

Before the
Maharashtra Electricity Regulatory Commission

Comments and Suggestions on
Tata Power Company Limited (Distribution business) petition
for Multi-Year Tariff for FY 2016-17 to FY 2019-20
(Case 47 of 2016)

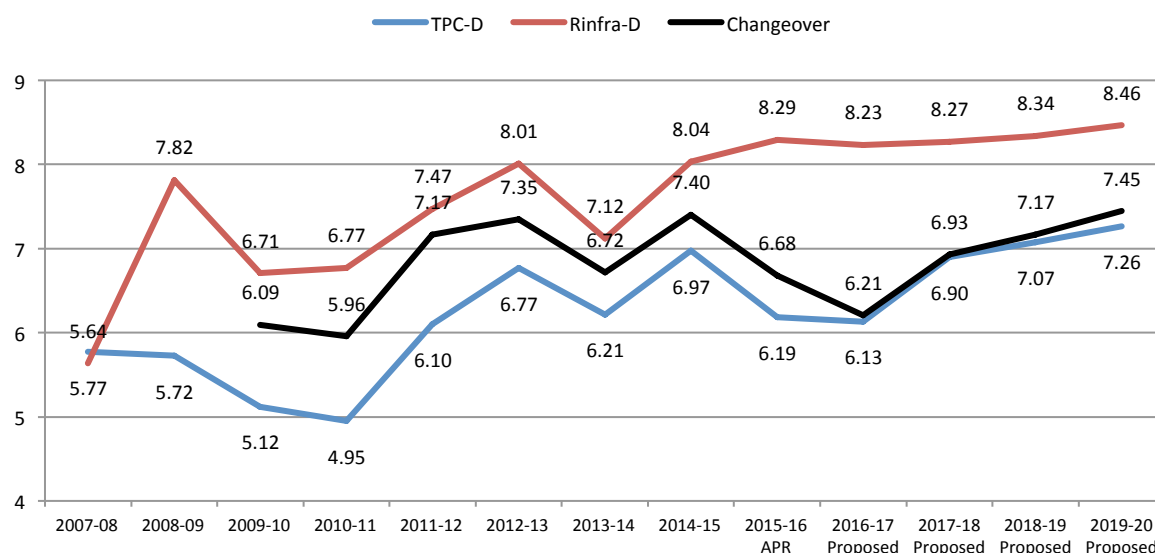
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Summary of observations

Operationalization of parallel license mechanism in Mumbai brought in new hope and significantly piqued interest in a city that was reeling under high tariffs. It also set high expectations for efficiency improvement and better planning, as it was felt that competition would help counter the incentive for overspending inherent in a 'cost-plus' tariff approach. However, nothing of the subsequent Mumbai experience met these expectations. Instead, the story of parallel licensing in Mumbai is one of consistent planning failures, litigious utilities, ineffective regulation and tariff-burdened consumers.

Given the high costs of Rinfra, TPC was a lucrative option when changeover was introduced in FY 2009-10, but as Figure 1 shows the gap has been closing in the recent times. After moving to TPC in the initial years, many consumers have now started reverse migration. The sad aspect of this change is that consumers are not moving because the other licensee's tariffs have reduced, but because their existing licensee's tariffs have increased. Thus, strangely in Mumbai, competition seems to have pushed tariffs upwards instead of lowering them.

Figure 1: ACoS for Rinfra-D's own consumers, changeover consumers and TPC-D's own consumers



Source: Values up to 2015-16 are as per audited actuals declared by the licensees. Projections have been taken for the MYT period.
 Note: ACoS here is the total ACoS (i.e. sum of ACoS of wires and ACoS of supply).

Given this background, we submit that the failure of the parallel license mechanism has its roots in the following:

- 1. Greater focus on generation business than distribution:** TPC fought for its right to sell its generation to anyone, anywhere in the country; however, today it sells all its generation to Mumbai utilities - its own distribution business i.e. TPC-D and BEST on cost-plus basis. The only long-term PPA for firm power signed by TPC-D is with its sister concern, TPC-G. It has not signed any PPA based on competitively discovered tariffs, and has relied heavily on the short-term bilateral market for the past few years. During the present MYT period, it plans to renew its existing PPAs with TPC-G, while continuing to purchase around 25% of its power from bilateral sources. The only recent attempt at signing new long term PPA was also with a potential sister concern and on cost-plus basis, but the same has been put under abeyance. This has resulted in revenue and sales certainty for TPC's generation business at assured

profitability (i.e. regulated return). At the same time, retail consumers in distribution business have faced high power purchase cost and tariff uncertainty on account of the heavy reliance on short term market.

- 2. Regulatory failure in operationalising competition:** Regulatory failure in controlling costs combined with the inability to enforce prudent planning has led to the creation of regulatory assets for both the parallel licensees. Delay and ambiguities in decisions pertaining to applicability of various charges such as Cross-Subsidy Surcharge (CSS), Regulatory Asset Charge (RAC), etc. made it difficult for the consumers to make informed choices. For example, the decision to make the CSS and the RAC applicable to changeover consumers was taken by MERC almost two years (21 months) after operationalising changeover. By this time 1.54 lakh consumers had already opted for changeover and applicability of these charges significantly eroded the perceived benefits of this move for many. With regards to network rollout also, right from the beginning there was no clarity on how TPC is supposed to fulfil its Universal Supply Obligation - with its own network or using RInfra's or a mixture of both. Meanwhile, TPC had been laying down its network and claiming capital expenditure for the same.
- 3. Lack of clarity and absence of monitoring:** Every tariff order of the MERC for TPC-D and RInfra-D since 2008 has been challenged in the Appellate Tribunal for Electricity (APTEL). This has led to a situation where there is no finality and no clarity regarding Mumbai tariffs. In addition, deferring and staggering recoveries (whether of regulatory assets or revenue gap) makes it difficult for consumers to understand their tariff structures. Thus, the present state of things renders it impossible for a concerned citizen to inform herself and participate effectively in the Mumbai regulatory processes. Further, there has been no tracking or monitoring of changeover process by MERC and there is no data in public domain to easily understand consumer migration. All this has resulted in serious information asymmetries and confusion, making it difficult for the consumers to exercise choice.

This is perhaps the biggest failure, as healthy competition relies on consumers' ability to make informed decisions based on easily comprehensible and publicly available data.

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1. MYT petition

1.1 Key demands of the licensee

In its petition for the third control period, Tata Power Company Limited – Distribution (TPC-D) has claimed a past revenue gap of Rs. 816 crore along with unrecovered regulatory asset of Rs. 570 crore. This is in addition to the aggregate revenue requirement, which increases from Rs. 2991 crore in 2016-17 to Rs. 4037 crore in 2019-10. These amounts would be recovered over the next four years.

Table 1: TPC-D claims under the proposed MYT petition

Particulars	Notation	Proposed 2016-17	Proposed 2017-18	Proposed 2018-19	Proposed 2019-20
Aggregate Revenue Requirement (Rs. cr) (gross)		2991	3356	3671	4037
ACoS (Rs/unit) for own consumers	A	6.13	6.90	7.07	7.26
ACoS (Rs/unit) for changeover consumers	B	6.21	6.93	7.17	7.45
Regulatory Asset Recovery (w/o carrying cost)		190	190	190	
Regulatory Asset recovery (Rs/unit)	C	0.59	0.58	0.53	
Recovery of revenue gap up to 2015-16		775	31	10	0
Recovery of revenue gap up to 2015-16 (Rs/unit)	D	1.59	0.06	0.02	
Total (Rs/unit) for own consumers	A+C+D	8.31	7.54	7.62	7.26
Own Sales (MUs)	E	2643	2891	3197	3531
Changeover Sales (MUs)	F	2224	2252	2279	2307
Open Access Sales (MUs)	G	599	367	367	367
Total Sales (MUs)	H=E+F+G	5466	5510	5843	6205

Note: ACoS here is the total ACoS (i.e. sum of ACoS of wires and ACoS of supply). Thus, in the case of changeover consumers, Rinfra-D's wires ACoS has been taken.

As can be seen above, the stand alone average cost of supply (ACoS) will increase from Rs. 6.13 to Rs. 7.26 per unit by the end of the control period. This is without accounting for any fuel cost adjustments and any other costs arising out of litigation or other such uncontrollable factors. In addition, with recovery of regulatory assets and the past revenue gap (which is all proposed to be recovered in FY17), the ACoS for FY17 is expected to be Rs. 8.31.

1.2 Failures at the heart of the Mumbai power sector

The operationalization of parallel licensees in Mumbai is a unique experiment in the annals of India's electricity sector. It set high expectations of increasing efficiency and prudent expenditures. However, nothing of the subsequent Mumbai experience met these expectations. Close to seven years since the experiment, both licensees have accumulated regulatory assets and there is still no clarity on network roll out plan.

Given this background, this submission brings out the key issues in planning and regulation that are at the root of these failures and which continue to remain unaddressed. It argues that so long as the regulator fails to ensure proper power purchase planning and continues to assure full recovery (with

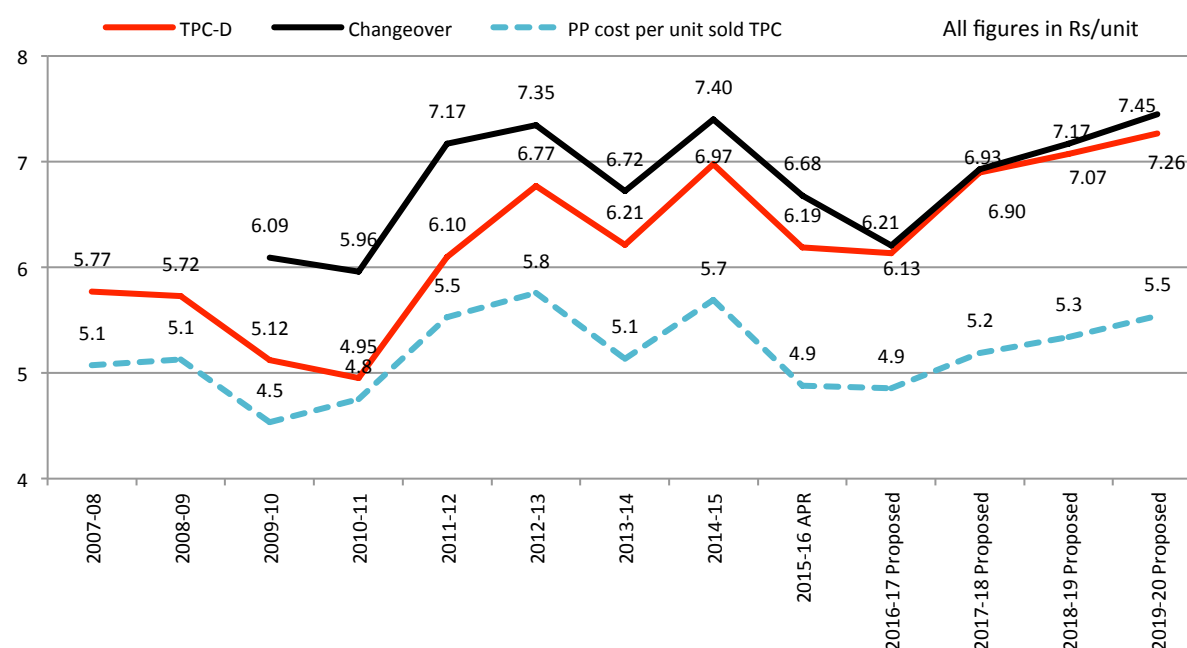
carrying cost) for all expenses claimed by the licensees; the consumers will continue to bear the burden of high tariffs, in spite of competition and in spite of technical and commercial losses being low.

