

(Em)Powering Mumbai

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This summer the increase in temperature and electricity use in Mumbai is coinciding with the expiry of the city's power purchase agreements (PPAs). Mumbai's electricity distribution companies (DISCOMs) - Tata Power, BEST and Reliance Infrastructure- have approached the Maharashtra Electricity Regulatory Commission (MERC) for the renewal of their PPAs for which hearings are underway.

Power purchase accounts for around 70% of the cost of supply for the DISCOMS and forms the bulk of consumer tariff. Therefore, economical power purchase is crucial for ensuring affordable tariffs. These agreements, if renewed, will have long-term implications for electricity supply in Mumbai. In this regard, we make the case for competitive bidding to ensure the most economical power procurement.

Planning for power: where do we stand today

Three PPAs, between BEST-Tata Trombay, Tata Distribution- Tata Trombay and Reliance Distribution – Reliance Dahanu, are expiring. All these PPAs are long-term “cost-plus” contracts, and, for Tata and Reliance these are also with sister concerns. Tariff determination under “cost-plus” happens on annual basis and allows recovery of most of the claimed costs, along with a guaranteed return on investment. As against this, tariff discovered through bidding provides a cost trajectory for the entire term of the PPA and is generally more efficient. Notably, none of the DISCOMs have competitively bid PPAs.

The DISCOMs are seeking renewal on three main grounds: the constraint of importing power (“transmission constraint”), the islanding requirement for Mumbai, and the ‘competitiveness’ of their tariff. We examine these one by one.

Everybody loves a good constraint

Mumbai has a separate grid, which is connected to the larger state grid through tie-lines. This restricts the amount of electricity that can be imported into the city, and has been used by the DISCOMs to justify signing pre-identified PPAs. Tata's Trombay and Reliance's Dahanu stations (embedded generation) have their own transmission infrastructure and are thus, unaffected by the constraint. Augmentation in transmission capacity has happened in a piecemeal manner making power purchase from these stations imperative. However, with increase in demand and fall in embedded generation, today nearly half of Mumbai's demand is met through power imported from outside the city. Instead of using the transmission constraint as an excuse to continue old cost-plus contracts, the PPA renewal is an opportunity to completely review transmission planning and enable more economical power procurement options.

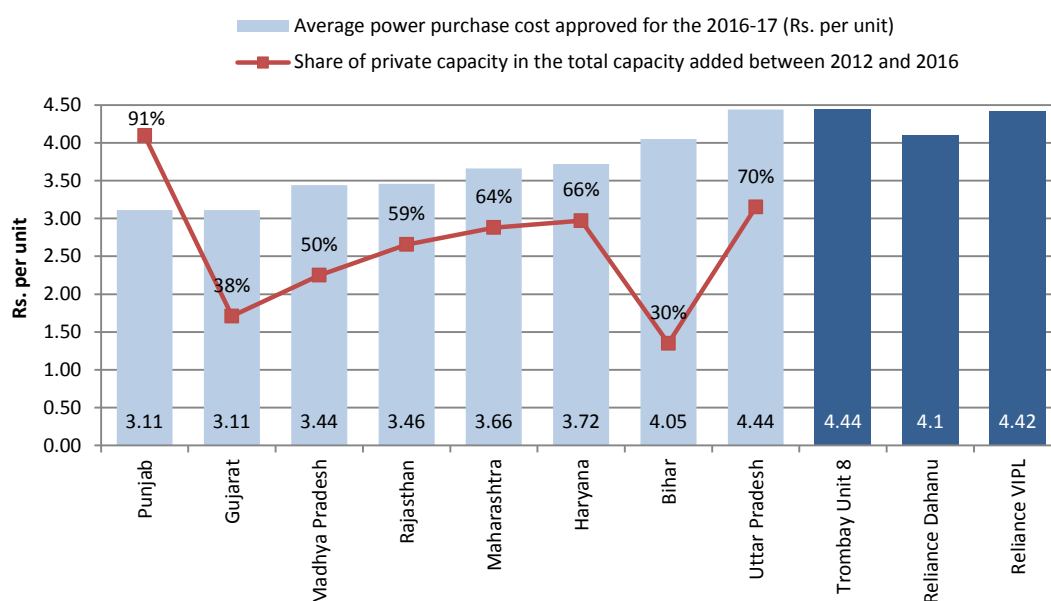
Between the towers and the deep blue sea

Mumbai has an islanding scheme that allows isolating it from the state grid in case of disturbances in the latter. However, it needs to be reconsidered in light of the following: insufficient embedded generation means that in the event of islanding only half the load can be met. Secondly, with the strengthening of the state and national grid systems, there has been no instance of islanding in Mumbai for more than a decade. Thirdly, many cities, such as Pune and Nagpur, have reliable supply without islanding. Finally, with increasing open access many big consumers such as the railways,

airport, industries, and commercial complexes are likely to migrate away from the DISCOMs. Hence, if islanding is to continue it should be done through public consultation with regards to its coverage (who will get supply if islanded), need and costs.

Need for competition

The DISCOMs claim that their identified PPAs are the most economical. However, data shows otherwise: the following table gives the average cost for coal-based thermal capacity contracted by various states in the last 5 years (2012 to 2017). With the exception of Uttar Pradesh and Bihar, the average cost of procurement is below Rs. 4 per unit. As against this, the cost of generation for Tata's newest coal-based unit, Trombay Unit 8, is Rs. 4.44 per unit, while that of Dahanu is Rs. 4.10 per unit and for VIPL is Rs. 4.42 per unit.



Source: PEG compilation from various state regulatory orders. Power purchase costs as approved by the respective commissions.

In addition, since all these contracts are cost-plus, any increase in cost mostly gets passed on to the consumers. This was most recently seen in the case of VIPL: at the time of the approval of the PPA, Reliance claimed that VIPL's tariff was competitive. However, the claimed tariff for FY 2014-15 has increased from Rs. 3.92 to Rs. 6.28 per unit (increase of more than 60%).

To avoid such issues inherent in cost-plus tariff determination, the National Tariff Policy mandates that all future power procurement be undertaken through competitive bidding. Currently, surplus power is available with various state DISCOMs, including the Maharashtra state DISCOM. Under such circumstances if the Mumbai DISCOMs float tenders for power procurement, they are likely to discover better options. Nothing precludes the embedded generating stations from bidding and, indeed, winning the contracts.

Considering all these factors, the MERC should mandate the Mumbai DISCOMs to undertake power purchase only through the bidding route.

Going Forward

The electricity sector is undergoing massive changes with a sharp fall in prices of renewable energy, increase in open access and net metering, etc. By [one estimate](#) the solar potential of Mumbai is

~1700 MW; if even half is utilised, it can have major impact on the city's demand. In such an environment, the MERC should use the PPA renewal process to completely overhaul transmission planning, review the islanding scheme and mandate competitive bidding for all future power procurement. At a larger level, changing demand of each DISCOM and the uncertainty with regards to [changeover and network rollout](#) puts a question mark on the need and relevance for any long-term PPA. In light of this, the MERC should urgently initiate a process to fundamentally review and address the challenges in operationalizing competition in retail supply for Mumbai. Maintaining the status quo would only prolong Mumbai's wait for competition.

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