

The Energy and Resources Institute

TERI-NFA Working Paper No. 21

teri



Electricity Governance in India: Regulatory Governance of Maharashtra Power Sector

Veena Aggarwal

March 2014

Acknowledgements

This paper was written as part of a project ‘Analyzing Global, Regional and National Energy Governance Structures’ under the Program of Activities, Framework Agreement between the Norwegian Ministry of Foreign Affairs (MFA) and The Energy and Resources Institute (TERI), briefly referred to as the Norwegian Framework Agreement (NFA). We would like to thank the Norwegian MFA for their support. We would also like to thank Mr Prabir Sengupta, Ms Anmol Soni and Ms Nagalaxmi Muthuswamy for providing very valuable comments on this paper.

Corresponding Author : Veena Aggarwal, Fellow at TERI, New Delhi.

Email: veenaa@teri.res.in

© TERI, 2014

Contacts

The Energy and Resources Institute
Darbari Seth Block
India Habitat Centre
Lodhi Road
New Delhi 110 003
Tel: + 91 - 11- 24682100 / 41504900

Table of Content

Abstract	Error! Bookmark not defined.
Electricity Governance in India: Regulatory Governance of Maharashtra Power Sector	6
Electricity Governance.....	6
Approach and Structure of Paper.....	7
Institutional Structure for Electricity	8
Maharashtra Electricity Regulatory Commission.....	9
Assessing Regulatory Performance	9
Regulatory and Governance Challenges in the Maharashtra Power Distribution Sector	10
Power Shortages and its Management	11
Issues in projection of Supply	12
Distribution Losses	15
Loss Reduction Trajectory in the First Control Period.....	15
Tariff rationalization	17
Trends in average tariff hikes.....	19
Agricultural Metering	20
Capital expenditure (Capex).....	23
Quality of Supply, Standards of Performance.....	25
Relation between regulator and government.....	26
Compliance of Directives.....	26
Timeliness in issue of tariff order.....	27
Regulatory Process: Examining Public Participation and Regulatory Capacity.....	30
Public Participation.....	30
State Advisory Committees.....	30
Public Hearings.....	31
Regulatory Capacity	31
Constitution of the Commission.....	31
Technical capacity	32
Financial capacity	32
Reference.....	35

Electricity Governance in India: Regulatory Governance of Maharashtra Power Sector

Electricity Governance

The Electricity Governance Initiative (EGI) of the World Resources Institute and Prayas, together, in early 2000 was one of the first attempts to understand and assess governance in the electricity sector in the backdrop of the distribution reforms envisaged for the sector. Their work sought answer to questions on how decisions are made rather than what decisions were made. In their expanded definition of governance, the roles of NGOs, the private sector, and citizens are important and legitimate; the ability to participate in governance rests not only in formal authority, but also institutionalized rules, norms, and understanding between actors (WRI, 2007) . They have argued that by strengthening electricity governance the processes, institutions, and actors that shape how such decisions are made, countries can develop more equitable and sustainable electricity policies. In their work in India they have developed an electricity governance toolkit that evaluates governance at broadly two levels: policy and regulation. It also agrees that operational implementation (involving utilities interaction with consumers) is also relevant. They added another dimension added was that of environment and social aspect to understand issues of environmental jurisdiction, minimum environmental standards, inclusive planning, etc.

The establishment of independent electricity regulatory commissions was seen as a major move in the Indian power sector towards better accountability and transparency. It was assumed that crucial issues of pricing, competition, and consumer interest could be best taken by a statutory authority that would not be dependent on the state government. The first electricity regulatory was set up in Orissa in April 1996 under the Orissa Electricity Reforms Act 1995. Subsequently, the Electricity Act, 2003 further defined the powers and functions of electricity regulatory commissions. Now, almost all states have functional Electricity Regulatory Commissions (ERCs). The North-east and the Union Territories have Joint ERCs.

In the early years of functioning of the electricity commission, some studies were undertaken to assess the effectiveness of regulatory commissions. Prayas surveyed 12 regulatory commissions to assess the extent of transparency and public participation in the regulatory process and assess resource and limitations faced by ERCs in their functioning. The survey concluded that though regulatory commissions have made a good beginning, further effort is needed for increased autonomy and accountability of regulatory commissions. It also mentioned that regulatory commissions need to be more participative and transparent and should remain sensitive to social issues (Prayas, 2003).

Subsequently, Dubash & Rao (2007), in 2007 examined electricity regulatory commissions in three states, viz. Andhra Pradesh, Karnataka, and Delhi. The study focused on the context and processes in the functioning of ERCs in these states. It examined the design of electricity reforms and the context for setting up the regulator. The decision-making process was also examined and perceptions of

effectiveness of stakeholder process were thoroughly analyzed. The major conclusions that emerged from the study were that the process of selection of regulators and regulatory capacity has hampered effectiveness; regulators have side step overtly political discussions and have exercised limited use of their power. The study concluded that stakeholder participation, though welcome, is overall weak and the impact of stakeholder participation falls short of a desirable ‘stakeholder model’ of regulation.

In a more recent attempt, Chitnis (2011) conducted a website survey to examine the performance of 19 regulatory commissions on select parameters. Appointments to key positions in ERC, transparency and accountability in communication with Government and public, attention to service quality and grievance redressal issues and efforts at encouraging public participation and enabling information access – all parameters were thoroughly analyzed. The study found that around 50 per cent of the key posts of Members, Chairperson and Secretaries are held by Administrative services officers, 26 per cent by staff of regulated utilities, and 15 per cent by PSU. The study also noted considerable delays in appointments to key positions in the SERCs. It also mentioned that Maharashtra was one of the few ERCs which regularly and timely published their annual reports. The limited transparency amongst many SERCs as regards communications with the government, formulation of regulations and functioning of State Advisory Committees was also noted.

Approach and Structure of Paper

This paper is guided by the electricity governance framework developed under the EGI initiative and an assessment of regulatory governance in three states by Dubash & Rao (2007). This paper, unlike earlier studies, focuses less on ‘regulatory process’ but on impact of regulation’. Study on impact is more appropriate at this stage of regulatory reform when electricity regulatory commissions have been in place for over a decade. This paper attempts to study regulatory performance on parameters such as reduction in cross-subsidy, regulatory in tariff determination, improved efficiency and prudence in cost estimation and increased competition. These were the major reasons why regulatory commissions were set up as part of the electricity reform process.

This paper focuses on studying the Maharashtra Power Sector. Maharashtra has the largest electricity sector in the country. Historically the SEB has been heavily politicized and its strong trade unions and public protests have been able to ward off attempts to privatize. Reforms in the sector have settled at unbundling of the SEB and formation of the Independent electricity regulator. The state power sector, like many other states has utilities which have significantly deteriorated in terms of physical and financial performance. The state has however also been witness to experiment with IPPs, competition in distribution (parallel license in Mumbai), appointment of urban franchisee and various load management initiatives. Importantly it also has an active and aware civil society which has continuously pressurized the state government, regulator and utility to improve the working of the utilities. The focus of this paper is on distribution segment and studies the working of Mahadiscom and the Maharashtra Electricity Regulatory Commission.

Institutional Structure for Electricity

Historically Maharashtra was served by one monolith – the Maharashtra State Electricity Board (MSEB). The annual turnover of MSEB in the year 2000-01 amounted to Rs 12, 500 crore, which is the highest among all SEBs, and is equivalent to the annual budget of some medium-sized states in India (Prayas, 2001).

Considered one of the best management boards in the country in the 1970s and 1980s, over the years, however, the performance has deteriorated. In 2001, almost 25 per cent of households in

Maharashtra did not have access to electricity. At the same time, those who were connected to the MSEB grid were unhappy with the frequent supply failures, erratic voltage fluctuations, and poor service from MSEB staff (Prayas, 2001). In the four years between 1995-96 and 1998-99, the state government had paid a total subsidy of Rs 1500 crore to MSEB. And, the Government subsidy for a single year of 1999-2000 rose to Rs 1300 crore (Prayas, 2001).

A major reason cited for the financial stress of MSEB was its decision to measure agricultural consumption on a flat rate. According to Prayas (2001), over the year's consumption of agricultural consumers and proportion of unmetered electricity grew at a rapid pace. At the same time, technical losses and theft also grew rapidly but was not acknowledged in official statistics. Excessive agricultural consumption was shown to disguise excessive inefficiencies in the system. Prayas (2001), also stated that agricultural subsidies benefit only a few large farmers and 80 per cent of farmers in the state, who did not have electric pumps, did not receive any subsidy. The Dabhol Project was another major reason for the distress of the MSEB and brought it to the verge of bankruptcy (ibid).

It was in this backdrop, that the state was pressurized into considering privatization as a means to restore the health of the SEB. However, all attempts in this direction, were met with stiff resistance from the workers union. So, it was decided to unbundle the monolith as an attempt at improving its working. In June 2005, the MSEB was unbundled into three entities for generation (MSPGCL – Maharashtra State Power Generating Co. Ltd), transmission (MSETCL – Maharashtra State Electricity Transmission Co. Ltd) and distribution (MSEDCL – Maharashtra State Electricity Distribution Co. Ltd.) along with a Holding Company. Barring Mumbai and a few cities served by private companies and franchisee, respectively, the MSEDCL undertakes electricity distribution for the entire state.

MSEDCL today supplies electricity to a staggering 1.93 crore consumers across the categories all over Maharashtra excluding the island city of Mumbai. There are about 1.43 crore residential, 31.70 lakh agricultural, 13.79 lakh commercial, and 3.63 lakh industrial consumers in the MSEDCL area which fetch an annual revenue of about Rs 34,000 crore (Mahadiscom)

Maharashtra Electricity Regulatory Commission

The High Court of Mumbai, in an appeal by the Thane Belapur Industries Association (TIBA) (on behalf of several industries' associations) protesting against the hike in its power tariff in September 1999, had ordered the state government to desist from announcing such unilateral

tariff hikes. It gave it two options: either appoint a state electricity regulatory commission following the central law (viz., Electricity Regulatory Commissions [ERC] Act 1998), or present the tariff hike proposal to the High Court. This led to the establishment of the Maharashtra Electricity Regulatory Commission in August 1999. Subsequent to the enactment of the Electricity Act, 2003, the powers of MERC were broadened to include issues of performance standards, grid code, etc.