2. Power Purchase Planning Failure

2.1 Power purchase is a significant part of ARR for TPC-D

Figure 2 shows the total ACoS (wires and retail supply) for TPC consumers and for changeover consumers. Power purchase cost accounts for a significant portion of the total ARR of TPC-D - it was close to 90% of the ARR in FY13, but has come down to 83% in FY16, due to increase in O&M expenses and investment related costs. Thus, power purchase cost effectively determines the average cost of supply for TPC-D. Given such importance of power purchase, the later sections in this chapter highlight how lack of prudent power purchase planning has impacted the overall costs and tariff.

Figure 2: ACoS for TPC own consumers and changeover consumers, and power purchase cost per unit sale



Source: ACoS is based on actual ARR (stand-alone, gross). Power purchase cost up to 2015-16 is as per actuals submitted by the licensee; for the MYT period, projections by licensee have been taken.

Note: Power Purchase cost here includes transmission charges, SLDC and stand-by charges. For this graph, power purchase per unit sale is taken, i.e. total power purchase has been divided by the total retail sales (own + changeover) for TPC-D.

Note: ACoS here is the total ACoS (i.e. sum of ACoS of wires and ACoS of supply). Thus, in the case of changeover consumers, Rinfra-D's wires ACoS has been taken. The difference between changeover and TPC-D above is due to differences in wires ACoS since the retail supply ACoS for both changeover and TPC consumers is the same. The convergence in the ACoS, hence, is due to convergence of wires ACoS for Rinfra and TPC.

TPC's Average Cost of Retail Supply in MYT petition

Figure 2 above considers the stand-alone gross ACoS of TPC-D (i.e. it does not include past recoveries or regulatory asset) and is seen to increase from Rs. 6.13 to Rs 7.26 over the MYT period. In Table 11-5 on page 269 of its MYT petition, TPC-D's calculated 'Average Cost of Supply for Retail Supply Business', which moves from Rs. 6.31 in FY17 to Rs. 5.75 in FY20, as can be seen from Table 2 below¹. This calculation includes the past revenue recoveries of Rs. 775 crores which TPC-D has proposed to recover in FY 17 itself; this causes the ACoS to increase in FY17 and then come down in the following years.

¹ Please note that TPC-D here has calculated only the ACoS for retail supply, while we have taken the total ACoS, i.e. ACoS of wires and ACoS of supply in Table 1 and Figure 2.

Table 2: Reproduction of ACoS calculation in Table 11-5 from TPC-D’s MYT petition (pg 269 of MYT petition)

Particulars	2016-17	2017-18	2018-19	2019-20
Average Cost of Supply for Retail Supply Business	6.31	5.42	5.56	5.75

In Table 1 we have provided stand-alone ACoS as well as per unit recovery of regulatory asset and past revenue gap. As in TPC-D’s calculation, the recovery of past revenue gaps in 2016-17 increases the total ACoS for the year to Rs. 8.31, which falls in subsequent years.

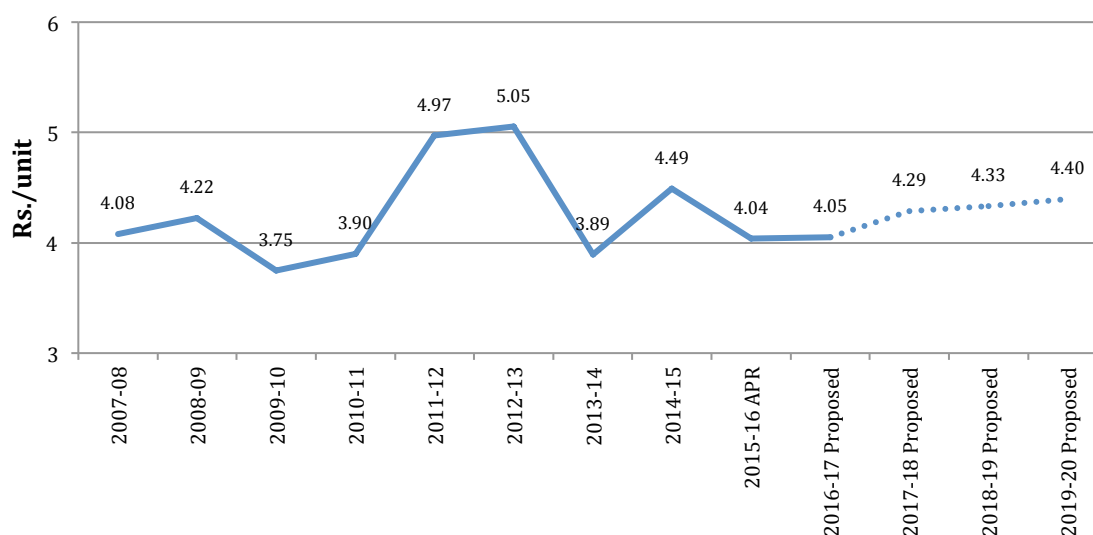
Since past recoveries deal with costs that have already been incurred, from the point of view of evaluating performance during MYT period, it is important to consider the expenditure that is planned or proposed. Hence the figure 2 above does not consider past recoveries and shows a rising trend as far as proposed expenditure is concerned.

2.2 Freedom to sell generation

The years 2008 and 2009 were important years for TPC- two landmark judgments by the Supreme Court held in its favour. The first in July 2008 upheld the right of TPC as a Distribution Licensee to supply electricity to all retail consumers in its licence area, while the second in May 2009 held that generation was a de-licensed activity under the Electricity Act, 2003 and that TPC-G could not be forced to sell its generation to anyone without a PPA.

TPC had thus, successfully asserted its right to sell its power to anyone, anywhere in the country. Today, TPC-G sells its entire generation capacity (1877 MW) in Mumbai, to BEST (932 MW) and TPC-D (944 MW) under cost-plus PPAs. The following graph shows how the average power purchase cost of TPC-D has varied over years.

Figure 3: Changes in average power purchase cost for TPC-D



Source: Figures up to 2013-14 are true-up figures as approved by MERC; from FY15 they are actuals and projections as provided by TPC. Note: Power Purchase cost here does not include transmission charges, SLDC and stand-by charges. For this graph, average power purchase is taken, i.e. total power purchase has been divided by total MUs purchased by TPC-D. Dotted lines depict MYT projections.

TPC-D has only one long-term power purchase contract and it is with TPC-G. It was initially for 527 MW and is at present for 940 MW. TPC-G accounted for 61% of the total power purchase quantum of TPC-D in 2015-16 at a cost of Rs. 4.3/unit. It is expected to account for about 69% of the total quantum of power purchase in the MYT period, at a cost of Rs. 4.2/unit.

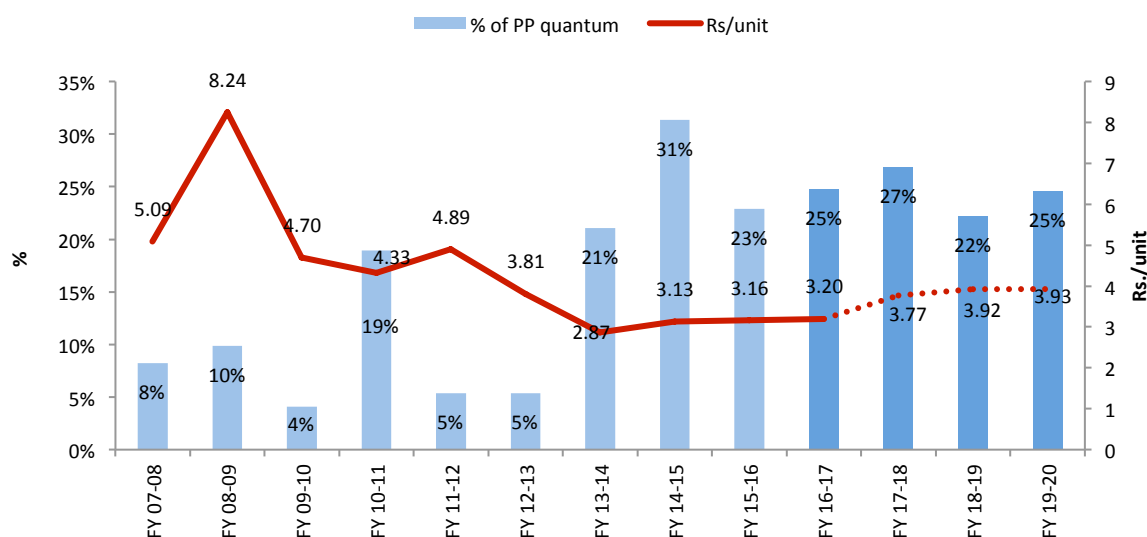
Costs of TPC-G

While TPC-G's Natural Gas and Hydro units can be considered as competitive, the generation cost for its coal-based units is quite high. In the MYT period, TPC-G's coal powered generation cost is estimated to reduce marginally, while both hydro and natural gas powered generation is expected to increase. Because of this, TPC-G's average generation cost will be around Rs. 4.2/ unit for the MYT period. Being cost-plus projects, any variations in fuel price as well as variations in any other incidental costs are likely to be completely passed through to TPC-D consumers.

Short-term / bilateral power purchase

For various reasons, TPC-D has been sourcing significant share of its total power requirement from the short-term bilateral market. From FY 2007-08 to 2014-15, the percentage of short-term (i.e. non-firm) power in TPC's total power purchase has increased from 8% to 31%. The main concern here is that for around 25% of its power purchase quantum, there is no price certainty. Going by the past trends, if these rates increase, the commission is likely to pass on such costs thereby defeating the purpose of power purchase planning as envisaged in the regulations.

Figure 4: Quantum and Cost of short-term (no firm contract) power purchase for TPC-D



Note: Dotted line and darker blue colored bars depict MYT projections.

Source: Figures up to 2013-14 are true-up figures as approved by MERC; from FY15 they are actuals and projections as provided by TPC.

In its petition, TPC has mentioned that it may explore the possibility of tying up around 140 MW capacity for medium term power from domestic coal based sources. Presently, there is no firm arrangement for this and it is also not clear whether TPC is planning to undertake competitive bidding for this purpose. However, the rates for the same have been projected at around Rs. 3.99 – Rs. 4.17 per unit from FY 17-18 to FY 19-20², which are much higher than that of short-term power purchase rates being considered for the same period. If TPC's projections for short-term power purchase are to be believed, then the proposed medium term contract is not desirable. TPC should either be willing to accept the risk of its short-term power purchase projections, or it should make more serious efforts towards finding economical alternatives.

² Refer to table 8-27: Bilateral Power Purchase Cost and Quantum for the Control Period

Competitive Bidding

In February 2011, TPC-D approached MERC for approval of quantum of 250 MW-350 MW on medium term basis from April 1, 2012 to March 31, 2015 to “ensure reliable power supply and to reduce the power procurements cost to its consumers”. MERC accorded approval for the same in May 2011³. However, in March 2011 TPC-D had signed a PPA for additional 400 MW with TPC-G. This quantum had been freed since TPC-G was no longer mandated to supply to Rlnfra-D. MERC approved the PPA under Section 62 citing technical constraints (islanding and transmission constraint). TPC claimed that demand-supply gap remaining after this PPA will be procured through competitive bidding⁴.

