



**ABPS INFRASTRUCTURE ADVISORY PRIVATE LIMITED**

**Discussion Paper for  
Multi Year Tariff Regulations for  
the Control Period from FY 2016-17 to FY  
2019-20**

**Submitted to  
Maharashtra Electricity Regulatory Commission**

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## LIST OF ABBREVIATIONS

AAD	Advance against Depreciation
ACOS	Average Cost of Supply
ABT	Availability Based Tariff
ATE	Appellate Tribunal for Electricity
ATIL	Adani Transmission (India) Limited
EA 2003	Electricity Act, 2003
APR	Annual Performance Review
ARR	Aggregate Revenue Requirement
BEST	Brihan-Mumbai Electric Supply and Transport
CAGR	Compound Annual Growth Rate
CBG	Competitive Bidding Guidelines
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CFBC	Circulating Fluidised Bed Combustion
CIL	Coal India Limited
Ckt-km	Circuit Kilometres
COD	Commercial Operation Date
CPI	Consumer Price Index
CPRI	Central Power Research Institute
CTU	Central Transmission Utility
CUF	Capacity Utilisation Factor
DE	Design Energy
DISCOM	Distribution Companies
DSM	Demand Side Management
ECR	Energy Charge Rate
EE	Energy Efficiency
FAC	Fuel Adjustment Charges
FERV	Foreign Exchange Rate Variation
FGD	Flue Gas Desulphurisation
FOR	Forum of Regulators
FRL	Full Reservoir Level
GCV	Gross Calorific Value
GERC	Gujarat Electricity Regulatory Commission
GFA	Gross Fixed Asset
GoM	Government of Maharashtra
HT	High Tension
HVDC	High Voltage Direct Current

IIT	Indian Institute of Technology
IWC	Interest on Working Capital
InSTS	Intra-State Transmission System
JPTL	Jaigad Power Transco Ltd.
kWh	kilo Watt hour
LT	Low Tension
MDDL	Minimum Draw Down Level
MEGPTCL	Maharashtra Eastern Grid Power Transmission Company Ltd
MERC	Maharashtra Electricity Regulatory Commission
MNRE	Ministry of New and Renewable Energy
MoU	Memorandum of Understanding
MSEDCL	Maharashtra State Electricity Distribution Company Limited
MSETCL	Maharashtra State Electricity Transmission Company Limited
MSLDC	Maharashtra State Load Despatch Centre
MSPGCL	Maharashtra State Power Generating Company Limited
MYT	Multi Year Tariff
NAPAF	Normative Annual Plant Availability Factor
NEP	National Electricity Policy
NEEPCO	North Eastern Electric Power Corporation Limited
TP	Tariff Policy
OA	Open Access
O&M	Operation and Maintenance
PAF	Plant Availability Factor
PBR	Performance Based Regulation
PGCIL	Power Grid Corporation of India Limited
PLF	Plant Load Factor
PoC	Point of Connection
RE	Renewable Energy
REC	Rate of Energy Charges
RERC	Rajasthan Electricity Regulatory Commission
RInfra	Reliance Infrastructure
RInfra-G	Reliance Infrastructure Limited- Generation Business
RInfra-T	Reliance Infrastructure Limited- Transmission Business
RLDC	Regional Load Despatch Centre
ROE	Return on Equity
RPO	Renewable Purchase Obligation
R&M	Repair and Maintenance
SBBR	SBI Base Rate
SEB	State Electricity Board

SERC	State Electricity Regulatory Commission
SEZ	Special Economic Zone
SFOC	Secondary Fuel Oil Consumption
SHR	Station Heat Rate
SLDC	State Load Despatch Centre
SPTL	Sinnar Power Transmission Company Limited
STU	State Transmission Utility
TCR	Transmission Capacity Rights
ToD	Time of Day
TPC	Tata Power Company Limited
TPC-G	Tata Power Company Limited- Generation Business
TPC-T	Tata Power Company Limited- Transmission Business
TSC	Transmission Service Charges
TSU	Transmission System User
TTSC	Total Transmission System Cost
UERC	Uttarakhand Electricity Regulatory Commission
UI	Unscheduled Interchange
VIPL-T	Vidarbha Industries Power Limited
WPI	Wholesale Price Index



# 1 Introduction

The Electricity Act, 2003 (EA 2003), as amended from time to time, requires the appropriate Commission to be guided by Multi-Year Tariff (MYT) principles while specifying the Terms and Conditions for determination of tariff. Section 61 of the EA 2003 stipulates:

*“The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely:-*

*(a) The principles and methodologies specified by the Central Commission for determination of the tariff applicable to generating companies and transmission licensees;*

*(b) The generation, transmission, distribution and supply of electricity are conducted on commercial principles;*

*(c) The factors which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments;*

*(d) Safeguarding of consumers' interest and at the same time, recovery of the cost of electricity in a reasonable manner;*

*(e) The principles rewarding efficiency in performance;*

*(f) **Multi year tariff principles;***

*(g) That the tariff progressively reflects the cost of supply of electricity and also reduces cross-subsidies in the manner specified by the Appropriate Commission;*

*(h) The promotion of co-generation and generation of electricity from renewable sources of energy;*

*(i) The National Electricity Policy and tariff policy” (emphasis added)*

The Maharashtra Electricity Regulatory Commission (MERC or Commission) notified the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2011 (henceforth MERC MYT Regulations, 2011) on February 4, 2011, which superseded the Maharashtra Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2005.

Further, the Commission notified the first amendment to the MERC MYT Regulations, 2011 on October 21, 2011 related to deferment of the implementation

MYT framework in case of difficulty in giving effect to the determination of tariff with effect from April 1, 2011 under MERC MYT Regulations, 2011. Accordingly, the Commission deferred the implementation of MYT framework for two years for State Government Utilities, viz., MSPGCL, MSETCL and MSEDCL and one year for RIntra (G, T &D) and BEST. The Commission notified the second amendment to the MERC MYT Regulations, 2011 on February 17, 2014 related to operation of generating stations in case of fuel shortages and consequential impact on demonstration of declared capacity and backing down generation. The Commission notified the third amendment to the MERC MYT Regulations, 2011 on May 8, 2014 related to change in mechanism of sharing of gains or loss on account of uncontrollable factors and approval of Z-factor charge including  $Z_{FAC}$  and  $Z_{OUC}$ .

The MERC MYT Regulations, 2011 were guided by the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, which specified the norms and approach for tariff determination for Generation Companies and Transmission Licensees regulated by the CERC for the Control Period from April 1, 2009 to March 31, 2014. The Central Electricity Regulatory Commission (CERC) has subsequently notified the CERC (Terms and Conditions of Tariff) Regulations, 2014, (herein after referred as CERC Tariff Regulations, 2014) which is applicable for the Control Period from April 1, 2014 to March 31, 2019.

Further, there are some Judgments issued by the Appellate Tribunal for Electricity (ATE) during the four years after the notification of the MERC MYT Regulations, 2011, on different aspects of the above-mentioned Regulations. Also, during the second Control Period, while issuing the MYT Orders and Mid Term Performance Review Orders including the Truing-up of previous years, for the Utilities in the State in accordance with the MERC MYT Regulations, 2011, the Commission has observed certain areas where improvements can be made in the specified MYT framework. As the applicability of the MERC MYT Regulations, 2011 is only till March 31, 2016, the Commission has decided to frame the MERC MYT Regulations, 2015 keeping in view the Regulations notified by Central Electricity Regulatory Commission (CERC), various State Electricity Regulatory Commissions (SERCs), Judgments of ATE, as well as areas of improvement observed in the MERC MYT Regulations, 2011.

The Commission had also published the draft MERC (Levy and Collection of Fees and Charges by State Load Despatch Centre) Regulations, 2014, and invited comments and suggestions from stakeholders on the same. The Commission has considered the comments and suggestions received from the stakeholders and modified the draft MERC (Levy and Collection of Fees and Charges by State Load Despatch Centre) Regulations, 2014. However, the Commission is now of the view

that it would be more appropriate to incorporate the specific clauses as a part of the MERC MYT Regulations, 2015, rather than having a separate Regulation for the same. Accordingly, the outcome of that regulatory process has been considered as an input, and the relevant clauses have been incorporated in the draft MERC MYT Regulations, 2015, and have also been elaborated in this Discussion Paper, as appropriate.

The Commission has engaged the services of ABPS Infrastructure Advisory Private Limited (ABPS Infra) to provide consultancy support to the Commission for framing the MERC MYT Regulations, 2015 for the third Control Period.

This Discussion Paper is organised in the following Sections:

- Section 1:** Introduction
- Section 2:** MYT General Principles
- Section 3:** Broad Financial Principles
- Section 4:** Norms and Principles for determination of Revenue Requirement and Tariff for Generation Companies
- Section 5:** Norms and Principles for determination of Revenue Requirement and Tariff for Transmission Business
- Section 6:** Norms and Principles for determination of Revenue Requirement and Wheeling Charges and Losses for Distribution Wire Business
- Section 7:** Norms and Principles for determination of Revenue Requirement and Tariff for Retail Supply Business
- Section 8:** Norms and Principles for determination of Fees and Charges for the Maharashtra State Load Despatch Centre (MSLDC)

## 2 MYT Overview - General Principles

This Discussion Paper details the philosophy and principles for formulation of Regulations for determination of tariff on the basis of Multi-Year Tariff (MYT) principles for the third Control Period. The objectives of any MYT framework are:

- Provide regulatory certainty to the Utilities, investors and consumers by promoting transparency, consistency and predictability of regulatory approach, thereby minimizing the perception of regulatory risk.
- Address the risk sharing mechanism between Utilities and consumers based on controllable and uncontrollable factors.
- Ensure financial viability of the sector to attract investment, ensure growth and safeguard the interest of the consumers.
- Review operational norms for Generation, Transmission, Distribution and Supply Businesses, related issues and recommend suitable measures to address such issues.
- Promote operational efficiency.

### 2.1 *Contours of Multi-Year Tariff*

#### 2.1.1 **Cost-plus Regulation vs. Performance Based Regulations**

The Cost-plus Regulation approach determines the Tariff in such a manner so as to enable the Utilities to recover their expenses and earn a pre-determined return on the equity investment or the capital employed. The SERCs have generally adopted the approach of modified 'cost-plus' regulation, whereby tariffs are determined in such a manner so as to enable the Utilities to recover prudent expenses and earn a pre-determined return on the equity investment or the capital employed. It should be noted that most SERCs do not approve all the expenses, and undertake prudence check on the expenditure, with the objective of improving the Utility's efficiency and thereby, reducing tariffs. This introduces an element of 'performance-based' regulation within the overall framework of 'cost-plus' regulation.

The alternative to the 'Cost-Plus' approach is Performance Based Regulation (PBR). Rather than frequent reviews of Utility costs and determining tariffs to reimburse Utilities for what they spend, PBR takes a longer term view and focuses on how Utilities perform. In a well-designed PBR, good performance should lead to higher

profits, while poor performance should lead to lower profits. In general, PBR mechanisms provide Utilities with a fixed price or a fixed level of revenues, as opposed to a predetermined level of profits. As a result, Utilities can earn higher or lower profits depending upon how efficiently they plan for and operate their systems. The most commonly discussed PBR mechanism is the 'price cap'. Price caps differ from the cost plus approach in that the capped prices over longer periods are intended to provide incentives to reduce costs. Second, Utilities are allowed to lower their prices to some customers, as long as all prices stay within the cap (or caps). This flexibility allows the Utilities to provide competitive price discounts to customers that might otherwise leave their system.

However, it should be noted that internationally, PBR has been introduced only for the Wires Business (Transmission Business and Wheeling Business), and the retail supply Business is subjected to open competition. However, in India, the retail supply Business is not presently subjected to competition in the real sense, save for certain Open Access transactions and presence of parallel Licensees in Mumbai.

The modified 'cost-plus' approach followed in the State of Maharashtra as specified in the MERC MYT Regulations, 2011, is well understood by all the stakeholders and has stood the test of time, and has also been largely effective in achieving the desired objectives.

**Hence, for providing regulatory certainty to consumers, Utilities and various stakeholders of the power sector in Maharashtra, it is proposed that the modified 'cost-plus' regulation subject to prudence check of the expenses may be continued, in line with the approach followed in the second Control Period.**

### **2.1.2 Prescribing Norms Vs Prescribing Principles in the Regulations**

There are two options to specify trajectories for performance and cost parameters under the MYT framework, viz:

- a. Prescribing norms based on the analysis of past performance levels/expenses and approved trajectory of last Control Period.
- b. Prescribing principles outlining the approach that needs to be followed to be used in the MYT/Mid-term review Orders.

Both the approaches have their merits and demerits. However, prescribing norms based on the analysis of past performance levels and approved trajectory of last Control Period, provides clarity about the roadmap of tariff to the Utilities as well as to the consumers. Regulatory certainty is one the key objectives of any MYT framework.

In this context, the Forum of Regulators (FOR) Report on MYT framework and distribution margin recommends as under:

*“6.1.1 Annual revision of performance norms and tariff might not be desirable. During the first control period, which should not be more than three years, the opening levels of performance parameters should be specified as close to the actual level of performance as possible and a trajectory of improvement of norms to desired level be provided with an incentive and disincentive mechanism to share efficiency gains with consumers.”*

The FOR Report recommends that the norms should be specified as close to actual level of performance as possible. The FOR Report also underlines on specifying a trajectory to achieve desired levels of norms, which entails fixing of performance trajectory on normative basis rather than at actual levels for the second Control Period onwards.

Further, Para 5.3 (f) of the Tariff Policy stipulates as under:

*“f) Operating Norms*

*Suitable performance norms of operations together with incentives and disincentives would need be evolved along with appropriate arrangement for sharing the gains of efficient operations with the consumers. Except for the cases referred to in para 5.3 (h)(2), the operating parameters in tariffs should be at “normative levels” only and not at “lower of normative and actuals”. This is essential to encourage better operating performance. The norms should be efficient, relatable to past performance, capable of achievement and progressively reflecting increased efficiencies and may also take into consideration the latest technological advancements, fuel, vintage of equipments, nature of operations, level of service to be provided to consumers etc. Continued and proven inefficiency must be controlled and penalized.*

*....” (emphasis added)*

In the MERC MYT Regulations, 2011, the Commission has specified operational norms for Generation and Transmission Business as well as norms for O&M Expenses for Transmission and Distribution Business, while principles have been specified for operational norms for Distribution Business and O&M norms for Generation Business, in order to minimise the ambiguity in interpretation of the Regulations, which has largely achieved the objective.

Hence, it is proposed to prescribe operational norms for Generation and Transmission Business as well as norms for O&M Expenses for Transmission and Distribution Business, in line with the approach followed in the MERC MYT Regulations, 2011.

## 2.2 Business Plan

The FOR, in its report on MYT framework and Distribution Margin has recommended as under:

*“2.5.4 Distribution licensees should submit the business plan and power purchase plan, for approval of the Commission, at least six months prior to submission of MYT petitions, comprising the following aspects:*

- *Category-wise sales projections*
- *Load growth details*
- *Power Procurement Plan from short-term and long-term sources*
- *Details of load shedding*
- *Capital expenditure and capitalisation plans, financing pattern and impact on related expenses*
- *Employee rationalisation*

*2.5.5 The Commission should issue its order on the business plan and power procurement plan within four months of submission, so that the licensee submits the MYT petition based on the approved plan”*

The FOR recommendations provides for submission of Business Plan six (6) months prior to submission of MYT Petition, i.e., 30<sup>th</sup> November. Hence, date for submission of Business Plan would be 31<sup>st</sup> May.

The objective in requiring the filing of Business Plan around 3 to 6 months prior to the submission of the MYT Petition is that the Utilities will be required to prepare a long-term plan for the critical aspects of their business, mainly, capital investment, sales projections, power purchase planning and contracting, etc., and also provide various scenarios for these aspects for the Commission's consideration. Once the Commission approves the Business Plan after due regulatory process, the Utilities are required to file their MYT Petition in accordance with the Business Plan approved by the Commission.

The MERC MYT Regulations, 2011 specifies as under:

### ***“4 Multi-Year Tariff Framework***

....

*4.2 The Multi-Year Tariff framework shall be based on the following elements, for calculation of Aggregate Revenue Requirement and expected revenue from tariff and charges for Generating Companies, Transmission Licensee, Distribution Wires Business and Retail Supply Business:*

...

*(ii) A detailed Business Plan based on the Operational Norms and trajectories of performance parameters specified in the MYT Regulations, for each year of the Control Period, shall be submitted by the applicant for the Commission's approval;*

*(iii) Based on the Business Plan, the applicant shall submit the forecast of Aggregate Revenue Requirement and expected revenue from existing tariff for each year of the Control Period, and the Commission shall approve the tariff for Generating Companies, Transmission Licensee, Distribution Wires Business and Retail Supply Business, for each year of the Control Period;*

...

### **7 Business Plan**

*7.1 The Generating Company, Transmission Licensee and Distribution Licensee shall file a Business Plan, for the Control Period of five (5) financial years from April 1, 2011 to March 31, 2016, as directed by the Commission, which shall comprise but not be limited to detailed category-wise sales and demand projections, power procurement plan, capital investment plan, financing plan and physical targets, in accordance with guidelines and formats, as stipulated by the Commission from time to time..."*

Thus, the MERC MYT Regulations, 2011 specify mandatory filing of the Business Plan by every Generation Entity, Transmission Licensee and Distribution Licensee. In the second Control Period, the Commission, after following due regulatory procedure, approved the Business Plan and then directed all Utilities to file MYT Petition for second Control period. Accordingly, all the Utilities have filed MYT Petition, only after the approval of Business Plan by the Commission and subsequently, the Commission has issued Multi Year Tariff Orders. The requirement and effectiveness of the submission of Business Plan in the present form needs to be reviewed in view of the experience gained while issuing the MYT Orders and Mid Term Performance Review Orders for the Utilities in the State, in accordance with the MERC MYT Regulations, 2011, as summarised below:

#### **a) Delay in filing MYT Petition**

The MERC MYT Regulations, 2011 specify that the application for determination of tariff under Multi Year Tariff framework for the second Control Period shall be made to the Commission before the commencement of FY 2011-12, as directed by the Commission. Also, the MERC (Terms and Conditions of Tariff) Regulations, 2005



also specified that the application for determination of tariff for any financial year shall be made not less than one hundred and twenty (120) days before the commencement of such financial year. Further, ATE in its Judgement dated 11 November, 2011 in O.P. 1 of 2011 held that it should be the endeavour of every State Commission to ensure that the tariff for the financial year is decided before 1<sup>st</sup> April of the tariff year.

The experience of the second Control Period shows that the requirement for filing and approval of Business Plan has caused a delay in issuance of the MYT Order. This raises a question on the efficacy of the Business Plan as it has not only caused a delay in filing of MYT Petition, but also, because of the delay in filing, data changed significantly, requiring the Commission to study the data afresh again during disposal of MYT Petitions.

Considering the timelines specified, if the Tariff under the new Regulations has to be applicable from April 1, 2016, then Utilities have to file the MYT Petition latest by November 30, 2015, irrespective of the approval of Business Plan Petition. If the Utilities are asked to submit the Business Plan, it would result in delaying the issuance of the MYT Order in this Control Period also.

#### **b) Variation between data approved in Business Plan Order and MYT Petition**

As discussed earlier, there were significant changes in the projections approved in the Business Plan Order and the projections made by the Utilities in the MYT Petition for key parameters such as category-wise sales and power purchase costs, as a result of which, the approval of the Business Plan, which represents a forecast for the entire control period on the basis of analysis of various scenarios, became infructuous.

In view of the above observations, we have analysed the merits and demerits of filing a separate Business Plan, as under:

#### **Merits**

1. It requires the Utility to undertake long-term planning for the Control Period, rather than having a short-term view of say 1 year, which is essential in case of key aspects like sales projections, power procurement, and capital expenditure.
2. Different scenarios can be analysed in the Business Plan for the consideration of the Commission, and the Commission can take a view on the most likely scenario.

#### **Demerits**

1. Separate filing of the Business Plan and MYT Petition necessitates two separate regulatory processes, with similar end objectives, though the tariffs are not determined in the MYT Business Plan.
2. In case of separate filing of the Business Plan and MYT Petition, the MYT Petition is based on the approved Business Plan. The filing of any review petition or appeal against the Business Plan Order may impinge on the subsequent ARR and tariff determination exercise.
3. The necessary objectives of long-term planning can be achieved without separate filing of the MYT Business Plan.

In view of the above, and considering that the Utilities are aware of the need for long-term planning, after gaining the experience of preparation of Business Plan and MYT Petition during the second Control Period, it is proposed to discontinue with the requirement for submission of a separate MYT Business Plan.

In view of the above, Regulation 7 and 8 of existing MERC MYT Regulations has been clubbed and revised as under:

"

## **6 Multi-Year Tariff Petition**

- 6.1 *As a part of the Multi-Year Tariff Petition, the Petitioner shall submit the forecast of Aggregate Revenue Requirement and expected revenue from Tariff for each year of the Control Period in the manner specified in these Regulations and accompanied by applicable fees.*
- 6.2 *The Petitioner shall forecast the Aggregate Revenue Requirement using the assumptions relating to the behaviour of individual variables that comprise the Aggregate Revenue Requirement during the Control Period, including inter-alia detailed category-wise sales and demand projections, power procurement plan, capital investment plan, financing plan and physical targets, in accordance with guidelines and formats, as may be prescribed by the Commission.*
- 6.3 *The capital investment plan shall show separately, on-going projects that will spill over into the Control Period, and new projects (along with justification) that will commence in the Control Period but may be completed within or beyond the Control Period, for which the Petitioner shall provide relevant technical and commercial details.*
- 6.4 *The Distribution Licensee shall project the realistic power purchase requirement from all Generating Stations considered for power purchase based on the Merit Order Despatch principles, the Renewable Purchase Obligation (RPO) specified by the*

*Commission under the relevant Regulations, and the target set, if any, for Energy Efficiency (EE) and Demand Side Management (DSM) schemes:*

*Provided that Merit Order Despatch principles shall not apply to purchase of power from Renewable Energy sources up to the RPO specified by the Commission under the relevant Regulations.*

6.5 *The Petitioner shall forecast the expected revenue from Tariff and charges based on the following:*

*(a) In the case of a Generation Entity, estimates of quantum of electricity to be generated by each Unit/Station for each year of the Control Period;*

*(b) In the case of a Transmission Licensee, estimates of transmission capacity allocated to Transmission System Users for each year of the Control Period;*

*(c) In the case of a Distribution Licensee, estimates of quantum of electricity to be supplied to consumers and wheeled on behalf of Distribution System Users for each year of the Control Period:*

*Provided that the Distribution Licensee shall submit all relevant details of category-wise sales separately for each Distribution Franchisee area, including the Input Energy and the Input Rate;*

*(d) Prevailing Tariff as on the date of filing the Petition.*

6.6 *Based on the forecast of Aggregate Revenue Requirement and expected revenue from Tariff and charges, the Generation Entity or Distribution Licensee or MSLDC shall submit the proposed Tariff or Fees and Charges for each year of the Control Period, that would meet the gap, if any, in the Aggregate Revenue Requirement:*

*Provided that the Distribution Licensee shall submit the proposed category-wise Tariff for each year of the Control Period, that would meet the gap, if any, in the Aggregate Revenue Requirement.*

6.7 *The Petitioner shall provide full details supporting the forecast, including but not limited to details of past performance, proposed initiatives for achieving efficiency or productivity gains, technical studies, contractual arrangements and/or secondary research, to enable the Commission to assess the reasonableness of the forecast.*

6.8 *On receipt of the Petition, the Commission shall either-*

*(a) issue an Order approving the Aggregate Revenue Requirement and Tariff for the Control Period, subject to such modifications and conditions as it may stipulate in the said Order; or*

*(b) reject the Petition for reasons to be recorded in writing."*

### **2.3 Duration of Control Period**

The Control Period means a multi-year period typically ranging from 3 to 5 years, fixed by the Commission from time to time for the duration of which, the principles for determination of Aggregate Revenue Requirement (ARR) and tariff will be fixed.

Regulation 2(16) of existing MERC MYT Regulations, 2011 specifies the Control Period as under:

*“(16) “Control Period” means the period comprising of five years from April 1, 2011 to March 31, 2016, and as may be extended by the Commission, for submission of forecast in accordance with Part C of these Regulations;”*

However, the Commission has deferred the implementation of the MYT framework by two years for State Government Utilities and one year for other Utilities. The Commission has issued MYT Orders for Utilities for the period up to March 31, 2016. Hence, the third Control Period is due to begin on April 1, 2016.

Further, CERC Tariff Regulations, 2014 is applicable till March 31, 2019 and the Tariff Regulations for the next Tariff Period are likely to be notified by CERC before March 31, 2019. This will give the Commission sufficient time to incorporate any necessary modifications before mid-FY 2019-20, for the MERC MYT Regulations for the fourth Control Period.

Hence, it is proposed to have a Control Period of four (4) years, over the period from April 1, 2016 to March 31, 2020.

### **2.4 MYT Framework for the third Control Period**

It is proposed to continue with the approach of determining the tariff for each year of the Control Period, at the beginning of the Control Period, with provision for Mid-term Review at the end of two years. In other words, the tariff for the third and fourth year of the Control Period may be revised after Mid-term Review. Considering the above changes to the Control Period, Business Plan, etc., as well as the need to give greater clarity to all stakeholders regarding true-up, provisional true-up, Mid-term Review, etc., the MYT framework for the third Control Period is proposed to be modified as under:

*“4.2 The Multi-Year Tariff framework shall be based on the following elements, for calculation of Aggregate Revenue Requirement and expected revenue from Tariff and charges for Generating Companies, Transmission Licensee, Distribution Wires Business, Retail Supply Business, and Fees and Charges for MSLDC:*

- (i) *A Multi-Year Tariff Petition comprising of the forecast of Aggregate Revenue Requirement, expected revenue from existing Tariff or Fees and Charges in case of MSLDC, expected revenue gap, and proposed Tariffs or Fees and Charges for each year of the Control Period, shall be submitted by the Generation Entity or Licensee or MSLDC:*

*Provided that the Distribution Licensee shall propose the category-wise Tariffs for each year of the Control Period:*

*Provided further that the performance parameters, whose trajectories have been specified in these Regulations, shall form the basis of projection of these performance parameters in the Aggregate Revenue Requirement for the entire Control Period;*

- (ii) *Determination of the Aggregate Revenue Requirement and Tariff or Fees and Charges for Generating Companies, Transmission Licensee, Distribution Wires Business, Retail Supply Business, and MSLDC by the Commission for each year of the Control Period, at the start of the Control Period:*

*Provided that the Commission shall also approve the sharing proportion amongst the Long-term Beneficiaries for the SLDC Fees and Charges for the Control Period;*

- (iii) *Petition for Mid-term Review of operational and financial performance vis-à-vis the approved forecast for the first two years of the Control Period and revised forecast of Aggregate Revenue Requirement, expected revenue from existing Tariff, expected revenue gap, and proposed category-wise Tariffs for the third and fourth year of the Control Period shall be submitted by the Generation Entity or Licensee or MSLDC;*

- (iv) *True-up for the first year of the Control Period based on audited accounts and provisional true-up for the second year of the Control Period of operational and financial performance vis-à-vis the approved forecast for the respective years shall be submitted by the Generation Entity or Licensee or MSLDC along with the Petition for Mid-term Review;*

- (v) *Determination of the revised Aggregate Revenue Requirement and Tariff or Fees and Charges for Generating Companies, Transmission Licensee, Distribution Wires Business, Retail Supply Business, and MSLDC by the Commission for the third and fourth year of the Control Period based on the Mid-term Review;*

- (vi) *True-up for the first year of the Control Period, provisional true-up for the second year of the Control Period of operational and financial performance vis-à-vis the approved forecast for the respective years and categorization of*

*variation in performance as those caused by factors within the control of the Petitioner (controllable factors) and those caused by factors beyond the control of the Petitioner (uncontrollable factors) by the Commission along with the Mid-term Review;*

- (vii) The mechanism for pass-through of approved gains or losses on account of uncontrollable factors as specified by the Commission in these Regulations;*
- (viii) The mechanism for sharing of approved gains or losses arising out of controllable factors as specified by the Commission in these Regulations."*

Further, it is also proposed that the Commission may, from time to time, issue Practice Directions in regard to implementation of these MYT Regulations, subject to the provisions of the Act.

#### **2.4.1 Petitions to be filed in the Control Period**

The timelines for filing of different Petitions during the third Control Period, the scope of the Petitions, and the applicable MYT Regulations for true-up for different years, are proposed to be elaborated in the following manner, in the MYT Regulations for the third Control Period.

