

Webinar On

INDIA'S POWER SECTOR

The journey till date and going forward

BRIEF SUMMARY REPORT- 9TH JULY 2020

The webinar was attended by more than 165 attendees turning up out of the total 243 registrations. The issues discussed by the panelists covered issues and challenges related to entire power sector value chain from electricity generation to demand.

The sessions began with introduction by Mr. Vivek Sen-Associate Director (Clean Power Program) about the Power Outlook Series Initiative followed by briefing from Mr. Srinivas Krishnaswamy- CEO, Vasudha Foundation about the flow and structure of the webinar.

Ms. Vrinda Gupta and Mr. Faraz Alam from Vasudha Foundation then presented the insights from the two volumes of Power Outlook Series reports and highlighted the points for discussions to the panelists. Some of the key takeaways are as follows:

- India's power picture is set for a major change in its electricity mix with rising renewable energy shares.
- While there has been some success, a lot needs to be done to meet the 175 GW RE target.
- Aggressive RE targets and conducive policies behind India's clean energy ambition.
- Power networks in India moving towards a new phase of network augmentation and grid maturity.
- State level grid integration strategies critical for large scale RE penetration and lower curtailments levels.
- Lower demand deficits, declining AT&C losses, narrowing ACS-ARR gap, improving supply quality presents hope for the electricity distribution sector.
- Peak electricity demand doubling between 2020 and 2030.
- Need for accelerated push to Solar Rooftop additions to ensure 175 GW RE by 2022.
- Battery storage is critical to ensure future RE success.
- Pumped hydro expected to become an integral part of India's Storage journey.
- India ranks far below in its per capita electricity consumption in comparison with the global average with some Indian states even below the national average.
- Despite large scale electrification, many rural and urban households experience frequent power outages and poor quality of electricity.
- Only a small percentage of the planned coal power plants have installed flue gas desulfurization systems.

Mr. V Subramanian, IAS (Retd), Former Secretary- MNRE, who moderated the session and gave opening remarks:

1. Electricity is a concurrent subject with States and Centre governing the sector together.
 2. Most of the states used to have combined departments for Power and Irrigation. But later hydro took lesser importance and there used to be lot of pride for high PLFs.
 3. Now, most thermal power plants have declining PLFs, not because of inefficiency but due to increase in RE.
 4. We have moved from deficits to surplus. But what kind of surplus; there is a need to assess on how the biggest consumers- Industries have performed in the past few years. Also, to focus on how demand has behaved in the past few years.
 5. Major irrigation plants can also serve as storage. Inviting tenders related to solar PV + thermal could also help in increasing generation and storing power for peak consumption.
 6. Per capita is less, but that should be not a worry since we have a huge population. Let consumption go up but led by industries. But for the past few years' consumption is rising mainly because of increased AC usage by the middle class homes.
 7. Need to Study of peak demand pattern change in India.
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The speakers then commenced with the discussion in the following sequence:

Mr. Uma Shankar, Former Secretary, MoP

1. India is committed to its low carbon goals. Solar and Wind we are still away from that. The targets and timelines are important but it doesn't matter if we are late by a year or so. But what is important is the viability of RE sector and investor interest.
2. The recent EA amendment indicates a strong legislative push to the power sector. The proposed under the EA amendment National Renewable Energy Policy will become binding on the Regulators. It will have specific RPO and penalties in case of non-compliance.
3. The 90,000 crore comes as a welcome and a long-awaited relief for the Gencos but as far as the Discoms are concerned, it's not a relief for them. This is because there was a huge outstanding to Gencos in the first place and it was there because there were huge receivables pending from state governments and had the states paid their dues like subsidies, departmental dues etc.; the issues of non-payment by Discoms would not have surfaced. Due to this, Discoms have an extra loan burden and interest burden already on their stressed assets.

4. It would have been much better for the Centre to have actually loan the states or help the states so that they pay the genuine dues to the Discoms without adding to their interest burden. An outstanding of 2.7 lakh crore is pending to Gencos and Transcos, 90,000 crores is only a part of this outstanding and is only till March 2020. In short, the 90,000 crore is no net relief for the Discoms.
 5. Even before the pandemic happened, the Discoms were not in good shape. The FY 19 recorded the lowest electricity demand growth in the past five years. The demand is expected to contract by ~5% this year. Demand reduction which is more on account of high paying commercial and industrial consumers is a double whammy for Discoms (higher paying consumers and the cross-subsidizing ones) while residential consumers are expected to remain the same and even rise higher.
 6. Given the current situation, a tariff hike is way unlikely this year. Hence, the current year will become the most difficult year for the Discoms.
 7. Further, the RE targets will be tempered to some extents. RE target fixation should be done in complete coordination and conjunction with State Governments. The rethinking of targets needs to be done to better calibrated along parameters like RE potential, state's position, discoms financial health etc.
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Mr. Sushil Kumar Soonee, Former CEO, POSOCO