Assessing Regulatory Performance

Prayas (2001) had noted that the three crucial lacunae in the functioning of MSEB were: lack of transparency, accountability, and participation. It noted that there was absolutely no procedure or mechanism to hold accountable those who make decisions or implement them. The public has no way of getting information on crucial questions regarding making or implementing decisions. It also noted that there is no space or scope for public participation in the decision-making process in the working of SEB (ibid).

Through a study of process-related parameters, this paper will examine how establishment of regulatory commissions have improved public participation and accountability.

Independent regulators were also set up with the aim for improving the performance of the utilities and for protecting consumer interest. This paper will examine the performance of MSEDCL on crucial performance parameters and delve into the action taken by regulator to improve the performance. In this evaluation, it is also necessary to reflect on how stringent a regulator can be and how does it take decisions judiciously based on the best interest of all stakeholders. For instance, Shunglu Committee (2011) in its report on the reasons for the poor health of utility stated that regulators often resort to various methods to avoid tariff hike, such as creating regulatory assets, setting very high performance targets, etc.

This paper examines regulatory and governance challenges in electricity distribution in Maharashtra, with particular reference to MSEDCL. It examines the effort made by the regulator in addressing these challenges and compelling the utility towards greater efficiency. The parameters for this analysis are divided into those concerning impact and those concerning process. The process parameters focus on the functioning of the regulator on parameters of good governance, i.e. public participation, regulatory capacity, regularity in issue of tariff orders. The impact parameters specifically looks at how regulator has over the a five year period (2007-08 to 2012-13) dealt with issues of power shortages, distribution loss, curtailing costs particularly capital expenditure, rationalizing tariffs, agricultural metering, monitoring quality of supply and promoting renewable energy.

Functions of the SERC have been specified under section 86(1) of the Electricity Act, 2003. Some of the specific functions viz-a viz the distribution utility and which are analyzed in this paper are given below:

- 1) Tariff determination for generation, supply and transmission and wheeling of electricity within the state (including wheeling charges and surcharges for open access consumers)
- 2) Regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources
- 3) Promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and setting renewable obligations targets
- 4) Specify or enforce standards with respect to quality, continuity and reliability of service by licensees

The Electricity Act, 2003 under Section 86(2) also lays out certain functions for the SERC with respect to the state government. These functions specified lay out the broad contours or the objectives around which the regulatory commissions need to work towards. These include:

- 1) Promotion of competition, efficiency and economy in activities of the electricity industry;
- 2) Promotion of investment in electricity industry;
- 3) Reorganization and restructuring of electricity industry in the State;
- 4) Matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that Government

Regulatory and Governance Challenges in the Maharashtra Power Distribution Sector

Historically, the Mahadiscom and the Maharashtra Power Sector was considered one of the best governed in the country. Gradually, however, financial losses of the discom mounted and as per the Shunglu Committee Report the accumulated losses during 2005-2010 were estimated at Rs 108988 crore (Shunglu Committee, 2011). Losses in 2010-11 stood at Rs 1533 crore but declined in 2011-12 to Rs 808 crore (PFC, 2013). There were news reports which suggest that the Mahadiscom is on the 'brink of a financial collapse and that, banks have refused them working capital loans¹. The 10 per cent ceiling of FAC has been identified as a main reason behind the same. There are also dues pending of more than Rs 400 crore from various distribution franchisee (Prayas, 2010),

The recent state power utilities rating carried out by the Ministry of Power in 2013 notes that one of the strengths of MSEDCL is the steady improvement in AT&C losses over the years on account of measures such as network strengthening, anti-theft measures and distribution franchisee scheme

¹ http://www.business-standard.com/article/finance/mahavitaran-s-loans-halted-112070400073_1.html

(MoP, 2013). This study also notes that the Discom has timely receipt subsidy support from the state government. On the downside, this rating also notes the significant dependence on subsidy support from state government , (rise in cost of power supply and continuing subsidized nature of tariff towards agriculture category), delays in tariff determination and true-up process as well as under-recovery in FAC in the past and short-term power costly power purchases.

In the subsequent section, this paper examines the major challenges currently affecting the Maharashtra sector, with specific focus on the distribution segment.

Power Shortages and its Management

Peak shortages in Maharashtra in the five years between 2007-08 and 2011-12 have been in the range of 20% - 25% and overall supply shortage has been in the range of 15% - 20%. Both peak and overall power shortage has been much higher in the state compared to all India average as is evident from the following tables.

From 2012-13, the deficits have come down sharply to 6.5 per cent peak shortage in 2012-13, and approximately 4 per cent peak shortage for the first six months of FY 2013-14 (April to November 2013). Similarly, the overall supply shortage was around 3.2 per cent in 2012-13 and 1.7 per cent for first six months of FY 2013-14. This indicates that in recent year or two, the situation has improved considerably.

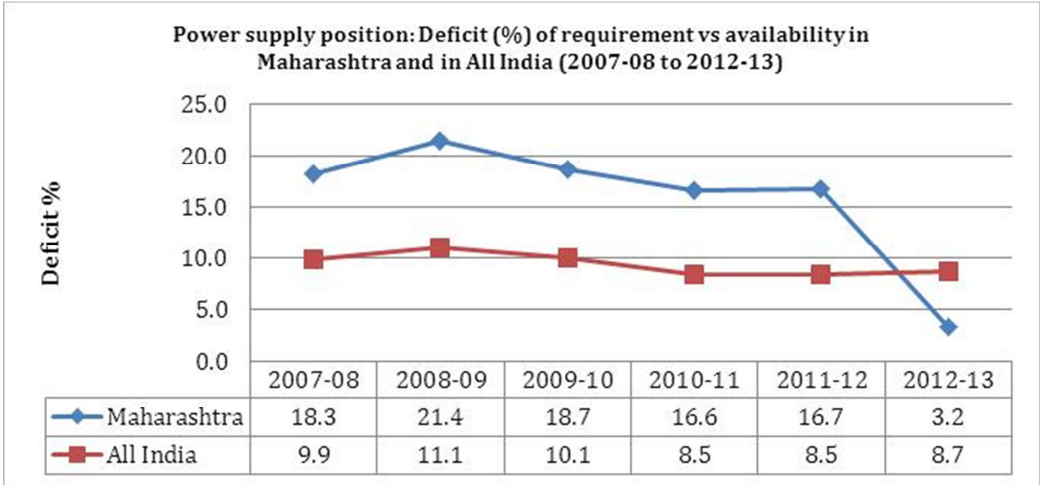


Figure 1: Power Supply Position in Maharashtra

Source: TEDDY & CEA

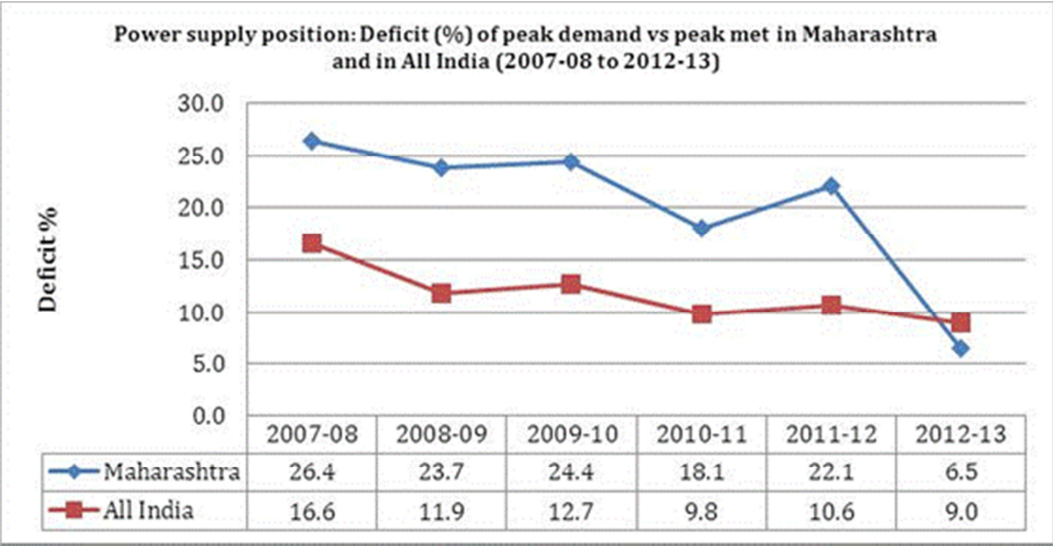


Figure 2: Peak Demand and Supply in Maharashtra

Source: TEDDY and CEA

Amongst large states; Maharashtra has had the highest deficits, both peak and annual, barring Madhya Pradesh for few years. Comparable states, in terms of size, like Andhra Pradesh and Tamil Nadu have come into focus in the last few years for their growing deficits but Maharashtra clearly has had much higher deficits. As a result of this growing deficit, the utility has had to undertake systematic load-shedding to the extent of 8-10 hours daily (see Box 1). Its power purchase cost has also increased rapidly in these years. In the next, this paper examines issues involved in managing demand and supply, its impact on ARR and the regulators response in tackling power deficit without significantly implicating costs and tariffs

Issues in projection of Supply

A study of stakeholder comments during the public hearings in course of the tariff determination process (and as available in the tariff orders) suggest that a major reason for increase in the cost of power purchase of the Discom is the less than the anticipated generation from the state generation company. On a number of occasions (years), the MSEDCL estimations from power procurement from different sources have not materialized and a result it has had to go in for unplanned short-term power purchase. For instance Annual Performance Review of 2007-08² showed that while the Commission approved 51691 MU from the state Genco, the actual availability was only 47488 MU. The power generation from the Ratnagiri Gas and Power Limited (earlier Dabhol Project) has also been unpredictable while the MSEDCL is committed to buying from it. In the APR 2007-08, it was found that while the Commission had approved 4075 MU from RGPPL for 2007-08, the actual availability was only 949 MU.