It is proposed that the following Petitions shall be filed in the third Control period:

**Table 1: Petitions to be filed in Third Control Period**

<b>Petition</b>	<b>Details</b>	<b>Timeline</b>
Multi Year Petition	<ul style="list-style-type: none"> <li>• Truing-up for FY 2014-15 and provisional Truing-up for FY 2015-16 under MERC MYT Regulations, 2011;</li> <li>• ARR for each year from FY 2016-17 to FY 2019-20 under MERC MYT Regulations, 2015;</li> <li>• Revenue from the sale of power at existing Tariffs and charges and projected revenue gap for each year of the Control Period under MERC MYT Regulations, 2015;</li> <li>• Proposed category-wise Tariff for each year of the Control Period under MERC MYT Regulations, 2015</li> </ul>	November 30, 2015
Mid Term Review Petition	<ul style="list-style-type: none"> <li>• Truing-up for FY 2015-16 under MERC MYT Regulations, 2011</li> <li>• Truing-up for FY 2016-17 and provisional Truing-up for FY 2017-18 under MERC MYT</li> </ul>	November 30, 2017

Petition	Details	Timeline
	Regulations, 2015 <ul style="list-style-type: none"> <li>Revised forecast of ARR and proposed tariff for third and fourth years of third Control Period under MERC MYT Regulations, 2015</li> </ul>	
Truing-up Petitions	<ul style="list-style-type: none"> <li>Truing-up for FY 2017-18 and FY 2018-19 under MERC MYT Regulations, 2015</li> <li>Provisional Truing-up for FY 2019-20 under MERC MYT Regulations, 2015</li> </ul>	November 30, 2019

Further, based on the experience with deemed Distribution Licensees under Section 14 of the EA 2003 such as SEZ's, it is proposed that in case of a deemed Distribution Licensee whose tariff is yet to be determined by the Commission till the date of effectiveness of the proposed MERC MYT Regulations, 2015, the Commission may relax the timelines for submission of the Multi-Year Tariff Petition, Mid-term Review Petition and Truing-up Petitions, on case to case basis. Further, such deemed Distribution Licensee may be permitted to first file a Petition for approval of ceiling tariff in its area of supply, followed by the Petition for approval of Power Purchase Agreement or Arrangement, after which the Multi-Year Tariff Petition may be filed.

#### 2.4.2 Mid-term review

As regards the Mid Term Review, Regulation 11 of MERC MYT Regulations, 2011 specifies as under:

*“11.1 Where the Aggregate Revenue Requirement and expected revenue from tariff and charges of a Generating Company or Transmission Licensee or Distribution Licensee is covered under a Multi-Year Tariff framework, then such Generating Company or Transmission Licensee or Distribution Licensee, as the case may be, shall be subjected to a Mid-term Performance Review during the Control Period in accordance with this Regulation.*

*11.2 The Generating Company or Transmission Licensee or Distribution Licensee shall make an Application for Mid-term Performance Review within the time limit specified in Regulation 19:*

*Provided that the Generating Company or Transmission Licensee or Distribution Licensee, as the case may be, submit to the Commission information in such form as may be stipulated by the Commission, together with the Accounting Statements, extracts of books of account and such other details as the Commission may require to assess the reasons for and extent of any variation in financial performance from the*

*approved forecast of Aggregate Revenue Requirement and expected revenue from tariff and charges.*

*11.3 The scope of the Mid-term Performance Review shall be a comparison of the actual performance of the Generating Company or Transmission Licensee or Distribution Licensee with the approved forecast of Aggregate Revenue Requirement and expected revenue from tariff and charges and shall comprise of the following:*

*(a) a comparison of the audited performance of the applicant for the previous two financial years with the approved forecast for such previous financial year; and*

*(b) a comparison of the performance of the applicant for the first half of the current financial year with the approved forecast for the current financial year.*

*(c) carrying cost on surplus/deficit amounts, if any, at the time of Mid-term Performance review.*

*11.4 For the efficiency parameters stipulated by the Commission under Regulation 12, the Commission shall carry out a detailed review of performance of the applicant vis-à-vis the approved forecast, as part of the Mid-term Performance Review.*

*11.5 Upon completion of the review under Regulation 11.4 above, the Commission shall attribute any variations or expected variations in performance, for variables specified under Regulation 12 below, to factors within the control of the applicant (controllable factors) or to factors beyond the control of the applicant (uncontrollable factors):*

*Provided that any variations or expected variations in performance, for variables other than those specified under Regulation 12 below, shall not be reviewed by the Commission during the Control Period and shall be attributed entirely to controllable factors:*

*Provided however, that where the applicant or any interested or affected party believes, for any variable not specified under Regulation 12 below that there is a material variation or expected variation in performance, for any financial year, on account of uncontrollable factors, such applicant or interested or affected party may apply to the Commission for inclusion of such variable, at the Commission's discretion, in the review under Regulation 11.4 above for such financial year.*

*11.6 Upon completion of the Mid-term Performance Review, the Commission shall pass an order recording-*

*(a) the approved aggregate gain or loss to the Generating Company or Transmission Licensee or Distribution Licensee on account of controllable factors and the amount of such gains or such losses that may be shared in accordance with Regulation 14.*



*(b) the approved modifications to the forecast of the Generating Company or Transmission Licensee or Distribution Licensee for the remainder of the Control Period."*

While the overall scope of the Mid-term Review is proposed to be retained as at present, certain clauses have been added/modified for greater clarity, as shown below:

*"8.1 The Generation Entity or Licensee or MSLDC shall file a Petition for Mid-term Review and Truing-up of the Aggregate Revenue Requirement and Revenue for the Years 2015-16 and 2016-17, and provisional Truing-up for the Year 2017-18, by November 30, 2017:*

*Provided that the Generation Entity or Licensee or MSLDC shall submit to the Commission information in such form as may be stipulated by the Commission, together with the Accounting Statements, extracts of books of account and such other details, including Cost Accounting Reports or extracts thereof, as the Commission may require to assess the reasons for and extent of any variation in operational and financial performance from the approved forecast of Aggregate Revenue Requirement and expected revenue from Tariff and charges.*

*8.2 The scope of the Mid-term Performance Review shall be a comparison of the actual operational and financial performance vis-à-vis the approved forecast for the first two years of the Control Period and revised forecast of Aggregate Revenue Requirement, expected revenue from existing Tariff, expected revenue gap, and proposed category-wise Tariffs for the third and fourth year of the Control Period, of the Generation Entity or Licensee or MSLDC.*

*8.3 Upon completion of the review under Regulation 8.2, the Commission shall attribute any variations or expected variations in performance, for variables specified under Regulation 9, to factors within the control of the Petitioner (controllable factors) or to factors beyond the control of the Petitioner (uncontrollable factors):*

*Provided that any variations or expected variations in performance, for variables other than those specified under Regulation 9, shall not be reviewed by the Commission during the Control Period and shall be attributed entirely to controllable factors:*

*Provided however, that where the Petitioner believes, for any variable not specified under Regulation 9.1 that there is a material variation or expected variation in performance for any year, on account of uncontrollable factors,*

*such Petitioner may apply to the Commission for inclusion of such variable, at the Commission's discretion, in the Mid-term Review for such Year.*

8.4 *Upon completion of the Mid-term Review, the Commission shall pass an order recording-*

- (a) the approved aggregate gain or loss to the Generation Entity or Licensee or MSLDC on account of controllable factors for the Years 2015-16 and 2016-17 and provisional Truing-up for the Year 2017-18, and the amount of such gains or such losses that may be shared in accordance with Regulation 11;*
- (b) the approved aggregate gain or loss to the Generation Entity or Licensee or MSLDC on account of uncontrollable factors for the Years 2015-16 and 2016-17, and provisional Truing-up for the Year 2017-18, and the amount of such gains or such losses that were not recovered during the respective years and may be shared in accordance with Regulation 10;*
- (c) the approved modifications to the Aggregate Revenue Requirement and Tariffs of the Generation Entity or Licensee or Fees and Charges of the MSLDC for the remainder of the Control Period."*

### **2.4.3 Annual Performance Review**

Regulation 10 of MERC MYT Regulations, 2011 provides for Annual review of operational performance. However, it may be noted that this clause has been utilised only once, for M/s Adani Power Transmission Company Limited, and has not been invoked for any other Utility. It is felt that there is no benefit in retaining this provision, especially, since, no revision to the ARR and/or tariff is permitted under this Clause. Hence, it is proposed to remove the provisions related to Annual Performance Review.

### **2.5 Baseline Values Determination**

The baseline data considered, while defining the trajectory of different performance and financial parameters for the Control Period needs to be accurate and reliable. Such baseline data has been considered based on audited accounts of the Utilities and prudence check and operational and financial parameters of the Utility based on true-up Orders issued by the Commission. The existing performance levels of the Utilities regulated by the Commission also need to be borne in mind while defining the baseline values for the next Control Period. At this stage, the true-up Orders for FY 2012-13 and FY 2013-14 have been issued by the Commission during Mid Term Performance Review for most of Utilities. Hence, we have analysed the operational

and financial data for a period of three years from FY 2011-12 to FY 2013-14, based on the true-up Orders for the respective years, for determining the norms for the third Control Period.

## ***2.6 Revision in Operational Norms***

A suitable performance trajectory for improvement in operational parameters has to be evolved along with an appropriate arrangement for sharing the gains and losses on account of superior and inferior performance vis-à-vis target performance, with the beneficiaries. This will ensure protection of consumers' interests as well as provide motivation to the Utilities for improving the efficiency of operations.

While setting the norms, due regard has to be given to the existing performance levels and the desired performance levels, and the performance improvement trajectory has to be designed in such a manner that sufficient time is given to the Utilities to achieve the desired operational efficiency, while at the same time ensuring that the performance trajectory is not slack and is easily achievable by the Utilities. However, since one of the basic objectives of the MYT regime is to ensure that the consumer tariffs are reduced in the long-term, the operational norms have to be revised at the beginning of each Control Period, on the basis of the actual performance achieved during the previous Control Period, so that the benefits of operational efficiency improvement are passed on the consumers.

At the same time, some operational performance norms or O&M norms may also have to be revised upwards to reflect the performance approved by the Commission in the true-up Orders. Under this mechanism, the Utilities are allowed to retain the incentive earned during the Control Period, and at the end of the Control Period, the operational norms are revised, so that there is continuous improvement and the Utilities are incentivised to further improve their operational efficiency.

Further, for specifying the operational as well as O&M norms for new Transmission Licensee or Distribution Licensee, the same depends on availability of data. Till the time the actual data is available for the respective new licensee, the operational as well as O&M norms of existing licensees will have to be made applicable, as discussed in subsequent sections of the Discussion Paper.

## ***2.7 Controllable and Uncontrollable Factors***

While formulating the MYT framework, it is essential to clearly specify the controllable factors and uncontrollable factors and their treatment. The impact on the

Utility due to uncontrollable factors are generally considered as a pass-through element in tariffs, while the impact – gain or loss – on account of controllable factors has to be shared between the Utility and the beneficiaries in a specified manner.

Regulation 12 of MERC MYT Regulations, 2011 specifies the various controllable and uncontrollable factors to be considered under second Control Period and Regulations 14 and 15 provide the mechanism for treatment of gains or losses arising on account of such controllable and uncontrollable factors, respectively.

### **2.7.1 Controllable factors**

Controllable factors are those considered to be under the Utility's control. In Regulation 12.2 of MERC MYT Regulations, 2011, various controllable parameters have been specified as under:

*“12.2 Some illustrative variations or expected variations in the performance of the applicant, which may be attributed by the Commission to controllable factors include, but are not limited to the following:*

- (a) Variations in capital expenditure on account of time and/or cost overruns/efficiencies in the implementation of a capital expenditure project not attributable to an approved change in scope of such project, change in statutory levies or force majeure events;*
- (b) Variations in technical and commercial losses, including bad debts;*
- (c) Variations in performance parameters;*
- (d) Variations in working capital requirements;*
- (e) Failure to meet the standards specified in the Standards of Performance Regulations, except where exempted in accordance with those Regulations;*
- (f) Variations in labour productivity;*
- (g) Variation in operation & maintenance expenses;*
- (h) Variation in Wires Availability and Supply Availability; and*
- (i) Coal transit losses.”*

Sub-clause (a) specifies that change in Capital Expenditure on account of time and/or cost overrun/inefficiencies in the implementation of capital expenditure projects, which are not attributable to an approved change in scope of such project or change in statutory levies or force majeure events, shall be considered as controllable, since the Utility is responsible for any delay in the project completion

and the impact of the delay in terms of cost should not be passed on to consumers, except in specific circumstances mentioned above. However, it is actually the change in 'Capitalisation', which leads to increase in capitalisation on account of increase in interest during construction and allied expenses. Such change in capitalisation would also impact the other heads of ARR such as Interest Expenses, Depreciation and Return on Equity. Also, the Commission in second Control Period has disallowed variation in capitalisation on account of time over-run or cost over-run. Hence, it would be appropriate to consider the "variation in capitalisation" instead of "variation in capital expenditure" in above said sub-clause (a). Further, such variation in capitalisation ultimately affects the Interest expenses, Return on Equity and Depreciation, to be considered in ARR for Generation Entity or licensee. Hence, it is also proposed to consider the "variation in Interest and Finance Charges, Return on Equity, and Depreciation on account of variation in such capitalisation" as controllable factor.

Sub-clause (d) specifies that the "Variations in working capital requirements" shall be treated as controllable. It should be noted that in the ARR, interest on working capital rather than the working capital requirement, is allowed for recovery, hence, the controllable parameter is proposed to be modified to specify "Variations in interest on working capital requirement" rather than "Variations in working capital requirements". If done accordingly, then the Utility would have two avenues for reducing the working capital interest, viz., the interest rate on the working capital requirement and the working capital requirement itself. It should be noted that most Utilities do not incur significant interest on working capital, as they efficiently manage the working capital requirement itself, rather than the interest rate on the same. The comparison shall be done between the normative IWC allowed in the Tariff Order and the normative IWC computed at the time of Truing-up, based on the trued up components of the working capital requirement.

Sub-clause (b) specifies that variation in technical and commercial losses have to be considered as controllable factors, since the Transmission and Distribution Licensees are bound to reduce these losses in accordance with the trajectory specified by the Commission.

In the electricity supply business, there is a risk of non-payment of electricity bills by the beneficiaries. The distribution licensee has access to the consumers' security deposit, which is collected for precisely to mitigate the risk of non-payment of electricity bills. However, the licensee has to ensure that the collection efficiency is maximized and even the arrears, if any, should be collected. The efforts towards maximizing the collection efficiency are required to be put in throughout the year to have adequate cash flow with the licensee and reduce the burden of bad debts.

Hence, it is proposed that “collection efficiency” be considered as a controllable factor.

Sub-clause (f) and (g) specified the variation in labour productivity and O&M expenses as controllable factors respectively. O&M expenses are well within the control of the Utility’s management, and are hence, classified as controllable factors under the MYT framework. The labour productivity is indirectly related to controlling the O&M expenses and variation in labour productivity in turn affect the variation in O&M expenses. Hence, the labour productivity has been removed from controllable parameters and only variation in O&M expenses is continued as controllable factor under proposed Regulations.

The Distribution Licensees have entered into power purchase agreements with the Generation Entity or other supplier to supply power to their consumers. The Distribution Licensees have to ensure the timely payment towards the power payment bills as per terms of contract. Transmission System Users are also required to pay the monthly transmission charges on time. Further, the Generation Entity is also required to pay the bills of fuel supplier on time. The delay in payment of such transactions attracts delayed payment charges. The objective of introducing the delayed payment charges in any financial transaction is to bring in discipline in payment. Hence, it is proposed to introduce the “payment efficiency” as a controllable factor. This aims at timely payment of bills and effective cash flow utilisation by Utilities. Further, treatment of such delayed payment charge and rebate or incentives on account of such payment efficiency is discussed in subsequent section.

As regards the Standards of performance, it may be noted that the Commission has recently notified the MERC (Standards of Performance of Distribution Licensees, Period for Giving Supply and Determination of Compensation) Regulations, 2015. These Regulations have specified the mandatory and guaranteed standards to be achieved by the Distribution Licensees while providing the service to the consumers and amount of compensation to be provided to consumers on failure to meet such standards. These standards are mandatory and the Distribution Licensee has to adhere to such standards. Hence, it is proposed not to consider these standards under controllable factors.

Further, the amount of compensation given to consumers on account of failure to comply with these standards shall also not be allowed to recover through ARR and tariff. As present, it may be noted that no segregation is submitted by the licensee regarding amount paid as compensation or penalties on account of failure in meeting such Standards of Performance. Hence, it is also proposed that separate provision of accounts has to be made for booking the amount paid as compensation or penalties

on account of failure in meeting such Standards of performance and respective amount paid to consumers or any other affected party shall be booked in that account only.

## **2.7.2 Uncontrollable factors**

Uncontrollable factors are those factors, which are beyond the control of the Utility.

Regulation 12.1 of MERC MYT Regulations, 2011 specifies the uncontrollable factors as under:

*“12.1 The “uncontrollable factors” shall comprise of the following factors which were beyond the control of, and could not be mitigated by the applicant, as determined by the Commission. List of uncontrollable factors is as follows:*

- (a) Force Majeure events, such as acts of war, fire, natural calamities, etc.;*
- (b) Change in law;*
- (c) Variation in fuel cost on account of variation in coal, oil and all primary-secondary fuel prices;*
- (d) Taxes and Duties;*
- (e) Variation in the cost of power generation and/or power purchase due to the circumstances specified in Regulation 26; and*
- (f) Variation in freight rates; ”*

The variation in fuel cost on account of variation in coal, oil and all primary-secondary fuel prices is already considered as uncontrollable. It may be noted that the variation or part of variation in power purchase due to variation in rate of power purchase on account of change in fuel prices or subsequent issuance of order from Central Commission or State Commission or any other factors may not be within the control of Distribution Licensee and such impact has to be pass through the consumers. Further, it may be noted that in some instances like delay in signing of FSA, non-compliance of clauses of power purchase agreement or arrangement, etc., such variation in power purchase might be on account of reasons attributable to Distribution Licensee or Generation Entity or its supplier. In such case, to avoid increase in cost, the Commission intends to insert certain clauses at time of approval of power purchase arrangement or agreement, which has been discussed in subsequent sections. Hence, it is proposed to consider the “variation in power purchase due to variation in rate of power purchase from approved sources, subject to clauses in the power purchase agreement or arrangement approved by the Commission” as uncontrollable factor.

In the MERC MYT Regulations, the ROE approach has been considered and same is proposed to be retained for the next Control Period. In this context, since, long-term interest rates at which Utilities are borrowing long term loans are proposed to be considered as an uncontrollable factor.

## **2.8 Sharing of Gains and losses**

The variation in expenses and revenue on account of uncontrollable factors will have to be passed through to the consumers periodically, through the 'Z' factor.

Clause 8.1 (2) of the Tariff Policy stipulates:

*“The State Commissions should introduce mechanisms for sharing of excess profits and losses with the consumers as part of the overall MYT framework. In the first control period the incentives for the utilities may be asymmetric with the percentage of the excess profits being retained by the utility set at higher levels than the percentage of losses to be borne by the utility. This is necessary to accelerate performance improvement and reduction in losses and will be in the long term interest of consumers by way of lower tariffs.”*

The Profit Sharing mechanism is intended to share the benefits of better performance of the Utility with the consumers, while at the same time ensuring that the Utility has enough incentive to improve its operational efficiency. The proposed sharing of gains and losses in case of controllable factors is discussed below:

### **2.8.1 Sharing of gains or losses on account of controllable factors**

Regulation 14 of MERC MYT Regulations, 2011 provides for sharing of gains or losses on account of controllable factors as under:

*14.1 The approved aggregate gain to the Generating Company or Transmission Licensee or Distribution Licensee on account of controllable factors shall be dealt with in the following manner:*

*(a) One-third of the amount of such gain shall be passed on as a rebate in tariff over such period as may be stipulated in the Order of the Commission under Regulation 11.6;*

*(b) The balance amount, which will amount to two-third of such gain, may be utilised at the discretion of the Generating Company or Transmission Licensee or Distribution Licensee.*



*14.2 The approved aggregate loss to the Generating Company or Transmission Licensee or Distribution Licensee on account of controllable factors shall be dealt with in the following manner:*

*(a) One-third of the amount of such loss may be passed on as an additional charge in tariff over such period as may be stipulated in the Order of the Commission under Regulation 11.6; and*

*(b) The balance amount of loss shall be absorbed by the Generating Company or Transmission Licensee or Distribution Licensee.*

*14.3 Gains and losses on account of controllable factors during the second Control Period shall be shared with the consumers at the time of Mid-term Performance Review and also at the time of tariff determination process of third Control Period."*

In this context, the FOR Report on MYT framework and distribution margin has recommended as under:

***"6.2 Sharing of benefits of efficiency gains with consumers***

*6.2.1 The losses on account of under achievement in controllable parameters shall not be shared with consumers as norms are being fixed at close to actual levels, except in extraordinary circumstances if decided by the SERC.*

*6.2.2 Efficiency gains with respect to controllable parameters shall be shared between the licensee and the consumer in the ratio of two-third and one-third at the end of every year during the truing up exercise."*

In view of the above, it may be contended that losses on account of controllable factors have to be borne by the Utility only, since, the operational norms as well as the O&M norms are being specified based on the actual performance of the Utility in the previous Control Period.

The practices followed by selected other SERCs and CERC in this regard have been discussed below:

GERC MYT Regulations, 2011 specifies the mechanism for sharing of gains or losses on account of controllable factors as under:

*"25.1 The approved aggregate gain to the Generating Company or Transmission Licensee or Distribution Licensee on account of controllable factors shall be dealt with in the following manner:*

*(a) One-third of the amount of such gain shall be passed on as a rebate in tariffs over such period as may be stipulated in the Order of the Commission under Regulation 22.6;*

*(b) The balance amount, which will amount to two-thirds of such gain, may be utilised at the discretion of the Generating Company or Transmission Licensee or Distribution Licensee.*

*25.2 The approved aggregate loss to the Generating Company or Transmission Licensee or Distribution Licensee on account of controllable factors shall be dealt with in the following manner:*

*(a) One-third of the amount of such loss may be passed on as an additional charge in tariffs over such period as may be stipulated in the Order of the Commission under Regulation 22.6; and*

*(b) The balance amount of loss, which will amount to two-thirds of such loss, shall be absorbed by the Generating Company or Transmission Licensee or Distribution Licensee.”*

The RERC in its RERC (Terms and Conditions for Determination of Tariff) Regulations, 2014 specified as under:

*“9. Gains and Losses on account of Uncontrollable and Controllable factors*

*...*

*2) Gain or loss to the Generating Company or Licensee on account of controllable factors shall be retained or borne by the Generating Company or Licensee, as the case may be, except in case of the following:*

*a) Rate of Interest on working capital requirement, which shall be as per regulation 27;*

*b) Station Heat Rate, Auxiliary Consumption, and Secondary fuel oil consumption, which shall be as per regulation 57 and*

*c) Distribution loss, which shall be as per regulation 76.*

*.....*

*27. Interest charges on working capital*

*...*

*(2) Rate of interest on working capital to be computed shall be on normative basis and shall be 250 basis points higher than the average Base Rate of State Bank of India prevalent during first six months of the year previous to the relevant year. The interest on working capital shall be computed on normative basis notwithstanding that the generating company or licensee has not taken working capital loan from any outside agency. The variation in the interest amount on account of actual vis-a-vis normative interest rate on normative working capital shall be shared in the ratio of 50:50 between the generating company/licensee and the beneficiary.*

....

57. *Sharing of gains or losses on account of controllable factors*

***(1) The financial gains by a generating company on account of Station Heat Rate, Auxiliary Consumption and Secondary Fuel Oil Consumption shall be shared between generating company and the distribution licensee on monthly basis, in the ratio of 60:40 between the generating company and beneficiary as per the following formulae:***

*Net Gain = (ECRN – ECRA) x Actual Generation*

*Where,*

*ECRN – Normative Energy Charge Rate computed on the basis of norms specified for Station Heat Rate, Auxiliary Consumption and Secondary Fuel Oil Consumption.*

*ECRA – Actual Energy Charge Rate computed on the basis of actual Station Heat Rate, Auxiliary Consumption and Secondary Fuel Oil Consumption for the month*

...

76. *Distribution Losses & Collection Efficiency*

...

***(5) The gains arising on account of distribution losses being lower or the losses arising on account of distribution loss being higher than the target fixed for any year by the Commission, shall be shared in the ratio of 50:50 between the distribution licensee and the consumers.”(emphasis added)***

The UERC in its UERC (Terms and Conditions for Determination of Tariff) Regulations, 2011 specified as under:

*“15. Sharing of Gains and Losses on account of Controllable factors*

*(1) The approved aggregate gain to the Applicant on account of controllable factors shall be dealt with in the following manner:-*

*a) 20% of such gain shall be passed on as a rebate in tariffs over such period as may be specified in the Order of the Commission*

*b) The balance amount of gain may be utilized at the discretion of the Applicant.*

*(2) The approved aggregate loss to the Applicant on account of controllable factors shall be dealt with in the following manner:-*

*a) 25% of the amount of such loss shall be allowed by the Commission to be recovered through tariffs over such period as may be specified in the Order of the Commission*

*b) The balance amount of loss shall be absorbed by the Applicant.”*

The CERC in its CERC Tariff Regulations, 2014 specified as under:

*“(2) The generating station shall carry out truing up of tariff of generating station based on the performance of following Controllable parameters:*

*a) Controllable Parameters :*

- i) Station Heat Rate;*
- ii) Secondary Fuel Oil Consumption;*
- iii) Auxiliary Energy Consumption ; and*
- iv) Re-financing of Loan*

*(3) The Commission shall carry out truing up of tariff of generating station based on the performance of following Uncontrollable parameters:*

- i) Force Majeure;*
- ii) Change in Law; and*
- iii) Primary Fuel Cost*

*(4) The Transmission Licensee shall carry out truing up of tariff of transmission system based on the controllable parameter of Re-Financing of loans:*

*(5) The Commission shall carry out truing up of tariff of transmission licensee based on the performance of following Uncontrollable parameters:*

- (i) Force Majeure; and*
- (ii) Change in Law.*

***(6) The financial gains by a generating company or the transmission licensee, as the case may be on account of controllable parameters shall be shared between generating company/transmission licensee and the beneficiaries on monthly basis with annual reconciliation. The financial gains computed as per following formulae in case of generating station on account of operational parameters as shown in Clause 2(a) (i) to (iii) of this Regulation shall be shared in the ratio of 60:40 between generating station and beneficiaries:***

*Net Gain = (ECRN– ECRA) x Scheduled Generation*

*Where,*

*ECRN – Normative Energy Charge Rate computed on the basis of norms specified for Station Heat Rate, Auxiliary Consumption and Secondary Fuel Oil Consumption.*  
*ECRA – Actual Energy Charge Rate computed on the basis of actual SHR, Auxiliary Consumption and Secondary Fuel Oil Consumption for the month.*

*Provided that in case of financial gains on account of Clause 2 (a)(iv) and Clause 4 of this Regulation shall be shared in accordance with Clause 7 of Regulation 26 of these regulations*

*(7) The financial gains and losses by a generating company or the transmission licensee, as the case may be, on account of uncontrollable parameters shall be passed on to beneficiaries of the generating company or to the long term transmission customers/DICs of transmission system, as the case may be.” (emphasis added)*

It is seen that most SERCs as well as CERC have adopted the approach of sharing the gains as well as losses, though the percentage shares vary. Further, it may be noted that SERCs as well as CERC follows different mechanism of sharing of gains and losses. The Commission in existing MERC MYT Regulations, 2011 has adopted a symmetrical mechanism for sharing of gains and losses. It has specified that one third of gains or losses shall be shared with the consumers and remaining part shall be retained/borne by Utilities.

As regards the sharing of gains and losses, the Tariff Policy stipulates as under:

***“8.1 Implementation of Multi-Year Tariff (MYT) framework***

... ..

*2) The State Commissions should introduce mechanisms for sharing of excess profits and losses with the consumers as part of the overall MYT framework. In the first control period the incentives for the utilities may be asymmetric with the percentage of the excess profits being retained by the utility set at higher levels than the percentage of losses to be borne by the utility. This is necessary to accelerate performance improvement and reduction in losses and will be in the long term interest of consumers by way of lower tariffs.” (emphasis added)*

The mechanism of sharing of gains and losses may be asymmetric. The Commission specifies controllable factors and the operating norms for Utilities. The Commission, to protect the interest of consumer, intends to pass on the maximum benefit to the consumer, on account of better performance of Utilities for specified Operating norms and controllable factor. Hence it is proposed that two-third of gains on account of controllable factors shall be shared with the consumers.

Further, it may be noted that FOR Report on MYT Framework recommends that no sharing of losses shall be done with consumer. Also, CERC Tariff Regulations, 2014 specify no sharing of losses on account of controllable factors with the consumers. However, Commission has proposed the similar approach as specified in existing MERC MYT Regulations, 2011 for sharing of losses on account of controllable factors.

Further, Gains or losses shall be shared with the consumers at the time of the Mid-term Review/Truing-up for the third Control Period.

Accordingly, the following clauses have been proposed in draft Regulations:

*“11.1 The approved aggregate gain to the Generation Entity or Licensee on account of controllable factors shall be dealt with in the following manner:*

*(a) Two-third of the amount of such gain shall be passed on as a rebate in Tariff over such period as may be stipulated in the Order of the Commission under Regulation 8.4;*

*(b) The balance amount of such gain shall be retained by the Generation Entity or Licensee.*

*11.2 The approved aggregate loss to the Generation Entity or Licensee on account of controllable factors shall be dealt with in the following manner:*

*(a) One-third of the amount of such loss may be passed on as an additional charge in Tariff over such period as may be stipulated in the Order of the Commission under Regulation 8.4;*

*(b) The balance amount of such loss shall be absorbed by the Generation Entity or Licensee.”*

## **2.8.2 Mechanism for pass through of gains or losses on account of uncontrollable factors**

Performance based Tariff mechanism allows for recovery of specific costs that are not meant to be subject to the price cap. Z-factors usually include costs over which the Utility has no control, such as fuel cost variation, etc.