1. India has a robust transmission grid and is also discovering single price which is commendable. The same grid strengthening is also required at state levels. Increasing the footprint of the grid to cross -border is a good measure and will help us in the stranded assets, integrating RE, harnessing the time diversity etc.
2. We have moved from shortage to resource adequacy. When we say adequacy, demand forecasting is very important. Demand forecasting was never given the same attention with the supply. It is not just peak or energy demand, but the load profile that matters which is changing continuously. In winters, the peak load is observed in the morning and in summers the peak load is going beyond the late evening due to thermal comfort considerations. States have to focus on granular demand forecasting as well as the profiling.
3. The high PLFs need to retire and only one index will matter which is flexibility. Flexibility needs to be defined, have a matrix for it, measure it, value it and incentivize it.
4. For hydro, we are only valuing per unit price energy and not the flexibility component that hydro brings with it. Tariff design of hydro needs to be done so that we incentivize flexibility. Even pumped storage is not being harnessed in the way it should be. For gas, we don't have a good pipeline and has thus become more of a stranded asset. But there is still scope for gas.

5. Financial problem of Discoms is not a technical problem. It is an institutional re-engineering problem and is an issue of governance and hence has to be handled in that fashion. There is a need to put distribution system operators with no conflict of interest who do not fudge figures and comes out with the exact recipe and prescription for a particular Discom. At Distribution level, the record keeping, the granularity, analysis needs a complete cultural change. Reliability will be much more important than just meeting load. This is going to become the biggest challenge going forward.
 6. Pandemic: The demand of electricity has gone down by 25%. But the value of electricity has gone up with the whole set of amenities available to us. Electricity and communication have made our life easier. Pandemic has shown that the load curve changes. The residential load is going up and is good for us.
 7. No number for pre- Covid should be valid for post-Covid.
 8. Tariff needs to re-looked (we can't have cross subsidy) especially when the domestic load is going up and C&I is coming down. The tariff design needs to move away volumetric and move to multi-part tariff.
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Mr. Rajesh K Mediratta, Director, India Power Exchange

1. Major cost of the Discom is Power Procurement.
 2. The prices have gone down to 2.5 Rs and below in the market. Now, the Discoms are using markets very well. They have started buying from the markets.
 3. Big states like Maharashtra, Andhra Pradesh, Telangana, Madhya Pradesh, Rajasthan etc started using the market for their benefits during the lockdown. And they stopped buying power from their own generators and even central plants.
 4. Markets are going to provide a lot of benefit to provide grid flexibility. States also used the Day ahead markets to manage the 9 pm 9-minute event to handle it.
 5. Real time markets (RTM) were started from 1st June, 2020 and are trading 1000 MW on the real time markets. RTM is an hour ahead market where both buyers and sellers can place their bid for each 15-min time block. Every half an hour, there is an auction. Half a billion-unit transactions have happened on this RTM over a month; which is a huge success for IEX. 100+ participants on daily basis.
 6. In a 10-year timeframe, RTM will become main market segment and day ahead will become secondary.
 7. The GOI has also planned to incentivize the clean energy buyers and sellers by creating a green energy market.
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Mr. Gopal Saxena, Independent Director WBSEDCL and Former Director, BRPL and BYPL

1. Despite 100% electricity access, problem of availability still persists
 2. In terms of affordability, due to the power purchase parity the consumer still cannot consume the desired number of units.
 3. Accumulated loss for discoms 4.79-4.89 lacs crores as assessed by GOI
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Mr. Debashish Majumdar, Former Chairman and Managing Director, IREDA

1. Due to the effect of the pandemic, there is disruption in the power sector value chain in terms of supply chain to achieve the targets. Government can incentivize the local manufacturers, R&D to improve the efficiencies to smoothen this chain
 2. Hurdles due to import duties hinders the RE achievement targets.
 3. During the bidding process, the tariff caps (Can give lower quotes but cannot cross a certain number) led to many cancellation and postponement of tenders.
 4. Financial health of DISCOMS needs to be addressed, because utilities are buying the power. Small changes in the policies by the government by introducing certain charges hinder RE projects due to smaller margins. 160 GW can be achieved soon but 455 GW is a bit difficult due to these issues.
 5. Steps like incentivizing the transmission charges for RE dispatch boost the technology. Similar steps will help in achieving 455 GW targets.
 6. Business and operational improvement are needed in the DISCOMS to make them financially viable which will also boost RE installation.
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Mr. Saibaba Vutukuri, CEO, Vikram Solar

1. India has made excellent achievements in terms of achievement in RE.
 2. Energy storage is also taking a similar path like solar in terms of the cost. Hence, we need to start looking at more solar projects with storage so as to dispatch RE smoothly.
 3. Any PPA signed, is not viable if the ultimate beneficiary is not the DISCOM, otherwise DISCOM defaults. If the DISCOMS continue to accumulate losses that are not set right, this will result in NPAs in the country. Many investors have started to think about whether it is good to invest in the country due to this issue. Equity may dry up in the sector.
 4. Are we creating enough consumption in the sector compared to the volume of capacity added?
 5. Rooftop: The policy framework discourages DISCOMS to have RTPV installations. DISCOMS are losing industrial & commercial consumers due to low tariffs offered by RE projects. Policy needs to be framed which encourage DISCOMS involvement in the rooftop installations
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Mr. D.V. Giri, Secretary General, Indian Wind Turbine Manufacturers Association