² Undertaken the subsequent year

In the first MYT order 2007-08 (MERC, 2012), the Commission recognized that there could be uncertainties in quantum of power availability and load shedding and it may be prudent to project the sales and power purchase quantum in the second and third years of the control period. This, however, defeats the aim of an MYT regime where projections are made for better planning. In the Business Plan for 2013-14 to 2015-16, the MSEDCL has submitted three different scenarios of power purchase, i.e., pessimistic, realistic and optimistic. Even in the tariff determination of 2012-13, the commission noted that in the past tariff orders the power purchase projected in the ARR has not materialized and that MSEDCL is directed to make realistic projection of power purchase in future ARR petitions.

While the MSEDCL has been criticized that its power purchase cost are high on account of lack of planning and entering into long term PPAs, in recent months, the criticism has been on making losses as a result of these long term PPAs. MSEDCL is reportedly³ being selling 300-500MW of power between 9pm and 6am every day at less than Rs 2 per unit while it is paying Rs 3.50 per unit. This is on account of the power purchase agreement with the Genco. Clearly there are issues in the projection of supply. In such a scenario, the Commission should also itself undertake a study to assess demand and supply in the state. Coal shortage, delays in environmental clearances and consequent delays in capacity addition are factors impacting other states equally and, hence, the Commission should also draw learnings from other states.

Box: 1 Load Shedding Protocol and the Role of Regulatory Commission

Historically, load shedding in the state was decided by MSEDCL. The MSEDCL protocol was appealed against in the State High Court for discrimination between urban and rural consumers. The High Court passed an order against such discrimination and this was challenged by MSEDCL in the Supreme Court. The Supreme Court in its May 2005 judgment ruled that "the load shedding protocol needs to be determined in consultation with Maharashtra Electricity Regulatory Commission". MSEDCL, since then, works out the load shedding in consultation with the Commission. An objective of involving the regulatory commission was to make the process more transparent and to provide space for public to participate. Subsequently, the MSEDCL filed an appeal before the Appellate Tribunal for Electricity (ATE) challenging MERC's jurisdiction regarding issuing such a protocol. The ATE in July 2009 upheld the Commission's jurisdiction and stated: "... there cannot be a blanket freedom to the appellant to operate its network without observing desired transparency in its operations. Further to the ruling, a committee was also formed comprising representatives from the Commission, MSEDCL, MSLDC and consumer representatives to deliberate upon certain implementation and other issues related to the load shedding protocol.

Source: Regulations and orders of MERC

In this sub-section, we examine the proposed plan of utility in dealing with the shortage and Commission's response to the rising power purchase requirement.

For the first MYT control period (2007-08 to 2009-10), MSEDCL anticipated deficit in the range of 5000-6000MW during the control period and expected to bring down this deficit in the range of 200-300 MW through capacity addition and through DSM measures. It projected daily load shedding of

³ http://articles.timesofindia.indiatimes.com/2013-08-26/nagpur/41453926_1_msedcl-ajoy-mehta-new-power-tariff

about 8 hours in 2007-08, 5.5 hours in 2008-09 and 5 hours in 2009-10. The ceiling of load shedding for agricultural consumers was proposed at about 15 hours (order February 2007). MSEDCL stated clearly that ‘it is meeting 60 per cent of the demand and the balance load is being shed’. Clearly, MSEDCL had anticipated a huge deficit much in advance.

Table 1: Deficit projected by MSEDCL 2007-08 to 2009-10 (MW)

	2007-08	2008-09	2009-10
Demand	15993	17057	18191
Availability	9996	11634	12853
Deficit	5997	5423	5338

Source: MYT Order 2007-08 to 2009-10

In this MYT order 2007-08, the Commission reiterated that the crisis could have been avoided if the utility had taken measures for ‘Projection of long-term demand, planning for long-term power purchase, measures for agricultural feeder separation and substantial DSM measures. The MERC took serious view on lack of effort of MSEDCL in handling this deficit and threatened to put in place adequate disincentive in case the MSEDCL is not able to improve the situation (measures such as linking RoE to average hours of supply).

The Commission also ‘censured the performance of MSEDCL in matter of load shedding in the MYT order (MERC , 2007). It stated that instead of arranging for required power purchase, utility is increasing continuously the hours of load shedding—8 hours in 2005 order to 15 hours in February 2007 order.

Over the years, the Commission has been stringent with regard to the costs allowed for power purchase. In the true up of 2007-08, the Commission disallowed substantial amount of costly power purchase. From both traders and from Kawas and Gandhar, it considered less than half the generation amount that the petitioner sought. The table below explains this further:

Table 2 : Power Purchase, True Up 2007-08

Category	Proposed		Approved	
	Quantum (MU)	Total Cost (Rs Cr)	Quantum (MU)	Total Cost (Rs Cr)
Total Cheap	73751	13546	73865	12816
Total Costly	5199	3051	3615	2147
Total Power Purchase	78950	16597	77480	14963

While determining the tariff for 2008-09, the Commission did not consider any power purchase from traders but agreed to allow the petitioner purchase from the source in case of actual shortage during that year. It, however, asked MSEDCL to approach it before undertaking any such purchase of power from traders. In the tariff determination for 2009-10, the Commission again did not consider any power purchase from traders though the Utility had considered more than 3000 MU from IEX at a price of Rs 9 per unit.

Distribution Losses

Unlike, most other regulatory Commissions, MSEDCL still reports on distribution losses and not Aggregate Technical and Commercial Losses (AT&C). During the review of the MYT petition for 2007-08 to 2009-10, the Commission had asked MSEDCL to submit a break up of losses in technical and commercial. MSEDCL had submitted an approximate break up of losses for MSEDCL as a whole (not circle wise) as follows: Commercial losses - 17.14 per cent, technical losses - 15.27 per cent and total distribution and losses 32.4 per cent for 2006-07. MERC had observed that commercial losses were comparatively higher and could be reduced through a ‘more focused drive and strong penal action against connivance of MSEDCL’s employees’. The Commission also opined that reduction in commercial losses would not require significant capital investment.

Loss Reduction Trajectory in the First Control Period

Since the MSEDCL was able to reduce distribution losses by 2 per cent over six months in 2006-07, the Commission determined a trajectory of 4 per cent loss reduction during the MYT period. The Commission estimated the opening loss level for the MYT period, i.e., end of 2006-07 to be 31.6 per cent. On true up of 2006-07, the losses were finally accepted at 30.2. The following table gives the trajectory of loss reduction as determined by the Commission in the MYT order 2007-08 -2009-10 and the actual loss levels accepted by the Commission on true up.

Table 3: T&D Losses: Targets and Achievements of MSEDCL

Year	Loss Reduction Trajectory (%)	Actual Losses on true up(%)	Difference (%)
2007-08	26.2	24.15	2.05
2008-09	22.2	22.24	-0.04
2009-10	18.2	20.6	-2.4

Source: Tariff orders for MSEDCL

As can be seen from the Table, the MSEDCL over-achieved the target by 2 per cent in the first year of the three-year control period. In the next year, it managed to meet the target but for the last year, i.e., 2009-10 it expressed its inability to meet the prescribed target.

For 2007-08, the Commission estimated a gain of Rs 176 crore for MSEDCL as part of sharing of profits from loss reduction. For 2008-09 (in true up), the MSEDCL claimed it had overachieved its loss target by 0.02 per cent at 21.98 per cent as against a target of 22.2 per cent. The commission, however, re-estimated that the loss levels were higher at 22.24 per cent. For 2009-10, MSEDCL had asked that loss trajectory be brought down to 1 per cent from 4 per cent claiming 'inability to achieve further incremental loss reduction beyond current loss levels'. It had also quoted the Abraham Committee Report which had recommended that a loss reduction of 2 per cent should be considered for utilities where existing losses were around 20% - 30%. At that stage, Prayas, one of the stakeholders had argued that there were a number of circles where losses were higher than 30 per cent and, hence, there was still scope for significant loss reduction. The Commission, however, maintained the trajectory as set in the MYT order, i.e., that loss levels in 2009-10 be brought down to 18.2 per cent.⁴ The Commission had strongly argued its decision stating that comparable states like Gujarat and Andhra Pradesh had lower loss levels in 2009-10. It also referred to circles where distribution losses were still very high. Around 11 circles, comprising 28 per cent of all circles had losses higher than 30 per cent in 2008-09. For 2010-11, the MERC took a less firm stand and considered loss of only 1 per cent (i.e., 17.2%).

During the course of the public hearing for 2011-12 and 2012-13 (MERC, 2012), a number of stakeholders expressed concern against inadequate attention to agriculture metering and billing which has allowed the MSEDCL to 'understate losses'. An authorized consumer representative stated that agricultural consumer readings are never taken by MSEDCL and loss levels are manipulated to report lower losses (MERC, 2012, p. 29). However, in this order the Commission much like for 2010-11, took a lenient view on the distribution losses of MSEDCL. It acknowledged MSEDCL's concern that reduction in distribution loss levels beyond a certain level is difficult to achieve. It approved a reduction of 1 per cent in loss levels for 2011-12 and 0.5 per cent in 2011-12. These losses were approved as proposed by the utility, at 16.27 per cent for 2011-12 and 15.77 per cent in 2012-13.

The following table compares AT&C losses of Maharashtra Discom with that of comparable states. These figures are presented below to reflect on the Commission's less stringent view on the reduction in losses. From the table below, it appears that comparable states particularly Andhra Pradesh and Gujarat have been able to reduce their AT&C losses much more significantly.

⁴ This was challenged by MSEDCL in APTEL

Table 4: AT&C Losses in Select States AT&C losses (%)

	2009-10	2010-11	2011-12
Maharashtra	25.02	23.3	21.63
Andhra Pradesh	16.43	17.5	15.27
Gujarat	22.81	16.89	19.26
Tamil Nadu	18.87	19.49	19.88
All India	26.78	26.04	27

Losses are aggregate of all state discoms

Source: PFC, 2013

Tariff rationalization

The National Tariff Policy, 2006 under Section 8.3.2 recommends ‘that for achieving the objective that the tariff progressively reflects the cost of supply of electricity, the SERC would notify a roadmap within six months with a target that latest by the end of year 2010-2011 tariffs are within $\pm 20\%$ of the average cost of supply’. The Commission submitted a report on ‘Roadmap to reduce cross subsidy in Maharashtra’ to the Government of Maharashtra on 21 June, 2012 (MERC, 2012) for its consideration. This is, however, yet to be finalized by the state government. Mercadoes, 2010 in the report prepared for the Commission on the roadmap for cross subsidy reduction suggests that if the entire cross subsidies that are being presently received by the subsidized categories were to be replaced by direct subsidies the existing level of support of Rs 1650 crore (only for MSEDCL) by the state government could increase to around Rs 4700 crore. Sudden withdrawal of cross subsidy would be undesirable from the perspective of the state government as it would mean significant increase in budgetary support without giving the state government time to raise additional resources for funding this support.