Regulation 13 of MERC MYT Regulations, 2011 provides for pass through of gain or losses to the Generation Entity or Licensee on account of uncontrollable factors.

The above said Regulations has clearly specified the mechanism for passing on gain or loss on account of uncontrollable factor under Z-factor charge including  $Z_{FAC}$  and  $Z_{OUC}$ .

Further, the Commission has notified the third amendment in MERC MYT Regulations, 2011 in May, 2014. The following changes have been made by the Commission in the mechanism of Z-factor charge:

- (i) The recovery of on account of variation in fuel and power purchase cost has been allowed on monthly basis instead of half yearly, with ceiling of 20% of variable component of tariff.

- (ii) Any excess in the FAC charge over and above such stipulated ceiling of 20% shall be carried forward by the Distribution Licensee and shall be recovered over such future period as may be directed by the Commission.
- (iii) Prior approval of  $Z_{FAC}$  for first month of the first year of second Control Period, to be recovered in subsequent months of the second Control Period, subject to prudence check.
- (iv) Submission on quarterly basis for post-facto approval of  $Z_{FAC}$ .
- (v) Approved gain or loss on account of uncontrollable factors other than due to variation in fuel and power purchase rates shall be passed through under  $Z_{OUC}$  as an adjustment in tariff on yearly basis as specified in regulations and as may be determined in Order of the Commission.

It is proposed that the existing mechanism of  $Z_{FAC}$  as specified in MERC MYT (Third Amendment) Regulations, 2014, be retained, with some modifications, as reproduced below:

*“10.1 The aggregate gain or loss to the Generation Entity on account of variation in cost of fuel shall be passed through as an adjustment in the Energy Charges of the Generation Entity on a monthly basis, as specified in Regulation 47.6.*

*10.2 The aggregate gain or loss to the Distribution Licensee on account of variation in cost of fuel and power purchase shall be passed through under the Fuel Adjustment Charge (FAC) component of the Z-factor Charge ( $Z_{FAC}$ ), as an adjustment in the Tariff of the Distribution Licensee on a monthly basis, as specified in these Regulations and as may be determined in the Order of the Commission passed under these Regulations, and shall be subject to ex-post facto approval by the Commission on a quarterly basis:*

*Provided that the  $Z_{FAC}$  for the first month of the first year of the Control Period shall require the prior approval of the Commission thereafter, based on prudence check:*

*Provided further that the Distribution Licensee shall submit, in the stipulated formats, details of the variation between expenses incurred and the figures approved by the Commission, and the detailed computations and supporting documents as may be required for verification by the Commission for the first month of the first year of the Control Period, for prior approval of  $Z_{FAC}$ :*

*Provided also that the Distribution Licensee shall submit the details of variation in fuel costs relating to power generated from own generation stations and cost of power procured for the first month of the first year of the Control Period, after completion of the first month.*

10.3 The  $Z_{FAC}$  component shall be applicable to the entire sales of the Distribution Licensee without any exemption to any consumer.

10.4 The  $Z_{FAC}$  component shall be computed and charged on the basis of actual variation in cost of fuel and power purchase relating to power procured during any month subsequent to such costs being incurred, in accordance with these Regulations, and shall not be computed on the basis of estimated or expected variations in fuel costs.

10.5 After the approval by the Commission for the  $Z_{FAC}$  for the first month of the first year of the Control Period, the Distribution Licensee shall submit such details in the stipulated formats to the Commission of the variation between expenses incurred and the figures approved by the Commission, and the detailed computations and supporting documents as may be required for verification by the Commission for the subsequent months of the Control Period, for post-facto approval of  $Z_{FAC}$ :

Provided that the first quarter of the first year of the Control Period shall include the first month of the first year of the Control Period, for which prior approval of  $Z_{FAC}$  is required:

Provided further that the Distribution Licensee shall submit the details of variation in fuel costs relating to power generated from own generation stations and cost of power procured for the subsequent months of the Control Period, on a quarterly basis within 60 days after completion of each quarter, for post facto approval:

Provided also that the Distribution Licensee shall submit the  $Z_{FAC}$  levied to all consumers for the preceding quarter vis-a-vis the  $Z_{FAC}$  recoverable, along with the detailed computations and supporting documents as may be required for verification by the Commission:

Provided also that the Distribution Licensee shall provide details of the Commission's approval for levy of  $Z_{FAC}$ , from time to time, on its internet website.

10.6 The formula for computation of the FAC component of Z-factor Charge is as under:

$$Z_{FAC} \text{ (Rs crore)} = F + C + B,$$

Where,

$Z_{FAC}$  = Z-factor Charge component for FAC;

F = Change in fuel cost of own generation and cost of power purchase;

C = Carrying Cost for any under recovery/over recovery, computed at the Bank Rate prevailing at the beginning of the month;

B = Adjustment factor for over-recovery/under-recovery.



10.7 The calculation for FAC to be charged for the month "n" is as under:

$$Z_{FAC\ n} \text{ (Rs crore)} = F_{n-2} + C_{n-2} + B_{n-2},$$

Where,

$F_{n-2}$  = Change in fuel cost of own generation and cost of power purchase for the month "n-2", and shall be computed as

$$F \text{ (Rs. Crore)} = A_{FC,Gen} + A_{FC,PP},$$

Where,

$A_{FC,Gen}$  = Change in fuel cost of own generation, to be computed based on the directives and norms approved by the Commission, including heat rate, auxiliary consumption, etc.;

$A_{FC,PP}$  = Change in variable and/or fixed cost of power procured from other sources, which would be allowed to the extent it satisfies the criteria prescribed in these Regulations and the prevailing Tariff Order, and subject to applicable norms;

$C_{n-2}$  = Carrying cost for any under recovery/over recovery for the month "n-2";

$$B_{n-2} \text{ (Rs. Crore)} = Z_{FAC\ n-4} - R_{n-2}$$

Where:

$B_{n-2}$  = Adjustment factor for over-recovery / under-recovery for the month "n-2";

$Z_{FAC\ n-4}$  =  $Z_{FAC}$  for the month "n-4";

$R_{n-2}$  =  $Z_{FAC}$  for the month "n-4" actually recovered in the month "n-2".:

10.8 The total  $Z_{FAC}$  recoverable as per the formula specified above shall be recovered from the actual sales in "Rupees per kilowatt-hour" terms:

Provided that in case of unmetered consumers, FAC component of  $Z_{FAC}$  shall be recoverable based on estimated sales to such consumers, computed in accordance with such methodology as may be stipulated by the Commission:

Provided further that where the actual distribution losses of the Distribution Licensee exceed the level approved by the Commission, the amount of FAC component of  $Z_{FAC}$

corresponding to the excess distribution losses (in kWh terms) shall be deducted from the total FAC component of  $Z_{FAC}$  recoverable.

10.9 The  $Z_{FAC}$  per kWh for a particular Tariff category/sub-category/consumption slab shall be computed as per the following formula:

$$Z_{FAC\ Cat} (Rs/kWh) = [Z_{FAC} / (\text{Metered sales} + \text{Unmetered consumption estimates} + \text{Excess distribution losses})] * k * 10,$$

Where:

$Z_{FAC\ Cat}$  =  $Z_{FAC}$  component for a particular Tariff category/sub-category/consumption slab in 'Rupees per kWh' terms;

$k$  = Average Billing Rate / ACOS;

Average Billing Rate = Average Billing Rate for a particular Tariff category/sub-category/consumption slab under consideration in 'Rupees per kWh' as approved by the Commission in the Tariff Order:

Provided that the Average Billing Rate for the unmetered consumers shall be based on the estimated sales to such consumers, computed in accordance with such methodology as may be stipulated by the Commission;

ACOS = Average Cost of Supply in 'Rupees per kWh' as approved for recovery by the Commission in the Tariff Order:

Provided that the monthly  $Z_{FAC}$  shall not exceed 20% of the variable component of Tariff or such other ceiling as may be stipulated by the Commission from time to time:

Provided further that any under-recovery in the  $Z_{FAC}$  on account of such stipulated ceiling shall be carried forward by the Distribution Licensee and shall be recovered over such future period as may be directed by the Commission."

The MERC MYT Regulations, 2011 specified that gain or loss on account of variation in uncontrollable factors other than components of FAC shall be passed through under Z-factor charge  $Z_{OUC}$  on yearly basis. This provision has not been invoked during the second Control Period. However, a need has been felt to have a mechanism to pass through the impact of Judgments of higher Courts, as well as the impact of revision in the intra-State Transmission Tariff, without waiting for the Mid-term Review or end of the Control Period. It is hence, proposed to modify the coverage of the  $Z_{OUC}$  to address these impacts, as discussed below:

### Consideration of impact of Judgments of Higher Courts under Z<sub>OUC</sub>

The affected/aggrieved party may appeal against the Tariff Order of the Commission before the Appellate Tribunal of Electricity (ATE) under Section 111 of the Act and further to Supreme Court under Section 125 of the Act, if aggrieved by Judgment of ATE. Since, Judgments of the higher Courts are binding on the Commission, it is required to pass on consequential order and within the time frame given by higher Court, if any. In view of the various ATE Judgements, viz. Judgments in Appeal No. 36 of 2008, Appeal No. 160 of 2012, Appeal No. 174 of 2013, etc., the Commission is required to pass on the consequential impact of such Judgments of higher Courts along with carrying cost, on the applicable items. There might be more than one Judgments of higher Courts for which the consequential impact need to pass on to consumers. In the past, the consequential impact of Judgments of higher Courts, including carrying cost, have been passed through tariff Orders or by way of additional energy charge through intermediate Orders of the Commission. The delay in passing consequential Order leads to increase in carrying cost.

During Mid Term Performance Review exercise, the Commission has considered the impact of Judgments of higher Courts in Mid Term Performance Review Orders and it is observed that carrying cost is relatively higher while passing on the impact of Judgments of higher Courts, since the tariff was revised after more than two (2) years.

At the other end, immediate passing of consequential impact to consumer would lead to revision in tariff more than once in financial year. The sub-section (4) of Section 62 of the Act stipulates that no tariff or part of any tariff may ordinarily be amended, more frequently than once in any financial year, except any changes expressly permitted under the terms of any fuel surcharge formula. The above said sub-section intends to have stable electricity tariff during the financial year.

Hence, the consequential impact of such Judgments will be considered as uncontrollable factor and variation on account of such uncontrollable factor will be recovered under Z<sub>OUC</sub> charge, to be determined on yearly basis.

Accordingly, the following clause has been proposed:

*“10.10 The consequential impact of decisions of higher Courts or Tribunals on the Generation Entity or Licensee will be passed through under the Other Uncontrollable Cost component of the Z-factor Charge (Z<sub>OUC</sub>), as an adjustment in the Tariff of the Generation Entity or Licensee on a yearly basis, as may be determined in the Order of the Commission passed under this Regulation.”*

### Consideration of variation in transmission charges under Z<sub>OUC</sub>

The Commission determines the intra-State transmission charges payable by Transmission System Users in accordance with Regulation 64 of MERC MYT Regulations, 2011. In case a new Transmission Licensee achieves COD during the year, and the Commission determines the Annual Transmission Charge for such Transmission Licensee, then the Distribution Licensee should have some method to pass through this impact to the consumers, without having to wait till the Truing-up or Mid-term Review. Similarly, the impact of change in inter-State transmission charges on account of Orders issued by Central Commission or any other factor may also be passed on to consumers. Since, such impact of inter-State and intra-State transmission charges is not in control of Distribution Licensees, it is proposed that the variation of the same be passed on to consumer under Z<sub>OUC</sub> charge.

Accordingly, the following clause has been proposed:

*“10.11 The impact of change in the inter-State and intra-State transmission charges payable by the Distribution Licensee will be passed through under the Other Uncontrollable Cost component of the Z-factor Charge (Z<sub>OUC</sub>), as an adjustment in the Tariff of the Distribution Licensee on a yearly basis, as may be determined in the Order of the Commission passed under this Regulation.”*

### **3 Broad Financial Principles**

The broad financial principles envisaged under the MYT framework proposed for the third Control Period from FY 2016-17 to FY 2019-20 in the State of Maharashtra have been discussed in this Section. These broad financial principles are required to be specified for the State of Maharashtra considering various factors such as investments required in the sector, risks involved in the sector, sector structure, extent of private participation in the sector, investments that have materialized in the sector in the recent past, etc.

The existing MERC MYT Regulations, 2011 also address the broad financial principles. However, these financial principles need to be revisited while establishing the Multi-year Tariff framework for the third Control Period, in view of the developments subsequent to the notification of the above-said MERC MYT Regulations, 2011. The broad financial principles discussed in this Section are:

- Accounting Statement and Allocation Statement
- Financial Prudence
- Capital Cost
- Debt:Equity Ratio
- Approach for Giving Returns – Equity or Capital Employed
- Depreciation
- Interest on Loans
- Interest on Working Capital
- Carrying Cost or Holding Cost
- Treatment of Deposit works, Consumer Contribution and Grants
- Income Tax
- Foreign Exchange Rate Variation
- Rebate, Incentive, and Penalties
- Delayed Payment Surcharge

#### ***3.1 Accounting Statements and Allocation Statement***

The existing MERC MYT Regulations, 2011 define the Accounting Statements and Allocation Statement as under:

*“(1) “Accounting Statement” means for each financial year, the following statements, namely-*

*(i) balance sheet, prepared in accordance with the form contained in Part I of Schedule VI to the Companies Act, 1956 as amended from time to time;*

*(ii) profit and loss account, complying with the requirements contained in Part II of Schedule VI to the Companies Act, 1956;*

*(iii) cash flow statement, prepared in accordance with the Accounting Standard on Cash Flow Statement (AS-3) of the Institute of Chartered Accountants of India;*

*(iv) report of the statutory auditors”;*

*(v) cost records prescribed by the Central Government under Section 209(1)(d) of the Companies Act, 1956;*

*together with notes thereto, and such other supporting statements and information as the Commission may direct from time to time:*

*Provided that in case of any local authority engaged in the business of distribution of electricity, the Accounting Statement shall mean the items, as mentioned above, prepared and maintained in accordance with the relevant Acts or Statutes as applicable to such local authority:*

...

*(3) “Allocation Statement” means for each financial year, a statement in respect of each of the separate businesses of the Generating Company or Transmission Licensee or Distribution Licensee, based on allocation principles specified in Maharashtra Electricity Regulatory Commission (Uniform Recording, Maintenance and Reporting of Information) Regulations, 2009. “*

The Generating Entity and Licensees are required to submit their Accounting Statements and/or Allocation Statements in support of their claim and assessment of reasons for variation in expenses therein, at the time of Truing-up.

Utilities have to prepare these Accounting Statements as per the provisions of the Companies Act, 1956. It may be noted that the Companies Act, 1956 has been amended. The Companies Act, 2013 has been notified in the Official Gazette on August 30, 2013. The revised Schedules and Forms as per the Companies Act, 2013, shall be applicable from the date as prescribed therein or subsequent rules, notification, etc., issued there under.

The determination of tariff is being done separately for Generation Entity and Licensee under MERC MYT Regulations, 2011. At the time of Truing-up, the Generation Entity or Licensee are required to submit their Accounting Statements. One of the pre-requisites for determination of ARR and tariff for Generating Business

or Licensed Business is the availability of audited Accounting Statements for each separate Business. However, it may be noted that in case of multi-Business companies such as Reliance Infrastructure (RInfra) Limited and The Tata Power Company Limited (TPC), the Accounting Statements are being submitted for the Company as a whole including regulated (even for more than on State) and non-regulated Business. At the time of Truing-up, the Commission has to rely upon the Allocation Statement or Reconciliation Statement certified by the Statutory Auditor, submitted by the respective Generation Business or Transmission/Distribution Business. Hence, there is need for separate Accounting Statements for each regulated/licensed Business for which, the tariff is to be determined under the proposed Regulations.

In this regard, the MERC (General Conditions of Distribution Licence) Regulations, 2006 specifies as under:

2. (1) **DEFINITIONS:** *In these Regulations, unless the context otherwise requires: “Accounting Statement” means for each financial year, accounting statements for the Licensed Business comprising of : (i) balance sheet, prepared in accordance with the form contained in Part I of Schedule VI to the Companies Act, 1956; (ii) profit and loss account, complying with the requirements contained in Part II of Schedule VI to the Companies Act, 1956; (iii) cash flow statement, prepared in accordance with the Accounting Standard on Cash Flow Statement (AS-3) of the Institute of Chartered Accountants of India; (iv) report of the statutory auditors’ of the Distribution Licensee; (v) cost records prescribed by the Central Government under Section 209(1)(d) of the Companies Act, 1956, together with notes thereto and a statement of sources and application of funds, and such other supporting statements and information as the Commission may direct from time to time:*

*Provided that in case of any local authority engaged in the business of electricity, the Accounting Statement shall mean the items, as mentioned above, prepared and maintained in accordance with the relevant Acts or Statutes as applicable to such local authority.*

...

*“Annual Accounts” means the accounts of the Distribution Licensee prepared in accordance with the provisions of the Companies Act, 1956 and/or in such other manner as may be directed by the Commission from time to time;*

...

8.4.2 *The Distribution Licensee shall, in respect of the Licensed Business and in respect of any Other Business engaged in by the Distribution Licensee:*

*(a) keep such accounting records as would be required to be kept in respect of each such business so that the revenues, costs, assets, liabilities, reserves and provisions of, or reasonably attributable to the Licensed Business are separately identifiable in the books of the Distribution Licensee, from that of Other Business in which the Distribution Licensee may be engaged;*

*(b) prepare on a consistent basis from such accounting records and deliver to the Commission periodic Accounting Statements supported by Auditor's certificates, which shall, unless otherwise directed by the Commission, show separately the amounts of any revenue, cost, asset, liability, reserve or provision, which has been either charged from the Licensed Business to any Other Business or from any Other Business to the Licensed Business, as the case may be, together with a description of the basis of that charge; or determined by apportionment or allocation between the Licensed Business and any Other Business of the Distribution Licensee together with a description of the basis of the apportionment or allocation."* ***(emphasis added)***

Also, the MERC (Transmission Licence Conditions) Regulations, 2004 specifies as under:

### **3. Definitions**

*In these Regulations unless the context otherwise requires:*

*(a) "Accounting Statement" means for each financial year, accounting statements separately in respect of the Licensed Business and the Other Business, comprising-*

*(i) balance sheet, prepared in accordance with the form contained in Part I of Schedule VI to the Companies Act, 1956;*

*(ii) profit and loss account, complying with the requirements contained in Part II of Schedule VI to the Companies Act, 1956;*

*(iii) cash flow statement, prepared in accordance with the Accounting Standard on Cash Flow Statement (AS-3) of the Institute of Chartered Accountants of India;*

*(iv) report of the statutory auditors' of the Transmission Licensee;*

*(v) cost records prescribed by the Central Government under Section 209(1)(d) of the Companies Act, 1956,*

*together with notes thereto, and such other supporting statements and information as the Commission may direct from time to time;*

*(b) "Allocation Statement" means for each financial year, a statement in respect of each of the separate businesses of the Transmission Licensee, showing the amounts of any revenue, cost, asset, liability, reserve or provision, which has been either:*

*(i) charged from or to any Other Business together with a description of the basis of that charge; or*



*(ii) determined by apportionment or allocation between the Transmission Business and any Other Business of the Transmission Licensee, together with a description of the basis of the apportionment or allocation;*

...

*16.2 The Transmission Licensee shall in respect of the Licensed Business and the Other Business:*

*(a) keep such Allocation Statement as would be required, so that the revenues, costs, assets, liabilities, reserves and provisions for, or reasonably attributable to the Licensed Business are separately identifiable in the books of the Transmission Licensee;*

*(b) adopt a fair and transparent cost allocation mechanism for the reasonable allocation of joint and common costs between the Licensed Business and the Other Business;*

*(c) prepare on a consistent basis the Accounting Statements in accordance with the provisions of the Companies Act, 1956 and/or the standards or guidelines of the Institute of Chartered Accountants of India."*

As can be seen from the above extracts of the MERC Distribution Licence Regulations, the Accounting Statements have to be maintained for the Licensed Business. Further, the Allocation Statement is required in cases where the Distribution Licensee does some "Other Business" in order to optimise the utilisation of its assets. Similar provisions have been reproduced above for the Transmission Business. Thus, the Allocation Statement is not sufficient and cannot replace the requirement of separate Accounting Statements for the Licensed Distribution Business or Transmission Business.

In this regard, the ATE, in its Judgement dated 1 July, 2014 in Appeal No. 213 and 214 of 2013 in the matter of Jindal Steel and Power Limited v/s Chhattisgarh State Electricity Regulatory Commission, held as under:

*"19.1 The State Commission has rightly rejected the segregated accounts filed by the Appellant-JSPL and rightly disallowed the various capital cost and expenses due to absence of segregated audited accounts with regard to the distribution business of the Appellant-JSPL. The accounts prepared for the distribution business of the Appellant/JSPL-D were barely extractions from the audited accounts of the parent company i.e. JSPL based on certain assumptions and the audited accounts submitted by JSPL did not comply with the CSERC (License) Regulations, 2004 and, there was no opinion from the Auditor with respect to whether the accounts prepared gives true and fair view of the JSPL-licensed distribution business. The State Commission has legally rejected the segregated accounts filed by the JSPL-D for its distribution licensed business on the ground that the account book or book keeping was not done separately for*

*the distribution business and the accounts did not reflect the actual expenditure with respect to its distribution business. However, we have given liberty to the Appellant to prepare separate accounts for their distribution business duly certified by the statutory auditors as sought by the State Commission and the State Commission shall consider the same in the final true-up of the accounts. The auditors will also certify the common expenses apportioned to the distribution business as true and fair view of the JSPL's distribution business. "*

In view of the above said Judgment, it is proposed to add a proviso in the MERC MYT Regulations, 2015 that the Licensees have to submit separate Accounting Statements for each licenced/regulated Business. At the same time, it is appreciated that it may not be possible for the Generating Business and Licensed Business to submit separate Accounting Statements till the present year (FY 2015-16). Hence, it is proposed that separate Accounting Statements for each licensed/regulated Business shall be necessarily submitted latest for FY 2016-17 onwards. It is also proposed that in case of absence of such Accounting Statements for each licensed/regulated Business from FY 2016-17 onwards, the Petition filed by the concerned Generation Business/licensed Business shall be rejected.

Accordingly, the definitions of Accounting Statement and Allocation Statement are proposed to be modified as under:

*"Accounting Statement" means for each Year, the following statements, namely-*

- (i) balance sheet, prepared in accordance with the form contained in Part I of Schedule VI to the Companies Act, 1956 as amended from time to time;*
- (ii) profit and loss account, complying with the requirements contained in Part II of Schedule VI to the Companies Act, 1956;*
- (iii) cash flow statement, prepared in accordance with the Accounting Standard on Cash Flow Statement (AS-3) of the Institute of Chartered Accountants of India;*
- (iv) report of the statutory auditors';*
- (v) cost records prescribed by the Central Government under Section 209(1)(d) of the Companies Act, 1956;*

*together with notes thereto, and such other supporting statements and information as the Commission may direct from time to time:*

*Provided that the revised schedules and forms as stipulated under the Companies Act, 2013 shall be applicable from the date as prescribed therein:*

*Provided further 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 also 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 Year 2016-17 onwards, the Petitions filed by the Generating Entity or Licensee or MSLDC, as the case may be, shall be rejected by the Commission:*

*Provided also that the Generating Entity or Licensee or MSLDC shall submit the Statutory Auditor's comments, observations and notes to Accounts, along with the Accounting Statements, along with a summary of the key issues highlighted by the Statutory Auditor and the steps taken by the Generating Entity or Licensee or MSLDC, as the case may be, to address such key issues:*

*Provided also that in case of any Local Authority engaged in the business of distribution of electricity, the Accounting Statement shall mean the items, as mentioned above, prepared and maintained in accordance with the relevant Acts or Statutes as applicable to such local authority:*

*Provided also that till the MSLDC remains part of the Maharashtra State Electricity Transmission Company Limited, separate books of accounts for MSLDC would have to be maintained by the Maharashtra State Electricity Transmission Company Limited and the same would have to be audited and certified by the statutory auditor;"*

**“Allocation Statement”** means for each Year, a statement in respect of each of the separate Businesses of the Generating Entity or Transmission Licensee or Distribution Licensee, showing the amounts of any revenue, cost, asset, liability, reserve or provision, etc., which has been either charged from or to each such Other Business together with a description of the basis of that charge; or determined by apportionment or allocation between different Businesses of the Licensee including the Licensed Businesses, together with a description of the basis of the apportionment or allocation:

*Provided that for the purpose of this Regulation, the licensed Business of the Distribution Licensee for an area of supply would be separated as Distribution Wires Business and Retail Supply Business:*

*Provided further that such allocation statement in respect of a generating Station owned and/or maintained and/or operated by the Distribution Licensee, shall be maintained in a manner so as to enable tariff determination, stage-wise, Unit wise and/or for the whole generating Station; ”*

### 3.2 Financial Prudence

To improve the financial position of the Utilities, it is important to have a focussed approach on financial operations and cash management and to endeavour towards bringing in financial discipline within Utilities. The onus of such improvement in financial operations lies with the Utility itself. However, it is observed that the Utilities are deviating from principles of financial discipline, which has significant impact on their financial operations as well as on other entities to whom such Utilities have contractual obligations. While approving the MYT Order of MSEDCL, the Commission had observed how non-maintenance of financial discipline was affecting the finances of the MSEDCL. In the Order dated June 26, 2015 in Case No. 121 of 2014, the Commission has observed and directed as under:

*“The Commission is deeply concerned about the persistent delays in payments by MSEDCL, reflected by unacceptably large and mounting DPC liabilities which MSEDCL has incurred and has projected in its Petition. Such payment delays also jeopardise the finances and working of the other Licensees including private and public Utilities. The Commission observes that the Tariff of all stakeholders is determined on Cost-plus method and therefore, it is not clear to the Commission as to why Utilities delay in making timely payment as laid down in Agreement or Order. The Commission is of the view that the stakeholders are required to devise an effective mechanism to curb this unfortunate practice and to ensure that timely payment is made to all the parties. The MSEDCL is directed to lay down a transparent system by which monthly payment to all the Suppliers are regular. This will not only negate the need for delayed payment charges but also would also enable all stakeholders to plan their finances in reasonable and cost effective manner. The Commission has extensively dealt with the issue of delay in payment of Transmission Charges by TSUs under its Order in Case No. 57 of 2015. In the said Order, the Commission has issued necessary directions to STU to approach the Commission, with its suggestions for dealing with past payment arrears and minimising future delays, through a Petition. In case of Generating Companies, the PPAs provide for payment security mechanism. The Commission directs MSEDCL to provide status of operationalisation of such payment security mechanisms under the PPA along with the next Tariff Petition.”*

The Commission has also observed the lack of discipline amongst the Utilities in timely payment of transmission charges approved by the Commission. The Commission, in its Order dated June 26, 2015 in Case No. 57 of 2015 has observed and directed as under:

*“71. TSUs are required to make timely payments to the STU in accordance with Regulation 68 of the MYT Regulations to enable it, in turn, to make timely settlement of the claims of the Transmission Licensees ...*

*74. Considering the information provided by the STU vide e-mail dated 26 March, 2015, the Commission notes that the late payment surcharge due but not received from the TSUs (Distribution Licensees) has accumulated to Rs. 650.56 Crore as on March, 2015. **This is an unacceptable position and indicates gross financial indiscipline, since it reflects the extent of delays in payment affecting the Transmission Licensees, as well as disregard by the concerned TSUs for the consequences of such delays.***

...

*78. The large arrears of late payment surcharge, which reflect recurring delays in payment of Transmission Charges over a long period, could not have accumulated had the above payment security mechanisms been implemented. **The Commission can only conclude that the STU has consistently failed to do so, and has thus been a party to the defaults and consequent financial impacts on the concerned Transmission Licensees. It has also not approached the Commission for appropriate directions, if any were required, on any aspect on which it is not already sufficiently empowered by the Regulations, the BPTAs or its own procedural rules.**”(emphasis added)*

Thus, the financial prudence of the Utilities can be measured in terms of revenue, revenue expenditure, and capital expenditure, as discussed below.

In terms of revenue, it needs to be assessed whether the category-wise sales projections are based on realistic estimates, and whether adequate justification has been provided by the Distribution Licensee for any anomalous increase in sales projected by the Licensee, as it is seen that the Licensees sometimes project abnormal increase/decrease in the sales to subsidised/subsidising categories, in order to under/over-project the revenue. It is necessary for the Licensee to realistically project the category-wise sales, in order to have a realistic projection of the revenue, and hence, the revenue gap, and hence, the tariff increase required.

It is also essential that the units that are injected/supplied are billed properly, and the Licensee has to ensure that the meters are in working condition. It is seen that in some cases, the bills are raised on 'average basis' for several months, and such defective meters are not replaced. Also, the percentage of defective meters remains high, instead of reducing.