In December 2012, TPC again approached MERC for approval of (revised) quantum for purchase through competitive bidding. It claimed that it did not undertake competitive bidding due to the fear of discovering expensive power (@Rs. 4.5 /unit) in the competitive bidding circuit as opposed to FBSM. MERC approved 250-300 MW for medium term purchase via competitive bidding from FY14 to FY16⁵. The per unit cost of TPC-G generation in 2011-12 was Rs. 4.9/unit. It is interesting to note that MSEDCL, which is the state owned utility in Maharashtra, contracted more than 5000 MW of base load capacity through competitive bidding between 2008 – 2012 at significantly lower tariffs. The following table gives list of the PPAs signed by MSEDCL along with the levelised tariffs that were discovered:

Figure 5: Levelised tariffs discovered under competitive bidding by MSEDCL

Sr. No	Name of Project Developer	PPA Capacity (MW)	PPA date	Levelised Tariff Rs./kWh #	Type of bidding
1	M/s CGPL	800	Apr-07	2.26	UMPP
2	M/s. Adani Power Maharashtra Ltd.	1320	Sep-08	2.64	Case 1
3	M/s. JSW Energy (Ratnagiri) Ltd.	300	Feb-10	2.71	Case 1
4	M/s Emco Energy Limited	200	Mar-10	2.88	Case 1
5	M/s.RattanIndia Power Ltd Amravati	450	Apr-10	3.26	Case 1
6	M/s.RattanIndia Power Ltd Amravati	750	Jun-10	3.26	Case 1
7	M/s. Adani Power Maharashtra Ltd.	1200	Mar-10	3.28	Case 1
8	M/s. Adani Power Maharashtra Ltd.	125	Aug-10	3.28	Case 1
9	M/s. Adani Power Maharashtra Ltd.	440	Feb-13	3.28	Case 1

Source: MERC orders pertaining to MSEDCL power purchase

Many of these projects have sought revision of the quoted tariff and some of these matters are pending before various legal fora.

Although many of the projects with which MSEDCL has signed long term PPA have sought revision of the discovered tariffs, the above table highlights the possibilities and the options that were available to discoms during this period, if they had made an effort to discover tariffs.

Long term power purchase

In February 2015, during the technical validation session of TPC-D’s petition for Mid Term Review, the Commission raised concerns regarding TPC-D’s high dependence on short term bilateral power to meet its demand. It also noted that the price trend in the bilateral market is fluctuating in nature, reaching as low as Rs. 3.93 per unit and as high as Rs. 4.66 per unit, within a period of six months and such unpredictable tariff is unfavourable to consumers⁶.

³ Case 20 of 2011

⁴ Case 76 of 2011

⁵ Case 14 of 2012.

⁶ Case No 18 of 2015, http://mercindia.org.in/pdf/Order_58_42/Order-18of2015-26062015.pdf

Following this, in May 2015, TPC approached MERC for approval of long term PPA with Ideal Energy Private Limited (IEPL) for 170 MW for 25 years on cost plus basis at a levelised tariff of Rs. 4.5/unit, with supply commencing from January 2016. To support its proposal TPC claimed: *“Long-term tie-up with IEPL would also help in catering to Mumbai’s load demand in a reliable and cost effective manner with minimum or no reliance on short-term purchase”* (emphasis added).

In October 2015 in its submission in the same matter, TPC-D stated that it was procuring almost 36% of its power from short-term bilateral sources and tie-up with IEPL would help to reduce such dependence significantly. As regards to the decision of not undertaking a competitive bidding process for this procurement, TPC stated that Case I bidding is fraught with legal battles and that *“the twin objective of reliability of power supply and its affordability is unlikely to be realised in competitive bidding process.”* MERC approved the proposed cost-plus PPA in November 2015⁷.

According to media reports TPC-D had entered into a 100% share purchase agreement with IEPL⁸, but these plans did not materialise⁹. Meanwhile, PTC India Ltd. approached the MERC claiming that it had already entered into a PPA with IEPL for supply of 240 MW (Net) in August 2013 for period of 25 years starting from 1 July, 2015¹⁰ and that neither TPC nor IEPL had informed it about the said proceedings before MERC. Aggrieved by this development, PTC has sought review of the MERC order granting in-principle approval to the PPA between TPC and IEPL. Given these developments, it seems that even if TPC’s plans to procure power from IEPL had materialised, there was a possibility of legal complications arising out of a pre-existing PPA.

In February 2016 TPC filed a separate petition before the MERC¹¹ requesting that proposed PPA with IEPL be put under abeyance.

Thus, on one hand, till late 2015 when TPC-D wanted to enter into a long term cost-plus contract with a potential sister concern, it justified the same on two grounds: a) such a contract will help it to reliably meet its demand with least reliance on short term bilateral market and b) if it undertakes competitive bidding for tariff discovery, it is unlikely to find power that is both affordable and reliable. On the other hand, within four months of approval of the said PPA by MERC, the contract has been put under abeyance and TPC is making statements that the uncertainty in demand is making it difficult for it to enter into long term arrangements.

Strangely, there is no mention of this potential long term cost-plus PPA anywhere in the MYT petition. In spite of being aware of these developments, the commission has not sought any information from TPC about the status of the said PPA and the future plans in this regard, though this is required as per the tariff regulations. Also, if the contract materialises, it will have significant bearing on tariff and hence it was essential to make this decision part of the MYT process. Thus, yet again, the commission has failed to bring in the much needed clarity in power purchase planning.

Transmission Constraint

The current transmission capacity in the Mumbai system allows import of around 1500 MW of power. Out of this 1500 MW, 600 MW capacity is being used by RInfra for bringing power from the

⁷ Case No 65 of 2015 <http://mercindia.org.in/pdf/Order%2058%2042/Order-65%20of%202015-05112015.pdf>

⁸ http://www.business-standard.com/article/companies/tata-power-acquires-ideal-energy-s-540-mw-thermal-plant-114121000541_1.html;

⁹ <http://www.livemint.com/Companies/jJVZOOTLAWf0tjvLM1S8dJ/Tata-Power-terminates-agreement-with-Ideal-Energy-to-buy-pow.html>.

¹⁰ MERC Daily order in case no 8 of 2016 <http://mercindia.org.in/pdf/Order%2058%2042/DO-8%20of%202016-18022016.pdf>

¹¹ Case No 37 of 2016 <http://mercindia.org.in/pdf/Order%2058%2042/DO-37%20of%202016-22032016.pdf>

Butibori (Nagpur) Plant on long-term basis and the balance is being used by other Distribution Licensees for bringing in short-term bilateral power. Thus, there is a constraint on how much power can be brought into Mumbai. This has resulted in several problems, most recently in summer 2014, when the Mumbai system's power requirement from outside was 1893 MW¹², due to forced outage of Unit 8. This led to all the three distribution licensees buying power from TPC-G Unit 6, which is otherwise extremely expensive.

Ever since the 2009 crisis emerged, one of the issues that have been raised in the context of bringing power into Mumbai is the transmission capacity constraint, which naturally limited the power procurement options. When TPC-G stopped supply to Rlnfra-D and had an un-contracted capacity of 400 MW, TPC-D contracted the same in 2011 and stated that the transmission constraint would not allow for alternate arrangements for the quantum. Other licensees in Mumbai have used similar arguments in connection with their power purchase plans.

Curiously, the licensees have raised the transmission issue only at the time of seeking approval for identified PPAs (which are often claimed to be the best option in light of the existing constraints), but never as an issue that needs to be resolved so as to enable more options for power procurement. Nor has the Commission ever made any attempts to explore the transmission planning issue from such broader planning perspective.

While some transmission capacity is added now and then, it is primarily to avoid load shedding. Had the licensees and the regulator undertaken a thorough exercise to evaluate all possible power purchase options, the transmission issues could have been resolved in a timely manner and the concerned agencies could have been held accountable for their actions. The MYT exercise was an opportunity to explore this issue. However, this again seems to be a lost opportunity.

Power Purchase planning as per the MYT regulations

Regulation 19.9 of the 2015 MYT regulations requires all distribution licensees to submit a ten year demand-supply forecast. Given the possibility of migration, continued high reliance on short term market, increase in open access and rapid reduction in renewable energy prices, it becomes crucial to develop a plan that factors in these uncertainties. In the absence of such realistic projections there is a danger of underestimating costs that would arise on these accounts and would lead to false representation of sales and demand.

In this context, it was suggested during the technical validation session that TPC-D should present a few scenarios for projecting its demand and power purchase plans based on various factors (migrations, open access, net metering, etc.), under various assumptions such as the transmission constraint, islanding requirements, etc. However, this was not provided. In the present petition, TPC plans to renew its existing cost-plus contracts with TPC-G (which expire in FY 2018) and continues to rely on bilateral sources for up to 25% of its power requirement.

Surprisingly, the Commission which seemed to be concerned about such high reliance on short term power during the last MYT, has admitted the present petition, which effectively has no change as far as power purchase planning is concerned. Failure of the Regulatory Commission to insist on compliance with its regulations and /or to facilitate any meaningful process for power purchase planning has meant that the consumers in Mumbai are forced to bear burden of cost-plus PPAs and also be at the mercy of the short term market.

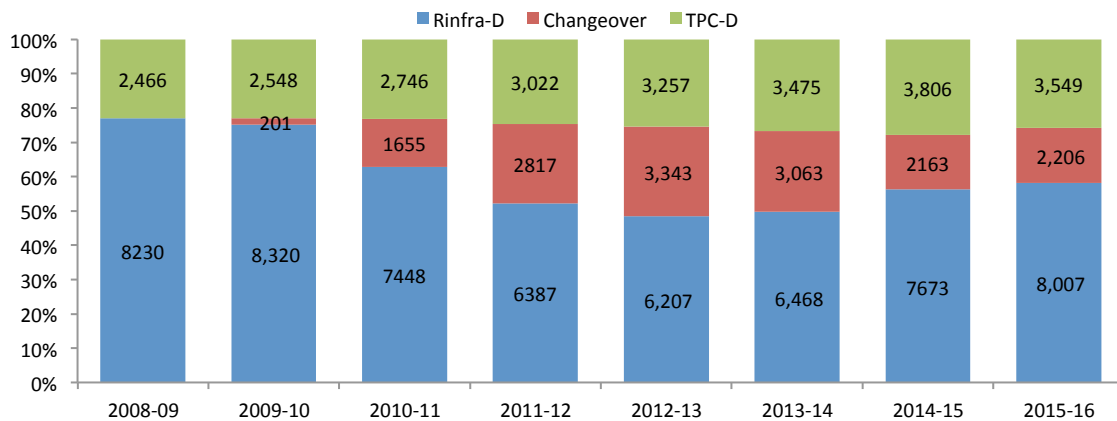
¹² Order in Case no. 89 of 2014 dated March 20, 2015.

3. The Changeover Experience

3.1 Movement of sales with changeover

From 2% of total sales in the common license area in 2009-10, the changeover sales increased to 26% in 2012-13. They have fallen to around 16% in 2015-16. As can be seen from the figure below, changeover sales reached their peak in 2012-13, and since then have been falling.