The following table tracks the proportion of the average cost of serve that is covered by the prevailing tariff across five years for major consumer categories. Since the state still does not have voltage-wise cost of serve estimates, the average cost of supply is considered across all categories. No consistent pattern seems to have emerged over time. While effort was made towards convergence towards cost of serve till 2008-09 and 2009-10, thereafter tariffs have moved away from cost of serve

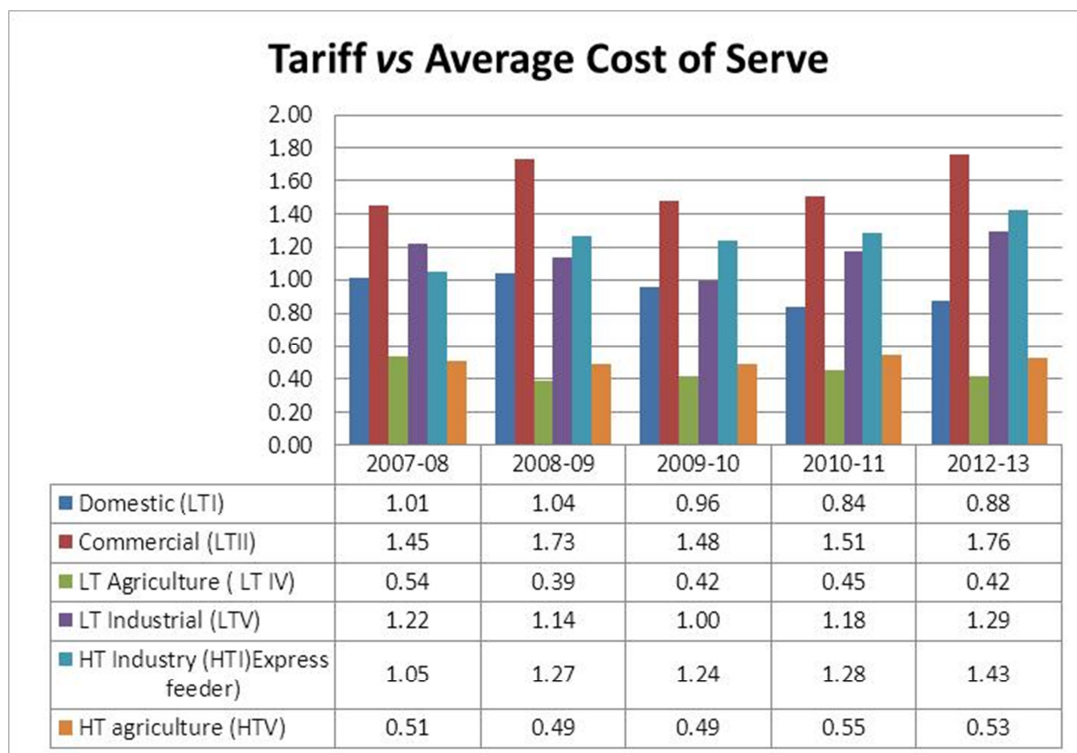


Figure 3: Tariff Vs Average Cost of Serve for MSEDCL over the years

Source: Tariff Orders for MSEDCL issued by MERC

In the following section, the paper examines how the regulator has dealt with tariffs for major categories over a five-year period. It is noted that most of the decisions around changes in tariff for any category of consumer is done in consultation with the government, both formally and informally.

The **domestic consumer category** has seen a decline in the recovery of cost of serve in the years 2009 -10 and 2010 -11, particularly in 2010 - 11 when average billing rate was only 84 per cent of average cost of serve. However, it abides broadly with the NTP which allows for difference of up to 20 per cent from cost of serve. In most years, the tariff hike allowed has been in the range of 1% - 4%. In 2012-13, the hike was 9 per cent but since it came after two years, on an average the hike was about 4 per cent annually. In 2009-10, MSEDCL asked for a hike of 32 per cent for the Domestic Category but the Commission allowed approximately 1.5 per cent. In 2011-12, utility proposed hike of 14 per cent but only 1.66 per cent was allowed. For 2012-13, utility asked for a hike of 22 per cent but was allowed 9 per cent. While, overall the Commission has allowed a much lower revenue gap than projected, it is notable that hike in domestic tariffs have not been significant. These hikes, however, do not consider the monthly fuel price adjustment as a result of which prices paid by retail consumers are automatically revised upwards.

LT agriculture has seen a gradual decline with average billing rate at around 40% - 45% of cost to serve. For 2007-08, LT agriculture tariff were retained at the same level. For 2008-09, the Commission did not increase agricultural tariffs and in fact marginally reduced the LT agricultural tariff by 2 paise. In 2009-10, the Commission again maintained the tariffs at the same level as the

previous year. In 2010-11, the utility proposed a hike of 15% for agriculture and was allowed a 6 per cent hike. This brought agriculture to cover 45 per cent of the cost of serve for the year. In 2012-13, the utility asked for a hike of about 4 per cent in agriculture but 9 per cent was approved. In most of the tariff orders, the Commission has argued that agriculture receives only 10-12 hours of supply daily and hence tariff for this category should not be increased.

LT Commercial (LTII) is the highest paying amongst the major categories, much ahead of industry. While in 2007-08, it covered about 1.45 times the cost of serve, by 2012-13, this had increased to 1.76 times the cost of serve. Barring 2008-09, the hike has been on an average around 5.5 % - 6.5% but in recent years, the hike proposed by utility has been significantly higher and mostly not allowed by the Commission. For instance in 200-10, the utility asked for a 46 per cent hike but was allowed only 6.44 per cent hike. In 2010-11, utility asked for a hike of 18 per cent but was allowed only 6.6 per cent.

In case of **Industry**, two categories, one in **HT** and another in **LT** were examined. In the 5-6 year period from 2007-08 to 2012-13, the tariff has till 2009-10 converged to cost of serve and in fact in 2009-10, tariff was equivalent to average cost of serve. Subsequently, tariffs have again moved upwards and in 2012-13, tariff was approx. 1.3 times cost of serve. Average tariff hike for this category has been moderate and rose at the maximum in 2010-11 by 8.84 per cent. Barring 2012-13, the tariff hike has also not been much different from what was proposed by the utility. In 2012-13, the hike was 5.7 per cent while the utility asked for a hike of 10.74 per cent.

For HT category, the HT Industry: Express Feeder (HTI) was considered. This category saw a continuous increase in terms of tariff vs cost of serve. While in 2007-08 this category covered 1.05 times cost of serve, by 2012-13, this has increased to 1.43 times cost of serve. the per cent of tariff hike has fluctuated hugely from 2 per cent in one year to approximately 25 per cent in another. In some years, there has been a significant difference between the tariff hike proposed and approved. For instance in 2009-10, the hike proposed was 44 per cent but 8.2 per cent was allowed. Similarly in 2010-11, the hike proposed was 14 per cent but allowed was only 2 per cent. In 2012-13, the hike allowed was 10.74 per cent which was what the utility had also proposed.

Trends in average tariff hikes

In the years from 2008-09 to 2012-13, barring the last year the tariff hike has been moderate compared to what was proposed. This hike, however, reflects only part of the picture as there is a monthly FAC which increases tariff in proportion to increase in fuel price. The maximum hike was asked for in 2009-10 of around 30 per cent by the utility. The MSEDCL claimed that only part of this could be attributed as the gap for 2009-10 while the rest emerged from true up and review of earlier years. Stakeholders had pointed out that the large increase was on account of not proposing a reduction of T&D loss by 4 per cent, projection of higher power purchase from traders and lesser from GENCO, and indiscriminate capital expenditure. The Commission finally allowed a revenue gap for FY 2009-10 as Rs 1156 crore as against Rs 7976 crore estimated by the MSEDCL. The

Commission also observed that in view of stakeholders, a major reason for hike in tariffs is the steep increase in the asset base every year which increases the returns on asset base.

Table 5: Average Tariff Hike for MSEDCL over the years*

	Proposed	Approved
2008-09	19.36%	6.76%
2009-10	29.72% ⁵	4.20%
2010-11	13.90%	3.03%
2012-13	17.68%	16.48%

*It is important to note that this hike does not take into account the hike on account on Fuel price adjustment which is an automatic pass through every month.

MSEDCL/MERC has not estimated voltage-wise cost to serve. All comparisons of reduction in cross-subsidy has been estimated based on the average cost to serve. MERC has reprimanded the utility during the course of the public hearing for not providing details on voltage-wise cost of serve.

It is also observed from the tariff orders, that while reviewing the tariffs every year, the Commission has not reasoned in its order, as to why it decides to take a particular stand for any category. It has generally used a broad argument that it would like to avoid giving a tariff shock to consumers. In the tariff order for 2009-10, the Commission did not approve any hike in agricultural consumption. The argument put forth was, since quality of supply to agricultural consumers has not improved, hence tariffs cannot be increased. In case of subsidizing categories, in response to stakeholder comments, the Commission in the order for determination of 2009-10 tariff remarked that ‘the average cost of supply has been increasing steadily, the average tariff increase required to meet the revenue gap is also increasing, and hence, subsidizing consumers have not been able to experience tariff reduction in absolute terms⁶’. At that time the Commission had remarked that it will strive to achieve the target of +20 of Average CoS by 2010-11.

Over all, while till 2008-09 and 2009-10, an effort was made for for coverage of each category towards cost of serve. Subsequently, the cost recovery has moved again from cost of serve. For instance, in case of domestic consumers, the recovery of cost of serve has progressively declined since 2009-10. Commercial and industry has increased and agriculture merely recovers 40 % - 50% of cost of serve. Barring domestic, no other categories is in the range of +-20% of cost to serve.