Once the bills are raised, then the amounts due have to be collected promptly, thereby improving the cash flow position of the Utility, and reducing the working capital requirement of the Utility. A higher collection efficiency will also help the Utility to reduce the amount of arrears receivable from consumers.

Another issue is the presence of un-metered consumers in MSEDCL area of supply. The percentage of metered consumers and metered consumption out of the total consumers and consumption, should continuously increase and improve.

It has also been observed that in the Petition, the amount of revenue expected from the levy of tariff components is sometimes under-estimated or over-estimated, which leads to over-reporting or under-reporting of the revenue gap, hence, there is a need to assess whether the revenue collected is in line with the projections made in the Petition and approved by the Commission.

In terms of revenue expenditure, it needs to be assessed whether the Utility has any systematic mechanism for monitoring of the revenue expenditure vis-a-vis the revenue earned, to ensure that all the internal expenses and payment obligations of the Generation Entity or Licensee to other entities are appropriately met at regular intervals, in a transparent manner. The Utilities also need to have a mechanism for monitoring the revenue expenditure with respect to the approved revenue expenditure, including schedule of interest payments for long-term loan and working capital, so that any untoward/excess expenditure is identified early and appropriate course corrections can be undertaken to ensure that the actual expenditure is in line with the approved expenditure.

One major area of expenditure for the Distribution Licensee is power purchase, which comprises around 70-80% of its ARR. It is essential that the Licensees undertake power procurement in a transparent manner, in order to optimise the power purchase expenses based on requirement of power and potential for earning additional net revenue based on the differential between the rate for purchase of power from different sources and the market rate for sale of surplus power.

It is also desirable that in case the variation between the revenue expenditure and the revenue earned exceeds 5%, the Generation Entity or Licensee shall submit detailed justification for the mismatch along with the Petition for True-up, including a comparison of the revenue expenditure and revenue estimated in the Petition with the amounts approved by the Commission and with the actual amount of revenue expenditure and revenue, under key heads of revenue expenditure and revenue.

As observed by the Commission in selected Orders, even though the Utilities are being allowed the justified expenses, some Utilities are not paying their bills on time, which is causing undue financial stress on the entities to whom they are contracted

with. In order to understand the reasons for the same, it is necessary to analyse the detailed cash flow statement for the respective business, showing the various sources of revenue, the actual amount of cash collected against the amount billed to different consumer categories for sale of electricity, the comparison of the actual revenue expenditure and capital expenditure with the projected and approved revenue expenditure and capital expenditure.

Further, as regards the implementation of various capital expenditure schemes, it may be noted that there is much delay in the implementation of such schemes, which results in increase in interest expenses and allied expenses. This delay in execution of various schemes is not desirable. The Utilities are lacking in estimating, planning, coordinating and execution of the capital expenditure schemes. Hence, co-ordinated efforts are required from the Utilities in monitoring and executing the projects on time.

Hence, it is proposed to incorporate certain enabling provisions related to financial prudence of revenue, revenue expenditure and capital expenditure so that the Utilities mandatorily adhere to the same. The Commission expects the Generation Companies, Licensees and MSLDC to maintain financial discipline and in case of variations beyond a limit set by the Commission, submit a justification for the same. Further, in case financial prudence is ascertained to be deficient, then the Commission may disallow a part of ARR, as an efficiency measure.

The approach proposed in MERC MYT Regulation reads as follows:

## ***“22. Financial Prudence***

*22.1 The Generation Entity or Licensee or MSLDC is required to manage its finances in an optimum and prudent manner.*

*22.2 In determining the Aggregate Revenue Requirement and Tariff of the Generation Entity or Licensee or MSLDC, the Commission shall assess the financial prudence exercised with regard to the following factors:*

- (a) revenue;*
- (b) revenue expenditure;*
- (c) capital expenditure:*

*Provided that the Commission may disallow a part of the Aggregate Revenue Requirement, as an efficiency measure, if it finds the exercise of such prudence to have been deficient.*

*22.3 The financial prudence with respect to revenue shall be assessed in terms of the following parameters:*

- (a) *whether category-wise sales projections are based on realistic estimates, and whether adequate justification has been provided for any anomalous increase in sales projected by the Distribution Licensee;*
- (b) *billing efficiency measured as a percentage of the units billed by the Generation Entity or Licensee to the total units injected into the transmission or distribution system, as the case may be;*
- (c) *collection efficiency measured as a percentage of the amount collected by the Generation Entity or Licensee to the total amount billed;*
- (d) *reduction in arrears receivable from Beneficiaries/consumers;*
- (e) *percentage of metered consumers and metered consumption out of the total, in the case of Distribution Licensee;*
- (f) *percentage of bills raised on the basis of assessed consumption out of the total number of bills raised by the Distribution Licensee;*
- (g) *whether revenue collected is in line with the projections made in the Petition and approved by the Commission.*

22.4 *The financial prudence with respect to revenue expenditure shall be assessed in terms of the following parameters:*

- (a) *monitoring of the revenue expenditure as against the revenue earned, such that the expenses and payment obligations of the Generation Entity or Licensee to other entities are met in a timely manner;*
- (b) *mechanism put in place for monitoring adherence with the approved revenue expenditure, including schedule of interest payments for long-term loans and working capital;*
- (c) *transparent method of power procurement, with the objective of optimising the power purchase expenses, as specified in Regulation 18, 19, 20, and 21;*
- (d) *optimum purchase of power based on requirement of power and potential for earning additional net revenue based on the differential between the rate for purchase of power from different sources and the market rate for sale of surplus power, if any:*

*Provided that, in case the excess of revenue expenditure over the revenue earned exceeds 5%, the Generation Entity or Licensee shall submit detailed justification for the mismatch along with the Petition for True-up, including a comparison of the revenue expenditure and revenue estimated in the Petition with the amounts approved by the Commission and with the actual amount of revenue expenditure and revenue, under key heads:*

*Provided further that the Generation Entity or Licensee shall submit a detailed cash flow statement for the respective Business, showing the various sources of revenue,*



*the actual amount of cash collected against the amount billed to different consumer categories for sale of electricity, the comparison of the actual revenue expenditure and capital expenditure with the projected and approved revenue expenditure and capital expenditure:*

*Provided also that in case the payment obligations of the Generation Entity or Licensee to other entities are not regularly met, the Generation Entity or Licensee shall provide justification for such shortfall with reference to the cash flow statement.*

22.5 *The financial prudence with respect to capital expenditure shall be assessed in terms of the following parameters:*

- (a) mechanism put in place for monitoring the physical progress of projects with respect to their original schedule;*
- (b) optimum drawal of loans in accordance with the physical progress of the capital expenditure schemes and efficient utilisation of such loans;*
- (c) in case the actual capital expenditure and capitalisation exceeds 10% of that approved by the Commission, the Generation Entity or Licensee shall submit detailed justification for such excess along with the Petition for True-up;*
- (d) in case any scheme has not been commenced during the year despite the Commission's approval for the same, detailed justification shall be submitted for the same along with the Petition for True-up."*

### **3.3 Capital Cost and Capital Structure**

MERC MYT Regulations, 2011 specifies that the Capital Investment Plan shall be submitted as a part of the Business Plan. As discussed in earlier section, since, the separate filing of Business Plan is proposed to be discontinued for the third Control Period, the Generating Company or Licensee has to submit the Capital Investment Plan, separately indicating on-going projects and new projects along with justification, as a part of its MYT Petition. It is also required to submit all the necessary technical and commercial details as asked by the Commission for approval of such Capital Investment Plan. It is also proposed to continue the practice of approving the capital expenditure and capitalisation as a part of tariff determination exercise.

As regards the various components of capital cost, Regulation 27.1 of MERC MYT Regulations, 2011 specifies as under:

*"27.1 Capital cost for a project shall include:*

- (a) the expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange*

*risk variation on the loan during construction up to the date of commercial operation of the project, as admitted by the Commission, after prudence check;*

*(b) capitalised initial spares subject to the ceiling rates specified in this Regulation; and*

*(c) additional capital expenditure determined under Regulation 28:*

*Provided that the assets forming part of the project but not put to use or not in use, shall be taken out of the capital cost."*

It may be noted that MERC MYT Regulations, 2011 specify that the assets forming part of the project but not put to use or not in use, shall be taken out of the capital cost.

An asset which has been capitalized is said to be put to use only if the asset is in regular service for its intended purpose and consumers are getting benefit out of it. The capital cost is to be approved only when an asset is being put to use. Even though the asset may be capitalized, it may not be considered for regulatory purposes unless such asset is put to use. Accordingly, it is proposed that the claim of asset being put to use be ascertained with the documentary evidence. Accordingly, the following provisos are proposed to be added:

*"Provided further that the Generating Entity or Transmission Licensee shall submit conclusive documentary evidence in support of its claim for assets being put to use:*

*Provided also that any capital expenditure incurred based on the specific requirement of a Generating Entity or Licensee shall be substantiated with necessary documentary evidence in the form of request for the same and undertaking received."*

Further, it may be noted that in some instances, the asset is capitalised by the Transmission Licensee, but not put to use on account of reasons not attributable to it such as delay in commissioning of upstream or downstream network, etc. In such cases, in line with the approach adopted by the CERC, it is proposed that concerned Transmission Licensee may approach the Commission and its request may be included as part of MYT or Mid Term Review or True-up Petitions to be filed before the Commission.

Accordingly, the following proviso has been added in definition of date of commercial operation of transmission system as:

*"Provided that where the transmission line or substation is dedicated for evacuation of power from a particular generating Station or for transmitting power to a particular distribution sub-Station, the Generating Entity and Transmission Licensee or Distribution Licensee shall endeavour to commission the generating Station and the transmission system or distribution system simultaneously as far as practicable:*

*Provided further that in case a transmission system or an element thereof is prevented from regular service for reasons not attributable to the Transmission Licensee or its supplier or its contractors but is on account of the delay in commissioning of the concerned generating Station or in commissioning of the upstream or downstream transmission system or distribution system, the Transmission Licensee may approach the Commission for approval of the date of commercial operation of such transmission system or an element thereof:*

*Provided also that in case of an existing Transmission Licensee, such request may be included as part of the MYT Petition or Mid-Term Review Petition or True-up Petition being filed by such Licensee under these Regulations; ”*

The Commission, under the existing MERC MYT Regulations, 2011, approves the capital expenditure projects having value more than 10 Crore, under Capital Investment Plan. Such capital expenditure projects are considered as Detailed Project Report (DPR) schemes. It is proposed to insert the definition of DPR scheme and Non-DPR scheme, to bring in more clarity, while submitting the capital schemes. Accordingly, the following definition is inserted in the proposed MYT Regulations:

*"DPR Scheme" means a capital expenditure Scheme with projected capital cost exceeding limits specified in these Regulations, for which the Generation Entity or Licensee or MSLDC is required to obtain prior in-principle approval by submitting a Detailed Project Report (DPR), in accordance with the 'Guidelines for In-Principle Clearance of Proposed Investment Schemes' published by the Commission, as amended from time to time.*

*Non-DPR Scheme" means a capital expenditure Scheme with projected capital cost within limits specified in these Regulations, for which the Generation Entity or Licensee or MSLDC is not required to obtain prior in-principle approval."*

As regards the capitalisation against non-DPR schemes, it is proposed to continue the limit of non-DPR capitalisation to 20% of DPR capitalisation for third Control Period. However, the following proviso has been added to bring in more clarity for allowance of non-DPR capitalisation subject to prudence check of the Commission:

*“The amount of capitalisation against non-DPR schemes for any Year shall not exceed 20% or such other limit as may be stipulated by the Commission through an Order, of the amount of capitalisation approved against DPR schemes for that Year:*

*Provided that the Commission may allow capitalisation against non-DPR schemes for any Year in excess of 20% or such other limit as may be stipulated by the Commission through Order, based on a request made by the Generation Entity or Licensee or MSLDC.”*

Further, it may be noted that for commissioning of transmission or distribution line, the expenses towards obtaining right of way has to be incurred by the Licensee, which may be beyond its control. The amount of such expenses is substantial in some of the cases. Hence, it is proposed to consider such expenses towards obtaining right of way as part of capital cost, subject to prudence check of the Commission.

It is proposed to consider the treatment of foreign exchange rate variation separately, hence, the relevant clause of “any gain or loss on account of foreign exchange risk variation on the loan during construction up to the date of commercial operation of the project” is proposed to be removed and considered separately as discussed in subsequent sections.

It may be noted that assets of the Utilities are covered under insurance. Hence, any damage to such assets will result in receipt of insurance proceeds against such assets. The treatment of insurance proceeds received by Utilities may be different as per their practices. It is proposed that, as such insurance proceeds are received to meet the full capital obligation of damaged assets, hence such insurance proceeds should be used to reduce the capital cost of replaced asset and consider the remaining income, if any, as Non-tariff Income. In view of this following proviso has been added:

*“Provided that the amount of insurance proceeds received, if any, towards damage to any asset requiring replacement of such asset, shall be first utilised to reduce the capital cost of such replaced asset, and the balance amount, if any, shall be considered as Non-Tariff Income.”*

Further, in line with the CERC Tariff Regulations, 2014, the following changes have been proposed to the existing Regulations:

“The capital cost may include initial spares capitalised as a percentage of the Plant and Machinery cost up to the cut-off date, subject to the following ceiling norms:

- |   |       |
|---|-------|
| (a) Coal based/lignite fired Generating Stations:                                   | 4.0%; |
| (b) Gas turbine/combined cycle Generating Stations:                                 | 4.0%; |
| (c) Hydel Generating Stations including pumped storage<br>hydel generating Station: | 4.0%; |
| (d) Transmission System and Distribution System                                     |       |
| i. Transmission Line & Distribution Line:   | 1.0%; |
| ii. Transmission sub-Station & Distribution sub-Station<br>(greenfield):            | 4.0%; |

- |      |   |        |
|------|---|--------|
| iii. | Transmission sub-Station (brownfield):            | 6.0%;  |
| iv.  | Series compensation devices and HVDC sub-Station: | 4.0%;  |
| v.   | Gas Insulated sub-Station (GIS):                  | 5.0%;  |
| vi.  | Communication System:                             | 3.5%." |

### **3.4 Additional Capitalisation**

The provisions of Additional Capitalisation are proposed to be modified, based on CERC Tariff Regulations, 2014, as under:

"24.1 *The capital expenditure, actually incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*

- (i) *Undischarged liabilities recognized to be payable at a future date;*
- (ii) *Works deferred for execution;*
- (iii) *Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 23;*
- (iv) *Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law; and*
- (v) *Change in law or compliance of any existing law:*

*Provided that the details of works included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the Petition for determination of final Tariff after the date of commercial operation of the Generating Unit/Station or transmission system.*

24.2 *The capital expenditure incurred or projected to be incurred in respect of a new Project on the following counts within the original scope of work after the cut-off date may be admitted by the Commission, subject to prudence check:*

- (i) *Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;*
- (ii) *Change in law or compliance of any existing law;*
- (iii) *Deferred works relating to ash pond or ash handling system in the original scope of work; and*

- (iv) *Any liability for works executed prior to the cut-off date, after prudence check of the details of such undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments, etc.*

24.3 *The capital expenditure, in respect of existing generating Station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:*

- (i) *Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;*
- (ii) *Change in law or compliance of any existing law;*
- (iii) *Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by relevant Government Agencies;*
- (iv) *Deferred works relating to ash pond or ash handling system in the original scope of work;*
- (v) *Any liability for works executed prior to the cut-off date, after prudence check of the details of such undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;*
- (vi) *Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;*
- (vii) *Any additional capital expenditure which has become necessary for efficient operation:*

*Provided that the claim shall be substantiated with the technical justification duly supported by documentary evidence like test results carried out by an independent agency in case of deterioration of assets, damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;*

- (viii) *In case of hydel generating stations, any expenditure, which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the Generating Entity) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;*
- (ix) *In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolescence of technology, replacement of switchyard equipment due to increase of fault level, tower*

*strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and*

*(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialisation of coal supply corresponding to full coal linkage in respect of thermal generating Station as a result of circumstances not within the control of the generating Station:*

*Provided that any expenditure on acquiring minor items or assets such as tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, computers, fans, washing machines, heat convectors, mattresses, carpets, etc., bought after the cut-off date shall not be considered for additional capitalization for determination of Tariff w.e.f. 1.4.2016:*

*Provided further that any expenditure, which has been claimed under Renovation and Modernisation or repairs and maintenance under O&M expenses, shall not be claimed under this Regulation.*

24.4 *Impact of additional capitalisation on Tariff, if any, shall be considered during Mid-term Review or Tariff determination for the next Control Period as the case may be."*

### **3.5 Debt: Equity Ratio**

The Commission has specified the debt - equity ratio of 70:30 for financing new capital expenditure on projects. Regulation 30 of MERC MYT Regulations, 2011 specifies as under:

*"30.1 For a project declared under commercial operation on or after April 1, 2011, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan for the Generating Company, Transmission Licensee and Distribution Licensee:*

*Provided that where equity actually deployed is less than 30% of the capital cost of the capitalised asset, the actual equity shall be considered for determination of tariff:*

*Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.*

*Explanation.- The premium, if any, raised by the Generating Company or the Transmission Licensee or the Distribution Licensee, as the case may be, while issuing*

*share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the Generating Station or the transmission system or the distribution system.*

*30.2 In case of the Generating Company, Transmission Licensee and Distribution Licensee, if any fixed asset is capitalised on account of capital expenditure project prior to April 1, 2011, debt-equity ratio allowed by the Commission for determination of tariff for the period ending March 31, 2011 shall be considered:*

*Provided that in case of retirement or replacement of the assets, the equity capital approved as mentioned above, shall be reduced to the extent of 30% (or actual equity component based on documentary evidence, if it is lower than 30%) of the original cost of the retired or replaced asset:*

*Provided further that for the Generating Company or the Transmission Licensee or the Distribution Licensee formed as a result of a transfer scheme, the date of the transfer scheme shall be the effective date instead of April 1, 2011 for the determination of equity capital.*

*30.3 Any expenditure incurred or projected to be incurred on or after April 1, 2011, as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension, shall be serviced in the manner specified in this Regulation."*

It is proposed to continue with the same debt - equity ratio for tariff determination for Generating Companies and Licensees for the third Control Period also, since, this is the standard practice being followed in the power sector in India and is well accepted at all levels. **However, it is clarified that the debt-equity ratio of 70:30 is to be applied on the asset value after reducing the funds received through Consumer Contribution, Grants, deposit works, and Capital Subsidy.** This is required because the issue of funding through debt or equity is relevant only if there is a need for funds for meeting the capex requirement, after utilisation of funds received in the form of Consumer Contribution, Grants, deposit works, and Capital Subsidy, which have neither any repayment obligation nor any servicing cost. This will ensure that only the amount invested by the Utility in the form of equity or debt, is entitled to returns or interest, as applicable.

Further, as regards equity investment, it is proposed to continue with the same approach of consideration of equity as under:

- (i) If actual equity deployed is less than 30% of amount of capital cost approved, then actual equity shall be considered.



- (ii) If actual equity deployed is more than 30% of amount of capital cost approved, then equity in excess of 30% shall be treated as normative loan.

In view of the above, it is proposed to make prudence check of actual equity deployed and sources of funds for the equity through documentary evidence. Accordingly, the following proviso is proposed to be added:

*“Provided further that the Generation Entity or Licensee or MSLDC shall submit documentary evidence for the actual deployment of equity and explain the source of funds for the equity:”*

Further, with regard to the issue of de-capitalization of assets, the ATE, in its Judgment dated May 30, 2014 in Appeal No. 147, 148 and 150 of 2013 filed by Torrent Power Limited, has stated as reproduced below:

*“The State Commission has, however, deducted the entire cost of the retired asset from the gross capital expenditure. We find that no documentary proof was given by the Appellant regarding outstanding loan component of the retired asset and actual equity deployed on the retired assets. We cannot find fault with the procedure adopted by the State Commission **in the absence of the data for the retired asset to deduct the total cost of the retired asset from the gross capital cost which amounts to taking equity and debt amount in the normative ratio of 70:30 for the retired asset.**” (emphasis added)*

In view of the above Judgement, it is proposed to add the following proviso in the existing MERC MYT Regulations, 2011:

*“Provided that in case of retirement or replacement or de-capitalisation of the assets, the equity capital approved as mentioned above, shall be reduced to the extent of 30% (or actual equity component based on documentary evidence, if it is lower than 30%) of the original cost of such assets:*

*Provided further that in case of retirement or replacement or de-capitalisation of the assets, the debt capital approved as mentioned above, shall be reduced to the extent of outstanding debt component based on documentary evidence, or the normative loan component, as the case may be, of the original cost of such assets:”*

### **3.6 Approach for Giving Returns**

In any business, in addition to recovery of the costs incurred, the investors are entitled to earn an appropriate return on their investment, since there are alternative investment opportunities, and the investor has to choose between these alternative investment opportunities, in view of his risk-return profile.

The Rate Base is defined as the Capital Base on which the rate of return is applied to compute the permissible return to the investors.

The Commission has adopted the RoE approach while formulating the MERC MYT Regulations, 2011, which is presently allowed to Generating Companies, Transmission Licensees and Distribution Licensees, for the second Control Period.

CERC, in the Explanatory Memorandum to the draft Terms and Conditions of Tariff Regulations for 2014-19, stated as under:

*“8.5.7 As the tariff is determined on multiyear principles, it is important to maintain certainty in approach over each control period to maintain the confidence of investors and regulated entities. In view of the fluctuating interest rate, shallow debt market and considering the financial health of Utilities and the other serious issues faced by Developers in sector such as fuel shortages etc., it appears that it is not desirable to switch to ROCE approach and thus the Commission proposes to continue with the ROE approach for next Tariff Period. Further most of the stakeholders have suggested for continuing the existing ROE approach.”*

It may be noted that Return on Equity approach is easy to compute and simple to implement, and is hence, easily understood by all its stakeholders. The investor gets assured returns on equity investment, once the investment is done and the utility is protected against the risk of fluctuation of interest rates, since interest expense is allowed as a pass through expense at actuals.

In view of the above, it is proposed to continue with the ROE approach for the third Control Period also.

It is proposed to continue with the rate of ROE of 15.5% for Generation Company, Transmission Licensee and Distribution Wires Business and 17.5% for Retail Supply Business.

MERC MYT Regulations, 2011 provided for additional returns to Generation companies on timely completion of projects. However, the same provision was not provided for Transmission and Distribution Licensees. Further, Regulation 24(2) of CERC Tariff Regulations, 2014, provides for an additional return of 0.5% for projects that are completed within the timeline specified in the Regulations, provided that they are commissioned on or after April 1, 2014. However, the primary requirement for providing such incentive for timely completion of projects is prescribing the timelines for completion of projects. Given that it is very difficult to assess the start date, which determines the completion period, it is proposed to remove the proviso related to providing additional returns for early completion.

### 3.7 Depreciation

The principles behind the charging of depreciation and the depreciation rates have been debated over the years, including the linkage of depreciation to creation of a reserve fund for replacement of assets versus the linkage of depreciation to providing cash flow for repayment of loans taken by the Utility.

In this context, Clause 5 (c) of the Tariff Policy stipulates:

*“The Central Commission may notify the rates of depreciation in respect of generation and transmission assets. The depreciation rates so notified would also be applicable for distribution with appropriate modification as may be evolved by the Forum of Regulators.*

*The rates of depreciation so notified would be applicable for the purpose of tariffs as well as accounting.*

*There should be no need for any advance against depreciation.*

*Benefit of reduced tariff after the assets have been fully depreciated should remain available to the consumers. “(emphasis added)*

The MERC MYT Regulations, 2011 has specified the straight line method for determination of depreciation expenses for the Generation, Transmission, Distribution Wire, and Retail Supply business, and a residual value of 10%.

The Tariff Policy stipulates that the depreciation rates specified by the CERC should be adopted for generation and transmission business, and may be adopted for the distribution business also, after suitable modification to be undertaken by the Forum of Regulators. The Tariff Policy also states that the same rate of depreciation should be considered for tariff purposes as well as accounting purposes and that there should be no need of providing Advance Against Depreciation (AAD) while determining the tariff. Hence, CERC and all SERCs had increased the rate of depreciation and had removed the provision of AAD in the Tariff Regulations notified after the issuance of the Tariff Policy. MERC MYT Regulations, 2011 has considered the depreciation at rate of 5.28%.

In regulatory perspective, depreciation, being the only cash source available to the Utility after meeting all other expenses, is considered as a source for repayment of loans.

It is proposed to continue the existing approach of MERC MYT Regulations, 2011, with minor modifications as under:

"27.1 The Generating Entity, Licensee and MSLDC shall be permitted to recover depreciation on the value of fixed assets used in their respective Business, computed in the following manner:

- a) The approved original cost of the fixed assets shall be the value base for calculation of depreciation:

Provided that the depreciation shall be allowed on the entire capitalised amount of the new assets after reducing the approved original cost of the retired or replaced or de-capitalised assets.

- b) Depreciation shall be computed annually based on the straight line method at the rates specified in the Annexure I to these Regulations:

Provided that the Generating Entity or Licensee or MSLDC shall ensure that once the individual asset is depreciated to the extent of seventy (70) percent, remaining depreciable value as on 31st March of the year closing shall be spread over the balance useful life of the asset, as provided in this Regulation:

Provided further that the Generating Entity or Licensee shall submit all such details or documentary evidence as may be required to substantiate the above claims.

- c) The salvage value of the asset shall be considered at 10 per cent of the allowable capital cost and depreciation shall be allowed upto a maximum of 90 per cent of the allowable capital cost of the asset.

27.2 Land other than the land held under lease and the land for reservoir in case of hydel Generating Station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the assets.

27.3 In case of existing assets, the balance depreciable value as on April 1, 2016, shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to March 31, 2016, from the gross depreciable value of the assets:

Provided that depreciation shall be chargeable from the first year of commercial operation.

27.4 In case of projected commercial operation of the assets for part of the year, depreciation shall be computed based on the average of opening and closing value of assets.

27.5 Depreciation shall be re-computed for assets capitalised at the time of Truing-up along with the Mid-term Review or at the end of the Control Period, based on documentary evidence of assets capitalised by the Petitioner, subject to the prudence check of the Commission, such that the depreciation is allowed proportionately from the date of capitalisation."

### 3.8 Consumer Contribution, Deposit Work, Grant and Capital Subsidies

The Utilities may receive Consumer Contribution from their consumers for creation of fixed assets used for serving the consumers. However, such assets remain in the books of the Utility. Similarly, one-time grants or capital subsidies are generally given to the State-sector Utilities by the Government for creation of fixed assets. At the end of the life span of such fixed assets created out of grants or Consumer Contribution, normally there is no provision of grants to be provided by Governments or Consumer Contribution to be provided by consumers for their replacement. Replacement of these old fixed assets are generally included in the normal capital expenditure plan and the funding of the same is claimed by the Utilities from the pool of consumers through the ARR and tariff, irrespective of the source of funding of the original fixed assets. When the Utility funds such replacement of old fixed assets, either by its own equity or by loan or by a mix of both, then only it will become eligible to claim returns on the new assets, subject to the specified Debt-Equity norm. Therefore, allowing depreciation on fixed assets created out of Consumer Contribution or grants will result in making available undue surplus to the Distribution Licensee at the expense of the consumers.

Further, in this regard, the Forum of Regulators in its Model Regulation for Multi Year Distribution Tariff has suggested as under:

*“24. Treatment of Depreciation*

*..... (b) Depreciation shall not be allowed on assets funded by capital subsidies, consumer contributions or grants”.....*

While formulating the Tariff Regulations, a number of SERCs have included specific provisions for not allowing depreciation on fixed assets created out of Grants and Consumer Contribution. The relevant references of Tariff Regulations of some of the SERCs have been tabulated below:

**Table 2: References to the specific provisions for not allowing depreciation on fixed assets created out of Grants and Consumer Contribution in the Regulations of various SERCs**

Sr. No.	SERC	Reference
1	Andhra Pradesh Electricity Regulatory Commission	Regulation 17 of the APERC (Terms and Conditions of Determination of Tariff for Wheeling and Retail Sale of Electricity) Regulations, 2005
2	Chhattisgarh State Electricity Regulatory Commission	Regulations 18 of the CSERC (Terms and Conditions for Determination of Tariff) Regulations, 2006
3	Delhi Electricity Regulatory Commission	Regulations 5.16 of the DERC (Terms and Conditions for Determination of Wheeling Tariff

Sr. No.	SERC	Reference
		and Retail Supply Tariff) Regulations, 2011
4	Himachal Pradesh Electricity Regulatory Commission	Regulations 23 of the HPERC (Terms and Conditions for Determination of Wheeling Tariff and Retail Supply Tariff) Regulations, 2011
5	Uttar Pradesh Electricity Regulatory Commission	Regulations 4.9 of the UPERC (Terms and Conditions for Determination of Distribution Tariff) Regulations, 2006
6	Uttarakhand Electricity Regulatory Commission	Regulations 29 of the UERC (Terms and Conditions for Determination of Tariff) Regulations, 2011

Hence, it is proposed that a specific clause be incorporated to the effect that depreciation (as well as ROE and interest) shall not be applicable to the extent of financial support provided through consumer contribution, deposit work, and capital subsidy/grant, and the debt:equity ratio shall be considered after deducting such amounts. If the entire amount of consumer contribution, deposit work, and capital subsidy/grant is deducted from the GFA, then there would be no need to treat any proportion of the same as non-tariff income, and there would be no complications of mismatch between the income considered and the expense considered.