(Unfortunately, could not deliver his speech but shared the notes later)

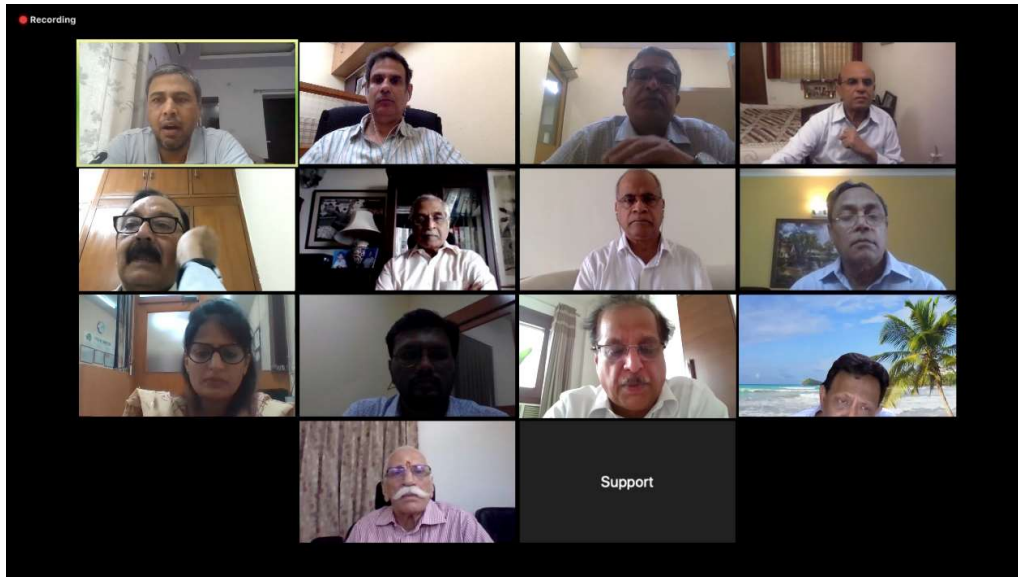
1. We are 37 GW and 12 GW wind are in pipeline which has been awarded and tendered. It is interesting to note that post 2017 14.4 GW have been bided by SECI/NTPC/State Bids and so far, only 2.8 GW is commissioned.
 2. Prior to the bidding regime, there was a growth in all nine wind states. Post bid regime, it has become Gujarat centric where State Government is not willing to provide land for ISTS transaction where power flows out of the state. Between SECI- I to VIII, Bids of SECI- I to IV may get commissioned (I& II are already commissioned and III-IV projects are in progress), SECI – V to VIII may not see light of the day.
 3. We have been advocating SECI to carry out state-wise bids as the tariff determined with projects in Gujarat does not represent the National Tariff of wind. Similarly, for states to perform their RPO, they must conduct their own bids and sell excess power to any of the entities at SECI, NTPC or to other non-wind states.
 4. If India is to achieve 140 GW of wind by 2030, Government may have to consider revisiting National Tariff to be determined by CERC zone-wise (lower the tariff with higher PLF) which was followed by Maharashtra.
 5. Manufacture of turbines, Project build up, Sale of turbines and O&M are four independent verticals and the bidding regime seem to have interfered with this and the kind of a mess we are in. This has resulted in average capacity addition of 2 GW in the last three years.
 6. Need for pre-qualification of bidders on Eligibility Criteria to secure Land, Financial Closure, Tie up with Manufacturers and connectivity for bidding.
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Q&A session began with question from the attendees from the chat box and live followed by answered from the panelists.

Concluding remarks by Mr. V Subramanian, who highlighted the key points from the session.

Vote of Thanks by Mr. Raman Mehta, Program Lead (Vasudha Foundation)

Here are some of the screenshots from the webinar session:



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Featuring
India's Power Outlook Series

9th July 2020

Supported by:
SHAKTI
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Can Pumped Hydro become an integral part of India's Storage journey?

Progress of Pumped Storage Development in India (in MW) - As on March 2020			
Installed		Under Construction	Proposal Development
Operational	Not operational	Commissioning by 2022-23	
3,305	1,480	1,580	8,380

Source: IREDA, 2019

9 minutes at 9 pm: A Perfect Example for Testing Grid Flexibility and Readiness

The total reduction in all India demand during the 9-minute event was **-31 GW**, almost **60%** higher than the estimated 1.2-1.3 GW.

The minimum demand of **85.7 GW** was recorded at 21:10 hrs.

The sharp reduction in load was chiefly met by **hydro** and **gas** resources.

Source: 20/07/2020, 9:00 hrs. The video taken in the India Light SAM-OR Eem on 7th April 2020.