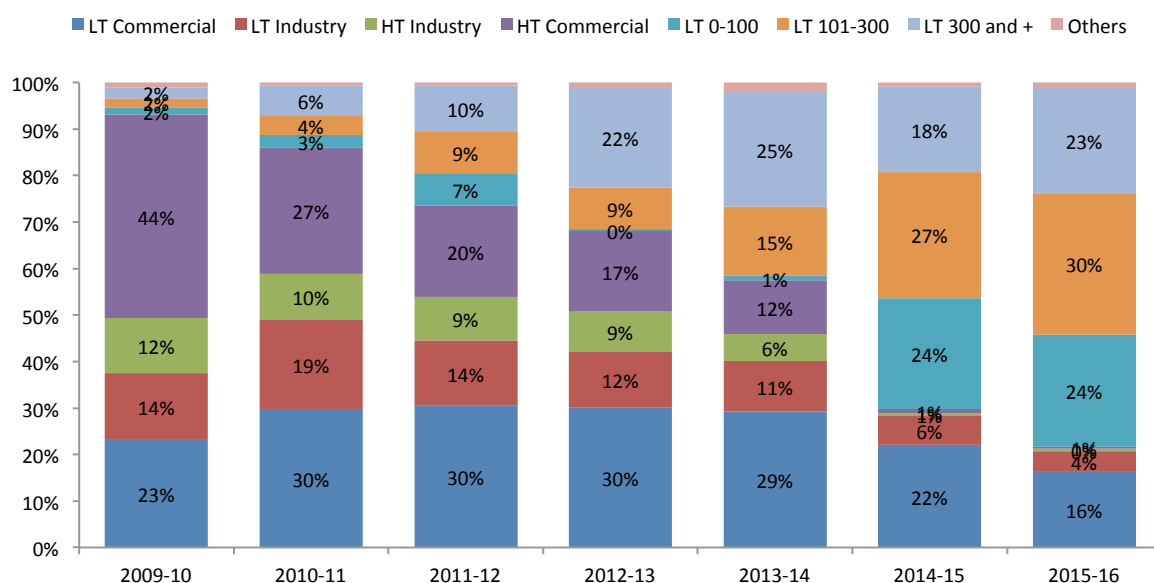
Figure 6: Movement of total sales in Rlnfra-D and TPC-D's common license area



Note: The above diagram gives a percentage composition of total sales in common license area of TPC-D and Rlnfra-D. However, the numbers in the bars refers to actual number of sales in MUs. Sales figures have been taken from actuals given by licensees.

The following graph provides the composition of changeover sales in the common license area. As can be seen, from primarily serving Industry and Commercial consumers (HT and LT) in 2009-10, changeover now serves LT Residential. LT Residential (0-300) account for 54% of changeover sales while LT Residential (300+) accounts for 23% of the sales. LT Commercial and Industry make up for 20% together.

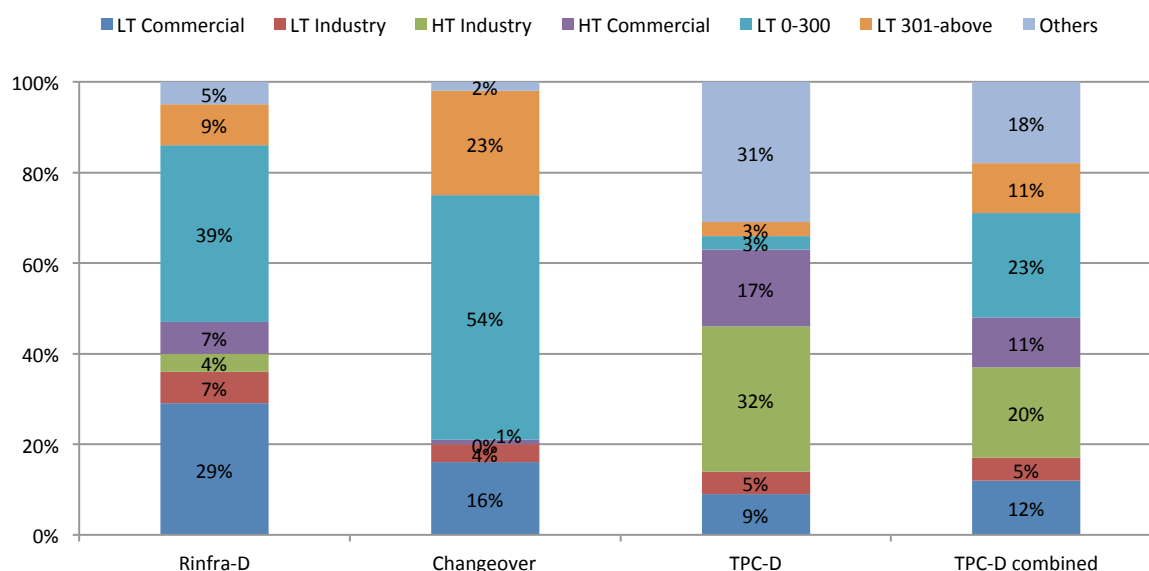
Figure 7: Composition of changeover sales



Note: Sales figures have been taken from actuals given by licensees.

The following graph gives the composition of sales (HT and LT) for Rlnfra-D, Changeover, TPC-D and TPC-D combined (own and changeover) for FY 2015-16:

Figure 8: Composition of sales for the licensees in 2015-16



Note: Others for TPC includes Railways consumption which is around 782 MUs (22%) in 2015-16. Sales figures have been taken from actuals given by licensees.

As can be seen from the above graph, residential consumers account for 48% of Rlnfra-D's sales, while Industrial and commercial (LT) account for 36%, and Industrial and commercial (HT) account for 11%. For TPC-D combined, 34% sales are from residential consumers, while Industrial and commercial (LT) account for 17%, and Industrial and commercial (HT) account for 31%.

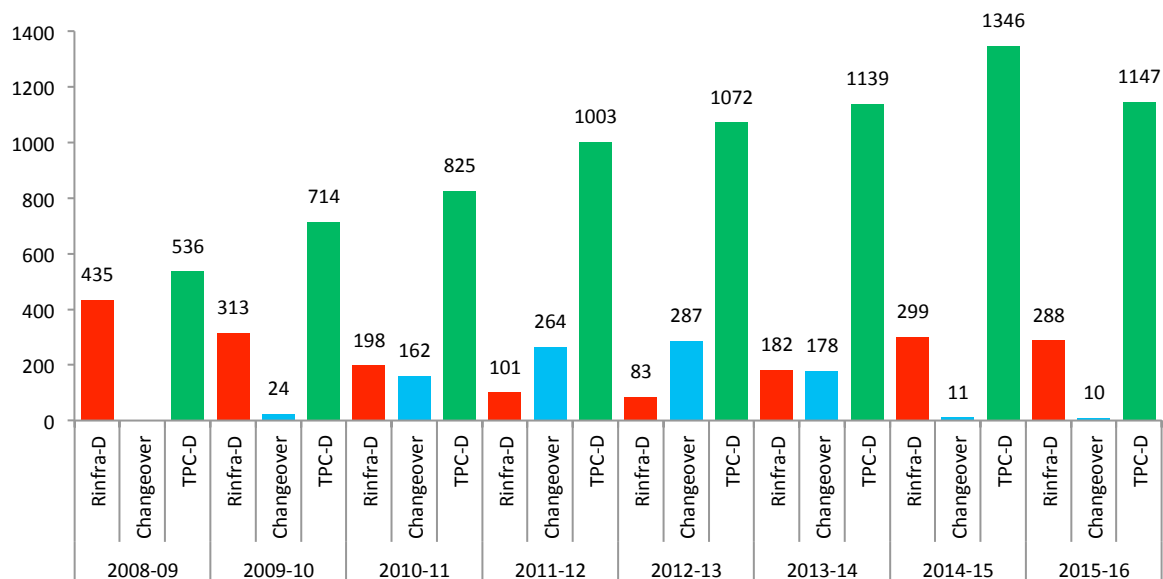
3.2 Movement of tariffs

The following graphs show the movement of tariffs and sales for certain categories of consumers. For graphs for more categories of consumers, please see Annexure 1. The graphs for movement of tariffs show a stack of the charges payable by the consumers. These charges are as approved by MERC for the respective licensees. These charges are:

- Energy charge: consumer pays the energy charge of their retail supply licensee. We have not taken fixed or demand charges or the Fuel Adjustment Cost (FAC), but considered only per unit energy charges.
- Wheeling charges: consumers pay the wheeling charges to the licensee whose wires they are using
- Cross-subsidy surcharge (CSS): Is payable by all consumers connected to the wires of a licensee but taking supply from somewhere else (another licensee or open access). This charge became applicable to changeover consumers from FY 2011-12.
- Regulatory Asset Charge (RAC): Consumers pay the RAC of their wires licensee. This charge became applicable for consumers on Rlnfra wires from FY 2013-14, and for those on TPC wires from 2015-16.

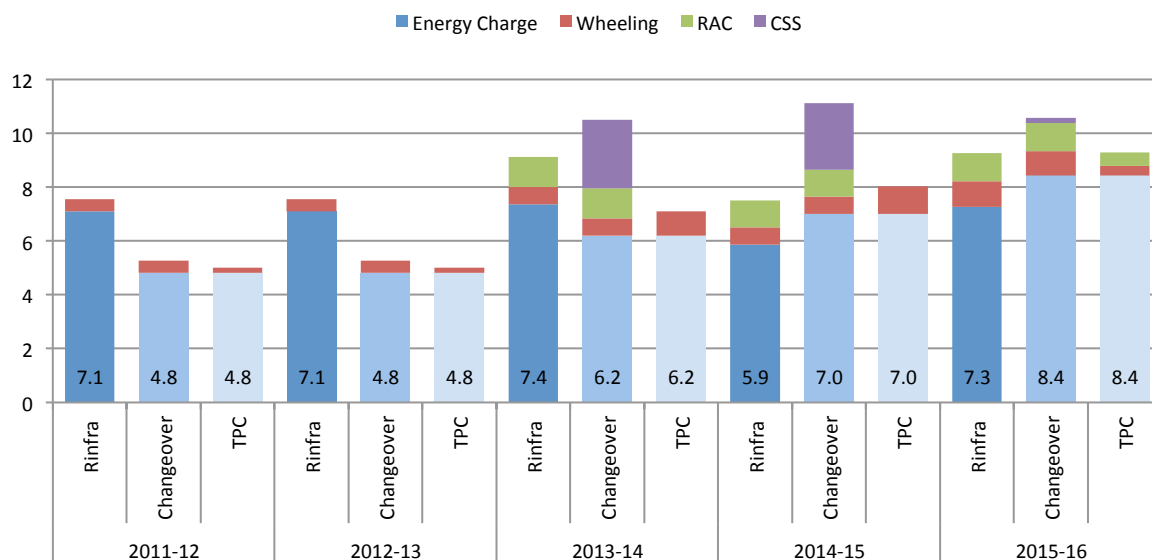
HT-Industry

Figure 9: Movement of HT Industry sales (MUs)



Source: Compiled from various TPC-D and Rinfra-D petitions. Sales figures have been taken from actuals given by licensees.