The following clauses are proposed to be added in this context:

*“25.1 The expenses on the following categories of works carried out by the Generation Entity or Licensee or MSLDC shall be treated as specified in Regulation 25.2:*

- (a) Works undertaken from funds, partly or fully, provided by the users, which are in the nature of deposit works or consumer contribution works;*
- (b) Capital works undertaken with grants or capital subsidy received from the State and Central Governments;*
- (c) Other works undertaken with funding received without any obligation of repayment and with no interest costs.*

*25.2 The expenses on such capital works shall be treated as follows:-*

- (a) normative O&M expenses as specified in these Regulations shall be allowed;*
- (b) the debt:equity ratio, shall be considered in accordance with Regulation, after deducting the amount of financial support received;*
- (c) provisions related to depreciation, as specified in Regulation, shall not be applicable to the extent of financial support received;*

- (d) provisions related to return on equity, as specified in Regulation shall not be applicable to the extent of financial support received;
- (e) provisions related to interest on loan capital, as specified in Regulation shall not be applicable to the extent of financial support received."

### **3.9 Interest on Loans**

Regulation 33 of MERC MYT Regulations, 2011 specifies the principles and method of allowing interest on loan capital.

As discussed earlier, while computing the debt and equity amount, it is proposed that the debt-equity ratio of 70:30 is to be applied on the asset value after reducing the funds received through consumer contribution, grants, deposit works, and capital subsidy.

As regards retirement or replacement of assets, MERC MYT Regulations, 2011 provides for reduction of loan component to the extent of 70% or actual loan component of original asset, if it is higher than 70%. Since, the asset is in service and depreciation is allowed for such period of operation for repayment of such loan outstanding, it is proposed that in case of retirement or replacement or de-capitalisation of assets, actual loan capital shall be reduced to the extent of outstanding loan component of original cost of retired or replaced or de-capitalised asset.

As per MERC MYT Regulations, 2011, the rate of interest shall be the weighted average rate of interest computed on the basis of the actual loan portfolio at the beginning of each year applicable to the Generation Entity or the Transmission Licensee or the Distribution Licensee. However, the actual interest incurred during the year varies depending on the variation in the interest rates. Hence, it is proposed to consider the weighted average rate of interest computed on the basis of the actual loan portfolio during the year at the time of Truing-up.

As regards the finance charges, it is proposed that actual finance charges incurred for obtaining the actual loans shall be allowed at time of Truing-up, subject to prudence check by the Commission.

The variation in market interest rate is not within the control of the Utility. However, the option of re-finance of loan is always available with the Utility for reducing the interest expenses. It is proposed that Utilities shall make their every effort to re-finance the loan as long as its results in net savings on interest and such benefit shall be shared between beneficiaries and Utilities in the ratio of 2:1, and the costs associated with such refinancing shall be borne by the beneficiaries.

Also, based on past experiences, the computation of interest on loan in case the Utility does not have any actual loan, has been further clarified by considering two additional scenarios.

It has also been seen that in many cases, there is a time and/or cost over-run, which results in higher Interest during Construction (IDC), and therefore, higher Capital Cost. It is proposed to clarify that the excess IDC shall be disallowed.

In view of the above, the proposed Regulations for Interest on loan are as under:

*"29.1 The loans arrived at in the manner indicated in Regulation 26 on the assets put to use shall be considered as gross normative loan for calculation of interest on loan:*

*Provided that in case of retirement or replacement or de-capitalisation of assets, the loan capital approved as mentioned above, shall be reduced to the extent of outstanding loan component of the original cost of such assets based on documentary evidence.*

*29.2 The normative loan outstanding as on April 1, 2016, shall be worked out by deducting the cumulative repayment as admitted by the Commission up to March 31, 2016, from the gross normative loan.*

*29.3 The repayment during each year of the Control Period from FY 2016-17 to FY 2019-20 shall be deemed to be equal to the depreciation allowed for that year.*

*29.4 Notwithstanding any moratorium period, the repayment of loan shall be considered from the first year of commercial operation of the Scheme and shall be equal to the annual depreciation allowed.*

*29.5 The rate of interest shall be the weighted average rate of interest computed on the basis of the actual loan portfolio at the beginning of each year:*

*Provided that at the time of Truing-up, the weighted average rate of interest computed on the basis of the actual loan portfolio during the year shall be considered as the rate of interest:*

*Provided further that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest for actual loan shall be considered:*

*Provided also that if the Generation Entity or the Licensee or the MSLDC, as the case may be, does not have actual loan even in the past, the weighted average rate of interest of its other Businesses regulated by the Commission shall be considered:*

*Provided also that if the Generation Entity or the Licensee or the MSLDC, as the case may be, does not have actual loan, and its other Businesses regulated by the Commission also do not have actual loan even in the past, then the weighted average rate of interest of the entity as a whole shall be considered:*

*Provided also that if the entity as a whole does not have actual loan, then the Base Rate of the State Bank of India at the beginning of the respective year shall be considered as the rate of interest for the purpose of allowing the interest on the normative loan.*



- 29.6 *The interest on loan shall be computed on the normative average loan of the year by applying the weighted average rate of interest:  
Provided that at the time of Truing-up, the normative average loan of the year shall be considered on the basis of the actual asset capitalisation approved by the Commission for the year.*
- 29.7 *The above interest computation shall exclude interest on loan amount, normative or otherwise, to the extent of capital cost funded by Consumer Contribution, Deposit Works, Grants or Capital Subsidy.*
- 29.8 *The finance charges incurred for obtaining loans from financial institutions for any Year shall be allowed by the Commission at the time of Truing-up, subject to prudence check.*
- 29.9 *The excess interest during construction on account of time and/or cost overrun as compared to the approved completion schedule and capital cost or on account of excess drawal of the debt funds disproportionate to the actual requirement based on Scheme completion status, shall be disallowed.*
- 29.10 *The Generation Entity or the Licensee or the MSLDC, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event, the costs associated with such re-financing shall be borne by the Beneficiaries and the net savings shall be shared between the Beneficiaries and them in the ratio of 2:1.*
- 29.11 *Interest shall be allowed on the amount held in cash as security deposit from Transmission System Users, Distribution System Users and Retail consumers at the Bank Rate as on 1st April of the Year in which the Petition is filed:  
Provided that at the time of Truing-up, the interest on the amount of security deposit for the year shall be considered on the basis of the actual interest paid by the Licensee during the year, subject to prudence check by the Commission. "*

### **3.10 Foreign Exchange Rate Variation**

As regards the treatment of Foreign Exchange Rate Variation (FERV) for equity invested and debt component, the existing MERC MYT Regulations, 2011 specify as under:

*"27.1 Capital cost for a project shall include:*

- (a) the expenditure incurred or projected to be incurred, including interest during construction and financing charges, **any gain or loss on account of foreign exchange risk variation on the loan during construction up to the date of commercial operation of the project, as admitted by the Commission, after prudence check;***

...

30.1 For a project declared under commercial operation on or after April 1, 2011, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan for the Generating Company, Transmission Licensee and Distribution Licensee:

...

***Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment."(emphasis added)***

As regards the treatment of equity invested in foreign currency, MERC MYT Regulations, 2011 specifies that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment. The purpose is to ensure that the debt equity ratio remains unaffected by the foreign exchange rate variation and provide regulatory certainty. The same approach has also been adopted by CERC in its CERC Tariff Regulations, 2014. Hence, the existing approach for considering the equity invested in foreign currency shall be continued.

The Generation Entity or Licensee draws foreign currency loan for most economical interest rate and mitigating its funding and financial risk. However, foreign currency loans are exposed to variation in exchange rate and treatment of the same has to be addressed in Tariff Regulations.

The hedging of foreign currency loans is generally market adopted practice to mitigate the risk of foreign currency loan. The options are either to consider the cost of hedging to be recovered through ARR; or to allow the variation in foreign exchange to be passed through ARR in case no hedging is done.

As regards the treatment of FERV, CERC Tariff Regulations, 2014 has provided the option of hedging to the Generation Entity or Licensee on foreign exchange exposure in respect of the interest on foreign currency loan. Also, hedging cost or FERV shall be allowed on year to year basis as income or expenses. The treatment of FERV has been specified as under:

In case of hedging of foreign exposure:

- (i) The cost of hedging shall be recovered in the relevant year on year-to-year basis as expense in the period in which it arises.
- (ii) No extra rupee liability shall be allowed against hedged foreign debt.

In case of no hedging of foreign exposure:

- (i) Extra Rupee liability for interest payment and loan repayment of normative foreign debt shall be permissible if not attributable to Generation Entity or licensee or its suppliers or contractors.

It is proposed to adopt the CERC approach at State Level also.

Further, CERC Tariff Regulations, 2014 allows recovery of cost of hedging or FERV by the Generation Entity or Licensee from the beneficiaries without making an application to the Commission. It may be noted that, in case of no hedging of foreign exposure, extra rupee liability shall be permissible and to ascertain the fact that extra rupee liability is not attributable to Generation Entity or Licensee or its suppliers or contractors, the approval of the Commission is required for recovery of such cost of hedging or FERV.

Accordingly, the following Regulations are proposed regarding the treatment of Foreign Exchange Rate Variation:

***“30 Foreign Exchange Rate Variation***

*30.1 The Generation Entity or Licensee may hedge foreign exchange exposure in respect of the interest on foreign currency loan and repayment of foreign loan acquired for the generating Station or the transmission system or distribution system, in part or in full at its discretion.*

*30.2 Any hedging transaction entered into by the Generation Entity or Licensee should be communicated to the Beneficiaries concerned, within thirty days of entering into such hedging transaction(s).*

*30.3 The Generation Entity or Licensee shall be permitted to recover the cost of hedging of foreign exchange rate variation corresponding to the foreign debt, in the relevant year as expense, subject to prudence check by the Commission, and extra rupee liability corresponding to such variation shall not be allowed against the hedged foreign debt.*

*30.4 To the extent that the foreign exchange exposure is not hedged, any extra rupee liability towards interest payment and loan repayment corresponding to the foreign currency loan in the relevant year shall be allowed subject to prudence check by the Commission, provided it is not attributable to such Generation Entity or the Licensee or its suppliers or contractors.”*

### ***3.11 Interest on Working Capital loans***

Regulation 35 of MERC MYT Regulations, 2011 specifies the principles and method of allowing Interest on Working Capital.

CERC in its CERC Tariff Regulations, 2014 has specified the norms for Working Capital for central sector Generation Companies and Transmission Licensees, as reproduced below:

**“28. Interest on Working Capital:** (1) *The working capital shall cover:*

*(a) Coal-based/lignite-fired thermal generating stations*

*(i) Cost of coal or lignite and limestone towards stock, if applicable, for 15 days for pit-head generating stations and 30 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;*

*(ii) Cost of coal or lignite and limestone for 30 days for generation corresponding to the normative annual plant availability factor;*

*(iii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;*

*(iv) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 29;*

*(v) Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the normative annual plant availability factor;*

*and*

*(vi) Operation and maintenance expenses for one month*

*(b) Open-cycle Gas Turbine/Combined Cycle thermal generating stations*

*(i) Fuel cost for 30 days corresponding to the normative annual plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;*

*(ii) Liquid fuel stock for 15 days corresponding to the normative annual plant availability factor, and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel;*

*(iii) Maintenance spares @ 30% of operation and maintenance expenses specified in Regulation 29;*

*(iv) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel; and*

*(v) Operation and maintenance expenses for one month*

*(c) Hydro generating station including pumped storage hydro electric generating station and transmission system including communication system:*

*(i) Receivables equivalent to two months of fixed cost;*

*(ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and*

*(iii) Operation and maintenance expenses for one month.*

*(2) The cost of fuel in cases covered under sub-clauses (a) and (b) of clause (1) of this regulation shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the generating company and gross calorific value of the fuel as per actual for the three months preceding the first month for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period.*

*(3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is late.*

*(4) Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency."*

The first issue is whether Interest on Working Capital (IWC) should be allowed on normative basis or on actual? Currently, IWC is being allowed on a normative basis rather than actual. Since it has been proposed that variation in interest on working capital requirement should be treated as a controllable factor, IWC would have to continue to be allowed on normative basis. If IWC is allowed on actuals, it will amount to considering IWC as an uncontrollable factor. Since it is desired to improve the operational and financing efficiency in this aspect, it is desirable to continue allowing IWC on normative basis.

As regards the formula of computing the working capital requirement for Generation Business, maintenance spares have been considered, however for Transmission, Distribution Wire and Supply Business, sum of book value of stores has been considered. Since, the maintenance spares are easy to compute based on historical cost, and in order to have uniform approach, it is proposed that for maintenance spares based on historical cost instead of sum of book value of stores shall be considered for Transmission, Distribution Wire and Supply business, also.

In the existing MERC MYT Regulations, the cost of coal or lignite is allowed for 1.5 months, whereas, in the CERC Tariff Regulations, the cost of coal stock and cost of coal for generation are allowed separately, with the proviso that the cost of coal stock shall be limited to maximum coal/lignite stock storage capacity. It is proposed to adopt the CERC approach in this regard, such that the overall coal stock allowed remains the same at 1.5 months, but is now split into cost of coal stock and cost of coal for generation.

It is also proposed to clarify the treatment at the time of Truing-up, by adding provisos to the effect that the working capital requirement shall be re-computed based on values of components of working capital approved during Truing-up. Further, in the existing MYT Regulations, the working capital requirement is computed equivalent to target availability. It is proposed to clarify that at the time of Truing-up, the working capital requirement shall be re-computed based on the actual availability or target availability of the generating Station/Unit, whichever is lower.

The amount of receivables to be considered for Transmission Business and Distribution Business is proposed to be reduced to 1 month and 1.5 months, respectively, based on the analysis of actual working capital requirement of the Transmission Licensees and Distribution Licensees.

It has also been clarified that the actual Security Deposits held in cash shall be deducted, while calculating the working capital requirement, as Security Deposits held in the form of Bank Guarantee do not provide working capital to the Licensee.

The working capital requirement for the MSLDC has also been proposed.

The rate of interest on working capital is one of the issues that needs to be addressed. Regulation 35 of MERC MYT Regulations, 2011 specifies the rate of interest as State Bank Advance Rate of State Bank of India as on the date of which the application for determination of tariff is made before the Commission.

For the purpose of ascertaining the interest rates, the analysis has been done on the basis of the actual interest rate of working capital loans incurred by the Utilities. Based on Annual Audited accounts of the Government Utilities, the interest rate on actual working capital loans taken during the year is summarised as under:

**Table 3: Interest rates for Short Term Loans**

Particulars	FY 2011-12	FY 2012-13	FY 2013-14
MSEDCL	13.53%	10.96%	10.38%
MSETCL	9.50%-11.35%	10.25%-12.5%	10%-11%
MSPGCL	10.5%-10.75%	10.20%-10.80%	10.2%-10.25%

From the above table, it is observed that Interest rates for working capital loans or short term loans are in the range of 10% to 11% for all the years, except for some outliers.

The existing MERC MYT Regulations, 2011 specifies the interest rate for Working capital equal to State Bank Advance rate (14.75% as on August 11, 2015), which is much higher than actual interest rates at which short term loans are being borrowed by the Utilities.

Further, weighted average Interest rates for long term loans taken by the Utilities during the year are summarised in the table given below:

**Table 4: Interest rates for Long Term Loans**

Particulars	FY 2011-12	FY 2012-13	FY 2013-14
MSEDCL	10.92%	11.49%	11.90%
MSETCL	10.15%	10.72%	11.27%
MSPGCL	10.96%	11.05%	12.70%
TPC-G	10.32%	11.06%	10.99%
TPC-T	10.67%	11.00%	11.03%
TPC-D	10.67%	10.93%	11.03%
RInfra-G	11.50%	11.34%	11.21%
RInfra-T	11.50%	12.83%	11.89%
RInfra-D	11.13%	11.00%	10.87%
<b>Range</b>	<b>10.15%-11.50%</b>	<b>10.72%-12.83%</b>	<b>10.87%-12.70%</b>

From the above table, it is observed that interest rates for long term loans are in the range of 10.15% to 12.70%. From the above data, it is inferred that interest rates for long term loans are higher than interest rates for short term loans or working capital loans, except for few cases.

Thus, consideration of State Bank Advance Rate for computation of normative Interest on working capital is not appropriate, as Utilities are borrowing the loans at much lower rate. Hence, it is required to revise the rate of interest for working capital loans.

SBI has moved to the concept of 'Base Rate' from Advance Rate, and gives loans at Base Rate plus a margin. The rate of interest for computing IWC may be kept at SBI Base Rate (SBBR) plus margin considering actual interest rates. At present, SBI Base Rate (as of August 5, 2015) is 9.70%. Considering the interest rates of 9.50%-11.35% at which Utilities are taking working capital loans, the margin comes out to 100 basis points.

**Hence, it is proposed to consider the Interest rate for Working capital as SBI Base Rate plus 100 Basis Points.**

It has also been clarified that at the time of Truing-up for each year, the variation between the normative interest on working capital computed at the time of Truing-up and the actual interest on working capital incurred by the Generation Entity or Licensee or MSLDC, duly substantiated by documentary evidence, shall be considered as an efficiency gain or efficiency loss, as the case may be, on account of controllable factors, and shared between the Generation Entity or Licensee or

MSLDC and the respective beneficiary or consumer as the case may be, in accordance with Regulation 12.

Accordingly, the following Regulations are proposed regarding the Interest on Working Capital:

*"31.1. Generation*

*(a) In case of coal based/lignite-fired Generating Stations, working capital shall cover:*

- (i) Cost of coal or lignite and limestone towards stock, if applicable, for fifteen days for pit-head Generating Stations and thirty days for non-pit-head Generating Stations, for generation corresponding to target availability, or the maximum coal/lignite stock storage capacity, whichever is lower;*
- (ii) Cost of coal or lignite and limestone for thirty days for generation corresponding to target availability;*
- (iii) Cost of secondary fuel oil for two months corresponding to target availability;*
- (iv) Operation and Maintenance expenses for one month;*
- (v) Maintenance spares at one per cent of the historical cost; and*
- (vi) Receivables for sale of electricity equivalent to two months of the sum of annual fixed charges and energy charges computed on target availability; minus*
- (vii) Payables for fuel (including oil and secondary fuel oil) to the extent of thirty days of the cost of fuel computed at target availability;*

*Provided that for the purpose of Truing-up, the working capital shall be computed based on the actual availability or target availability of the generating Station, whichever is lower:*

*Provided further that for the purpose of Truing-up for any year, the working capital requirement shall be re-computed on the basis of the values of components of working capital approved by the Commission in the Truing-up;*

*(b) In case of oil-fired Generating Stations, working capital shall cover:*



- (i) Cost of oil for thirty days towards stock, if applicable, for generation corresponding to target availability, or the maximum oil stock storage capacity, whichever is lower;
- (ii) Cost of oil for thirty days for generation corresponding to target availability;
- (iii) Operation and Maintenance expenses for one month;
- (iv) Maintenance spares at one per cent of the historical cost; and
- (v) Receivables for sale of electricity equivalent to two months of the sum of annual fixed charges and energy charges computed on target availability; minus
- (vi) Payables for fuel to the extent of thirty days of the cost of fuel computed at target availability:

*Provided that for the purpose of Truing-up, the working capital shall be computed based on the actual availability or target availability of the generating Station, whichever is lower:*

*Provided further that for the purpose of Truing-up for any year, the working capital requirement shall be re-computed on the basis of the values of components of working capital approved by the Commission in the Truing-up;*

(c) *In case of Open Cycle Gas Turbine/Combined Cycle Generating Stations, working capital shall cover:*

- (i) Fuel cost for thirty days corresponding to target availability duly taking into account the mode of operation of the Generating Station on gas fuel and liquid fuel;
- (ii) Liquid fuel stock for fifteen days corresponding to target availability;
- (iii) Operation and maintenance expenses for one month;
- (iv) Maintenance spares at one per cent of the historical cost; and
- (v) Receivables for sale of electricity equivalent to two months of the sum of annual fixed charges and energy charges computed on target availability; minus
- (vi) Payables for fuel (including liquid fuel stock) to the extent of thirty days of the cost of fuel computed at target availability:

*Provided that for the purpose of Truing-up, the working capital shall be computed based on the actual availability or target availability of the generating Station, whichever is lower:*

*Provided further that for the purpose of Truing-up for any year, the working capital requirement shall be re-computed on the basis of the values of components of working capital approved by the Commission in the Truing-up;*

*(d) In case of Hydro power Generating Stations including pumped storage hydel electric generating Station, working capital shall cover:*

- (i) Operation and maintenance expenses for one month;*
- (ii) Maintenance spares at one per cent of the historical cost; and*
- (iii) Receivables for sale of electricity equivalent to two months of the annual fixed charges computed on normative capacity index:*

*Provided further that for the purpose of Truing-up for any year, the working capital requirement shall be re-computed on the basis of the values of components of working capital approved by the Commission in the Truing-up;*

*(e) In case of own Generating Stations of the Retail Supply Business, no amount shall be allowed towards receivables, to the extent of supply of power by the Generation Business to the Retail Supply Business, in the computation of working capital in accordance with this Regulation.*

*(f) Rate of interest on working capital shall be on normative basis and shall be equal to the Base Rate of State Bank of India as on the date on which the Petition for determination of Tariff is filed, plus 100 basis points:*

*Provided that for the purpose of Truing-up for any year, interest on working capital shall be allowed at a rate equal to the weighted average Base Rate of State Bank of India prevailing during the Year plus 100 basis points.*

### **31.2 Transmission**

*(a) The working capital requirement of the Transmission Licensee shall cover:*

- (i) Operation and maintenance expenses for one month;*
- (ii) Maintenance spares at one per cent of the historical cost; and*
- (iii) One month equivalent of the expected revenue from transmission charges at the prevailing Tariff;*

*minus*

- (iv) Amount held as security deposits in cash, if any, from Transmission System Users:

*Provided further that for the purpose of Truing-up for any year, the working capital requirement shall be re-computed on the basis of the values of components of working capital approved by the Commission in the Truing-up;*

- (b) Rate of interest on working capital shall be on normative basis and shall be equal to the Base Rate of State Bank of India as on the date on which the Petition for determination of Tariff is filed, plus 100 basis points:

*Provided that for the purpose of Truing-up for any year, interest on working capital shall be allowed at a rate equal to the weighted average Base Rate of State Bank of India prevailing during the Year plus 100 basis points.*

### 31.3 Distribution Wires Business

- (a) The working capital requirement of the Distribution Wires Business shall cover:

- (i) Operation and maintenance expenses for one month;
- (ii) Maintenance spares at one per cent of the historical cost; and
- (iii) One and half months equivalent of the expected revenue from charges for use of Distribution Wires at the prevailing Tariff;

*minus*

- (iv) Amount held as security deposits in cash from Distribution System Users:

*Provided further that for the purpose of Truing-up for any year, the working capital requirement shall be re-computed on the basis of the values of components of working capital approved by the Commission in the Truing-up;*

- (b) Rate of interest on working capital shall be on normative basis and shall be equal to the Base Rate of State Bank of India as on the date on which the Petition for determination of Tariff is filed, plus 100 basis points:

*Provided that for the purpose of Truing-up for any year, interest on working capital shall be allowed at a rate equal to the weighted average Base Rate of State Bank of India prevailing during the Year plus 100 basis points.*

### 31.4 Retail Supply of Electricity

- (a) The working capital requirement of the Retail Supply Business shall cover:

- (i) Operation and maintenance expenses for one month;

- (ii) *Maintenance spares at one per cent of the historical cost; and*
- (iii) *One and half months equivalent of the expected revenue from sale of electricity at the prevailing Tariff;*

*Minus*

- (iv) *Amount held as security deposits in cash from retail supply consumers;*
- (v) *One month equivalent of cost of power purchased, based on the annual power procurement plan:*

*Provided that in case of power procurement from own Generating Stations of the Retail Supply Business, no amount shall be allowed towards payables, to the extent of supply of power by the Generation Business to the Retail Supply Business, in the computation of working capital in accordance with these Regulations:*

*Provided further that for the purpose of Truing-up for any year, the working capital requirement shall be re-computed on the basis of the values of components of working capital approved by the Commission in the Truing-up;*

- (b) *Rate of interest on working capital shall be on normative basis and shall be equal to the Base Rate of State Bank of India as on the date on which the Petition for determination of Tariff is filed, plus 100 basis points:*

*Provided that for the purpose of Truing-up for any year, interest on working capital shall be allowed at a rate equal to the weighted average Base Rate of State Bank of India prevailing during the Year plus 100 basis points.*

### 31.5 MSLDC

- (a) *The working capital requirement of the MSLDC shall cover:*

- (i) *Operation and maintenance expenses for one month;*
- (ii) *Half month equivalent of the expected revenue from levy of Annual Fixed Charges:*

*Provided further that for the purpose of Truing-up for any year, the working capital requirement shall be re-computed on the basis of the values of components of working capital approved by the Commission in the Truing-up;*

- (b) *Rate of interest on working capital shall be on normative basis and shall be equal to the Base Rate of State Bank of India as on the date on which the Petition for determination of Fees and Charges is filed, plus 100 basis points:*

*Provided that for the purpose of Truing-up for any year, interest on working capital shall be allowed at a rate equal to the weighted average Base Rate of State Bank of India prevailing during the Year plus 100 basis points.*

*31.6 For the purpose of Truing-up for each year, the variation between the normative interest on working capital computed at the time of Truing-up and the actual interest on working capital incurred by the Generation Entity or Licensee or MSLDC, substantiated by documentary evidence, shall be considered as an efficiency gain or efficiency loss, as the case may be, on account of controllable factors, and shared between it and the respective Beneficiary or consumer as the case may be, in accordance with Regulation 12. "*

### **3.12 Carrying Cost or Holding Cost**

The existing MERC MYT Regulations, 2011 does not specify about the allowance of carrying cost or holding cost. Hence, it is proposed to insert the clause related to carrying cost or holding cost to bring in more clarity in the MYT Regulations.

As per Section 62(6) of the EA 2003, if any Licensee or Generation Entity recovers a price or charge exceeding the tariff determined by the Commission, the excess amount shall be recoverable by the person who has paid such price or charge along with interest equivalent to the Bank Rate without prejudice to any other liability incurred by the Licensee. Since, the EA 2003 allows the refund of excess recovery at Bank Rate, a similar approach is proposed to be adopted for carrying cost also.

In view of the above, it is proposed that carrying cost and holding cost shall be allowed at Bank Rate.

Accordingly, the following clause inserted in the proposed Regulations:

#### ***"32. Carrying Cost or Holding Cost***

*The Commission shall allow Carrying Cost or Holding Cost, as the case may be, on the admissible amounts, at the Bank Rate as on the date on which the Petition is filed."*

### **3.13 Income Tax**

Regulation 34 of MERC MYT Regulations, 2011 specifies as under:

#### ***"34 Tax on Income***

*34.1 The Commission, in its MYT Order, shall provisionally approve Income Tax payable for each year of the Control Period, if any, based on the actual income tax paid on permissible return as allowed by the Commission relating to the electricity business regulated by the Commission, as per latest Audited Accounts available for the applicant, subject to prudence check:*

*Provided that no Income Tax shall be considered on the amount of efficiency gains and incentive earned by the Generating Companies, Transmission Licensees and Distribution Licensees.*

*Provided further that the Generating Company, Transmission Licensee and Distribution Licensee shall bill the Income Tax under a separate head called "Income Tax Reimbursement" in their respective bills.*

*34.2 Variation between Income Tax actually paid and approved, if any, on the income stream of the regulated business of Generating Companies, Transmission Licensees and Distribution Licensees shall be reimbursed to/recovered from the Generating Companies, Transmission Licensees and Distribution Licensees, based on the documentary evidence submitted at the time of Mid-term Performance Review and MYT Order of third Control Period, subject to prudence check.*

*34.3 Under-recovery or over-recovery of any amount from the beneficiaries or the consumers on account of such income tax having been passed on to them shall be on the basis of income-tax assessment under the Income-Tax Act, 1961, as certified by the statutory auditors. The Generating Company, or the Transmission Licensee or Distribution Licensee, as the case may be, may include this variation in its Mid-term Performance Review Petition and MYT Petition of third Control Period:*

*Provided that tax on any income stream from other than the business regulated by the Commission shall not constitute a pass through component in tariff and tax on such other income shall be borne by the Generating Company or Transmission Licensee or the Distribution Licensee, as the case may be."*

In the MERC MYT Regulations, 2015, the Income Tax was not considered as a part of the ARR and was intended to be recovered directly by the Generation Entity or Licensee from the beneficiaries. However, due to practical difficulties, the Income Tax was allowed as part of the ARR. It is proposed to clarify the treatment of the Income Tax accordingly.

The existing approach specifies the approval of Income tax payable based on actual income tax paid on permissible return as allowed by the Commission. It may be noted that though the regulatory framework allows the fixed return to Utilities, actual profit may be different or lower than the allowed return. In such case, the approval of income tax based on permissible return would be on higher side and not be prudent. Hence, it is proposed that income tax payable shall be approved on actual income tax paid on permissible return or actual profit before tax, whichever is lower.