Agricultural Metering

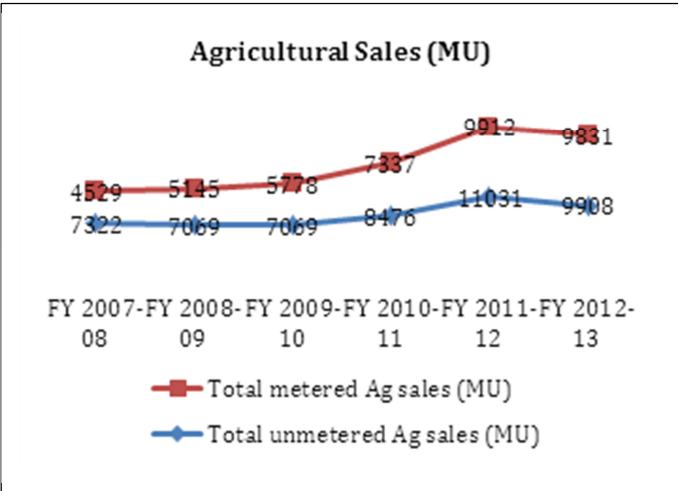
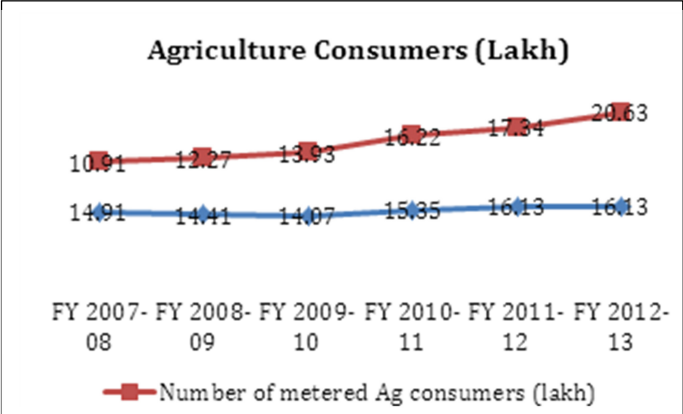
Measuring agriculture consumption is a concern for the state. By its own admission about half the total agricultural consumers are unmetered (MYT Business Plan, 2015), i.e., of the 33,64,659

⁵ These are as per revised supplementary petition filed by MSEDCL. The first petition proposed hike of 36.6%

⁶ Page 33 of 249, case no 116 of 2008

agricultural connections, 1,766,335 are un-metered (Ibid). The following figures summarize the trend in growth in metered and unmetered agricultural consumers and consumption over five years.

Figure 4: Agricultural consumers and sales over the years for MSEDCL



The number of unmetered agricultural consumers and consumption has grown at a CAGR of 1% and 5% respectively while the number of metered agricultural consumers and consumption has grown at a CAGR of 11% and 13% respectively. It is notable, however, that in absolute numbers, the unmetered agricultural base has grown which suggests that unmetered connections are still being provided despite Commission order since 2000, to not provide connections without meters.

A number of stakeholders have repeatedly claimed that the MSEDCL over-reports agricultural consumption in order to show lower T&D losses and also to claim subsidy benefit from the state government. Consumers have demanded feeder separation so that rural consumption going into agriculture can be separated from the domestic consumption. This feeder separation is yet to happen in the state unlike many other states, which have benefited from such initiatives.

The MERC had directed MSEDCL in 2000 to provide new connections on metered basis only, and to install meters for all consumers within three years. In March 2000, the MSEDCL had 18,23,629 agricultural consumers. The MSEDCL did meter a large number of consumers but also continued to provide unmetered connections. Even in recent years, MSEDCL released power supply without meters to 99,888 agricultural consumers in 2010-11 and 90,419 consumers in FY 2011-12. (28 per cent and 43.4 per cent of total agricultural connections released in the respective financial years). In response to MERC on the delay in metering, MSEDCL stated that metering had been delayed due to opposition of consumers and acute shortage of good quality three-phase static energy meters. It also acknowledged that along with installing meters, readings meters for agricultural consumers is also a problem (MERC, 2012, p. 263). It found it unviable to meter all agricultural consumers but instead suggested metering consumers at the feeder level. The Commission, however, still insisted on metering all consumers.

For 2011-12, the MSEDCL accepted that it has released new unmetered agricultural connections. As per Prayas, 2013 (Prayas, 2013) the Commission has not analyzed/verified, MSEDCL 'inability' to provide metered connections. The Commission has not conducted an independent analysis of the 'index' used for estimating agricultural consumption. Some experts opined that there is 'political pressure' by large farm lobbies on the Discom not to meter agriculture consumers.

Recovery from agricultural consumers is also low. Arrears from agriculture stood at Rs 5953 crore as on 31st March 2012 and comprised around 40 per cent of the total arrears of the Discoms. Such high level of receivables adversely impacts the finances, more specifically, working capital of the Discoms. The Commission in the tariff order dated August 12, 2012 did observe that the MSEDCL has reported liquidity problems affecting its working capital and strictures from banks to deny financing of working capital.

There are also concerns regarding data on agricultural metering and consumption. The petition of MSEDCL for 2013-14 could not be processed as objectors have contested data provided by the MSEDCL on agriculture consumption⁷. Newspaper reports indicate that the agriculture consumer data showed rural sub-divisions reporting losses below 10 per cent and some rural subdivisions have losses in negative. Showing higher consumption for agriculture helped MSEDCL show lower losses and claim higher subsidy from the state government for agricultural consumers⁸. During the 2nd MYT, the Commission did not consider any increase in number of unmetered agricultural connections. (2013-14 to 2015-16). The Commission is reportedly carrying out a study for assessing sales of for un-metered agriculture consumers of MSEDCL.

⁷ http://articles.timesofindia.indiatimes.com/2013-07-08/nagpur/40442574_1_msedcl-ajoy-mehta-power-tariff-hike

⁸ http://articles.timesofindia.indiatimes.com/2013-07-11/nagpur/40513601_1_msedcl-vp-raja-pratap-hogade

Capital expenditure⁹ (Capex)

Regulating Capital Expenditure has become a major issue for regulatory commissions. Capital Expenditure, impacts expenditure significantly as it adds to the return on regulated rate base, annual O&M expenditure and depreciation allowed. There is a major incentive for utility to show higher expenditure as it allows for higher profit for the utility. Capital expenditure is, however, needed for upgrading infrastructure of the utility in order to provide better quality supply. The regulator has to ensure close scrutiny that the proposed investment is actually made and more importantly has a significant positive impact on the quality of electricity supplied.

The following table compares capital expenditure of Mahadiscom in the last few years vis-a vis states of similar size. As can be seen the expenditure for 2010-11 and 2011-12 is way higher than the other two states.

Table 6: Capital expenditure of Discoms in Select States(Rs cr)

	2009-10	2010-11	2011-12
Maharashtra	2619	6591	6613
Andhra Pradesh	1941	1560	2016
Gujarat	1299	1324	1989

Source: PFC report

Aggregate for all Discoms for Andhra Pradesh and Gujarat

Table 7: Capital Expenditure Proposed, Approved and Actual for MSEDCL (Rs cr)

	2007-08			2008-09			2009-10		
	Proposed	Approved	Actual	Proposed	Approved	Actual	Proposed	Approved	Actual
Capital expenditure (Rs cr)	8398.85	1264		7890.31	1080.91		1321.83	524.58	
Capitalization (Rs cr)	5955.07	1215.46	463.16	7945.78	1414.03	941.71	4072.47	1026.93	2064.97

⁹ The details of capital expenditure exceeding Rs.10 Crs are required to be submitted to MERC for approval as per Regulation 71 of the MERC (Terms & Condition of Tariff) Regulations 2005. DPR of such schemes is to be submitted separately with details regarding the scheme and cost benefit analysis of the same. The schemes with capital expenditure less than Rs. 10 Crs i.e. Non-DPR schemes do not require prior approval and such capital expenditure is approved along the ARR for the respective year.

The above table shows the capital expenditure proposed and approved by the Commission for the three year first control period from FY 2007-08 to FY 2009-10. It also shows the actual capitalization approved by the Commission during the true up of respective year. The Commission had been very carefully in allowing capital expenditure. Of the aggregate capital expenditure proposed over the threeyear period, the Commission only allowed approximately 16 per cent. The subsequent section discusses in detail how the Commission has considered the expenditure during these years.

For the first MYT period, for three years, the MSEDCL projected capital expenditure of Rs 17611 crore. The Commission referred to schemes for Infrastructure Works Plan which accounted for 78 per cent of the outlay. It asked for better scrutiny as the Commission was of the view that these had been submitted without proper verification. The Commission finally approved only 7 out of 37 schemes that were resubmitted claiming that it had curtailed capital expenditure by around 25% to 30%. It also asked utility to maintain accounts of scheme wise capital expenditure and it also asked utility to formulate milestones for progress and submit quarterly report on compliance.

On a number of occasions, during the public hearings, many stakeholders have raised concerns before the regulatory commission over excessive capital expenditure. They have contended that, ideally, if the capital expenditure was of benefit, the tariff for subsequent years should come down.

The Commission in turn has expressed concerns in the orders, regarding MSEDCL's capital expenditure and proposed capitalization. In the order for APR 2007-08, the Commission observed that despite asking, MSEDCL has not furnished data on actual status of capital expenditure and capitalization for FY 2007-08. It opined that "given the ambitious target of capital expenditure that MSEDCL has set itself, MSEDCL's inability to track scheme-wise capital expenditure is not too comforting". In the tariff order for 2010-11, while truing up the expenses for 2007-08, the Commission had clarified that as MSEDCL had not submitted detailed reports on cost /benefit analysis, the Commission did not consider any revision in capitalization in FY 2007-08 (MERC, 2009, p. 135)

In the tariff order for 2009-10, the Commission undertook a detailed analysis of the capital expenditure and capitalization of the MSEDCL for its various activities, i.e., generation, transmission and distribution. The Commission noted that GFA increased by around 19 per cent in generation, 67 per cent for transmission, and by 124 per cent in the distribution business. The Commission also noted that as an integrated entity, during 2004-05 and 2005-06, the total asset addition every year was around Rs 900 - 1000 crore, whereas in 2008-09 and 2009-10, each of these business were individually adding assets of more than this amount every year on an average (MERC, 2009, p. 153). It noted that this increase was not commensurate either with the increase in sales or increase in demand in MW served. It was also noted by the Commission that 'while utilities indicate several quantifiable benefits at the stage of obtaining in-principle agreement for the DPR schemes, the utilities are not able to substantiate the benefits once the capital investment is actually undertaken and the assets are added to the GFA. As a result, costs and hence tariffs are increased but the expected benefits to the system do not accrue. The Commission also asserted that in-principle approval should not be construed as final approval for ARR purpose and the scheme would be open for scrutiny during the tariff determination process after implementation of the scheme.