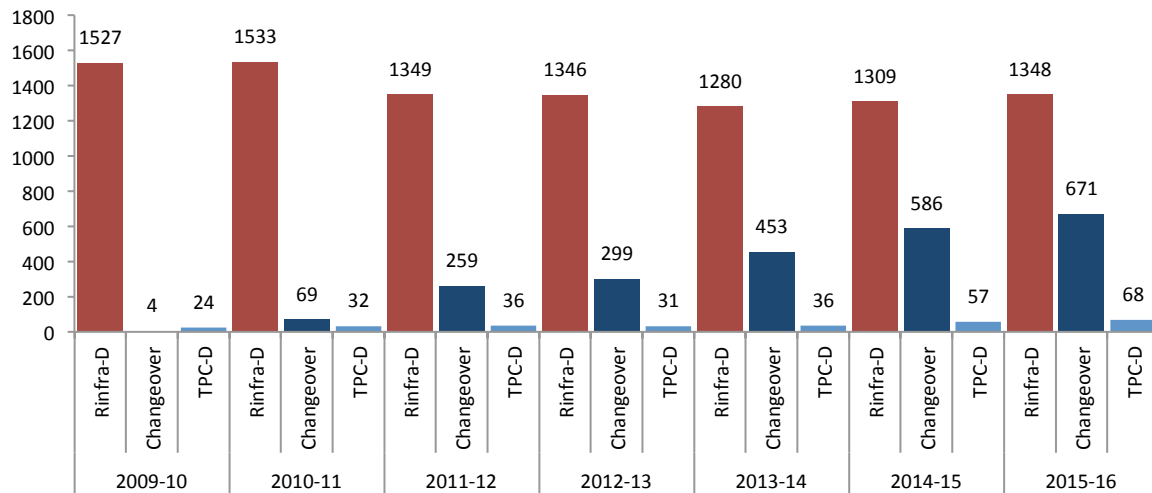
Figure 10: Movement of HT Industry tariffs (Rs/unit)



Source: Compiled from various TPC-D and Rinfra-D petitions.

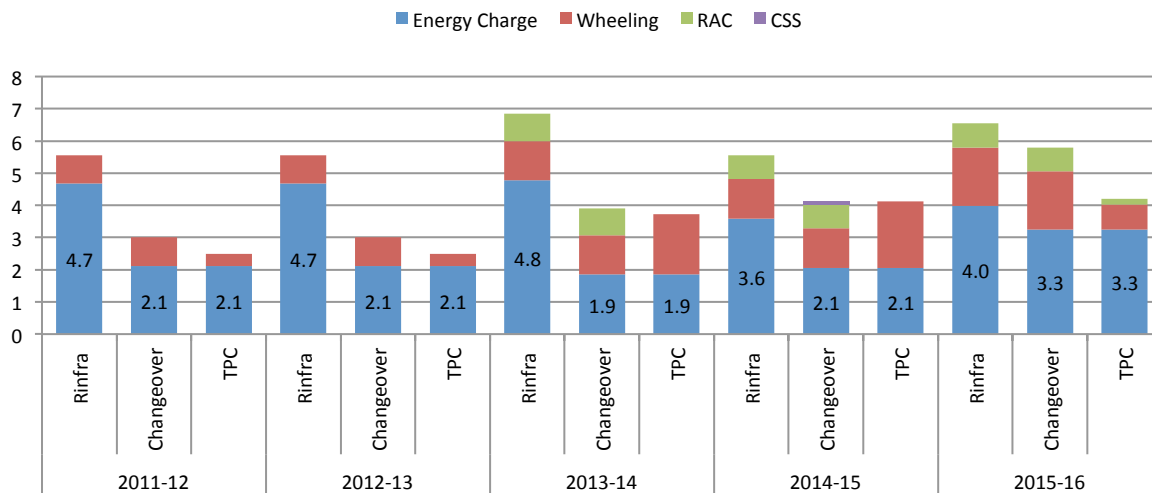
LT Residential (101-300)

Figure 11: Movement of LT Residential (101-300) sales (MUs)



Source: Compiled from various TPC-D and Rinfra-D petitions. Sales figures have been taken from actuals given by licensees.

Figure 12: Movement of LT Residential (101-300) tariffs (Rs/unit)



Source: Compiled from various TPC-D and Rinfra-D petitions.

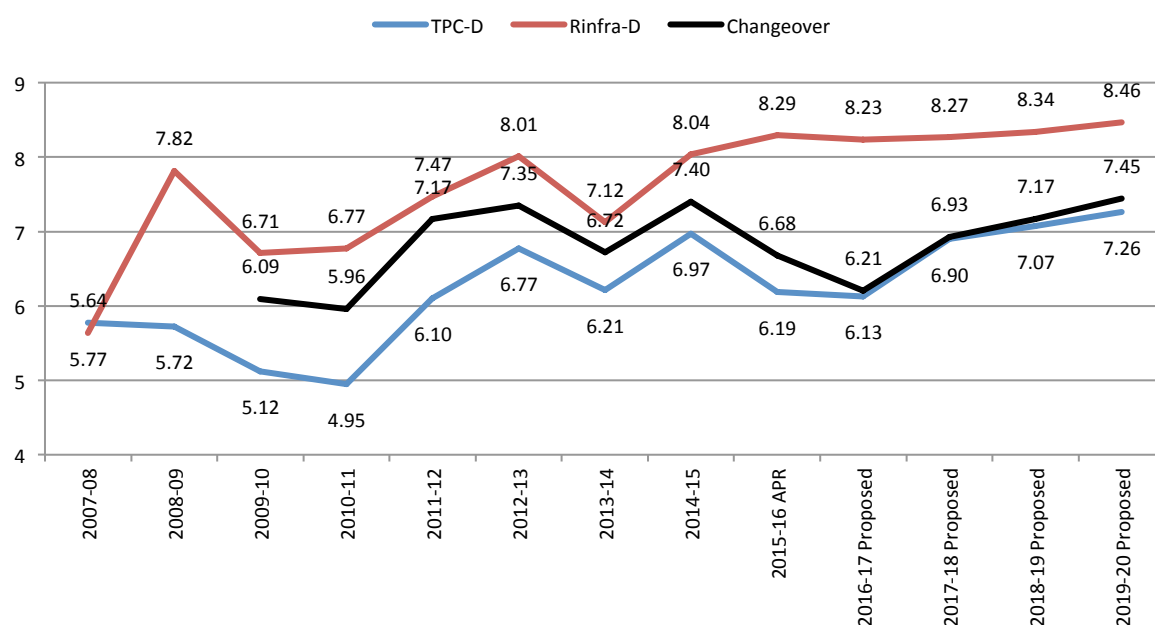
As can be seen from the graphs above, CSS and RAC have significantly increased the charges applicable and payable by changeover consumers. While tariff design has made changeover lucrative for some consumers and expensive for others, for FY 2015-16, TPC's energy charge for all categories of consumers has increased, indicating an overall rise in the costs.

4. Failure in implementing Changeover

4.1 Failure in controlling costs

When changeover mechanism was operationalised, TPC-D's average cost of supply (ACoS) was significantly lower than that of Rinfra-D and hence, it was a lucrative option. However, this gap began closing from FY12, and both licensees have shown an overall increasing trend for costs.

Figure 13: ACoS for Rinfra-D, changeover and TPC-D (in Rs/unit)



Source: Past tariff orders and present MYT petitions for Rinfra-D and TPC-D

Note: ACoS here is the total ACoS (i.e. sum of ACoS of wires and ACoS of supply). Values up to 2015-16 are as per audited actuals declared by the licensees. Projections have been taken for the MYT period.

Thus, even when not including past recoveries and regulatory assets, the ACoS for both the licensees are increasing. Prima facie this indicates failure of competition in lowering costs on account of efficiency improvements.

The “pass through” phenomenon

It is the responsibility of the regulatory commission to ensure that costs claimed by the licensees are a result of ‘prudent expenditure’. However, allowing all expenditures of distribution companies, without any regard to planning failures or efficiency improvement, has meant that the benefits of competition have been out of reach for the consumers. Assured of regulatory assets, the licensees have continued their ‘business as usual’ approach, and notably none of the Mumbai licensees have made any changes in their power procurement strategy and all of them procure power either on cost-plus basis or through bilateral sources. The legal precedent of recovering the costs (not limited to past losses) even from consumers choosing to migrate has rendered the option of changeover ineffective.

Creation of regulatory assets

“The Regulatory Asset Charge is an outcome of regulatory asset, which is approved by the State Commission¹³”. The tariff increase necessary to cover the revenue required is at times deferred by MERC if considered too large, i.e. if it likely to cause a ‘tariff shock’. Protecting consumers from a potential ‘tariff shock’ could be seen as a laudable objective. However, creation of regulatory assets shrouds the failure of the Commission in controlling costs and holding the licensees accountable for their planning decisions. In addition, it not only allows for full recovery of such costs but also adds the burden of carrying cost. The average consumer is, thus, unaware of the real impact of this deferment. Understanding the impact on tariff is made all the more difficult due to the many different components of Mumbai tariffs and numerous orders dealing with these issues.

4.2 Failure in operationalising competition

The other significant failure of the regulatory commission has been the delay and ambiguity in taking crucial regulatory decisions. This has prevented the limited competition (in terms of basic cost differential between Rinfra and TPC) from acting out in a manner that would enable consumers to choose the least cost supplier. Such failure has been on account of skewed tariff design, delays in deciding applicability of crucial tariff components and lack of clarity regarding network rollout plans.

Applicability of CSS and RAC

Vide its interim order in October 2009, MERC operationalised changeover, allowing consumers to be connected to the wires of one licensee while receiving supply from another¹⁴. Even before operationalising changeover, MERC had estimated savings to the tune of 13-41% for consumers moving from Rinfra-D to TPC-D.¹⁵

By June 30, 2011, 1.59 lakh consumers had migrated from Rinfra-D to TPC-D; of these, 1.54 lakh were connected to the Rinfra network but receiving supply from TPC-D. In July 2011, MERC decided that Regulatory Asset Charge (RAC) for recovery of regulatory asset and Cross-Subsidy Surcharge (CSS) will be payable by changeover consumers¹⁶.

Thus, almost 21 months after allowing changeover, the MERC decided that additional charges will be payable by changeover consumers. While CSS became applicable immediately, RAC becomes applicable from 2013-14, with regulatory asset calculated up to FY 2011-12. Thus, even after the consumers came to know about the applicability of RAC, the uncertainty over the amount continued well into 2013-14. It must be noted here that Rinfra-D had brought up the problem of recovery of CSS and RAC before MERC in April 2010, but the Commission delayed the decision¹⁷.

Impact on consumer choice

Both, Rinfra-D and TPC-D had regulatory assets of Rs. 3866 crore and Rs. 1440 crore at the beginning of 2013-14. Notwithstanding changeover, these costs were to be recovered from consumers. To add to the confusion of ‘who pays for what’ in the Mumbai license area, MERC’s treatment of the regulatory asset for TPC was different than that of Rinfra. In case of TPC there was no separate

¹³ APTEL Order in appeal no.294 of 2013, appeal no.299 of 2013, appeal no.331 of 2013 and appeal no.333 of 2013 dated November 26, 2014.

¹⁴ Interim Order in Case 50 of 2009 dated October 15, 2009.

¹⁵ Clarificatory order in Case 121 of 2008 dated July 22, 2009.

¹⁶ Order in Case 72 of 2010 dated July 29, 2011.

¹⁷ Order in Case 7 of 2010 dated September 10, 2010.

regulatory asset charge till 2015-16 unlike in the case of Rlnfra. This made understanding the recovery of regulatory assets and impact of carrying costs even more difficult.

