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Power Sector- Getting the sequence right

It is imperative for India to focus on maximizing capacity utilization and overall lowering of power generation cost, instead of addition in installed capacity, and urgently address its existing excess capacities. We must first focus on "capacity abstinence", i.e. maximizing existing capacities, and only then installing new capacities after substantial demand growth is visible. This will also entail suspending obligations & PPA to add new renewable energy capacities, until India improves overall utilization. The key theme therefore is say yes to renewables & no to thermal but only after collective utilization is at its peak. Therefore, sequencing is the key.

In 2005, many new private sector players entered power sector. A glance at the last decade or so shows that India's power sector has changed significantly. The total installed capacity under Central, State and Private has increased 147% (from 132 GW to 326 GW), with about 638% addition in Renewable Energy Source based capacity (from 8 GW to 57 GW) and 154% addition in Thermal capacity (from 86 GW to 218 GW), primarily coming from addition in Thermal Coal based capacities. Private sector installed capacity increased by about 733% i.e. 125 GW addition with about 69 GW coming under Thermal Coal and about 49 GW coming under Renewable Energy based capacities.

The addition in installed capacity also lead to improved energy supply position with the deficit going down from about 10% to a negligible level of about 0.66%. The load shedding and demand cuts have considerably reduced across the country though widely prevalent in many states even today.

The surge in installed capacity also led to decreased in short term power market prices which reduced from about Rs. 8/unit in 2008-09 to about Rs. 2.50/unit

in 2017. In the major turn of events in September this has seen a sudden spurt helped by coal supply shortfall. Merchant market being only about 3% of the total power market (long and medium term PPA dominate the sector) does not affect the national average sale price and is not material from a sector point of view other than giving a signal of marginal sale price.

The first step in the much publicized UDAY programme was reduction of debts in the Discom balance sheet. This, in many ways is no more than a transfer of debt from Discoms to the State treasury having a cosmetic effect in reducing cost of power at the Discom level. In spite of over Rs 2 Lakh crore being pumped to reduce interest and repayment burden, there is only a marginal decrease in power input cost to the end consumers. Initially this looked as if the Discoms found a new lease of life but, their tariff structure has not changed much and have failed to catch up to meet their full costs and they are in a way on a treadmill and losses are piling up again.

Generators face contrasting situations in over supply scenario

In case of regulated capacities i.e., power

generation plants receiving guaranteed return on equity apart from actual cost of generation, discoms pay pre-agreed fixed cost based on plant availability criteria, even if they do not off take the contracted capacity. Ironically the discoms are buying much lower units, pushing up the power purchase cost per unit. This leads to overall higher average cost of supply for discoms.

Open market capacities on the other hand are faced with oversupply due to excess power capacity, forcing generators to supply power at near-variable costs, just enough to keep the plant running to be able to service their operation and maintenance and debt service cost. As prices fall below variable cost, plants shut down, causing stranded assets, and creating Non-Performing Assets (NPAs) in the banking system.

Facing a bleeding balance sheet, discoms keep running old and inefficient plants instead of buying fresh & more efficient power.

The underutilization levels of India's thermal plants are evident in the fact that average PLF is down from 76.8% in 2006-07 to 59.6% in 2016-17. One of the big factors behind this is the push for

renewables which costs much higher than the variable cost of thermal power (fixed costs already sunk) causing an imbalance.

It is imperative for India to focus on maximizing capacity utilization and overall lowering of power generation cost, instead of addition in installed capacity, and urgently address its existing excess capacities. We must first focus on "capacity abstinence", i.e. maximizing existing capacities, and only then installing new capacities after substantial demand growth is visible. This will also entail suspending obligations & PPA to add new renewable energy capacities, until India improves overall utilization. The key theme therefore is say yes to renewables & no to thermal but only after collective utilization is at its peak. Therefore, sequencing is the key.

The government must also step in to proactively address factors like shortages of water and fuel, and other issues due to which almost 33 GW in plant capacities is stranded. Simultaneously, many smaller and inefficient units must be taken out. Power generators should be encouraged switching to more efficient capacities, which pollute less and therefore are more sustainable. This may look like additional cost, but it will be cheaper than brand new capacity to meet the environment laws.

Many States, at least on paper, have allowed open access but with deterrents, though on which open access is granted. In some states, open access is granted for the entire month and inability to procure power even in certain slots leads to temporary tariff being charged to the consumers. In other states open access is prohibited by exorbitant cross subsidy surcharges which are sometimes even higher than the amount of cross subsidy designed in the tariff. It needs to be considered that most of the diesel based capacity of 475 MW is operated as standby capacity. Considering that cost of running inefficient standby generation is too prohibitive because state owned Discoms are not able to make



commitment to supply 24x7 electricity, either open access should be made friendlier so that low cost available generation could be used by consumers today using standby or else Discoms should be made liable to compensate for availability factor being lower than 99.5%. There is also a need to create a level playing field. The government should view both Discoms and generators on equal footing and create equitable clauses in the Model PPA. This is not about favouring any segment of the sector but optimum and fair risk allocation.

A cursory glance and the tariff orders would provide evidence that about 30 to 40 paise/unit is paid for unutilized capacity, resulting to about 6% to 8% increase in power supply cost. Further, there are studies which suggest about 1.2% loss due to increase in heat rate for about 10% drop in PLF. It can be deduced from the above that average cost of supply is inflated by about 10% due to underutilization of installed capacities.

The government needs to focus on the need to line up capacities required in the next decade as against the next few years. At present we have 21% installed capacity under gas and hydro.

Considering the load pattern of specific geographies, we need to focus on creating peaking capacities to ensure the thermal coal based plants act as base load aided by gas and hydro's which could act as peaking capacities along with renewables. Hydro's are the next best alternative for long term cheap and stable power. The problem is of course the high capital cost leading to lack of PPAs. There is need to look beyond the first 10-12 years of a Hydro plant and consider the great advantage of the next 40-50 years of virtually zero variable cost of power with negligible escalation of fixed costs. This will throw up the fact that higher utilization of existing thermal assets, gradual retirement of inefficient ones followed by push towards renewables and hydros and then balancing through highly efficient thermal plants would be the ideal model to make India's power sector a model to the world. Of course, as storage solutions emerge on commercial scale further additions to thermal plants will drastically come down automatically.

In conclusion one could say that stakeholders of this critical sector are seemingly clear of what needs to be done. The right programmes with honest intentions are also there in place. But controlling the sequence and setting priorities is of paramount importance given the high costs of assets underused. Unfortunately, the consumer for the largest segment of investment i.e. most of the generation is sold to state owned Discoms who are heavily regulated by the governments, thereby having very little pricing power or market play. Until that is the nature of game, government must proactively ensure fair play and reasonable returns to investors at large. To start with let's get the sequence right.

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