In the APR of 2008-09, the Commission allowed Rs 941.71 crore as capitalization against the MSEDCL submission of Rs 2859.59 crore. In determining the tariff of 2009-10, the Commission approved Rs 1297.73 crore against the MSEDCL revised submission of Rs 5821.43. Clearly the Commission, in this case, had taken a strong stand. Similarly, the Commission considered capitalization of only 50 per cent against the approved DPR schemes from FY 2008-09 to FY 2010-11 (on ad hoc basis). In the case of non-DPR schemes, only up to 20 per cent of the DPR schemes were considered.

Quality of Supply, Standards of Performance

The last Standard of Performance (SoP) Regulations was issued in 2005 and it has not been revised till date even though comments were sought in 2010. In April 2013, the MERC had once again circulated a drafted SoP regulation and sought feedback from all stakeholders. The regulations have, however, not been finalized.

According to Prayas, “no report has been published by the Commission reviewing actual compliance and changes in supply and service quality, if any, although this is statutory requirement according to section 59(b) of the Electricity Act 2003.” (Prayas, 2013). There is no information available on whether the MSEDCL has paid penalty for non-compliance with the SoPs. The view of some stakeholders is that no penalty is levied on MSEDCL on account of pressure from the state government.

For MSEDCL, a report on compliance of standards for 2010-11 is available on the website of MERC. The compliance, over 95 per cent in case of all standards, shows some concern on the veracity of the claim. As of now, there is no stipulation for independent evaluation of claims by a third party. The Commission merely accepts the data provided by the utility.

A number of stakeholders have raised concerns on quality of supply (differences in load shedding between different areas, old meters, frequent power tripping, and low voltage) during the public hearings on the ARR petitions. In the first MYT order, the MERC expressed dissatisfaction with the MSEDCL management of revenue collection cycle (metering, billing, and collection). It also asked the utility to consider alternative modes of payment kiosks, collection boxes, through internet, etc (MERC, 2007). The Commission also observed issues with the billing software through its own independent verification of bills issued by MSEDCL (ibid).

In the MYT order 2007-08 to 2009-10, the Commission observed that MSEDCL has not submitted any specific data on reliability indices. Subsequently, the APR of 2008-09 did observe that the MSEDCL had recently commenced submission of monthly reports on reliability indices at the circle-level and are being analysed by the Commission.

In the APR for FY 2007-08, number of consumers, mostly large industry, had raised issues in billing—not regularly following monthly billing cycle, issues in interpretation of bill. The Commission had ruled that MSEDCL should take note of this.

Relation between regulator and government

During the earlier years of the establishment of the regulator, the state government did interfere, declaring concessions to power-loom consumers (first revision) and prescribing tariffs for various categories (second revision) (Prayas, 2003). At this stage a legal opinion was sought from the state and the state advocate general opined that the state government's policy directives should be treated only as a guiding factor (amongst other factors), and it would not be binding on the Commission. Subsequently, not much intervention was made by the government.

In August 2009, the Government of Maharashtra issued a directive under Section 108 of Electricity Act 2003 in the matter of Tariff Determination of 2009-10. It noted that the Commission had reduced tariff of HT commercial for malls and other big commercial complexes. It also noted that the Commission had increased tariff for industry and commercial category (cottage industry and shops) consuming less power as compared to large consumers. The government argued that a lot of consumption in malls and commercial premises is not essential and involves a lot of wastage.' It directed the Commission to articulate a policy of how it planned to reduce cross-subsidy while at the same time encouraging economic usage of resources at a time of shortage. It directed the Commission to keep in abeyance the cross-subsidy reduction for 2009-10 till such time the policy was brought out (GoM, 2009).

In recent months, open access, has emerged as another issue in which there has been substantial government intervention. In a letter dated July 31, 2013 to MERC, state power secretary, has said open access could adversely impact small consumers and lead to huge profits for developers and other consumers with a capacity to pay. Open access, without sufficient surcharges would adversely impact Mahadiscom, as it could possibly lose higher paying industry consumers. Incidentally, the Power Secretary also happens to be the MD of Mahadiscom. The fear for Maharashtra according to the Chairman of MERC was that "nearly 2,000 consumers contribute 65 per cent of Mahadiscom and they cross subsidize for the power supplied at lower rates to agriculture. The agriculture consumers contribute merely 3 per cent of the Discom's revenue. These 2,000 consumers will go out by opting open access and it will impact the Discom's revenue. Subsequently, in November 2013, the MERC issued an order raising cross-subsidy surcharge for open access substantially. This could be seen to be in response to the government pressure. Industry bodies argue open access will become an unviable proposition because, apart from higher CSS, they will have to pay charges towards transmission and distribution losses, wheeling charges and administrative charges. This will amount to more than Rs 3.60 per unit over and above the purchase of power through open access¹⁰. Experts view this to be against the Electricity Act which seeks to reduce cross-subsidy surcharge progressively.

Compliance of Directives

The paper tried to examine, the extent to which the MSEDCL complies with Directives issued by MERC. In the MYT order 2007-08, a stakeholder listed number of directives of the Commission which the MSEDCL had not complied with. These include directive on bringing down T&D losses below 26.87 per cent, implementation of DSM schemes, reduction in load shedding, metering all

¹⁰ http://www.business-standard.com/article/economy-policy/cross-subsidy-surcharge-in-open-access-to-rise-in-maharashtra-113111800740_1.html

consumers including agricultural consumers, and time bound implementation of agriculture feeder separation. All these are important measures required for bringing in transparency in the utilities working and to bring down losses. The Commission expressed displeasure with non-compliance and set up a compliance monitoring cell within the Commission to monitor the performance. There is, however, no public information available, on the working of this cell and its effectiveness.

In the subsequent APR 2007-08, number of stakeholders again raised the issue of non-compliance with directives of the Commission, particularly segregation of wires and supply business and voltage-wise segregated wires cost. These estimations are also important for determining the cost of serve for each category. Prayas suggested that the Commission should penalize the MSEDCL for non-compliance under Section 142 of EA., 2003. The Commission, however, only expressed “displeasure with the efforts of MSEDCL to comply with directives of the Commission”. In the tariff order for 2010-11, stakeholders again brought to the notice of the Commission that directives particularly on DTC are metering and energy accounting have not been complied with and hence the Commission should take action under EA, 2003. Interestingly, in this order, the Commission mainly stated that the issue of compliance with directives is a separate issue and cannot be considered under the proceedings on tariff determination¹¹.

Timeliness in issue of tariff order

The Shunglu Committee Report in its recommendations had stated that regulatory commissions need to ensure that tariff orders are passed in a timely manner every year. The regulator should not allow delaying tactics of the utilities and where necessary it should *suo-moto* commence the tariff revision process (Ibid). Regular revision is required to ensure that the utility remains financially sound and that consumers are not burdened with a sudden tariff shock. Generally, the petitioner is required to submit tariff petition by the 30th of November for the next financial year and the regulator takes a maximum of 120 days to issue the order (i.e., by March 31 the order is issued determining tariff applicable from 1st April). This section examines the regularity in issue of tariff orders of MSEDCL by MERC in the recent years.

Table 8: Timeliness of Tariff Orders Issued by MERC

Year	Date of Filing Petition	Date of issue of order	Delay
MYT order 2007-08		May 18, 2007	
APR 2007-08 & tariff 2008-2009	First Submission - 29 Dec 2006 Re-submission - January 19, 2007 and finally February 8 ,2007	Operative Order issued on 27 th April 2007 (revised tariff effective from May 1- March 31, 2008). Final MYT order 20 th June, 2008	Delay of 1 month MYT period delayed by one year/Control period shortened to 3 years
APR 2007-08 and	First submission 30,	Operative Order	Revised tariff

¹¹ Page 22 of 269 FY 2010-11

Year	Date of Filing Petition	Date of issue of order	Delay
Tariff for 2008-09	November 2007 Data gaps resolved –Dec 24, 2007 Revised petition after TVS submitted January 14, 2008 Revised petition after consultation with government submitted in February 13, 2008 , resubmitted after TVS in March 5, 2008	May 31, 2008 (revised tariffs applicable from 1 June 2008) Final Order issued June 20, 2008	delayed by 3 months Reasons: Data gaps Consultation with government
True Up 2007-08, APR 2008-09 and tariff 2009-10	First Submission : Dec 8, 2008, revised petition February, 2 2009 Revised petition after TVS submitted May 4, 2009, subsequently revised petition dated 8 May 2009 accepted by Commission (delay over 5 months)	Order issued August 17, 2009 (Tariff effective from August 1, 2009)	Revised tariff delayed by 4 months Reasons Data gaps Not incorporating provisions of APTEL judgment and review order on APR 2007-08
True up 2008-09, APR 2009-10 and Tariff 2010-11	First Submission : February 18, 2010, revised submission March 10, 2010, Revised submission Post TVS – April 7, 2010-accepted 8 April, 2010	Order issued 12 September 2010 (Revised Tariff applicable 1 September 2010)	Revised Tariff delayed by 5 months
Final True up 2009-10, APR 2010-11	July 12, 2011, Revised submission post TVS on August 17, 2011	Order issued December 30, 2011	By order dated October 2011, additional energy charge levied from November 2011 for 12 months
Final True up 2010-11, ARR for 2011-12 and 2012-13 and tariff for 2012-13	First Submission -24 th February 2012, replies 28 th March, revised submission post TVS 27 th April 2012.	Order issued August 16, 2012 (tariff effective from 1 August 2012)	

Source: Author Compilation

For the first MYT order, the Commission had asked the utility to submit a petition by November 30, 2006. The utility asked for more time but the Commission did not allow this. The utility filed the MYT petition on December 29, 2006. The MSEDCL was asked to provide more data which MSEDCL did on January 19, 2007. Subsequently, after the TVS, more data and gaps were identified and MSEDCL submitted a revised petition on February 8, 2007. This petition was finally accepted by

the Commission for review. The operative order was issued on April 27, 2007 (revised tariff effective from May 1, 2007 - March 31, 2008) and the MYT order issued on June 20, 2008. This MYT order, was, however, supposed to be enforced from 2006-07¹² but on appeal by utilities, the MYT period was pushed a year ahead and began only in 2007-08. The control period was also shortened to three years.