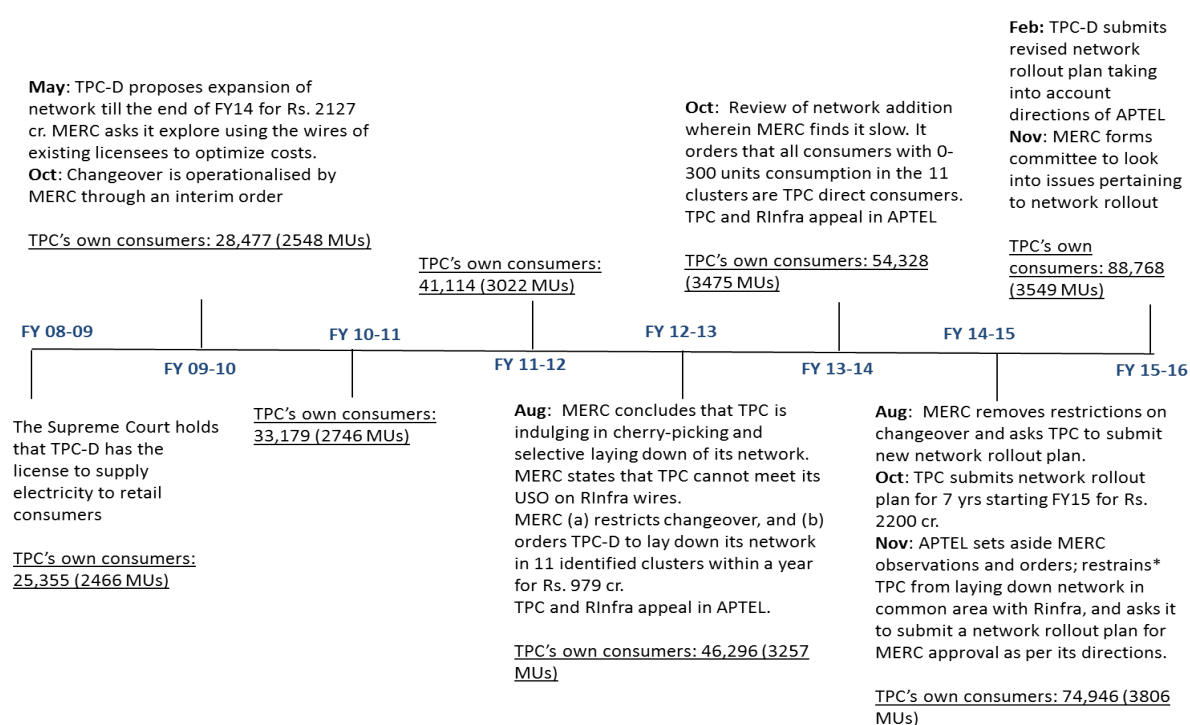
It is important to note that TPC-D, which in the past has championed the cause of consumer choice in its common license area with Rlnfra-D, is now asking for a lock-in period of two years for migration of consumers between utilities to ensure “consistent and sustainable operations of the utility and also ensure competition between the licensees to be healthy benefiting all stakeholders.”

The impact of RAC and CSS are clear from the graphs on movement of sales. Thus, consumers are no longer moving because the other licensee has become cheaper, but because their existing tariffs have increased.

4.3 Network Rollout

In 2008, the Supreme Court adjudged that TPC-D’s license allows it to supply electricity to retail consumers. It has been eight years since that Supreme Court judgment and yet there is no clarity on TPC’s network. The following graph provides a timeline of events in the TPC network rollout story for the license area common to Rlnfra and TPC:

Figure 14: Timeline of events in TPC's network rollout



* Refer to footnote 18.

¹⁸ The following are the key directions of the APTEL from its judgement dated 28th November 2014 (Para 58 to 61 of APTEL Order in case Appeal no. 246 and 229 of 2012):

- Where TPC has made considerable investment, its network should be commissioned and capitalised and allowed to feed consumers as decided by MERC.
- Where TPC has already laid down its network and consumers have switched over from Rlnfra to TPC, these consumers can stay with TPC, but can choose to move to Rlnfra based on switchover protocol to be decided by MERC.
- Changeover supply shall continue.
- Both TPC and Rlnfra can lay network to supply to new connections.
- MERC shall consider giving approval only where laying down TPC network will benefit consumers. Similarly, Rlnfra will not extend network in any area where only TPC network is existing and will use TPC network for changeover consumers till further orders by MERC.

History of network rollout

After the Supreme Court judgment, TPC approached MERC with its network rollout plan in 2009. MERC did not approve the plan but asked it to look into alternatives like using the wires of the existing distribution licensees¹⁹. TPC approached MERC with a plan for changeover, and the protocol for this was put into place vide an interim order in October 2009. It allowed consumers to remain connected to the wires of a distribution licensee while receiving supply from the other licensee²⁰. Consumers, thus, could remain connected to RInfra wires but move to TPC for supply (called “changeover consumers”). At the same time, the number of own consumers of TPC (i.e. those connected to TPC wires and receiving supply from TPC) also increased. TPC approached MERC for approval of actual capital expenditure and capitalisation in FY10, FY11 and FY12, and the same was approved by MERC. However, there was no monitoring of this network expansion.

In October 2011, RInfra approached MERC alleging that TPC was indulging in (a) selective changeover of subsidising consumers, and (b) selectively laying down wires to facilitate switchover of certain consumers to TPC (i.e. for wires and supply) so that such consumers did not have to pay CSS. It claimed that either TPC-D fulfilled its Universal Supply Obligation (USO) by utilizing the entire network of RInfra or it laid out its own entire network. TPC, however, claimed that it had the right to decide where and how it lays down its network, and that this was a business decision based on demand²¹. Following these allegations, MERC for the first time asked for crucial information regarding the network rollout plan and execution. Thus, for almost three years, changeover and capital expenditure for parallel network progressed simultaneously without any monitoring by MERC²².

Finding merit in RInfra’s claims, vide its order dated August 2012, MERC modified the changeover protocol, and observed as follows:

- TPC could not fulfil its USO using the wires of RInfra, and that the use of RInfra wires was a temporary arrangement, applicable only until TPC developed its own network.
- Only consumers with per month consumption of 300 units and below could changeover to TPC.
- TPC was to complete its network in 11 identified clusters within one year, i.e. by August 2013.

TPC and RInfra, both, appealed against this decision of MERC before the APTEL. One year later, MERC found that network rollout in the identified clusters was behind target and decided to hurry things up by declaring all consumer consuming 300 units and below in the 11 clusters as direct consumers of TPC. Again, both RInfra and TPC appealed against this decision in APTEL.

In November 2014 APTEL issued judgements in the matters mentioned above holding that the MERC had exceeded its jurisdiction by mandating transfer of about 7.92 lakhs consumers in 0-300 Units

¹⁹ Case 113 of 2008

²⁰ Case 50 of 2009

²¹ “As a Distribution Licensee, TPC-D is free to roll out its network in the manner that suits its business. Further, USO cast upon a Distribution Licensee requires connecting a consumer who seeks connection, and it does not mean that TPC-D must put its distribution network in every nook and corner of the licensed area even before there is demand for connection by a consumer.” Case 151 of 2011.

²² Information sought at this stage included (i) information on changeover applications received, rejected with reasons, etc., (ii) geographical mapping of changeover consumers, (iii) scheme wise details of all capital expenditure schemes, (iv) areas where TPC-D’s network was fully established and supply on TPC-D’s own network can be given on demand or within timeframe specified in regulations, (v) details of TPC network cluster wise with location of changeover consumers, (vi) details of new consumers added to TPC network, etc.

slab to Tata Power while being connected to Rlnfra’s distribution system, and that its directions were in violation of natural justice²³.

In the other set of appeals, the APTEL set aside MERC orders and observations on cherry-picking. It stated that it was in the overall interest of consumers of TPC and Rlnfra that the changeover consumers continue to get supply from Tata Power on the Rlnfra’s network, and that there be no unnecessary duplication of network.

Capital Expenditure so far

The following Table gives the amount of capital expenditure and capitalisation from FY 2009-10 to FY 2019-20.

Table 3: Capital expenditure and capitalisation as claimed by TPC-D

Year	Total		For wires only	
	Capex	Capitalisation	Capex	Capitalisation
2009-10	124	108	N.A.	N.A.
2010-11	202	139	N.A.	N.A.
2011-12	201	188	N.A.	182
2012-13	208	233	179	202
2013-14	352	304	321	275
2014-15	421	494	395	465
2015-16 APR	258	257	237	239
Total	1766	1723	1131	1180
2016-17 proposed	268	207	257	195
2017-18 proposed	279	221	262	203
2018-19 proposed	274	235	261	221
2019-20 proposed	283	217	270	202
Total for third MYT	1104	881	1050	822

Note: compiled from audited actuals of different years and MYT projections. Wires capital expenditure and capitalisation was available only from FY2012-13.

In its new network rollout plan, TPC has stated that it will need 7 years (from FY 2014-15) and Rs. 2200 crore for its network rollout. However, till 2015-16, TPC has claimed Rs. 1766 crore in capital expenditures and Rs. 1723 crore in capitalisation. It is unclear how far the TPC network already exists in Mumbai, especially since the number of consumers on TPC wires has increased from 25,355 consumer (with a consumption of 2466 MUs) in 2008-09 to 88,768 consumers (with a consumption of 3549 MUs) in 2015-16.

While initially changeover seemed to be based on non-duplication of network, TPC-D has been expanding its network all along. Recently, MERC issued another Interim Order²⁴ in November 2015, inter alia constituting a committee to make recommendations on certain issues and is holding a separate public process for TPC-D's network rollout plan and the said committee's report on 21st June 2016²⁵. Thus, there is still no clarity on how TPC is supposed to fulfil its USO and what impact it will have on consumer tariff and migration.

²³ Appeal No. 278 of 2013 & Appeal no. 36 of 2014

²⁴ MERC dated 9 November, 2015 in Case No. 182 of 2014

²⁵ http://mercindia.org.in/Events_June_2016.htm

5. Other Regulatory Failures

5.1 Failure to provide relevant information and clarity on tariff

No monitoring and reporting of changeover sales

Mumbai is the only city in the country to have operationalized parallel licenses. Given the uniqueness of this experiment, it was expected that the Commission would actively monitor its progress and for the benefit of the consumers and the sector at large, publish insightful reports with relevant data and information. More importantly, such an arrangement offers different choices to consumers and hence, the Commission should also be tracking and actively monitoring how consumers are responding to such initiatives. It goes without saying that since changeover/switchover affects consumer tariffs; it is imperative that such data be made more easily accessible, rather than it being shared, if at all, only through tariff petitions and orders.

Alas, no such exercise has been undertaken by the MERC in the last six years of the changeover experiment. In this regard, it must be stated that Prayas (Energy Group) had demanded such crucial sales data regarding changeover and migration during the technical validation processes, but both RInfra and TPC did not make the same available. Thus, neither is the commission monitoring such important developments, nor is it directing the licensees to make the necessary information public.

Litigation

In the case of Mumbai, almost every tariff order for TPC-D and RInfra-D since 2008 has been challenged in the APTEL²⁶. In fact, if one were to consider all APTEL judgments for two years (2013-14 and 2014-15), one would find that appeals from MERC form the single biggest chunk of appeals from a state commission, and of these appeals almost a third come from Mumbai's private distribution companies. In a regulatory forum where decisions are taken after giving all stakeholders due opportunities to present their case and where reasoned orders factoring in all objections and suggestions are issued, it is expected that there would be greater acceptance for such decisions. Hence, such a high rate of dissatisfaction with the regulatory decisions brings into question the effectiveness of the regulatory forum in its adjudicatory role. These appeals by the distribution companies also lead to significant costs for consumers, not only in terms of the legal fees (which is recovered from consumer tariff), but also on account of uncertainty and reversal of many regulatory decisions.

