervision of the regulator, with the generating company having the right to approach the courts if this is not acceptable. However, the way it has happened with some of the RE developers in few states, this could hurt the investor sentiment and can also lead to a decline in new investments in renewable energy.*

**13. Li Ion is presently trending and Sodium Ion batteries just entering the market what could be the stake of these two technologies**

**Answer:** *The prices of these batteries are dropping fast but not yet economical. But that should happen soon.*

**14. Integration of RE/intermittent energy puts a significant stress on the balancing of the Grid. As is happened in RE rich states like Gujarat, Tamil Nadu and others, grid balancing has been an issue if balancing power is not significant viz. Pumped Hydro or Gas is absent/not available. While it is indispensable to move to low carbon development in power sector, with the increasing Wind/Solar in the grid, what is the way out for states to have safe operation and organic evolution of grid? (Battery cost still is very high for Solar PV)**

**Answer:** *In addition to grid scale storage measures, other workable measures could be – state specific grid integration strategies, better planning and sharing of grid balancing responsibility, capacity building of the LDC's engineers etc. Going forward; real time and ancillary services could help better grid management.*

**15. Can you please provide you point of view on the value of appliance load disaggregation for the utilities?**

**Answer:** *An extremely useful exercise as it could help both the consumer and the utility in better demand management and demand response. The utility could even develop effective DSM and TOU programs. Further it could help consumers to identify ways to reduce their electricity bills. So could be win-win on both sides- energy efficiency vis a vis customer satisfaction. However; this exercise in India can only be enabled with advanced metering infrastructure delivering the most granular level data.*

**16. While the developments over the last 5 yrs in the sector are commendable, it is important to ensure that the mistakes of the past are not repeated. For this it is essential to give more powers to the regulators, ensure accountability at state government level through the Distribution Responsibility Bill and strengthening the Coordination Committee u/s 166 of the Electricity Act. Would welcome comments of the panellists on this?**

**Answer by Mr. P. Uma Shankar:** *There is no doubt that mistakes of the past should not be repeated and corrective action has to be taken. But what actions can be taken to rectify or prevent mistakes/inaction by regulators? In the past 5 years, some SERCs didn't revise tariffs even once. Likewise, no action was taken to bring down the levels of cross subsidies. Huge regulatory assets have been created arbitrarily. What can be done to ensure action on these fronts which form the core of the financial condition of discoms is the question. The proposed amendments are an attempt in this direction. SERCs enjoy a lot of power but if they are not being used, increasing them is debatable.*

*As for distribution responsibility bill, this was proposed as part of Financial Restructuring Plan 2012, but I don't think it got passed by state governments. I will agree and suggest that Gol attempts this again.*

*As for Coordination Committee, how useful it has been is a matter of debate.*

*To sum up, we have to find ways to ensure that State Governments manage discoms responsibly, especially from the point of view of their finances and SERCs do their work independently of the state.*

**17. From a market perspective, what are the experts' thoughts on hydro purchase targets suggested in the Amendment Bill? Is this in keeping with a more market-based power procurement regime?**

**Answer by Mr. DV Giri:**

- 1. Hydro has been included in the RE basket though there is no specific targets or numbers.*
- 2. Hydro power, if country were to run as RE will be a base load. We propose and recommend that there should be a Hydro Purchase Obligation (HOP) supported by solar and non-solar purchase obligation.*
- 3. Renewable Purchase Obligation has to be made mandatory with stringent penalties across the country where the Government has proposed 8.75% as a base and increase it to 9.5% and 10.25%.*

*The above alone will help center stage RE targets*

**18. From the date of RE targets set by Central govt, many experts and think tanks pointed the higher probability of missing the target. Sir, almost every discom is struggling to meet the RPO target and it is also putting extra financial burden on discoms Balance sheet, what are your views wrt making discoms RPO targets.**