The existing approach of non-allowance of income tax on amount of efficiency gains and incentive earned by Utilities is proposed to be continued. Also, to bring more

clarity, it is proposed to insert that no income tax shall be allowed on amount of efficiency gains and incentive earned by Utilities irrespective of the fact that such efficiency gains or incentive is billed separately or not.

The Commission during the Mid Term Performance review of second Control Period observed that in some cases, the Generation Entity and Licensees were not taking into account various income tax benefits available such as income tax holiday, Section 80-IA benefit, MAT credit under Income Tax Act, 1961, etc.

For example, Section 80-IA has a specific and distinct provision allowing deduction of profits from such new investments in power sector. Section 80-IA provides that any investment made in laying a network of new transmission lines or new distribution lines at any time during the period beginning from 1 April, 1999 is eligible for claiming deduction of hundred percent of the profits and gains derived from such investment for ten consecutive years for computing PBT.

Utilities should have made all efforts to claim such benefits available under Income Tax Act, 1961. Not doing so results in payment of higher Income Tax, which burdens the consumers unnecessarily. Hence, it is proposed to add the following clause:

*“The benefits of any Income tax holiday and any other Income Tax benefits allowed under the Income tax Act, 1961, credit for unabsorbed losses or unabsorbed depreciation, or amount of Minimum Alternate Tax paid in previous years and available for set off against Corporate Tax liability, shall be taken into account for computation of the Income Tax liability of the Generating Entity or Licensee or MSLDC, as the case may be, irrespective of whether or not such Income Tax benefits and allowances have actually been.”*

The variation between Income Tax actually paid and approved shall be allowed at time of Mid Term review or Truing-up.

### ***3.14 Rebate and Delayed Payment Charge***

The objective of introduction of Prompt Payment Rebate and Delayed Payment Charge on payment of bills was to bring in discipline in payments by Licensees and Consumers. For any Utility, it would always be preferable to have minimum time gap between the raising of bills and receiving the payment against that bill. Any delay in payment of bills affects the cash flow of the Utilities, hence, surcharge on late payment shall be levied. Also, to promote the early payment of bills, prompt payment rebate shall be given to payer.

Regulation 52 of MERC MYT Regulations, 2011 specifies the provisions related to rebate and Delayed Payment Charge for bills of Generation Entity, as under:

***“52 Billing and Payment of Charges***

... ..

52.2 *The Billing and Payment of Capacity Charges and Energy Charges for Hydro Generating Stations shall be done on a monthly basis.*

52.3 *For payment of bills through a letter of credit on presentation, the Generating Company and Distribution Licensee may mutually agree to a maximum rebate of 2 per cent of the bill amount. If the payments are made within one week of presentation of the bill, the Generating Company and Distribution Licensee may mutually agree to a maximum rebate of 1.25 per cent of the bill amount.*

52.4 *In case the payment of bills is delayed beyond a period of two (2) months from the date of billing, a late payment surcharge at the rate of 1.25 per cent per month shall be allowed to be levied by the Generating Company.” (emphasis added)*

Further, Regulation 68 of MERC MYT Regulations, 2011 specifies the provisions related to payment of transmission charges, as under:

***“68 Payment Modalities and Payment Security***

68.1 *State Transmission Utility (STU) shall raise monthly bill for Intra-State Transmission Charges on every Transmission System User (TSU) on 1st working day of the Month for the Transmission Charges of preceding month.*

68.2 *The monthly bill for transmission tariff for each calendar month shall be payable on 14th day of subsequent calendar month by the TSUs.*

68.3 *All TSUs shall ensure timely payment of Transmission Tariff to STU so as to enable STU to make timely settlement of claims raised by Transmission Licensees.*

68.4 ***Where there is delay in payment by any TSU, late payment surcharge at the rate of 1.25% per month or part thereof shall be applicable.” (emphasis added)***

Further, existing MERC MYT Regulations, 2011 does not specify Rebate or Delayed Payment Charge on bills of retail tariff for consumers. The Commission’s Order for retail Tariff provides the mechanism as under:

- (i) Prompt payment discount of 1% on the monthly bill (excluding Taxes and Duties) shall be available to the consumers if the bills are paid within a period of 7 days from the date of issue of the bill, or within 5 days of the receipt of the bill, whichever is later.
- (ii) Delayed Payment Charges of 2% on the total electricity bill (including Taxes and Duties) shall be levied on the bill amount, in case the electricity bills are not paid within the due date mentioned on the bill.

As regards the rebate and delayed payment surcharge, CERC Tariff Regulations, 2014 specify as under:



*“44. Rebate. (1) For payment of bills of the generating company and the transmission licensee through letter of credit on presentation or through NEFT / RTGS within a period of 2 days of presentation of bills by the generating company or the transmission licensee, a rebate of 2% shall be allowed.*

*(2) Where payments are made on any day after 2 days and within a period of 30 days of presentation of bills by the generating company or the transmission licensee, a rebate of 1% shall be allowed.*

*45. Late payment surcharge: In case the payment of any bill for charges payable under these regulations is delayed by a beneficiary of long term transmission customer/DICs as the case may be, beyond a period of 60 days from the date of billing, a late payment surcharge at the rate of 1.50% per month shall be levied by the generating company or the transmission licensee, as the case may be.”*

The Commission is of view that the mechanism of rebate and Delayed Payment Charge is a must for maintaining the discipline in payment of bills, hence the same shall be continued. The provisions are separately specified in the proposed Regulations for bringing more clarity. Further, considering the up-gradation in technology of mode of transactions in banking, it would be appropriate to include payment through NEFT/RTGS for payment of bills and claiming rebate.

It may be noted that Distribution Licensees are required to make timely payment their power purchase and transmission charges. The delay in payment of retail Tariff bills affects the cash flow of the Distribution Licensee. Hence, it is proposed to specify Rebate or Delayed Payment Charge on bills of retail tariff for consumers.

It is proposed to specify the treatment of such rebate and Delayed Payment Charge in ARR. The rebate and Delayed Payment Charge earned shall be considered as Non-tariff Income. It is expected that Utilities should make timely payment of bills. The delay in payment of bills reflects the inefficiency in cash flow management and financial indiscipline, which is not desirable. Hence, the Delay Payment Surcharge or penalty paid by the Utility shall not be allowed as expenses in ARR.

In view of the above, following regulation is proposed:

*“35. Rebate, Incentive, and Penalties*

*35.1 For payment of bills of generation Tariff or transmission charges or MSLDC Fees and Charges within 7 days of presentation of bills, through Letter of Credit or otherwise or through NEFT/RTGS, by the Distribution Licensee, a rebate of 1% on billed amount, excluding the taxes, cess, duties, etc., shall be allowed.*

35.2 For payment of bills of retail Tariff by the consumers within 7 days of issue of bills, a rebate of 1% on the billed amount, excluding the taxes, cess, duties, etc., shall be allowed.

35.3 All rebates or incentives earned by the Generation Entity or Licensee or MSLDC shall be considered under its Non-Tariff Income, while all rebates or incentives given by the Generation Entity or Licensee or MSLDC shall be allowed as an expense for the Generation Entity or Licensee Or MSLDC.

35.4 Penalties paid, if any, by the Generation Entity or Licensee shall not be allowed as an expense for the Generation Entity or Licensee.

### **36. Delayed Payment Charge and Interest on Delayed Payment**

36.1 In case the payment of bills of generation Tariff or transmission charges or MSLDC Fees and Charges by the Beneficiary is delayed beyond a period of 30 days from the date of billing, Delayed Payment Charge at the rate of 1.25% per month on the billed amount shall be levied for the period of delay by the Generation Entity or the Transmission Licensee or MSLDC, as the case may be:

*Provided that in case the Distribution Licensee has agreed for a different rate of Delayed Payment Charge in the Power Purchase Agreement or Arrangement entered into with the Generation Entity or the Bulk Power Transmission Agreement with the Transmission Licensee, and such Agreement or Arrangement has already been approved by the Commission, then the rate of Delayed Payment Charge stipulated in such Agreement or Arrangement shall continue to be applicable.*

36.2 In case the payment of bills of retail Tariff by the consumers is delayed beyond a period of 30 days from the date of billing, Delayed Payment Charge on the billed amount, including the taxes, cess, duties, etc., shall be levied at the rate of 1.25% on the billed amount for the first month of delay:

*Provided that for delay in payment of bills of retail Tariff beyond 60 days and upto 90 days from the date of billing, Interest on Delayed Payment on the billed amount, including the Delayed Payment Charges, taxes, cess, duties, etc., shall be levied at the rate of 12% per annum:*

*Provided that for delay in payment of bills of retail Tariff beyond 90 days and upto 180 days from the date of billing, Interest on Delayed Payment on the billed amount, including the Delayed Payment Charges, taxes, cess, duties, etc., shall be levied at the rate of 15% per annum:*

*Provided that for delay in payment of bills of retail Tariff beyond 180 days from the date of billing, Interest on Delayed Payment on the billed amount, including the*

*Delayed Payment Charges, taxes, cess, duties, etc., shall be levied at the rate of 18% per annum.*

*36.3 Such Delayed Payment Charge and Interest on Delayed Payment earned by the Generation Entity or the Licensee shall be considered under its Non-Tariff Income.*

*36.4 Such Delayed Payment Charge paid by the Distribution Licensee to the Generation Entity or the Transmission Licensee shall not be allowed as an expense for such Distribution Licensee."*

### **3.15 Contribution to Contingency Reserves**

Regulation 36 of MERC MYT Regulations, 2011 specify as under:

#### ***"36 Contribution to contingency reserves***

*36.1 Where the Transmission Licensee or Distribution Licensee has made an appropriation to the Contingency Reserve, a sum not less than 0.25 per cent and not more than 0.5 per cent of the original cost of fixed assets shall be allowed annually towards such appropriation in the calculation of aggregate revenue requirement:*

*Provided that where the amount of such Contingencies Reserves exceeds five (5) per cent of the original cost of fixed assets, no such appropriation shall be allowed which would have the effect of increasing the reserve beyond the said maximum:*

*Provided further that the amount so appropriated shall be invested in securities authorised under the Indian Trusts Act, 1882 within a period of six months of the close of the financial year.*

*36.2 The Contingency Reserve shall not be drawn upon during the term of the licence except to meet such charges as may be approved by the Commission as being:*

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*(a) Expenses or loss of profits arising out of accidents, strikes or circumstances which the management could not have prevented;*

*(b) Expenses on replacement or removal of plant or works other than expenses requisite for normal maintenance or renewal;*

*(c) Compensation payable under any law for the time being in force and for which no other provision is made:*

*Provided that such drawal from Contingency Reserve shall be computed after making due adjustments for any other compensation that may have been received by the Licensee as part of an insurance cover.*

*36.3 No diminution in the value of contingency reserve as mentioned above shall be allowed to be adjusted as a part of tariff."*

The concept of creation of Contingency Reserve and investing the same in safe securities is to ensure that such amount is readily available to meet certain emergency requirements, without having to approach the consumers for allowance of the expenses. It is for this reason that the MERC MYT Regulations, 2011 specify that the amount of Contingency Reserve shall be invested in specified securities, and also specify the manner and heads on which the Contingency Reserve may be utilised. If such Contingency Reserve is not created, then such funds may not be available when really required. Hence, it is proposed to continue the existing provisions in this regard.

The contribution to Contingency reserve is linked to original cost of fixed assets. It is proposed to continue with the same annual limit of 0.25% to 0.5% of original cost of fixed assets and overall cumulative limit of 5% of original cost of fixed assets.

As discussed in earlier sections, treatment of insurance cover received against the damaged assets shall be separately done, hence, the existing proviso of drawal from Contingency reserve after making due adjustment for compensation received as part of insurance cover is proposed to be removed.

### ***3.16 Prior Period Income and expenses***

It may be noted that existing MERC MYT Regulations, 2011 does not specify about the treatment of prior period income and expense.

The Commission is of the view that the treatment of prior period income and expenses has to be done on a case to case basis, as this is primarily an accounting treatment, and hence, cannot be specified in the Regulations. However, as a principle, in case any excess provisioning or expense has been disallowed in previous years due to allowance of normative expenses, and the same is reported as prior period income due to write-back, then the same ought not to be considered as prior period income, as the expenses have not been allowed in the prior periods. Similarly, prior period expenses pertaining to heads where normative expenses have already been allowed ought not to be allowed, as only the normative expenses can be allowed.

It is proposed to add the following proviso:

*“Provided further that prior period income/expenses shall be allowed by the Commission at the time of Truing-up based on audited accounts, on a case to case basis, subject to prudence check.”*

## 4 Norms and Principles for Determination of Generation Tariff

This Section discusses the issues related to the determination of the revenue requirement and tariff for Generating Companies supplying power to the Distribution Licensees in the State of Maharashtra.

### 4.1 Background

For several years, the Maharashtra State Power Generating Company Limited (MSPGCL), The Tata Power Company Limited - Generation Business (TPC-G) and Reliance Infrastructure Limited - Generation Business (RInfra-G) are the Generating Companies in the State of Maharashtra, who own and operate generating stations in the State and supply power to Distribution Licensees on a long-term basis based on tariff approved by the Commission. MSPGCL also operates various hydel generating stations, which are owned by the Water Resources Department of Government of Maharashtra (GoM) and have been handed over to MSPGCL for operation and maintenance, for which MSPGCL pays lease rent approved by the Commission. During the second Control Period, MSPGCL has commissioned new Generating Units, viz., Khaparkheda Unit 5 and Bhusawal Unit 4 and 5, for which the tariff has been determined by the Commission under the provisions of MERC (Terms and Conditions) Regulations, 2005 and MERC MYT Regulations, 2011, as applicable. Recently, Vidarbha Industries Power Limited - Generation Business (VIPL-G) has entered into Power Purchase Agreement with RInfra-D and the Commission has also approved the capital cost and determined its tariff for second Control Period.

The summary of generating stations and their installed capacity is given in the following Tables:

**Table 5: Generating Stations of MSPGCL**

Station/ Unit	No of Units	Installed Capacity	
		Capacity of each Unit in MW	Total Capacity in MW
<b>Coal based and Gas based Thermal</b>			
<b>Uran (Gas)</b>			<b>672</b>
Unit 5,6,7,8	4	108	432
WHR_AO, WHR_BO	2	120	240
<b>Khaperkheda</b>			<b>840</b>
Unit 1,2,3,4	4	210	840
Unit 5	1	500	<b>500</b>
<b>Paras</b>			<b>500</b>

Station / Unit	No of Units	Installed Capacity	
		Capacity of each Unit in MW	Total Capacity in MW
<b>Unit 3 &amp; 4</b>	2	250	500
<b>Bhusawal</b>			<b>420</b>
Unit 2,3	2	210	420
Unit 4 & 5	2	500	<b>1000</b>
<b>Nashik</b>			<b>630</b>
Unit 3,4,5	3	210	630
<b>Parli</b>			<b>1130</b>
Unit 3,4,5	3	210	630
Unit 6,7		250	500
<b>Koradi</b>			<b>620</b>
Unit 5	1	200	200
Unit 6,7	2	210	420
<b>Chandrapur</b>			<b>2340</b>
Unit 1,2,3,4	4	210	840
Unit 5,6,7	3	500	1500
<b>Sub-Total</b>			<b>8652</b>
<b>Hydel</b>			
Koyna			1956
Vaitarna	1	60	60
Bhira	2	40	80
Tillari	1	66	66
Others			167
<b>Ghatghar Pump storage</b>	2	125	<b>250</b>
<b>Sub-Total</b>			<b>2579</b>
<b>Total</b>			<b>11231</b>

Table 6: Generating Stations of TPC-G

Sr. No	Station Name	Type and Fuel	Status	Unit Details	Capacity
1	Trombay	Thermal - Oil	Stand By	Unit-4 (1 x 108 MW)	1538 MW
		Thermal - Coal/Oil	Operational	Unit-5 (1 x 500 MW)	
		Thermal - Oil/Gas	Operational	Unit-6 (1 x 500 MW)	
		Thermal - Gas	Operational	Unit-7 (1 x 180 MW)	
		Thermal - Coal	Operational	Unit-8 (1 x 250MW)	
2	Khopoli	Hydel	Operational		72 MW
3	Bhivpuri	Hydel	Operational		75 MW
4	Bhira	Hydel	Operational		300 MW
	<b>Total</b>				<b>1985M W</b>

Table 7: Generating Stations of RInfra-G

Sr. No	Station Name	Type and Fuel	Status	Unit Details	Capacity
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Sr. No	Station Name	Type and Fuel	Status	Unit Details	Capacity
1	Dahanu	Thermal - Coal	Operational	2 x 250 MW	500 MW

**Table 8: Generating Stations of VIPL-G**

Sr. No	Station Name	Type and Fuel	Status	Unit Details	Capacity
1	VIPL, Butibori	Thermal - Coal	Operational	2 x 300 MW	600 MW

## 4.2 Common Issues for Thermal and Hydel Generating Stations

### 4.2.1 Approval of Provisional Tariff

The MERC MYT Regulations, 2011, specify inter-alia as under:

*“38.4 A Generating Company may make a Petition for determination of provisional tariff in advance of the anticipated Date of Commercial Operation of Unit or Stage or Generating Station as a whole, as the case may be, based on the capital expenditure actually incurred up to the date of making the Petition or a date prior to making of the Petition, duly audited and certified by the statutory auditors and the provisional tariff shall be charged from the date of commercial operation of such Unit or Stage or Generating Station, as the case may be.*

*38.5 A Generating Company shall make a fresh Petition in accordance with these Regulations, for determination of final tariff based on actual capital expenditure incurred up to the date of commercial operation of the Generating Station duly certified by the statutory auditors based on Annual Audited Accounts.*

*38.6 Any difference in provisional tariff and the final tariff determined by the Commission and not attributable to the Generating Company may be adjusted at the time of determination of final tariff for the following year as directed by the Commission.”*

Thus, the MERC MYT Regulations, 2011 provide scope for filing Petition for approval of provisional generation tariff in advance, before the anticipated date of commercial operation (COD). However, the advance period has not been specified. Further, the MERC MYT Regulations, 2011 specify that the Petition for determination of provisional tariff has to be filed based on the capital expenditure actually incurred till date or a date prior to making of the Petition and duly audited and certified by the statutory auditors.

As regards the application of determination of tariff, CERC Tariff Regulations, 2014 specifies as under:

*“7. Application for determination of tariff:*

(1) *The generating company may make an application for determination of tariff for new generating station or unit thereof in accordance with the Procedure Regulations, in respect of the generating station or generating units thereof **within 180 days of the anticipated date of commercial operation.***

(2) *The transmission licensee may make an application for determination of tariff for new transmission system including communication system or element thereof as the case may be in accordance with the Procedure Regulations, in respect of the transmission system or elements thereof anticipated to be commissioned **within 180 days from the date of filing of the petition.***

(3) *In case of an existing generating station or transmission system including communication system or element thereof, the application shall be made not later than 180 days from the date of notification of these regulations **based on admitted capital cost** including any additional capital expenditure already admitted up to 31.3.2014 (either based on actual or projected additional capital expenditure) **and estimated additional capital expenditure** for the respective years of the tariff period 2014-15 to 2018-19.*

(4) *The generating company or the transmission licensee, as the case may be, shall make an application as per **Annexure-I** of these regulations, for determination of tariff **based on capital expenditure incurred duly certified by the auditors or projected to be incurred up to the date of commercial operation** and additional capital expenditure incurred duly certified by the auditors or projected to be incurred during the tariff period of the generating station or the transmission system as the case may be:*

*Provided that the petition shall contain **details of underlying assumptions for the projected capital cost and additional capital expenditure, wherever applicable.***

(5) *If the petition is inadequate in any respect as required under **Annexure-I** of these regulations, the application shall be returned to the generating company or transmission licensee as the case may be, for resubmission of the petition within one month after rectifying the deficiencies as may be pointed out by the staff of the Commission.*

(6) *If the information furnished in the petition is in accordance with the regulations and is adequate for carrying out prudence check of the claims made, the Commission shall consider the suggestions and objections, if any, received from the respondents within one month from the date of filing of the petition and any other person including the consumers or consumer associations. The Commission shall issue the tariff order after hearing the petitioner, the respondents and any other person specifically permitted by the Commission.*



*(7) In case of the new projects, the generating company or the transmission licensee, as the case may be, may be allowed tariff by the Commission based on the projected capital expenditure from the anticipated COD in accordance with Regulation 6 of these regulations:*

*Provided that :*

*(i) the Commission may grant tariff upto 90% of the annual fixed charges claimed in respect of the transmission system or element thereof based on the management certificate regarding the capital cost for the purpose of inclusion in the POC charges in accordance with the CERC (Sharing of Inter State Transmission charges and losses), Regulation, 2010 as amended from time to time:*

*(ii) if the date of commercial operation is delayed beyond 180 days from the date of issue of tariff order in terms of clause (6) of this regulation, the tariff granted shall be deemed to have been withdrawn and the generating company or the transmission licensee shall be required to file a fresh application for determination of tariff after the date of commercial operation of the project:*

*..." (emphasis added)*

Thus, the CERC Tariff Regulations, 2014 clearly specify that the Generation Entity may make an application for determination of Provisional tariff for new generating stations or units six months prior to anticipated date of commercial operation. Further, to ensure that the time span between issue of the Order on approval of provisional tariff and achievement of COD does not exceed six months, the CERC Tariff Regulations, 2014 specify that if the date of commercial operation is delayed beyond six months from the date of issue of provisional Tariff Order, the provisional tariff granted shall be deemed to have been withdrawn and the Generation Entity shall be required to file a fresh application for determination of tariff after the date of commercial operation of the project. The Generation Entity shall also be required to file the Petition for determination of final Tariff within six months from COD.

The MERC MYT Regulations, 2011 specify that the Petition for approval of provisional tariff has to be filed strictly on the basis of audited capital expenditure on or before the date of filing the Petition, and not based on projected capital expenditure as on anticipated date of COD.

It is a fact that preparation and filing of the Petition, as well as audit of capital expenditure are time consuming activities. Also, the major portion of the assets gets capitalised in the last year before the COD. In view of such facts, based on the provisions of the current MERC MYT Regulations, 2011, the capital cost in the Petition for provisional tariff may be significantly lower than actual capital expenditure as on COD. Hence, there would be more certainty and minimum

retrospective adjustments if the filing of Petition for provisional tariff is allowed based on the projected capital expenditure upto COD. Therefore, it is proposed that the new generating stations be allowed to file the Petition for provisional tariff based on the capital expenditure incurred and projected to be incurred upto COD, and additional capital expenditure incurred, duly certified by the Statutory Auditor.

CERC Tariff Regulations, 2014 provides the mechanism addressing the variation in capital cost approved at time of provisional tariff and actual capital cost. It is proposed to adopt the same approach, to provide more certainty and minimum retrospective adjustment, with slight modifications.

It is proposed to adopt a similar approach as in CERC Tariff Regulations, 2014 in the revised MERC MYT Regulations, with the following modifications:

*“38.4 In the case of existing generating Stations/Units, the Commission may allow the Generation Entity; the Tariff based on the approved capital cost as on the April 1, 2016 and projected additional capital expenditure for the ensuing Years:*

*Provided that the Generation Entity shall continue to bill the Beneficiaries at the Tariff approved by the Commission and applicable as on March 31, 2016 for the period starting from April 1, 2016 till approval of Tariff by the Commission in accordance with these Regulations.*

*38.5 The Generation Entity shall file the Petition for determination of provisional Tariff for new Generating Station, at least six months prior to the anticipated date of commercial operation of Generating Unit or Stage or Generating Station as a whole, as the case may be.*

*38.6 The Generation Entity shall file a Petition for determination of provisional Tariff for new Generating Station based on capital expenditure incurred and projected to be incurred up to the date of commercial operation and additional capital expenditure incurred, duly certified by the statutory auditors:*

*Provided that the Petition shall contain details of underlying assumptions for the projected capital cost and additional capital cost, wherever applicable.*

*38.7 In the case of new projects, the Generation Entity may be allowed provisional Tariff by the Commission from the anticipated date of commercial operation, based on the projected capital expenditure.*

*38.8 If the date of commercial operation is delayed beyond six months from the date of issue of the order approving the provisional Tariff, the provisional Tariff granted shall be deemed to have been withdrawn and the Generation Entity shall be required to file a fresh Petition for determination of Tariff after the date of commercial operation of the Project.*

38.9 *The Generation Entity shall file the Petition for determination of final Tariff for new Generating Station within six months from the date of commercial operation of Generating Unit or Stage or Generating Station as a whole, as the case may be, based on the audited capital expenditure and capitalisation as on the date of commercial operation:*

*Provided that in case of more than one Unit in the Generating Station, such Petition shall be filed for each Unit as and when such Unit achieves COD and without waiting for the COD of the entire Station.*

38.10 *The final Tariff determination for the new Generating Station shall be done by the Commission based on prudence check of the audited capital expenditure and capitalisation as on the date of commercial operation.*

38.11 *Where the actual Capital Cost incurred on year to year basis is less than the Capital Cost approved for determination of provisional Tariff by the Commission, by five percent or more, the Generation Entity shall refund to the Beneficiaries the excess Tariff realised corresponding to excess Capital Cost, along with interest at 1.20 times of the Base Rate of State Bank of India, as prevalent on the first day of April of the respective Year, plus one hundred basis points.*

38.12 *Where the actual Capital Cost incurred on year to year basis is more than the Capital Cost approved for determination of provisional Tariff by the Commission, by five percent or more, the Generation Entity shall, subject to the approval of the Commission, recover from the Beneficiaries the shortfall in Tariff corresponding to such decrease in Capital Cost, along with interest at 0.80 times of the Base Rate of State Bank of India, as prevalent on the first day of April of the respective Year, plus one hundred basis points.*

38.13 *In relation to multi-purpose hydroelectric Projects, with irrigation, flood control and power components, the capital cost chargeable to the power component of the Project only shall be considered for determination of Tariff."*

#### **4.2.1 Renovation & Modernisation**

The MERC MYT Regulations, 2011 specifies the treatment of the expenses on Renovation & Modernisation, claiming Special Allowance in lieu of Renovation & Modernisation, and operational performance parameters to be considered under both scenarios. These clauses were based on the CERC Tariff Regulations, 2009. In the CERC Tariff Regulations, 2014, CERC has revised the Special Allowance, and further elaborated on these provisions. It is proposed to adopt these provisions in the MERC MYT Regulations, 2015, as under:

**"41. Renovation & Modernisation**

41.1 For undertaking Renovation and Modernisation for the purpose of extension of life beyond the useful life of the Generating Station or a Unit thereof, the Generation Entity shall file a Petition for approval with a Detailed Project Report giving complete scope, justification, cost-benefit analysis, estimated life extension from a reference date, financial package, phasing of expenditure, schedule of completion, reference price level, estimated completion cost, record of consultation with Beneficiaries and any other relevant information.

41.2 Approval of such proposal for Renovation and Modernisation shall be granted after consideration of reasonableness of the cost estimates, schedule of completion, use of efficient technology, cost-benefit analysis, and such other factors as may be considered relevant by the Commission.

41.3 In case of gas/liquid fuel based open/combined cycle thermal generating Station, any expenditure, which has become necessary for renovation of gas turbines/steam turbine and any expenditure necessitated due to obsolescence or non-availability of spares for efficient operation of the stations shall be allowed:

*Provided that any expenditure included in the Renovation and Modernisation on consumables and cost of components and spares, which is generally covered in the O&M expenses during the major overhaul of gas turbine, shall be suitably deducted after prudence check, from the Renovation and Modernisation expenditure to be allowed.*

41.4 In case of coal-based/lignite fired thermal Generating Station, the Generation Entity, may, in its discretion, avail of a 'special allowance' in accordance with the norms specified in Regulation 41.5, as compensation for meeting the requirement of expenses including Renovation and Modernisation beyond the useful life of the Generating Station or a Unit thereof, and in such an event revision of the capital cost shall not be allowed and the applicable operational norms shall be revised, but the special allowance shall be included in the Annual Fixed Cost:

*Provided that such option shall not be available for a Generating Station or Unit for which Renovation and Modernisation has been undertaken and the expenditure has been admitted by the Commission before the date of effectiveness of these Regulations, or for a generating Station or Unit which is in a depleted condition or operating under relaxed operational and performance norms.*

41.5 The Special Allowance shall be Rs. 7.5 lakh/MW/year for the year 2016-17 and thereafter escalated at the rate of 5% every year during the Control Period, Unit-wise from the next Year from the respective date of the completion of useful life with

reference to the date of commercial operation of the respective Unit of generating Station:

Provided that in respect of a Unit in commercial operation for more than 25 years as on April 1, 2016, this allowance shall be admissible from the year 2016-17:

Provided further that the special allowance for the generating Station/Unit, which, in its discretion, has already availed of a 'Special Allowance' in accordance with the norms specified in Regulations 41.6 (iv) of the Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2011, shall be allowed Special Allowance by escalating the special allowance allowed for the year 2015-16 @ 5% every year during the Control Period.

- 41.6 The expenditure approved by the Commission after prudence check based on the estimates of Renovation and Modernisation expenditure and life extension, and after deducting the accumulated depreciation already recovered from the original Project cost, shall form the basis for determination of Tariff."