Public participation is enshrined in the Electricity Act; however, for effective public participation there needs to be adequate information available in a clear language, in the form of orders, datasets, etc. The situation in Mumbai is such that there is no finality, no information and no clarity regarding the fate of Mumbai tariffs. Thus, the present state of things renders it impossible for a concerned citizen to inform herself and participate effectively in the regulatory process.

5.2 Failure to insist on compliance with regulation

Separation of Accounts and Accounting Statements

As in previous years, TPC has provided only an allocation statement, which allocates expenses and revenue between its Generation, Transmission, and Distribution businesses. This is in spite of the

²⁶ Only the Order in Case no. 113 of 2008 has not been challenged.

regulations mandating that separate Accounting Statements be prepared for each licensed business.²⁷ Such separation is crucial to ensure that no costs arising out of any other business activity are being imposed on the consumers of the regulated business. It is also important for correctly estimating income tax and any other expenses such as say employee costs, which can be shared across businesses.

In this regard, a demand for submitting the separate accounting statements was made during the Technical Validation Session, but the same has not been provided. In fact, TPC-D in its response to the demand for the same has stated, *“In this regards, we wish to submit that The Companies Act, 2013 does not provide for reporting based on Generation, Transmission and Distribution Businesses being treated separately. Hence, Tata Power at present does not maintain separate accounts for Generation, Transmission and Distribution and separate Accounting Statements in the requisite Schedules of the Companies Act may not be possible at present.”*

It must also be noted that the regulations empower the MERC to reject tariff petition if the separate Accounting Statements are not submitted for each licensed business. The Commission however, has neither explicitly exempted TPC from the applicability of its regulations in this regard, nor has it insisted on compliance.

Escalation factor for O&M expenses

Regulations 72 and 81 provide the formula for calculating the escalation factor to be used for escalating the Operation and Maintenance (O&M) expenses for the duration of the MYT. TPC-D has not used this formula; however it has provided the calculation of the escalation factor and the consequent O&M expenditure using the methodology of the MYT regulations. From a comparison of the calculation of the O&M escalation factor as provided by TPC-D and Rlnfra-D, one can see that the “actual point to point inflation” of the regulations has been interpreted differently by the two.

While Rlnfra-D has taken the average of the monthly inflation from April to March to arrive at inflation for the previous year, TPC-D has taken the Year-on-Year inflation for March 2015 (i.e. change in index in March 2015 over March 2014) as the inflation for the previous year. These give two very different values using the same regulations.

The Commission could have easily avoided such confusion by clearly spelling out the methodology assumed in its regulations and by directing the licensees to provide calculations based on the same at the TVS stage itself. However, the same was not done leading to different assumptions.

²⁷ Regulation 2.1 (1) defines Accounting Statement and states *“Provided that separate Accounting Statements shall be prepared and submitted to the Commission for each licensed Business in accordance with the Licence conditions, and for each regulated Business : Provided further that, in case separate Accounting Statements are not submitted for each licensed Business in accordance with the Licence conditions and for each regulated Business for the Financial Year (FY) 2016-17 onwards, the Petitions filed by the Generating Company or Licensee or MSLDC, may be rejected by the Commission after giving the Petitioner a reasonable opportunity of being heard”*. In addition, Regulation 5.2 states *“The Petitioner shall submit separate audited Accounting Statements along with the Petition for determination of Tariff or Fees and Charges and Truing-up under these Regulations.”*

6. Conclusion and implication for consumers

With low distribution losses, no load shedding, near universal metering and coverage, the stage was set for ushering in competition in Mumbai. However, close to seven years of parallel license operation, the changeover mechanism has failed to improve services or reduce tariffs. Thus, in spite of being an ideal candidate, competition has failed Mumbai.

While, the fact that power purchase planning failure is largely responsible for the high costs that Mumbai consumers pay, the argument cannot be that therefore, the licensees should simply sign new firm contracts for power purchase. Given the complexity of the legal and regulatory challenges faced by Mumbai, any solution, which approaches the problem from the point of view of only one stakeholder or a single issue, is bound to be suboptimal. Instead, what is needed is a comprehensive approach, which deals with all aspects of the challenge. Therefore, we suggest that any solution for the way forward should include the following key elements:

- Prudent and holistic power purchase planning
 - Based on rational demand assessment, which accounts for the trends in changeover and potential impacts of open access, net-metering, etc.
 - Transmission planning for the entire Mumbai region with detail analysis regarding the present availability and constraints and potential requirements after factoring in overall system level demand growth and possibility of sourcing generation from outside Mumbai
- Clear separation of wires and supply business
 - Ensuring universal supply obligation without duplication of network and with most economical use of existing wires
- More choice to consumers
 - Enabling provisions to encourage and accelerate open access and net metering along with changeover and switchover
- Clarity and certainty regarding tariff
 - Category-wise ceiling tariffs with a falling trajectory for the next 4 years and appropriately tapering cross-subsidy surcharge
 - No regulatory assets going forward
- Effective monitoring and ease of information availability and accessibility
 - Active tracking by the Commission of changeover, open access, net-metering, etc. along with capital expenditure and network rollout
 - All such data to be published through websites and updated on a regular basis, say monthly or quarterly.

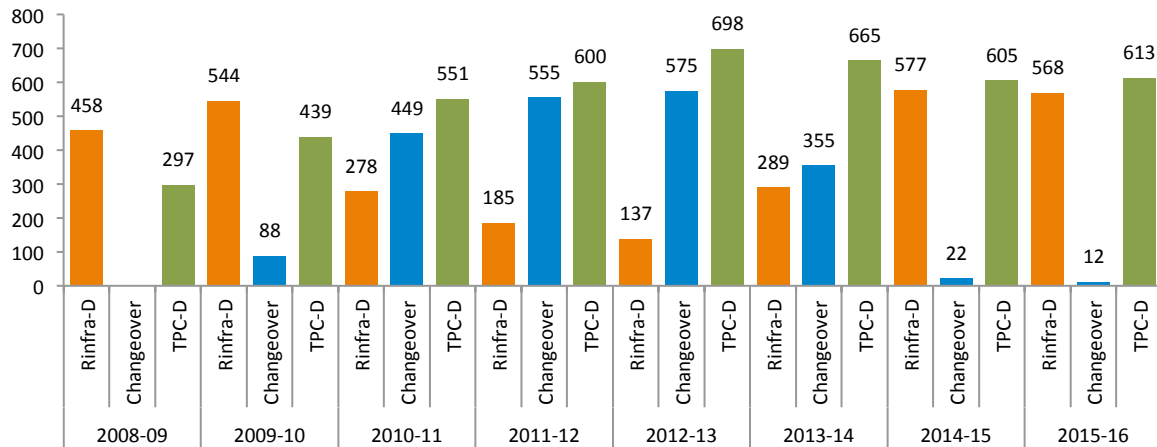
The above suggestions are for the entire Mumbai power sector, which includes RInfra and BEST, and not just for TPC-D. As mentioned earlier, these steps by themselves may not be sufficient to tackle the many challenges, but they will certainly help in developing a comprehensive approach for dealing with these issues.

Annexure 1: Movement of Sales and Tariffs

The following graphs give the movement of sales and tariffs for various categories of consumer

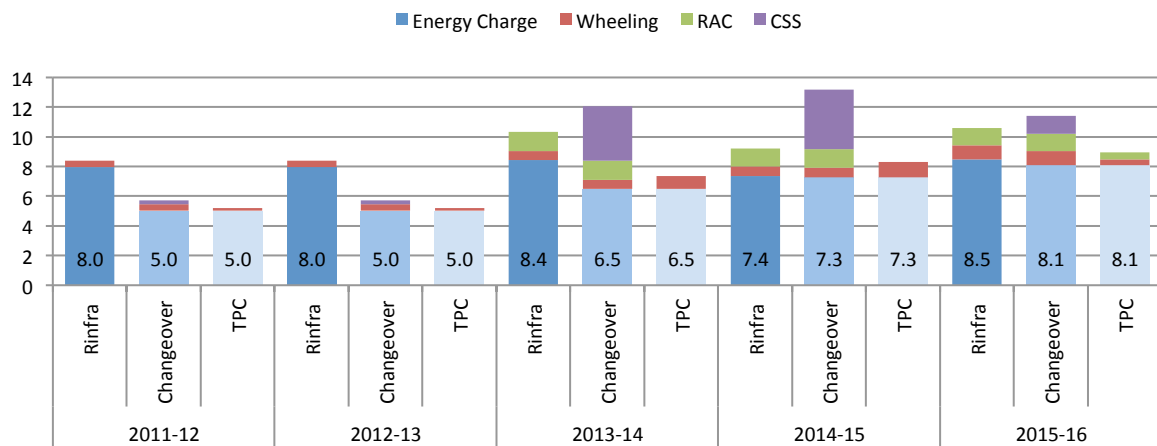
HT Commercial

Figure 15: Movement of HT Commercial sales



Source: Compiled from various TPC-D and Rinfra-D petitions. Sales figures have been taken from actuals given by licensees.

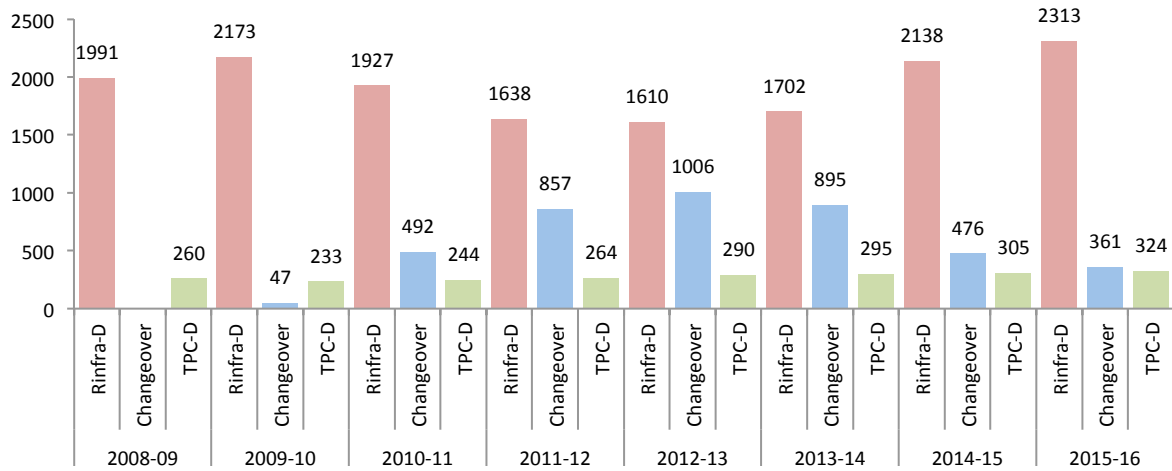
Figure 16: Movement of HT Commercial tariffs



Source: Compiled from various TPC-D and Rinfra-D petitions.