**Answer by Mr. Gopal Saxena:** *It is a fact that the RPO targets set by the Govt. / regulators for various states were very aggressive and in fact in Delhi, these were totally disproportionate to the relative area vis-a-vis other states. These were obviously predicated by Govt.'s intention to promote renewable energy and did not really account for the poor state of finances of the discoms where they were struggling to make timely payments to the existing generators, leave alone catering for renewable energy purchases.*

*Many discoms had taken it up with the regulators requesting time to meet these targets and, in several cases, relaxation was allowed by some of the regulators. However, regulators also imposed penalties in some cases for not meeting the yearly targets. Even as discoms struggled to tie up renewable energy sources, a new mechanism called the REC (renewable energy certificates) was introduced which allowed discoms to purchase these certificates from generators who were eligible to receive this incentive or through the Indian Energy Exchange platform where they were traded. This obviously added to the strain on the discom finances, since they now had to pay for energy purchased from conventional sources as also pay to procure the REC's.*

*At around the same time, SECI (Solar Energy Corpn of India), a Govt. of India enterprise, was created as a nodal agency to encourage and facilitate renewable energy generation and over the years they have been able to build up a large inventory of renewable assets through long term PPA's and offer the power to various discoms who have tied up with them. By this time, some of the States had also initiated action to set up renewable energy generation facilities. As a result of all the foregoing, the pressure on meeting RPO obligations has eased to some extent.*

*However, going forward, unless the renewable energy generation keeps pace with the targets that were set it is likely that the pressure on the discoms to meet their RPO obligations is likely to increase.*

**19. How to bring back the demand in the system while manufacturing sector will face near zero growth post the pandemic. Can this be used as an opportunity for tariff rationalization in the country?**

**Answer by Mr. Debashish Majumdar:** *The first impact of the Covid-19 was felt strongly in the power sector with sharply dampened demands for electricity. The demand has fallen drastically by around 30% due to reduced activities in the Commercial and Industrial sector. While the Government has announced ambitious plans and financial support for reviving the manufacturing sector through its economic stimulus packages to make the country “AtmaNirbhar”, it would still take considerable amount of time for complete recovery and further growth of the commercial and industrial sectors.*

*One of the important requirements for development of a globally competitive manufacturing ecosystem is the availability of inexpensive power. We must grab this opportunity to set right our skewed tariff structure. Present system of cross subsidisation of the agricultural and domestic sectors through the higher tariffs applied on the commercial and industrial sectors adds unnecessary cost burden on products manufactured in the country making it difficult to compete globally. Lower offtake of power by the commercial and industrial sectors arising out of the disruption caused by Covid-19 may lead to higher requirement of cross subsidy possibly resulting in a vicious cycle of higher industrial tariffs and consequent further negative impact on global competitiveness.*

*This is the right time to give a hefty leg up to the sagging economy by reviewing the cross-subsidisation policies and methodologies. Though the National Tariff Policy has been underlining the need to phase out cross subsidy completely, most states are far from this ideal situation.*

*We have to take the bull by the horn but we must also keep in mind the interest of the Discoms which are for several reasons, financially weak and unstable. Though the Government has announced a financial package of Rs 90,000 Crores for the Discoms, this alone may have little long-term impact unless the Discoms bring about significant improvements in their billing and collection efficiencies as well as technical and operational efficiencies in terms of modernisation of infrastructure, reduction in ATC losses etc.*

*A sudden change in the cross-subsidisation strategy may plunge many of the Discoms into deep financial crisis. A very careful and holistic approach therefore needs to be taken to simultaneously address a host of related issues such as fixation of cost related tariffs, rationalisation of consumer categories and tariff slabs. Fortunately, several structural reforms for Discoms have been covered in the proposed Amendments to the Electricity Act, 2003, including Direct Benefit Transfer of subsidies and Separation of Content and Carriage components. Reduction of cross-subsidy has been provided as one of the necessary conditions for states to access additional borrowing from the centre.*

*The earlier we rationalise power tariffs, the better it would be for the distribution sector and consequently for the economic growth of the country to fulfil its “AtmaNirbhar” dream.*

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