#### **4.2.2 Non-Tariff Income**

The various heads considered by the Commission under the Non Tariff Income in the MERC MYT Regulations, 2011 for Generating companies are as under:

*"The indicative list of various heads to be considered for non tariff income shall be as under:*

- a) Income from rent of land or buildings;*
- b) Income from sale of scrap;*
- c) Income from statutory investments;*
- d) Income from sale of Ash/rejected coal;*
- e) Interest on delayed or deferred payment on bills;*
- f) Interest on advances to suppliers/contractors;*
- g) Rental from staff quarters;*
- h) Rental from contractors;*
- i) Income from hire charges from contactors and others;*
- j) Income from advertisements, etc.;*
- k) Any other non tariff income"*

The Electricity (Removal of Difficulty) (Fourth) Order 2005 by Ministry of Power stipulates:

*"The supply of electricity by a generating company to the housing colonies of, or townships housing, the operating staff of its generating station will be deemed to be*

*an integral part of its activity of generating electricity and the **generating company shall not be required to obtain licence under this Act for such supply of electricity.***

In view of the above, the existing definition of Auxiliary Energy Consumption, which says that Auxiliary Energy Consumption **shall not include energy** consumed for supply of power to housing colony and other facilities at the generating station and the power consumed for construction works at the generating station, is proposed to be continued.

Since the Generation Entity is allowed to supply electricity to the housing colony, the energy supplied has to be charged at the rates approved by the Commission for the supply of electricity to the respective consumer category by the Distribution Licensee for that area of supply. The Generation Entity is required to submit the details of sale of electricity to housing colony including energy sales and revenue earned separately.

The net income that will be generated from supply of electricity has to be treated as Non Tariff Income. In line with the above, it is proposed to modify the existing list of heads of Non Tariff Income by adding **“Net Income from supply of electricity by the Generating Entity to the housing colonies of its operating staff, after adjusting the expenses incurred for supply of such electricity”** to the existing list. Further in order to verify the net income from supply of electricity by the Generation Entity to the housing colonies of its operating staff, it is proposed that Generating companies must submit the details of sale of electricity to Housing colony separately during the Mid Term Review.

It is proposed that interest earned from investments made out of Return on Equity corresponding to the regulated Business of the Generation Entity shall not be included in Non-Tariff Income.

#### **4.2.3 Billing and Payment of Charges**

Regulation 52 of MERC MYT Regulations, 2011 specifies provisions related to Billing and payment of charges towards generation. As discussed in earlier Section, the provisions related to rebate and delay payment surcharge on generation bills has been included separately under Part D of the proposed Regulations. In view of this, Regulation 52.3 and 52.4 of existing MERC MYT Regulations, 2011 are removed. The proposed Regulation is shown below:

*“The Billing and Payment of Annual Fixed Charges, Energy Charges, Fuel Surcharge Adjustments and Incentive for Thermal Generating Stations shall be done on a monthly basis.*

*The Billing and Payment of Capacity Charges and Energy Charges for Hydro Generating Stations shall be done on a monthly basis. ”*

### **4.3 Thermal Generating Stations**

#### **4.3.1 Components of Tariff**

The Tariff for sale of electricity from a thermal power Generating Station shall comprise of two parts, namely, Annual Fixed Charge and Energy Charge.

The Annual Fixed Charges shall comprise of the following components:

- a. Operation & Maintenance Expenses;
- b. Depreciation;
- c. Interest on Loan Capital;
- d. Interest on Working Capital;
- e. Return on Equity Capital;
- f. Income Tax;

**Less:**

- g. Non Tariff Income.

Further, as discussed in earlier section, prior period income/expenses shall be allowed at the time of Truing-up based on audited accounts, on a case to case basis, subject to prudence check.

#### **4.3.2 Norms of Operation**

The MERC MYT Regulations, 2011 specifies the various norms of operation for thermal Generating Stations. The norms and their impact on tariff have been summarised in the following table:

**Table 9: Norms for Operation for Generation Entity**

<b>Norms of Operation</b>	<b>Impact given in tariff</b>
Plant Availability Factor (PAF)	Recovery of Annual Fixed Charges
Plant Load Factor (PLF)	Incentive on excess generation
Station Heat Rate (SHR)	Sharing of gains and losses on account of controllable factors
Auxiliary Consumption	Sharing of gains and losses on account of controllable factors
Secondary Fuel Oil Consumption (SFOC)	Sharing of gains and losses on account of controllable factors

Norms of Operation	Impact given in tariff
Coal Transit Losses	Sharing of gains and losses on account of controllable factors

The approach adopted for the above norms of operation in the proposed Regulations is discussed as under:

### **Plant Availability Factor (PAF)**

The MERC MYT Regulations, 2011 specifies the target Availability for full recovery of Annual Fixed Charges as 85%, with relaxed norms for MSPGCL's existing Generation Stations as 72% for Koradi TPS and 80% for Chandrapur TPS, Nashik TPS, Bhusawal TPS, Paras TPS excluding Unit 3, and Parli TPS excluding Unit 6.

As regards the normative availability for full recovery of fixed charges, it is proposed to retain the normative availability for recovery of fixed costs as 85% for all the existing and new generating stations.

For exception as considered in MERC MYT Regulations, 2011, the actual performance parameters of Generating Stations for three years i.e. from FY 2011-12 to FY 2013-14 has been analysed as against the normative target availability.

It is observed that all the Generating Unit/Stations of TPC-G and RInfra-G have achieved the normative availability, whereas, the actual availability of MSPGCL's Generating Stations is lower than the relaxed normative levels specified by the Commission in the MERC MYT Regulations, 2011. MSPGCL in its Petitions has submitted that the lower availability was mainly on account of coal and water shortage. With respect to quality of coal, MSPGCL filed a Case before the Competition Commission of India, under Section 19(1)(a) of the Competition Act, 2002 against M/s Mahanadi Coalfields Limited (MCL and M/s Coal India Ltd. (CIL) alleging *inter alia* contravention of the provisions of section 4 of the Act (Abuse of Dominant Position). MCL, instead of signing/executing coal supply agreements/fuel supply agreements as required under the Coal Distribution Policy, 2007, executed/signed MoUs which did not cover aspects like quality control, grade failure, short supply, joint sampling *etc.* The Competition Commission of India, in its Order held that:

*"254. In view of the findings recorded by the Commission, it is ordered as under:*

*(i) The opposite parties are directed to cease and desist from indulging in the conduct which has been found to be in contravention of the provisions of the Act.*



(ii) The fuel supply agreements are ordered to be modified in light of the observations and findings recorded in the present order. For effecting these modifications in the agreements, CIL is further directed to consult all the stake-holders. CIL is also directed to ensure parity between old and new power producers as well as between private and PSU power producers, as far as practicable. Though varying needs of different classes of producers may require different treatment, yet to pass muster the embargo placed by section 4 of the Act, the differentiation or classification must be founded on an intelligible differentia which distinguishes persons or things that are grouped together from others left out of the group, and the differentia must have a rational nexus with the object sought to be achieved by such classification.

(iii) CIL is further directed to incorporate suitable modifications in the fuel supply agreements to provide for a fair and joint sampling and testing procedure.

(iv) CIL may also consider and examine the feasibility of sampling at the unloading-end in consultation with power producers besides adopting international best practices. CIL may also hasten the process of installing Augur Sampling Machines and washeries to help improve the coal supplied."

As regards the poor coal quality, ATE in its Judgment dated 19 April, 2012 in Review Petition No. 9 of 2011 in Appeal No. 199 of 2010 ruled as under:

*"We do not accept that the quality of coal is totally beyond the control of the appellant. If the quality of raw coal supplied by the coal companies is poor, the appellant has to make arrangements for washing of coal and blending with superior quality of coal"*

MSPGCL has already taken some of these steps to a certain extent. In February 2012, the Ministry of Coal issued direction to CIL to increase the trigger level for penalties to 80% from 50%. In accordance with the directive, CIL revised its fuel supply agreements and also enhanced the penalty level in favour of consumers.

The following Table provides the comparison of actual availability with normative availability:

**Table 10: Comparison of actual availability with normative availability**

Particulars	Normative					Actual submitted			Average
	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2011-12	FY 2012-13	FY 2013-14	
MSPGCL									
Bhusawal	80%	80%	80%	80%	80%	66.07%	57.84%	59.90%	61.27%
Chandrapur	80%	80%	80%	80%	80%	67.12%	70.97%	57.68%	65.26%
Khaperkheda	80%	80%	85%	85%	85%	81.62%	75.61%	68.37%	75.20%

Particulars	Normative					Actual submitted			Average
	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2011-12	FY 2012-13	FY 2013-14	
Koradi	74%	74%	72%	72%	72%	65.64%	48.42%	47.90%	53.99%
Nashik	79%	79%	80%	80%	80%	75.37%	83.45%	84.39%	81.07%
Parli	80%	80%	80%	80%	80%	51.45%	44.32%	28.08%	41.28%
Uran	80%	80%	85%	85%	85%	80.37%	63.86%	56.94%	67.06%
Paras Unit # 3	80%	80%	85%	85%	85%	64.99%	74.36%	83.26%	74.20%
Paras Unit # 4	80%	80%	85%	85%	85%	67.72%	66.51%		72.50%
Parli Unit # 6	80%	80%	85%	85%	85%	54.81%	43.38%	57.14%	51.78%
Parli Unit # 7	80%	80%	85%	85%	85%	56.17%	42.80%		52.04%
Khaperkheda Unit # 5		80%	85%	85%	85%		73.64%	65.17%	69.41%
Bhusawal Unit # 4		80%	85%				63.12%	71.18%	67.15%
Bhusawal Unit # 5			85%					65.85%	65.85%

As seen from the above Table, the actual availability achieved by MSPGCL's Stations is lower than the normative availability except for Nashik.

The existing norms for old stations of MSPGCL were fixed considering the recommendation of Central Research Power Institute (CPRI). MSPGCL has submitted that the coal availability is likely to improve in FY 2015-16, due to measures taken by MSPGCL to improve the availability of coal. In view of the above, it is proposed to continue with the existing norms, both for new and old generating Units with slight modification. Further, the norms for Paras TPS Unit 1 & 2 have been deleted as these Units have been retired.

Hence, it is proposed that target availability for full recovery of Annual Fixed Charges shall be **85% for all Thermal Generating Stations** except those covered in the following table:

**Table 11: Target Availability for Old Generating Stations of MSPGCL**

Particulars	Target Availability
Koradi TPS	72%
Khaperkheda TPS	85%
Chandrapur TPS	80%
Nashik TPS	80%
Bhusawal TPS excluding Unit 4 & 5	80%
Parli TPS excluding Unit No. 6 & 7	80%

### **Plant Load Factor (PLF)**

As discussed above, the normative Plant Load Factor is linked to the incentive on generation. The existing MERC MYT Regulations, 2011 specify the target PLF for incentive as 85%.

Based on the analysis of actual performance of Generating Stations for FY 2011-12 to FY 2013-14, it was observed that PLF for all the Generating Stations of MSPGCL (including the new Units) is lower than the normative PLF of 85%, whereas PLF for TPC-G Units and RInfra-G's Dahanu is more than the normative PLF of 85%, except for TPC-G Unit 6.

The existing MERC MYT Regulations, 2011 specifies as under:

#### ***"Incentive***

*49.8 Incentive shall be payable at a flat rate of 25.0 paise/kWh for actual energy generation in excess of ex-bus energy corresponding to target Plant Load Factor.*

*Provided that the actual generation shall also consider the generation loss on account of any backing down instruction from the Maharashtra State Load Despatch Centre.*

*The Incentive amount shall be computed and billed on monthly basis based on the cumulative Plant Load Factor till the respective month in a Year, subject to adjustment at the end of the year."*

Incentive needs to be given for actual generation, higher than the target PLF, and hence, it is proposed that no incentive shall be given after considering generation loss on account of backing down instructions. It is proposed to continue with the existing Regulation with certain modifications and specify target Plant Load Factor for incentive as 85%.

The proposed regulations are shown below:

*"Incentive shall be payable at a flat rate of 25.0 paise/kWh for actual energy generation in excess of ex-bus energy corresponding to target Plant Load Factor.*

*The Incentive amount shall be computed and billed on monthly basis based on the cumulative Plant Load Factor achieved with respect to the target Plant Load Factor till the respective month in a Year, subject to adjustment at the end of the Year."*

Apart from PAF and PLF, the other Performance norms to be specified for thermal generating stations are:

- **Station Heat Rate**

- **Auxiliary Power Consumption**
- **Secondary Fuel Consumption**
- **Coal Transit Losses**

CERC Tariff Regulations, 2014 has not specified separate norms for new Generating Stations and existing Generating Stations, and has specified the same norm for each performance parameter for both new as well as existing Generating Stations, and relaxed norms have been specified for few old Generating Stations of NTPC, Neyveli Lignite Corporation, Damodar Valley Corporation and North Eastern Electric Power Corporation Limited (NEEPCO) based on past performance.

It is proposed to adopt a similar approach and the same norm has been specified for each Performance parameter, which would be applicable to new as well as existing Generating Stations and relaxed norms have been specified for few Generating Stations. Further, norms for old generating stations of MSPGCL have been specified as per the recommendations of CPRI and based on actual performance for FY 2011-12 to FY 2013-14.

#### **Station Heat Rate (SHR)**

Station Heat Rate is an indicator of power plant efficiency. In line with the existing MERC MYT Regulations, 2011, separate norms for Heat Rate for new Generating Station based on Design Heat Rate is proposed to be specified.

The existing MERC MYT Regulations, 2011 specify the norms for Station Heat Rate for existing Generating Station as under:

<b>Particulars</b>	<b>200/210/250 MW sets</b>	<b>500 MW and above sets</b>
Station Heat Rate	2450 kcal/kWh	2425 kcal/kWh

It is proposed to specify the Station Heat Rate for existing Generating Stations in line with norms stipulated in CERC Tariff Regulations, 2014. Accordingly, the SHR norm for existing Stations except for the old Generating Stations of MSPGCL and TPC-G Unit 5, 6 & 7 is shown in the Table below:

<b>Particulars</b>	<b>200/210/250 MW sets</b>	<b>300/500 MW sets (sub-critical boilers)</b>
Proposed Station Heat Rate	2450 kcal/kWh	2375 kcal/kWh

In respect of 500 MW Units, where the boiler feed pumps are electrically operated, the gross Station Heat Rate shall be 40 kcal/kWh lower than the gross Station Heat Rate specified above.

For Generating Stations having combination of 200/210/250 MW sets and 500 MW sets, the normative gross Station Heat Rate shall be the weighted average Station Heat Rate.

For the relaxed norms to be specified for some existing Stations, we have analysed the performance of Generating Station during second Control Period. The summary of the past performance of the thermal generating stations of TPC-G, RInfra-G and MSPGCL in the context of Station Heat Rate is shown in the Table below:

**Table 12: Actual and Approved Station heat Rate of Existing Stations/Units (kcal/kWh)**

Particulars	Normative (kcal/kWh)					Actual submitted			Average
	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2011-12	FY 2012-13	FY 2013-14	
MSPGCL									
Bhusawal	2807.65	2791.50	2764.36	2743.21	2739.46	2789	2788.39	2775.3	2784.23
Chandrapur	2659.26	2698.31	2686.42	2679.52	2683.63	2642.83	2660.74	2708.63	2670.73
Khaperkheda	2608.52	2612.68	2605.64	2607.24	2606.7	2606	2608.5	2628.48	2614.33
Koradi	2829.72	2825.52	2835.14	2813.53	2760.72	2845.11	2849.14	2863.89	2852.71
Nashik	2769.15	2756.50	2735.84	2718.58	2715.26	2846.99	2731.7	2701.48	2760.06
Parli	2894.15	2868.20	2842.25	2841.3	2850.35	2969	2837.99	2801.19	2869.39
Uran	1980.00	1980.00	2017	2021	2025	2041	2020.42	1996.73	2019.38
Paras Unit # 3	2500	2500	2450	2450	2450	2546	2479.95	2463.11	2496.35
Paras Unit # 4	2500	2500	2450	2450	2450	2538.62	2477.08		2492.94
Parli Unit # 6	2500	2500	2450	2450	2450	2639.02	2625.22	2497.81	2587.35
Parli Unit # 7	2500	2500	2450	2450	2450	2640.26	2593.15		2577.07
Khaperkheda Unit # 5			2425	2425	2425		2519.5	2534.82	2527.16
Bhusawal Unit 4		2550	2440.07	2425	2425		2685.1	2701.05	2693.07
Bhusawal Unit 5			2443	2425	2425			2657	2657.00
TPC-G									
Unit 5	2575	2583	2591	2573	2581	2473.1	2476	2501	2483.37
Unit 6	2519	2524	2529	2534	2539	2502.63	2510	2649	2553.88
Unit 7 (CC)	2009	2013	2017	2021	2025	1959.95	1960	1998	1972.65
Unit 7 (OC)	2900	2900	2900	2900	2900				
Unit 8	2450	2450	2450	2450	2450	2314	2299	2260	2291.00
RInfra-G									
DIPS	2500	2355	2360	2365	2370	2282.27	2292.88	2322.41	2299.19

## MSPGCL

The average Station Heat Rate for most of the generating stations of MSPGCL for last three years (i.e., FY 2011-12 to FY 2013-14) has been higher than the normative Station Heat Rate specified by the Commission for the second Control Period.

CPRI, in its Study Report, has specified the trajectory for SHR for old stations of MSPGCL till FY 2017-18 assuming some immediate measures, medium-term measures, long-term measures and Renovation and Modernization for improving the performance of the Station. The SHR norms have been proposed in line with the recommendations of CPRI till FY 2017-18, with further degradation assumed as recommended by CPRI.

For Uran GTPS, it is proposed to consider the average of actual SHR over the period from FY 2011-12 to FY 2013-14 with degradation of 4 kcal/kWh. Such degradation in SHR is in accordance with the MERC MYT Regulations, 2011. The proposed norms for Station Heat Rate for MSPGCL's generating Stations are as under:

**Table 13: Proposed SHR for old Generating Stations of MSPGCL**

Particulars	Proposed SHR (kCal/kWh)			
	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
<b>MSPGCL</b>				
Bhusawal excluding Unit 4 & 5	2717	2682	2690	2699
Chandrapur	2672	2666	2676	2685
Khaperkheda	2606	2614	2622	2630
Koradi	2770	2780	2789	2798
Nashik	2685	2655	2665	2674
Parli excluding Unit 6 & 7	2813	2740	2749	2758
Uran	2023	2027	2031	2035

It is proposed that the Station Heat Rate norms for above said Generating Stations may be revised in case any Renovation & Modernisation is undertaken, in future.

### **TPC-G**

The average Heat Rate of the Generating Units of TPC-G for the last three years (i.e., FY 2011-12 to FY 2013-14) has been lower than the normative Heat Rate specified by the Commission for the second Control Period, except for Unit-6. Unit 6 Heat Rate depends upon the mix of Oil: Gas firing used to run the Unit. The MERC MYT Regulations, 2011 has specified Oil and Gas mix in proportion of 50:50 with a provision that in case variation in Oil and Gas mix is more than  $\pm 5\%$ , the heat rate for Unit 6 shall be approved considering the actual Oil and Gas mix. It is proposed to consider degradation of 5 kcal/kWh over the normative Heat Rate for FY 2015-16 as per CPRI recommendations and also to continue with the existing provision for fuel mix ratio.

Since, Unit 5 is performing better than the specified relaxed norm, it is proposed to specify the Heat Rate norm for third Control Period closer to the average for last three years of actual performance i.e. from FY 2011-12 to FY 2013-14. Further, degradation of 8 kcal/kWh for Unit 5 has been given in accordance with the degradation considered in the MERC MYT Regulations, 2011. With respect to Unit 7, which is entirely Gas based power plant, it is proposed to consider the average of actual SHR for three years FY 2011-12 to FY 2013-14 with degradation of 4 kcal/kWh. Such degradation in SHR is in accordance with the MERC MYT Regulations, 2011.

The proposed norms for TPC-G Units for third Control Period are as under:

**Table 14: Proposed SHR for TPC-G Unit 5, 6 & 7**

Particulars	Proposed			
	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
TPC-G Unit 5	2500	2508	2516	2524
TPC-G Unit 6	2544	2549	2554	2559
TPC-G Unit 7	1977	1981	1985	1989

For new Generating Unit/Stations to be commissioned after the date of effectiveness of the Regulations, the Station Heat Rate norm is proposed in accordance with the norms specified in CERC Tariff Regulations, 2014 for various technologies and Unit sizes as well as considering the technological advances and improvement, with manufacturers' committing design heat rates stipulated as under:

a) Coal-based and lignite-fired Thermal Generating Stations

Gross Station/(unit) Heat Rate = 1.045 X Design Heat Rate (kcal/kWh)

Where the Design Heat Rate of a Unit means the Unit heat rate guaranteed by the supplier at conditions of 100% Maximum Continuous Rating (MCR), zero percent make up, design coal and design cooling water temperature/back pressure.

Provided that the design heat rate shall not exceed the following maximum design unit heat rates depending upon the pressure and temperature ratings of the Units:

Pressure Rating (kg/cm <sup>2</sup> )	150	170	170	247
SHT/RHT (°C)	535/535	537/537	537/565	565/593
Type of Boiler Feed Pump	Electrical Driven	Turbine driven	Turbine driven	Turbine driven
Max Turbine Cycle Heat rate (kcal/kWh)	1955	1950	1935	1850
<b>Minimum Boiler Efficiency</b>				
Sub-Bituminous Indian Coal	0.86	0.86	0.86	0.86

Pressure Rating (kg/cm <sup>2</sup> )	150	170	170	247
Bituminous Imported Coal	0.89	0.89	0.89	0.89
<b>Maximum Design Unit Heat rate (kcal/kWh)</b>				
Sub-Bituminous Indian Coal	2273	2267	2250	2151
Bituminous Imported Coal	2197	2191	2174	2078

However, in case pressure and temperature parameters of a Unit are different from above ratings, the maximum design unit heat rate of the nearest class shall be taken.

In case, the boiler efficiency is below 86% for sub-bituminous Indian coal and 89% for bituminous imported coal, the same shall be considered as 86% and 89%, respectively, for sub-bituminous Indian coal and bituminous imported coal for computation of Station Heat Rate.

In case of lignite-fired Generating Stations (including stations based on Circulating Fluidised Bed Combustion [CFBC] technology), maximum design Heat Rates shall be increased using the following factors for moisture content:

- a) For lignite having 50% moisture: 1.10
- b) For lignite having 40% moisture: 1.07
- c) For lignite having 30% moisture: 1.04

For other values of moisture content, multiplying factor shall be pro-rated for moisture content between 30-40% and 40-50% depending upon the rated values of multiplying factor for the respective range given under sub-clauses (a) to (c) above.

b) Gas-based / Liquid-based thermal Generating Unit(s)/block(s)

Gross Station/Unit heat rate= 1.05 X Design Heat Rate of the unit/block for Natural Gas and RLNG (kcal/kWh)

Gross Station/Unit heat rate = 1.071 X Design Heat Rate of the unit/block for Liquid Fuel (kcal/kWh)

Where the Design Heat Rate of a Unit shall mean the guaranteed heat rate for a Unit at 100% MCR and at site ambient conditions; and the Design Heat Rate of a block shall mean the guaranteed heat rate for a block at 100% MCR, site ambient conditions, zero percent make up, design cooling water temperature/back pressure.

**Auxiliary Consumption**

The existing definition of Auxiliary Consumption in the MERC MYT Regulations, 2011 is as under:



*“Auxiliary Consumption” in relation to a period, means the quantum of energy consumed by auxiliary equipment of the generating station and shall be expressed as a percentage of the sum of gross energy generated at the generator terminals of all the units of the generating station:*

*Provided that for the purpose of these Regulations, Auxiliary Consumption for a thermal generating station shall include transformer losses within the generating station;”*

*Provided further that colony consumption of a generating station shall not be included as part of the Auxiliary Consumption for the purpose of these Regulations.”*

It is proposed to continue the same definition of Auxiliary Consumption, with a slight modification. To give more clarity on the type of equipments to be considered for Auxiliary Energy Consumption, it has been proposed to add the equipment being used for the purpose of operating plant and machinery including switchyard of the generating station. Further, for calculation of Auxiliary Consumption, it is suggested that supply to construction works and other facilities at the generating station should be excluded, while computing auxiliary consumption. Modified definition of Auxiliary Consumption is as under:

*“Auxiliary Energy Consumption ” in relation to a period, in case of a generating station, means the quantum of energy consumed by auxiliary equipment of the Generating Station, such as the equipment being used for the purpose of operating plant and machinery including switchyard of the generating station and the transformer losses within the generating station, and shall be expressed as a percentage of the sum of gross energy generated at the generator terminals of all the Units of the Generating Station:*

*Provided that Auxiliary Energy Consumption shall not include energy consumed for supply of power to housing colony and other facilities at the generating station and the power consumed for construction works at the generating station;”*

### Coal Based Generating Stations

The existing MERC MYT Regulations, 2011 specify the norm of Auxiliary Consumption for coal based Generating Stations as under:

<i>Auxiliary consumption</i>	<i>With Natural Draft cooling tower or without cooling tower</i>
<i>(i) 200 MW series</i>	<i>8.50%</i>

<i>Auxiliary consumption</i>	<i>With Natural Draft cooling tower or without cooling tower</i>
<i>(ii) 500 MW &amp; above</i>	
<i>Steam driven boiler feed pumps</i>	6.00%
<i>Electrically driven boiler feed pumps</i>	8.50%

For existing and new Generating Unit/Stations, the Auxiliary Consumption norm is proposed in accordance with the norms specified in CERC Tariff Regulations, 2014 for various technologies and Unit sizes as under:

(a) Coal-based generating stations:

<b>Auxiliary consumption</b>	<b>With Natural Draft cooling tower or without cooling tower</b>
<b>(i) 200 MW series</b>	8.50%
<b>(ii) 300/330/350/500 MW &amp; above</b>	
Steam driven boiler feed pumps	5.25%
Electrically driven boiler feed pumps	7.75%

Provided further that for thermal generating stations with induced draft cooling towers, the norms shall be further increased by 0.5%.

Provided also that Additional Auxiliary Energy Consumption as follows may be allowed for plants with Dry Cooling Systems:

<b>Type of Dry Cooling System</b>	<b>(% of gross generation )</b>
Direct cooling air cooled condensers with mechanical draft fans	1.00%
Indirect cooling system employing jet condensers with pressure recovery turbine and natural draft tower	0.50%

As regards the Auxiliary Consumption for Flue Gas Desulphurisation (FGD), CERC Tariff Regulations, 2014 has not specified any specific or relaxed norm. It may be noted that RInfra-G has commissioned the FGD Plant at DTPS in FY 2007-08 and TPC-G has commissioned the FGD Plant at Unit-8 in FY 2008-09 (which is not operational at present). The Commission, in its Orders while determining the tariff of DTPS for FY 2007-08 and FY 2008-09 has approved the Auxiliary Consumption for FGD separately in addition to normative Auxiliary Consumption applicable for the Unit/Station. From the actual data of RInfra-G for last three years i.e. FY 2011-12 to FY 2013-14, it is observed that an additional 1.25% Auxiliary Consumption is recorded over and above the auxiliary consumption excluding FGD.

One option is to specify the consumption of FGD plant in the Regulations. However, actual data for FGD consumption for one plant cannot be termed as a norm, considering the upgradation in technology and peculiarity of every plant. Hence, it is proposed to consider FGD consumption on case to case basis. Accordingly, the following proviso is proposed to be added:

*“Provided also that for thermal Generating Stations with Flue Gas De-sulphuriser (FGD), additional Auxiliary Energy Consumption shall be allowed on case to case basis after prudence check.”*

The average Auxiliary Consumption for the Generating Units of TPC-G (except Unit 6) and RInfra-G for the last three years (i.e., FY 2011-12 to FY 2013-14) has been lower than the normative value of Auxiliary Consumption specified by the Commission for the second Control Period.

The auxiliary consumption norm for Unit 6 has been considered same as 3.5% as stipulated in MYT Order for second Control Period.

The following table shows the past performance of the Thermal generating stations of MSPGCL in the context to Auxiliary Consumption:

**Table 15: Auxiliary Consumption (%)**

Particulars	Normative					Actual			Average
	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2011-12	FY 2012-13	FY 2013-14	
<b>MSPGCL</b>									
Bhusawal	11.06%	10.80%	10.79%	10.75%	9.94%	11.09%	11.25%	12.35%	11.56%
Chandrapur	9.01%	8.91%	8.84%	8.75%	8.71%	9.66%	9.39%	9.84%	9.63%
Khaperkheda	9.80%	9.77%	9.74%	9.71%	9.70%	9.70%	10.54%	11.62%	10.62%
Koradi	10.89%	10.81%	10.81%	10.51%	9.91%	12.15%	13.33%	14.10%	13.19%
Nashik	11.01%	11.80%	13.35%	13.48%	13.41%	10.97%	10.99%	11.10%	11.02%
Parli	12.36%	11.32%	14.02%	14.21%	14.57%	12.40%	12.75%	12.80%	12.65%
Uran	2.40%	2.40%	3.00%	3.00%	3.00%	2.09%	2.24%	2.90%	2.41%
Paras Unit # 3	9.00%	9.00%	8.50%	8.50%	8.50%	10.33%	9.99%	10.74%	10.35%
Paras Unit # 4	9.00%	9.00%	8.50%	8.50%	8.50%	10.82%	10.44%		10.67%
Parli Unit # 6	9.00%	9.00%	8.50%	8.50%	8.50%	12.04%	12.15%	11.07%	11.75%
Parli Unit # 7	9.00%	9.00%	8.50%	8.50%	8.50%	11.39%	11.10%		11.25%
Khaperkheda Unit # 5		7.50%	6.00%	6.00%	6.00%		6.58%	6.95%	6.77%
Bhusawal Unit 4		8%	6.24%	6.00%	6.00%		9.00%	9.15%	

Particulars	Normative					Actual			Average
	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2011-12	FY 2012-13	FY 2013-14	
Bhusawal Unit 5			6.00%	6.00%	6.00%			7.11%	

### MSPGCL

The average Auxiliary Consumption for most of the generating stations of MSPGCL for the last three years (i.e., FY 2011-12 to FY 2013-14) has been higher than the normative value of Auxiliary Consumption specified by the Commission for the second Control Period (except for Nashik, Parli and Uran plant).