The APR petition for 2007-08 was to be submitted in the first instance in a timely manner by the utility by November 30, 2007. A revised petition was filed after the TVS on January 14, 2008. Subsequently, the MSEDCL re-submitted the petition on February 13, after consultation with the government and finally after TVS, the petition was accepted for submission on March 5, 2008. Hence, it took more than three months beyond the stipulated time-frame for the petition to be accepted for further processing by the Commission. The operative order was issued on May 31, 2008 (revised tariffs applicable from June 1, 2008). Overall revised tariffs were delayed by three months.

The true up petition for 2007-08 was filed initially on December 8, 2008, a revised petition was filed on February 2, 2009 and subsequently after TVS, another revised submission was made on May 4, 2009 and finally an updated version was accepted on May 8, 2009. The delay was over five months, mainly due to data gaps and because the utility had not accounted for certain APTEL judgements and a review petition for APR 2007-08. The order was issued on August 17, 2009 and revised tariff effective from August 1, 2009.

The petition for true up 2008-09, APR 2009-10 and Tariff 2010 was first submitted by the MSEDCL on February 18, 2010. While the Tariff order does not specifically mention the reason for delay, it emerges that paralleling work was on for submission for MYT petition for the subsequent year. The petition was revised on February 18, 2010 and, subsequently, another revised petition was submitted post TVS on April 7, 2010 and this was accepted by the Commission the next day. The order was issued on September 12, nearly after four months of acceptance of petition. Overall the revised tariff was delayed by five months. Subsequently, due to delay in enforcement of new tariffs and due to inadequate power from Mahagenco, the MSEDCL filed for relief and was granted so through an interim order dated October 31, 2011 (MERC, 2011)

The petition for Final True up 2009-10, APR 2010-11 was submitted on July 12, 2011 and subsequently revised submission post-TV S was made on August 17, 2011. The order was issued on 30 December 2011.

The petition for Final True up 2010-11, ARR for 2011-12 and 2012-13 and tariff for 2012-13 was first submitted on February 24, 2012. Subsequently, additional information was provided on March 28 and a revised submission post TVS was made on April 27, 2012. Order issued August 16, 2012 (tariff effective from August 1, 2012).

The process of revising multi-year tariffs in Maharashtra began in December 2010. A five-year control period was initially envisaged FY 2011-12 to FY 2015-16. The revised MYT regulations were notified on February 4, 2011 and were to be enforced from April 1, 2011. The MSEDCL asked for

¹² The MYT Regulations were notified by MERC on August 25, 2005 and tariffs were to be determined on the basis of MYT framework from 1st April 2006

exemption on February 22, 2011 and the Commission allowed exemption for two years (till March 31, 2013). MSEDCL sought the exemption as it did not concur with the MYT regulations of the MERC and challenged the regulations in the Mumbai High Court. Subsequently, the Commission issued the Order for exemption of determination of Tariff under the MYT Regulations, 2011 on August 23, 2011. MSEDCL submitted its petition for MYT Business Plan for the second Control Period on November 27, 2012 for the period FY 2013-14 till FY 2015-16 The Commission issued order on the same on August 26, 2013 and also directed the utility to submit MYT petition based on this order within two months.

Over all, it is seen that barring the year 2011-12, tariff order has been issued for all years beginning 2007-08. MSEDCL had in most years (barring Final True up 2009-10, APR 2010-11) submitted tariff petition by February of the tariff year though it is required to submit petition by November 30 of the previous year. There has been sufficient delay, in some years even 4-5 months before all clarification and data requirements are met and the Commission accepts the petition. It is difficult to ascertain the cause of this delay. This can indicate an in-depth scrutiny by the Commission of the petition, aided by the multi-stakeholder technical validation sessions. It can also reflect on the quality of initial petition submitted or perhaps the complicated nature of issues and stakeholders involved.

Regulatory Process: Examining Public Participation and Regulatory Capacity

Public Participation

Independent regulation was aimed at bringing in greater participation in decision-making to ensure that all decisions were made balancing all interests. In this subsequent section, this paper delves on the extent and quality of public participation. It also examines participation of outside experts and academicians in enhancing quality of decision-making through a look at the working of State Advisory Committees.

State Advisory Committees

The Electricity Act, 2003 mandates for the creation of State Advisory Commission under Section 87 and suggests that these committees advise Commissions on “major questions of policy, matters relating to quality, continuity and extent of service provided by the licensees; compliance by licensees with the conditions and requirements of their license; protection of consumer interest; and energy supply and overall standards of performance by utilities’. The website of MERC has minutes of the last six SAC meetings (20-26th SAC held in 2012 and 2013). Minutes of the meeting do suggest that important and pressing issues are discussed. For instance there was discussion on reasons for delay in open access to industry, issues in complying with RPO obligations, etc. However, it is difficult to say how much these discussions impact actual decision-making. The minutes also suggest that at times, there were discussion also around specific grievances of particular party with the aggrieved party making its case. Consultants of MERC were, however, of the opinion that these meetings do not add substantially to decision-making and become another avenue for affected parties to voice their grievances.

Public Hearings

The MERC was one of the first Commissions to introduce a structured and transparent interaction with utilities on their petitions through the Technical Validation Sessions (TVC). TVCs are 10-15 day review period following utilities tariff filing during which regulator summons additional data and the petition is accordingly revised (Dubash & Rao, 2007). These TVCs were established right from the time the first petition was received by the Commission from MSEB in November 1999. The Commission ensured public participation in these TVCs by inviting consumer representatives from industry, agriculture and research groups. The Commission ensures that the petition is accepted for processing only after the TVC where all information gaps are satisfactorily addressed. This practice of technical validation sessions has continued. Some stakeholders were, however, of the opinion that in earlier years TVC for each case before the Commission was held for sufficient time so as to hear out all affected parties. However, in recent years, less time is given for each case.

Public hearings are held across all six districts in the state in the presence of the statutory recognized consumer representatives. The Tariff Orders of MSEDCL suggest that the Commission has taken serious note of comments received from stakeholders in the public hearing. In the first MYT order, there are several instances of commission taking heed of suggestions made by stakeholders and making decisions based on it (MERC , 2007, p. 28)

In this order, for every issue raised by stakeholder, the Commission has given its view. In the tariff determination of 2009-10, the Commission had considered views of stakeholders, particularly Prayas on the indiscriminate revenue gap that the MSEDCL had shown. It had allowed a revenue gap of Rs 1156 crore only against a claim of Rs 9577 crore claimed by MSEDCL in the APR petition and Rs 7976 claimed in the supplementary petition.

However of late, the orders are not as detailed as earlier¹³. In the recent orders, 2010-11 onwards, in response to several issues raised by stakeholders, the Commission merely replied that it has taken heed of the issue raised and accordingly made decision which is to be discussed in the respective sections—such as T&D loss estimate, power purchase. However, the stand of the Commission does not clearly come across in these orders. Prayas has submitted that the “earlier orders used to unambiguously state the category-wise slab-wise tariffs along with as annexure towards the end which gave details of category-wise, slab-wise consumer numbers and revenue from various components of the revised tariff”. This has been found missing in more recent orders.

Regulatory Capacity

Constitution of the Commission

The EA, 2003 under Section 76 (4) mandates regulatory commission to comprise three Members and a Chairman. However, the Commission has for a long time worked with a single Member and a Chairman. The position for Member was vacant for almost two years, apparently due to differences between political parties on the appointee. Subsequently, a directive was issued by the High Court to

¹³ Ajit Pandit, ABPS

appoint a Member within six months¹⁴. Thereafter, in May 2013, a new Member was appointed. Currently, the post of Chairman is vacant since the incumbent Chairman demitted office in September 2013.

While the EA, 2003 allows for the Members to be selected from diverse fields including electricity, law, finance and management, the MERC, like most Commission remains dominated by government officials either from the civil services or from the state electricity board itself. The last three Chairmen of MERC have all been retired IAS. While having members from the government or from the utility itself may benefit the Commission in understanding the complexities in the operations of the power sector, it is also necessary to have some experts from other fields and from the private sector for a balanced perspective. Further, it is difficult to expect persons from the utility to make decisions in a disinterested manner.

Technical capacity

MERC was one of the first commissions to be set up and regulatory practices were still developing in the country. Hence in the initial years, the Commission was totally dependent on consultants for tariff and other matters. The dependency was to the extent that even the research staff of the Commission 'reported' to the consultants. In the recent years, the Chairman has attempted to reduce dependency on consultants and create a cadre of professionals within the Commission to look at regulatory matters. A large number of research professionals have been inducted but the capacity within the Commission is still to be developed. The pay scales, though better than earlier, are still not comparable to the market and hence recruiting talented person is a challenge. Also most recruitment is still made on contractual basis. The dependency on consultants is also on account of the scale of operations and the number of players in the state's power sector.

Another departure from earlier years has been reduction in dependency on a single consultant. Now, the Commission hires different consultants for legal, accountancy, tariff and other matters. There is also a conscientious effort to train and better equip the current workforce. In fact, the regulatory commission organizes workshops on regulatory issues for other professionals as well.

Financial capacity

The table below analyses the income and expenditure of the MERC over a five-year period from 2007-08 to 2011-12 to understand the level of financial self sufficiency of the regulator and its spending pattern.

The total expenditure of MERC in 2011-12 exceeded its income by Rs 71 million. This trend of decline in the gap between income and expenses has continued since 2009-10¹⁵

¹⁴ As per discussions with ABPS, Palaniappan (Mr)

¹⁵ Box 1: The data has been sourced from the Annual Reports of various years. Even though a comparison over the five years may not be entirely accurate since the categories of income/expenditure that were reported have changed between the first two and the last three years being examined, the aggregate figures do provide indication of general trends followed by some variables.