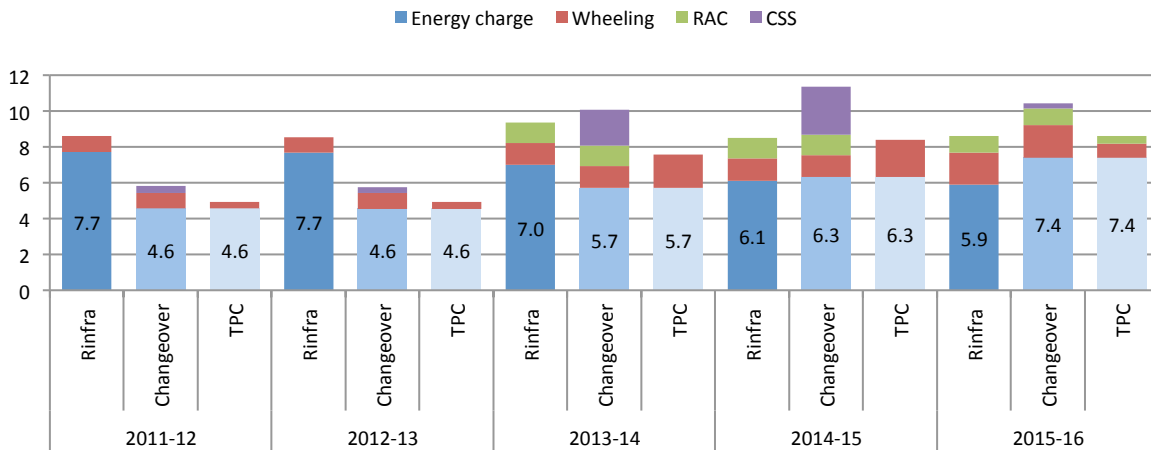
LT Commercial

Figure 17: Movement of LT Commercial sales



Source: Compiled from various TPC-D and Rinfra-D petitions. Sales figures have been taken from actuals given by licensees.

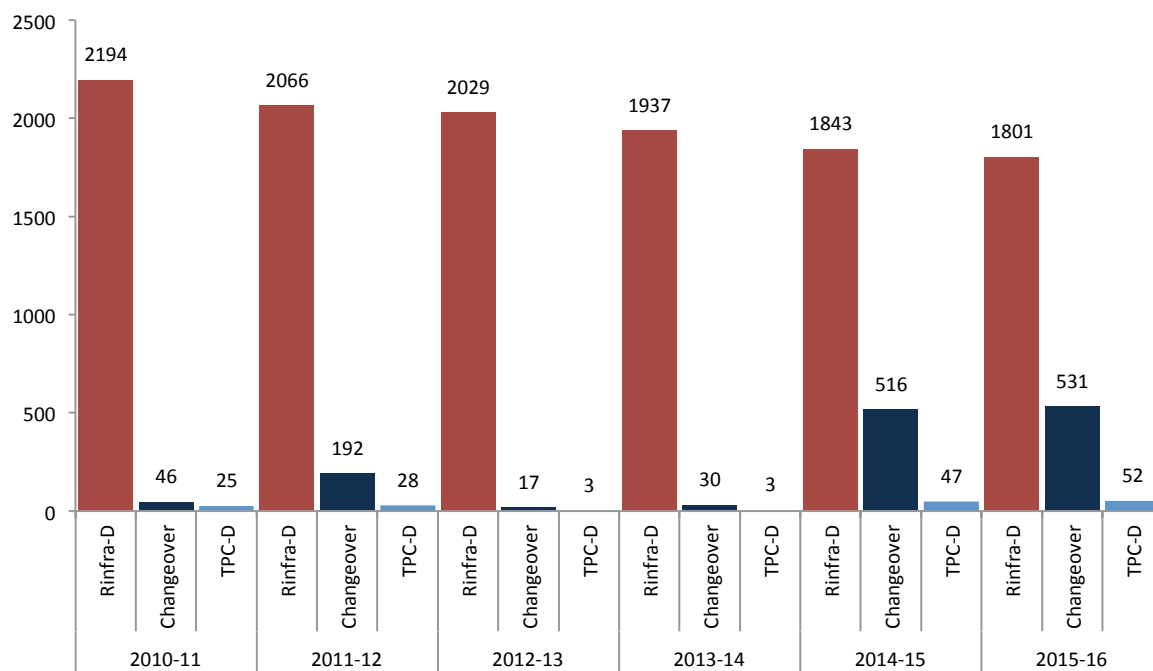
Figure 18: Movement of LT Commercial tariffs



Source: Compiled from various TPC-D and Rinfra-D petitions.

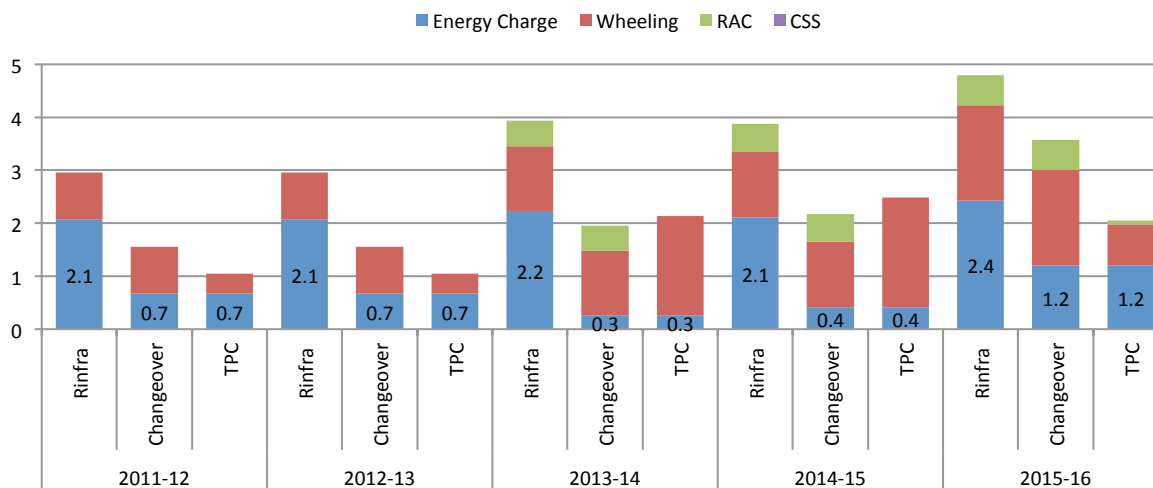
LT Residential (0-100)

Figure 19: Movement of LT Residential (0-100) sales



Source: Compiled from various TPC-D and Rinfra-D petitions. Sales figures have been taken from actuals given by licensees.

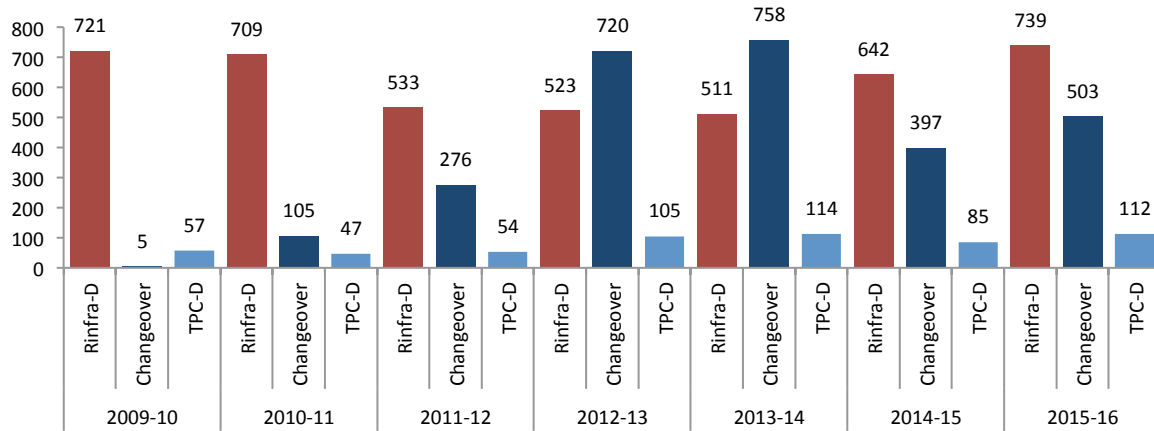
Figure 20: Movement of LT Residential (0-100) tariffs



Source: Compiled from various TPC-D and Rinfra-D petitions.

LT Residential (301 and above)

Figure 21: Movement of LT Residential (301 and above) sales



Source: Compiled from various TPC-D and Rinfra-D petitions. Sales figures have been taken from actuals given by licensees.

Figure 22: Movement of LT Residential (301-500) tariffs

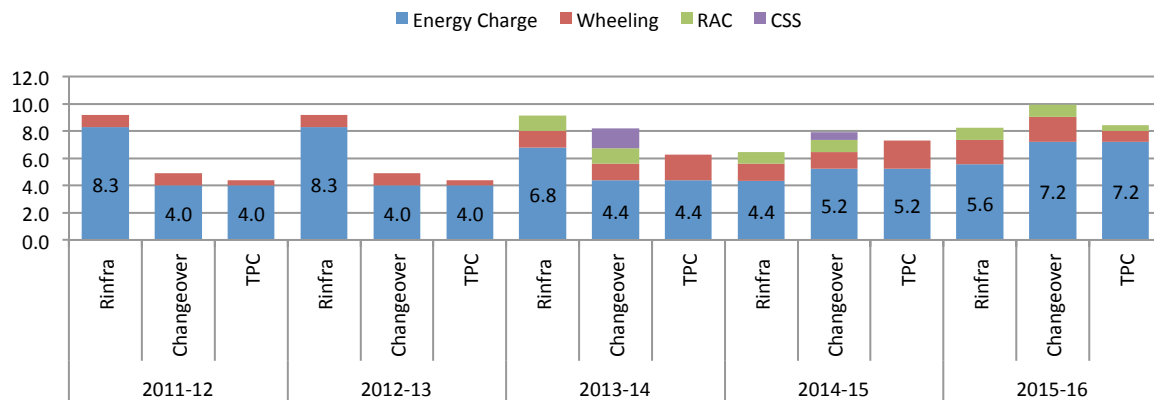
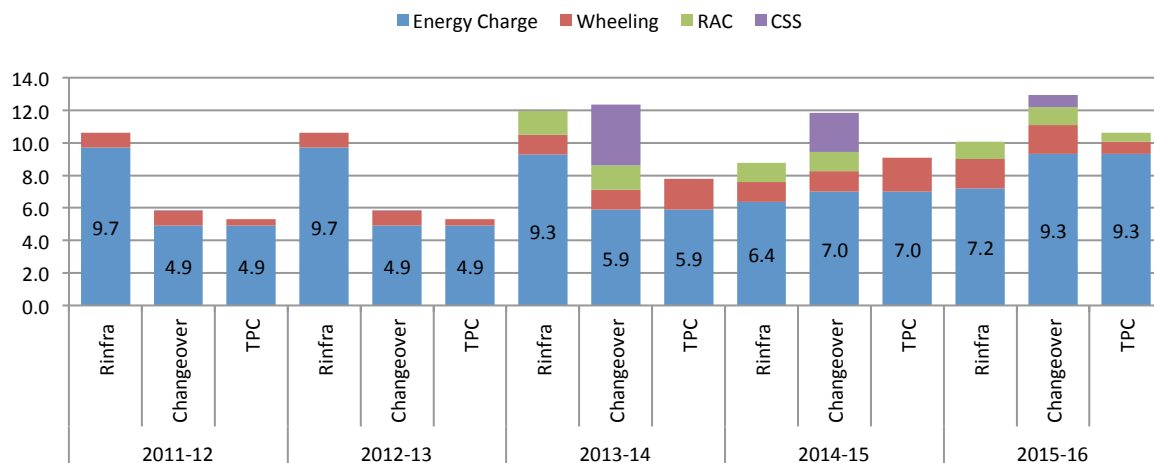


Figure 23: Movement of LT Residential (500 and above) tariffs



Source: Compiled from various TPC-D and Rinfra-D petitions.