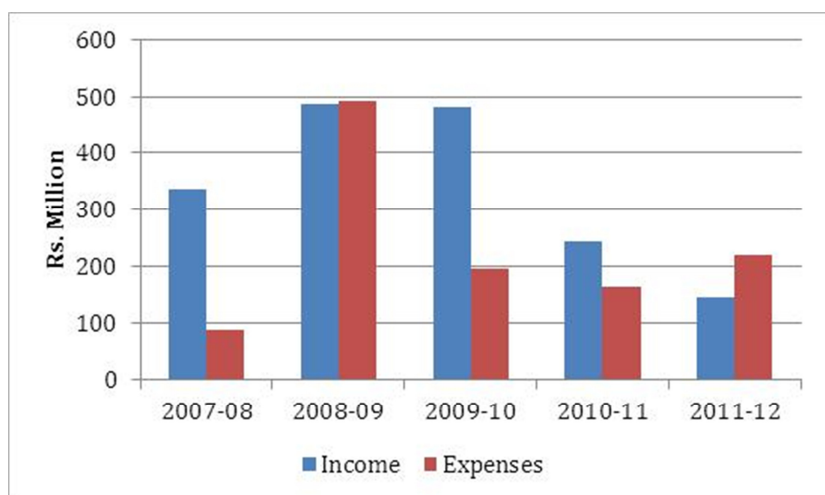


Figure 5: Income and expenses of MERC

Source: Annual Reports of various years

The Commission saw a decline in its income in the previous three years where the total income fell from nearly 488 million in 2008-09 to Rs 146 million in 2011-12. This decline has primarily been due to the fall in grants received and the fees charged for annual licenses. Even though fees charged has been reported as a component in the total income since 2009-10, the income for annual license fees has declined each year

Table 9: Fees received for annual license (in Rs.)

2011-12	2010-11	2009-10
62,331,000	182,399,694	425,418,504

On the other hand, the expenditure of the MERC has increased from Rs. 88 million in 2007-08 to Rs. 218 million in 2011-12. However, over time, the expenses per order have reduced significantly. As can be noted from Table 2, per order cost has declined to almost one-fourth of that in 2008-09.

Table 10: Expenses vis-à-vis number of orders issued

	2011-12	2010-11	2008-09
Number of orders issued (#)	162	150	122
Expenses (in Rs. million)	218.31	162.80	493.27
Expenses per order (in Rs million)	1.35	1.09	4.04

The consultancy cost¹ has more than doubled in the past five years from Rs 37 million in 2007-08 to nearly Rs 86 million in 2011-12. The expenses incurred on capacity building have also increased over the years and even though the trend has not been constant, there has been an overall improvement (Table 3). Capacity building includes the expenses incurred on Seminars, Consumer Advocacy Programmes and Workshops.

Table 11: Expenditure on capacity building by MERC

	2011-12	2010-11	2009-10	2008-09	2007-08
Expenses on Seminar	1,347,047	189,348	2,087,726		124,839
Expenditure on Consumer Advocacy Programmes					7250
Workshops / Training	1,325,568	975,125	27,937		
Total	2,672,615	1,164,473	2,115,663	-	132,089

Source: Annual Report for various years

As can be noted, the expenditure on workshops and trainings has increased in the past three years. This can be seen to reflect the initiatives of the regulator in engaging with the stakeholders and in developing capacity.

Conclusions: Regulatory Impact

This paper attempted to understand the stand of the regulator on important issues that impact performance and prices in the sector. The regulator has over the years, carefully scrutinized power purchase and capital expenditure, both of which have most significant impact on tariffs. Every year it has significantly curtailed power purchase expenditure on traded power and other high cost power. In case of capital expenditure, it has not allowed significant capitalization unless the utility has satisfactorily provided information on benefits of the expenditure. The Commission, however, seems somewhat lenient where power demand management is concerned. For instance, in case of the violation of the load shedding protocol observed in 2010, the Commission seems to have taken a lenient view and ruled that though the utility had violated the protocol, it was in public interest. In case of T&D losses, the Commission has held mostly a strict position. However, Maharashtra is one of the few states that still focuses on “distribution losses” rather than AT&C losses. In terms of AT&C losses, the Discom has ample scope for loss reduction.

Some aspects where the regulator seems to not have been effective are issues which continue to remain politically sensitive. For instance, the Commission has not had much success in metering of agricultural consumers and in the latest Business Plan the utility has expressed its inability to meter agricultural consumers. The utility in fact does not see much use of metering agricultural

consumption and would rather limit metering of agriculture till the feeder level. It is perceived by experts that the agricultural lobby is very strong and has sufficient political support.

The Commission has also not been able to finalise a roadmap/vision document on reduction of cross-subsidy. Apparently, the proposal of the Commission is stuck for approval with the state government since June 2012. While in the years between 2007-08 and 2009-10, tariffs seem to converge for each category towards average cost of serve, subsequently tariffs have diverged. Maharashtra is also one of the few remaining large state that does not have a voltage wise assessment of cost of serve. It also emerges from a study of tariff orders, that overall compliance of directives is also poor.

While there are not many significant delays in issue of tariff orders, the MYT control period has had to be reduced for both control years to only three years. There have been delays of two years in introducing the second MYT period with MSEDCL not interested in following the revised MYT regulations. There are instances of intervention by the government in ‘public interest’ on some occasions. While such interventions may be necessary in public interest, what is of concern is that the head of the utility has also been the representative of the government (i.e. Secretary, Energy) in the state since 2009.

Conclusions: Regulatory Process

The MERC was a pioneer in introducing public participation right from the first submission of petition by the utility. Over the years, substantial number of stakeholders have participated in the public hearings. While large industries present their suggestions and grievances individually before the Commission, there is much lesser participation of domestic and commercial consumers. Mostly their concerns are being raised by groups or associations. The state, however, benefits from a well-informed civil society, particularly Prayas, which intervenes in public interest on almost all matters before the Commission. Delays in appointment of Members suggest that appointments continue to be guided by political pressures. There still remains a bias towards appointing former bureaucrats or former officials of the utility on key positions of the MERC. While, it seems that a conscious effort has been made to induct own staff, MERC continues to depend significantly on consultants. Its increasing expenditure over the years also suggests higher expenditure on consultancy fees.

Reference

Chitnis, A. (2011). Presentation on web-based survey of Electricity Regulatory Commission. *6th Annual Conference on “Power Distribution in India: Trends and Outlook, Challenges and Opportunities”*. Prayas.

Dubash, N. K., & Rao, D. N. (2007). *The Practice and Politics of Regulation*. Delhi: Macmillan India.

Dubash, N. K., & Rao, D. N. (2007). *The Practice and Politics of Regulation*. Delhi: Macmillan India.

GoM. (2009, August 28). Government of Maharashtra Order no. tariff 2009/CR 706/NRG-5 dated 28th August 2009. Mumbai.

Mahadiscom. (n.d.). Retrieved November 15, 2013, from http://www.mahadiscom.in/aboutus/mahadiscom-Company_profile.pdf

MERC. (n.d.).

MERC . (2007). *In the Matter of Determination of Annual Revenue Requirement (ARR) of Maharashtra State Electricity Distribution Company Ltd. (MSEDCL) for the Control Period from FY 2007-08 to FY 2009-10 & Tariff for FY 2007-08.* Mumbai: Maharashtra Electricity Regulatory Commission .

MERC. (2009, August 17). Maharashtra State Electricity Distribution Company Ltd.'s (MSEDCL) Petition for Truing Up for FY 2007-08, Annual Performance Review for FY 2008-09 and Tariff Determination for FY 2009-10. *Tariff order.* Mumbai: MERC.

MERC. (2011, December 30). In the Matter of Petition filed by Maharashtra State Electricity Distribution Company Limited seeking. Mumbai: MERC.

MERC. (2012). *Final True up 2010-11, ARR 2011-12 & ARR 2012-13 & Tariff 2012-13.* Mumbai: MERC.

MERC. (2012). *In the matter of Petition of Maharashtra State Electricity Distribution Company Limited seeking Final True up for FY 2010-11, Aggregate Revenue Requirement of FY 2011-12 and FY 2012-13, Tariff Determination for FY2012-13 and Revision in Schedule of Charge.* Mumbai: Maharashtra Electricity Regulatory Commission.

MERC. (2012). Petition filed by Maharashtra State Electricity Distribution Company Ltd. (MSEDCL) under Regulation 13 of the MERC (Distribution Open Access) Regulations, 2005, seeking determination of cross subsidy surcharge to be levied on Open Access consumers. *Case No. 138 of 2012.*

MoP. (2013). *Integrated rating of State Distribution Utilities.* New Delhi: Ministry of Power.

PFC. (2013). *The Performance of State Power Utilities for the Years 2009-10 to 2011-12.* New Delhi: Power Finance Corporation.

Prayas. (2001). *Privatization or Democratization The Key to the Crises in the Electricity Sector The Case of Maharashtra.* Pune: Prayas.

Prayas. (2003). *A Good Beginning but Challenges Galore.* Pune: Prayas.

Prayas. (2010). *Comments on MSEDCL petition for true up of 2010-11.* Retrieved November 5, 2013, from Prayas: www.Prayaspune.org

Prayas. (2013). Prayas comments and submissions regarding Draft MERC Standards of Performance of Distribution Licensees, Period for Giving Supply and Determination of Compensation Regulations, 2013. Mumbai.

Prayas. (2013). Prayas's comments on MSEDCL Petition for approval of MYT Business Plan for the period of FY 2013-14 to FY 2015-16. Mumbai: Prayas.

RGVY website . (n.d.). Retrieved 12 31, 2012, from www.rggvy.nic.in

Shunglu Committee. (2011). *Report of High Level Plan on Financial Position of Distribution Utilities*. New Delhi: Planning Commission.

WRI. (2007).

WRI, P. &. (June 2007). *Electricity Governance Toolkit : Benchmarking Best Practice And Promoting Accountability In The Electricity Sector*. India: WRI, Prayas, & NIPFP.