As discussed previously, the Auxiliary Consumption norm for existing old stations of MSPGCL is proposed based on the outcome of the study carried out by CPRI. Further, for subsequent year of the Control Period, it has been proposed to keep norms same as for FY 2017-18. Nashik TPS and Parli TPS excluding Unit 6 & 7 have performed better than the relaxed normative levels, therefore, it is proposed to reduce the norm to the average of actual performance for last three years, i.e., from FY 2011-12 to FY 2013-14. Average actual Auxiliary Consumption (FY 2011-12 to FY 2013-14) for Nashik TPS and Parli TPS excluding Unit 6 & 7 is 11.00% and 12.65%, respectively, which is proposed to be specified for all the four year of the third Control Period.

Accordingly, the Auxiliary Consumption for MSPGCL generating stations proposed to be considered for the next Control Period is as under:

**Table 16: Proposed Auxiliary consumption norm for old Generating Stations of MSPGCL**

Particulars	Proposed			
	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
Bhusawal excluding Unit 4 & 5	10.00%	9.17%	9.17%	9.17%
Chandrapur	8.46%	8.25%	8.25%	8.25%
Khaperkheda	9.70%	9.70%	9.70%	9.70%
Koradi	9.91%	9.91%	9.91%	9.91%
Nashik	11.00%	11.00%	11.00%	11.00%
Parli excluding Unit 6 & 7	12.65%	12.65%	12.65%	12.65%

### Gas Turbine/Combined Cycle Generation Stations

The existing MERC MYT Regulations, 2011 specifies the norm for auxiliary consumption for Gas Turbine/Combine Cycle Generating Station as under:

*“Combined Cycle Generation Station: 3%*

*Open Cycle Generation Station: 1%”*

The actual performance existing Gas Generating Stations viz. Uran and TPC-G Unit 7 is better than the normative auxiliary consumption specified.

It is proposed to consider the norm for Auxiliary Consumption for Gas Turbine /Combine Cycle Generating Station in line with CERC Tariff Regulations, 2014, as under:

Gas Turbine/Combined Cycle generating stations:

(i) Combined cycle : 2.5%

(ii) Open cycle : 1.0%

### Lignite Fired Generating Stations

Since, no Lignite Fired Generating Station exists in the State, it is proposed to consider the norm for Auxiliary Consumption in line with CERC Tariff Regulations, 2014, as under:

*“Lignite-fired thermal generating stations:*

*Auxiliary Energy Consumption for Lignite-fired thermal Generating Stations/Units shall be 0.5 percentage points higher than the auxiliary energy consumption norms of coal based Generating Stations:*

*Provided that for the lignite fired stations using CFBC technology, the auxiliary energy consumption norms shall be 1.5 percentage points higher than the auxiliary energy consumption norms of coal based Generating Stations:”*

### Transit Loss

Transit and handling losses are common in fuel transportation, especially for coal transportation. These losses happen mainly due to Pilferage, leakage, weight reduction due to moisture evaporation, improper stacking, etc., and the losses are higher in load centre based generating stations as compared to that in pit head stations.

The following Table shows the transit losses approved by the Commission and transit losses actually recorded by RInfra-G and MSPGCL over the period from FY 2011-12 to FY 2013-14. However, no transit losses are applicable in case of TPC-G

stations, as TPC-G has not accounted for any transit losses, as the entire coal requirement is met through procurement of imported coal on delivery basis.

**Table 17: Transit Losses (%)**

Particulars	Normative					Actual submitted			Average of FY 12 to FY 14
	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2011-12	FY 2012-13	FY 2013-14	
<b>MSPGCL</b>									
Bhusawal	0.80%	0.80%	0.80%	0.80%	0.80%	1.21%	0.79%	0.73%	0.91%
Chandrapur	0.80%	0.80%	0.80%	0.80%	0.80%	0.21%	0.28%	0.77%	0.42%
Khaperkheda	0.80%	0.80%	0.80%	0.80%	0.80%	0.41%	0.33%	0.50%	0.41%
Koradi	0.80%	0.80%	0.80%	0.80%	0.80%	4.30%	4.03%	4.47%	4.27%
Nashik	0.80%	0.80%	0.80%	0.80%	0.80%	1.22%	1.72%	0.90%	1.28%
Parli	0.80%	0.80%	0.80%	0.80%	0.80%	0.36%	0.80%	0.65%	0.60%
Paras Unit # 3	0.80%	0.80%	0.80%	0.80%	0.80%	0.84%	0.57%	0.77%	0.73%
Paras Unit # 4	0.80%	0.80%	0.80%	0.80%	0.80%	0.82%	0.65%		0.75%
Parli Unit # 6	0.80%	0.80%	0.80%	0.80%	0.80%	0.36%	0.78%	0.65%	0.60%
Parli Unit # 7	0.80%	0.80%	0.80%	0.80%	0.80%	0.36%	0.80%		
Khaperkheda Unit # 5		0.80%	0.80%	0.80%	0.80%		1.30%	0.63%	0.97%
Bhusawal Unit 4 & 5		0.80%	0.80%	0.80%	0.80%		0.76%	0.73%	0.75%
<b>RInfra-G</b>									
DTPS	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.20%	0.30%	0.43%

From the above table, it can be seen that actual transit loss for Bhusawal excluding Unit 4 & 5, Nashik, Koradi and Khaperkheda Unit 5 TPS is more than the normative transit loss specified for second Control Period. Since, the transit loss is a controllable factor, no relaxation can be granted and therefore, it is proposed to continue with the existing norm for third Control Period.

For transit loss norms for Generating Unit/Stations, it is proposed to continue with the existing Regulation with slight modification in accordance with CERC Tariff Regulations, 2014. The proposed Regulation is shown below:

*“Normative transit and handling losses for coal/lignite based Generating Stations, as a percentage of quantity of coal or lignite dispatched by the coal/lignite supply company during the month shall be:*

*Pit head Generating Stations : 0.2%*

*Non-pit head Generating Stations : 0.8%*

*Provided that in case of pit head stations if coal or lignite is procured from sources other than the pit head mines, which is transported to the Station through rail, normative transit loss of 0.8% shall be applicable:*

*Provided further that the above norms shall be applicable for domestic coal and washed coal:*

*Provided also that in case of imported coal, the normative transit and handling losses shall be 0.2%:*

*Provided also that for procurement of coal on delivery basis, no transit and handling loss shall be allowed."*

### **Secondary Fuel Oil Consumption**

The existing MERC MYT Regulations, 2011 specify the norm for Secondary Fuel Oil Consumption as under:

- "i. Coal-based generating stations : 1 ml/kWh*
- ii. Lignite-Fired generating stations except stations based on CFBC technology: 2.0 ml/kWh*
- iii. Lignite-Fired generating stations based on CFBC technology : 1.00 ml/kWh"*

The Secondary Fuel Oil Consumption norm is proposed in accordance with the norms specified in CERC Tariff Regulations, 2014 as under, with exceptions discussed separately:

- (a) Coal-based generating stations : 0.50 ml/kWh*
- (b) Lignite-Fired generating stations except stations based on CFBC technology : 2.0 ml/kWh*
- (c) Lignite-Fired generating stations based on CFBC technology : 1.00 ml/kWh*

We have analysed the performance of Generating Stations vis-a-vis normative Secondary Fuel Oil Consumption levels during the second Control Period.

The Generating Units of TPC-G have the capability to utilise multiple fuels, whereas most of the other generating stations in the State of Maharashtra are not designed to utilise multiple fuels. More importantly, TPC-G fires liquid fuels as primary fuel also, and hence, it is not possible to distinguish between primary fuel and secondary fuel oil consumption. However from the average actual SFOC, it can be seen that TPC-G Unit-8 is performing better than the normative levels.

The average Secondary Fuel Oil Consumption of Rlnfra-G for the last three years is 0.10 ml/kWh, which is substantially lower than the Secondary Fuel Oil consumption norm of 1 ml/kWh as specified by the Commission for the second Control Period.

The following Table shows the past performance of the Thermal generating stations of MSPGCL in the context to secondary fuel oil consumption:

**Table 18: Secondary fuel oil consumption (ml/kWh)**

Particulars	Normative (ml/kWh)					Actual submitted (ml/kWh)			Average
	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2011-12	FY 2012-13	FY 2013-14	
<b>MSPGCL</b>									
Bhusawal	2.00	2.00	2.00	2.00	2.00	4.22	3.63	5.39	4.41
Chandrapur	2.00	2.00	2.00	2.00	2.00	1.6	1.56	3.01	2.06
Khaperkheda	2.00	2.00	2.00	2.00	2.00	2.7	5.99	7.64	5.44
Koradi	2.81	2.81	2.81	2.81	2.81	5.74	6.92	8.00	6.89
Nashik	3.00	3.00	3.00	3.00	3.00	5.59	1.48	1.11	1.30
Parli	2.00	2.00	2.00	2.00	2.00	10.38	7.4	2.65	6.81
Paras Unit # 3	2.00	2.00	1.00	1.00	1.00	5.91	1.61	1.22	2.91
Paras Unit # 4	2.00	2.00	1.00	1.00	1.00	6.54	1.64		3.13
Parli Unit # 6	2.00	2.00	1.00	1.00	1.00	8.31	6.59	1.40	5.43
Parli Unit # 7	2.00	2.00	1.00	1.00	1.00	9.7	5.03		5.38
Khaperkheda Unit # 5			1.00	1.00	1.00		2.39	3.24	2.82
Bhusawal Unit 4		4.50	1.42	1.00	1.00		3.83	5.63	4.73
Bhusawal Unit 5			1.00	1.00	1.00			0.84	0.84

The average Secondary Fuel Oil Consumption for most of the generating stations of MSPGCL for the last three years has been higher than the normative secondary fuel oil consumption specified by the Commission for the second Control Period (except Nashik plant). Existing norms for old Generating Units/Stations of MSPGCL, which have not been able to achieve the performance targets as specified by the Commission, have been specified on the basis of CPRI recommendations. In its Report, CPRI has made the following suggestions regarding Secondary Fuel Oil Consumption:

“

- i. *Koradi Units 1-4 have boiler furnace and APH related problems. Until these are attended, a SOC of 4 ml/kWh can be considered. After the APH and boiler related problems are attended the SOC can be restored to 2 ml/kWh.*



- ii. For Nashik units SOC of 3 ml/kWh can be considered until the boiler related problems are attended. Subsequently, the SOC can be restored to 2 ml/kWh.
- iii. Bhusawal, Paras can achieve the SOC of 2 ml/kWh.
- iv. Parli units can achieve the SOC of 2 ml/kWh if the mill related problems are attended.

*Units of 210 MW and above can achieve the targets of SOC with focused attention to monsoon management plans, coal quality improvements, leakage control and operational optimization."*

Considering the above recommendations of CPRI and actual performance, it is proposed to continue with the existing norm for all the plants of MSPGCL except for Nashik plant. As may be observed from the above recommendations of CPRI, the Units of the Generating Stations are capable of achieving the normative Secondary Fuel Oil Consumption (SFC) of 2 ml/kWh and the high secondary fuel oil consumption is on account of various problems as listed by CPRI.

Accordingly, the proposed norm for Secondary Fuel Oil Consumption for Generating Station of MSPGCL for third Control period as under:

**Table 19: Proposed Secondary Fuel Oil Consumption for Old Generating Stations of MSPGCL**

Station	Proposed Secondary Fuel Oil Consumption (ml/kWh)
Bhusawal excluding Unit 4 & 5	2.00%
Chandrapur	2.00%
Khaperkheda	2.00%
Koradi	2.81%
Nashik	1.50%
Parli excluding Unit 6 & 7	2.00%

It is proposed that the Secondary Fuel Oil Consumption norms for above said Generating Stations may be revised in case any Renovation & Modernisation is undertaken, in future.

#### 4.3.3 Norms for Operation & Maintenance (O&M) Expenses

##### O&M expenses for Existing Generating Stations

The principles specified in MERC MYT Regulations, 2011 for O&M expense for existing generating stations is reproduced below:

***“45.1 Existing Generating Stations***

*a) The Operation and Maintenance expenses including insurance shall be derived on the basis of the average of the actual Operation and Maintenance expenses for the three (3) years ending March 31, 2010, based on the audited financial statements , excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission.*

*b) The average of such operation and maintenance expenses shall be considered as operation and maintenance expenses for the financial year ended March 31, 2009 and shall be escalated based on the escalation factor as approved by the Commission for the respective years to arrive at operation and maintenance expenses for the base year commencing April 1, 2011.*

*c) The O&M expenses for each subsequent year shall be determined by escalating the base expenses determined above for FY 2010-11, at the escalation factor 5.72% to arrive at permissible O&M expenses for each year of the Control Period.*

*Provided that in case, an existing Generating Station has been in operation for less than three (3) years as at on the date of effectiveness of these Regulations, the O&M Expenses shall be as specified at Regulation 46 for New Generating Stations”*

In the existing Regulations, there was no separate clause for the treatment of water charges. In the existing practice by different utilities, it was observed that water charges were differently treated by MSPGCL, TPC-G and RInfra-G. MSPGCL in its Petition was claiming it under the energy charges (Other variable Charges) wherein TPC-G and RInfra-G are claiming water charges under A&G expenses.

CERC Tariff Regulations, 2014 has specified the common norm for all the existing and new plants except for few very old plants like Tanda TPS, Talcher TPS, Badarpur TPS Unit 1 to 3 of NTPC and Chandrapura TPS Unit 1 to 3 and Durgapur TPS Unit 1 of DVC.

With respect to water charges, it is observed that CERC has specified that the water charges will be allowed separately based on water consumption depending upon type of plant, type of cooling water system, etc. It is proposed to modify the existing principle for O&M expenses for the existing stations. Also, the escalation rate to be considered at time of Truing-up is also being specified to bring in more clarity.

It may be noted that in the existing MERC MYT Regulations, 2011, the Commission had specified the principles for the determination of O&M expenses for existing Generating Stations. It is one of the objectives of the MYT framework to move from

the methodology of specifying the principle to specifying norms for performance parameters and controllable factors. The existing Generating Stations are old Stations and are commissioned before the Regulatory regime. Hence, it would be difficult to specify the norms for such Stations. On the other hand, it may be observed that O&M expenses for Generating Stations or Units, which are commissioned after commencement of the Regulatory regime in the State, have been allowed O&M expenses as per the norms specified in the Tariff Regulations. Hence, it is proposed that the O&M expenses for Generating Stations or Units which are commissioned after the effectiveness of MERC (Terms and Conditions of Tariff) Regulations, 2005, shall be considered as per norms (in Rs. Lakh per MW) specified for New Generating Stations in the proposed Regulations and for existing Generating Stations, the O&M expenses shall be computed in accordance with the principles specified.

The proposed Regulations for determination O&M expenses for existing generating station is as under:

***“45.1 Generating Stations/Units that achieved COD before August 26, 2005***

- a) *The Operation and Maintenance expenses for Generating Stations that achieved COD before the date of effectiveness of the MERC (Terms and Conditions of Tariff) Regulations, 2005, shall be computed in accordance with this Regulation.*
- b) *The Operation and Maintenance expenses excluding water charges and including insurance shall be derived on the basis of the average of the actual Operation and Maintenance expenses for the three Years ending March 31, 2015, based on the audited financial statements, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission.*
- c) *The average of such Operation and Maintenance expenses shall be considered as Operation and Maintenance expenses for the Year ended March 31, 2014, and shall be escalated at the escalation rate of 5.72% to arrive at the Operation and Maintenance expenses for the base year commencing April 1, 2015.*
- d) *The O&M expenses for each subsequent year shall be determined by escalating the base expenses determined above for FY 2015-16, at the escalation rate of 5% to arrive at permissible O&M expenses for each year of the Control Period:*

*Provided that the escalation rate shall be considered as 5% per annum at the time of Truing-up the O&M expenses for the different Years during the Control Period.*

- e) *Water Charges shall be allowed separately as per actuals, based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check, and all the details regarding the same shall be furnished along with the Petition:*

*Provided that in the MYT Order, the Commission shall provisionally approve the Water Charges for each year of the Control Period, based on the actual Water Charges as per latest Audited Accounts available for the Generating Entity, subject to prudence check.”*

### **O&M expenses for New Generating Stations**

The existing Regulations allow the O&M expenses to new Generating Stations based on per MW norms. CERC Tariff Regulations, 2014 also allow the O&M expenses for new Generating Stations on the basis of per MW norms. Hence, existing approach of specifying per MW norms is being retained.

### Norms for Coal based Generating Stations

The MERC MYT Regulations, 2011 specify the norm for O&M expenses for Coal based new generating station on per MW basis, as reproduced below:

“

a) For Coal based Generating Station

Rs.

Lakh/MW

Particulars	200/210/250 MW sets	500 MW and above Sets
FY 2011-12	14.81	13.32
FY 2012-13	15.66	14.08
FY 2013-14	16.55	14.89
FY 2014-15	17.50	15.74
FY 2015-16	18.50	16.64

*Note: For the Generating Stations having combination of 200/210/250 MW sets and 500 MW and above sets, the weighted average value for operation and maintenance expenses shall be adopted.*

It may be noted that CERC Tariff Regulations, 2014 specify per MW basis O&M expenses norm for new coal based generation station for four categories: (i) 200/210/250 MW sets (ii) 300/330/350 MW sets (iii) 500 MW sets and (iv) 600 MW and above sets. The existing MERC MYT Regulations, 2011 specify the norms for only two categories. It may be noted that VIPL-G has commissioned its plant in second Control Period having capacity of 2 x 300 MW. Considering the Business Plan submitted by Generating Companies during second Control Period, it may also be noted that units having different sizes such as 300 MW, 500 MW, 660 MW, etc. are

likely to come in third Control Period. Hence, it is required to provide the norms for such sizes on the basis of CERC norms.

The following approach has been considered for norms for new Coal based Generating station with 200/210/250 MW sets:

- (i) The actual O&M expenses, including the impact of wage revision in case of MSPGCL Stations, of Paras Unit 3 & 4, Parli Unit 6 & 7 and TPC-G Unit-8, subject to prudence check of the Commission, have been considered for FY 2011-12 to FY 2013-14 for analysis purposes. The three year average of actual O&M expenses norms achieved on per MW basis for these new plants has been computed and considered as norms for FY 2012-13.
- (ii) Average of actual O&M expense norm considered for FY 2012-13, have been escalated at the escalation factor of 5.72% till the end of Second Control Period.
- (iii) Further, the norms derived for the end of second Control Period have been escalated at escalation rate of 5.00% for each year of the third Control Period.

Similarly, for specifying the O&M expense norm for 500 MW sets, the same methodology as stated above has been adopted by considering Khaperkheda Unit-5 and Bhusawal Unit 4 & 5. Since, the Units are commissioned after FY 2012-13, the actual O&M expenses are taken into account for FY 2012-13 and FY 2013-14 considering the effective days of operation.

The proposed norms are for new Generating Stations coming up in the third Control Period, hence, the consideration of actual O&M expenses, subject to prudence check, would reflect the reasonable cost of O&M for such new generating Stations.

As discussed earlier, these proposed norms shall also be applicable to the Generating Stations or Unit commissioned after the effectiveness of the MERC (Terms and Conditions of Tariff) Regulations, 2005.

CERC in its CERC Tariff Regulations, 2014 has specified the multiplying factor for arriving at norms of O&M expenses for additional Units in respective Unit sizes for the Units whose COD occurs on or after the April 1, 2014. In view of this, it is proposed to consider same multiplying factor as specified by CERC.

The proposed O&M expenses norm for New Coal based Generating Stations is shown below:

*“For Coal based Generating Stations:*

<i>Particulars</i>	<i>Rs. Lakh/MW</i>			
	<i>200/210/250 MW Sets</i>	<i>300/330/350 MW Sets</i>	<i>500 MW Sets</i>	<i>600 MW Sets and</i>

				<b>above</b>
FY 2016-17	23.80	19.70	15.59	14.03
FY 2017-18	24.99	20.68	16.37	14.73
FY 2018-19	26.24	21.71	17.19	15.47
FY 2019-20	27.55	22.80	18.05	16.24

Provided that for the Generating Stations having combination of above Sets, the weighted average value for operation and maintenance expenses shall be allowed:

Provided further that the norms shall be multiplied by the following factors for arriving at norms of O&M expenses for additional Units in respective Unit sizes for the Units whose COD occurs on or after 1.4.2016 in the same Station:

200/210/250 MW	Additional 5 <sup>th</sup> & 6 <sup>th</sup> Units	0.90
	Additional 7 <sup>th</sup> & more Units	0.85
300/330/350 MW	Additional 4 <sup>th</sup> & 5 <sup>th</sup> Units	0.90
	Additional 6 <sup>th</sup> & more Units	0.85
500 MW and above	Additional 3 <sup>rd</sup> & 4 <sup>th</sup> Units	0.90
	Additional 5 <sup>th</sup> & above Units	0.85

### Norms for Lignite based Generating Stations

The MERC MYT Regulations, 2011 specify the following norms for new Lignite based generation stations for second Control Period:

“

b) For Lignite based Generating Stations:

Rs. Lakh/MW

Particulars	Lignite based Unit/Stations
FY 2011-12	14.81
FY 2012-13	15.66
FY 2013-14	16.55
FY 2014-15	17.50
FY 2015-16	18.50

It is observed that there is no Lignite based Generating Stations in State of Maharashtra till now and hence there is no actual data available for the same. In

view of the above, it is proposed to modify the existing norm for Lignite based Generating Stations in proportion to the norm specified in CERC Tariff Regulations, 2009 and CERC Tariff Regulations, 2014. The proportion is applied on the existing norm for FY 2013-14 to arrive at norm for FY 2014-15. Further, such norms for FY 2014-15 have been escalated at the escalation rate of 5.72% to arrive at the O&M expense norm for FY 2015-16 and further escalated at the escalation rate of 5.00% for each year of the third Control Period.

The proposed norm for Lignite based Generating Stations is shown below:

“For Lignite based Generating Stations:

*Rs. Lakh/MW*

<i>Particulars</i>	<i>Lignite based Unit/Stations</i>
FY 2016-17	17.84
FY 2017-18	18.73
FY 2018-19	19.66
FY 2019-20	20.65

#### Norms for Gas Turbine/Combined Cycle Generating Stations

The MERC MYT Regulations, 2011 specify norms for Gas Turbine and Combined Cycle Generating Stations for the second Control Period as under:

“

#### *c) Gas Turbine/Combined Cycle Generating Stations*

<i>Particulars</i>	<i>Gas Turbine/Combined Cycle Generating Stations</i>		<i>Small Gas Turbine Generating Stations (less than 50 MW Unit size)</i>
	<i>With warranty spares for 10 years</i>	<i>Without warranty spares</i>	<i>Without warranty spares</i>
FY 2011-12	7.41	11.10	13.47
FY 2012-13	7.83	11.74	14.24
FY 2013-14	8.28	12.41	15.05
FY 2014-15	8.75	13.12	15.91
FY 2015-16	9.25	13.87	16.83

The categorisation is proposed in accordance with the category being followed in CERC Tariff Regulations, 2014 for specifying the norm for Gas Turbine/Combined Cycle Generating Stations.

Further, for specifying the norms for Gas Turbine/Combined Cycle Generating Stations and Small Gas Turbine Generating Stations (less than 50 MW Unit size)

same methodology has been adopted as considered for deriving the norms for Lignite based Generating Stations. Also, the norms for Advanced F Class machines are proposed in line with CERC Tariff Regulations, 2014. The proposed norm for Gas Turbine/Combined Cycle Generating Stations is shown below:

*“Gas Turbine/Combined Cycle Generating Stations*

*Rs. Lakh/MW*

<i>Particulars</i>	<i>Gas Turbine /Combined Cycle Generating Stations</i>	<i>Small Gas Turbine Generating Stations (less than 50 MW Unit size)</i>	<i>Advance F Class Machines</i>
<i>FY 2016-17</i>	<i>14.56</i>	<i>17.67</i>	<i>14.04</i>
<i>FY 2017-18</i>	<i>15.29</i>	<i>18.56</i>	<i>14.74</i>
<i>FY 2018-19</i>	<i>16.06</i>	<i>19.48</i>	<i>15.48</i>
<i>FY 2019-20</i>	<i>16.86</i>	<i>20.46</i>	<i>16.25</i>

#### **4.3.4 Computation and Payment of Annual Fixed Charges and Energy Charges for Thermal Generating Stations**

##### **4.3.4.1 Annual Fixed Charges**

The full recovery of fixed charge is linked to normative Plant Availability Factor and recovery shall be allowed on pro-rata basis. The proposed Regulation with some modifications to the existing provisions, is as under:

*“Annual Fixed Charges*

- 48.1 The total Annual Fixed Charges shall be computed based on the norms specified under these Regulations and recovered on monthly basis.*
- 48.2 The full Annual Fixed Charges shall be recoverable at target availability specified in Regulation 44.1 and 44.2, and recovery of Annual Fixed Charges below the level of Target Availability shall be on pro-rata basis:*
- Provided that at zero availability, no Annual Fixed Charges shall be payable.*
- 48.3 Computation and billing of Annual Fixed Charges shall be on monthly basis in proportion to contracted capacity and based on the cumulative Availability achieved with respect to the Target Availability, till the respective month in the Year, subject to adjustment at the end of the year.”*

##### **4.3.4.2 Energy Charges**



The existing formula for determination of Energy Charge is proposed to be continued, with some modifications, as discussed below.

CERC Tariff Regulations, 2014 has revised the consideration of Gross Calorific Value (GCV) of coal/lignite or gas or liquid fuel to “as received” basis instead of “as fired” basis. CERC, in Statement of Reasons for CERC Tariff Regulations, 2014, has mentioned about the recommendation of CEA on operational norms for thermal Generating Stations for the Tariff Period 2014-19 on the issue of GCV as follows:

*“13. GCV used for computations of Station Heat rate (SHR)*

*13.1 It is also important to ensure that the computations of SHR are made in accordance with the spirit of the CERC tariff Regulations and the Regulations appropriately define the principles of computation of SHR.*

*... ..*

*13.3 However, the stations have furnished only the GCV “as received” for imported coal and Weighted average GCV “as fired” (for the blend of domestic and imported coal combined) and have not furnished the data for “as received GCV” of domestic coal. Thus in the absence of details of “as received GCV” from the stations, both in respect of domestic coal as well as for the weighted average, it is not possible to determine the basis of computation of Station heat rate (SHR) or verify the correctness of the same; as difference between the as fired and as received GCV increases the coal consumption correspondingly. For instance taking the “as fired GCV” as 100 kcal/kg lower than the “as received GCV” understood to be followed by some utilities would project around 3 % increase in the coal consumption for typical 3500 GCV coal.*

*13.4 It may be pertinent to mention that the billing of coal would be on the basis of dispatch GCV by the coal suppliers (which should be approximately same as “as received GCV”). Considering the issues of coal quality being faced by some of the stations with CIL, there could be variations between the dispatch GCV and as received GCV; however, difference between the as received GCV vis-à-vis “as fired GCV” would be very marginal and would be solely on account of marginal loss of heat during the coal storage.*

*13.5 From the data received from stations, it is seen that most stations have very low storage of about 7-10 days coal requirements. The loss of heat value during storage depends on the type of coal and the period of storage. Some International publications indicate a loss of heat value of about 1 % for 1 year storage for high rank coals and 3 % for low rank coals. Thus considering a 3 % heat loss for Indian coals, the average loss of heat value for 10 days storage would be about 0.08% or about 3kcal/kg for a typical coal with 3500 kcal/kg GCV. The intent of this illustration is to just highlight*

*that the storage losses of coal are almost negligible especially for low storage periods as in the Indian stations. Thus the SHR computations could be based on “as received GCV” basis; and if considered necessary CERC may provide for appropriate quantum of storage heat loss separately to account for heat loss due to storage. Any arbitrary practice of using as fired GCV for SHR computations without proper guidelines for determining the same would only lead to inflated claims of coal consumption.*

**13.6** *It is thus felt that all SHR computations may be made on as received GCV basis, and the marginal difference between as received and as fired GCV could be compensated by providing a coal storage loss in terms of % of total coal on similar lines as coal transit loss. This will be in line with gate to gate energy accounting concept generally practiced Internationally and also envisaged under the PAT (Perform Achieve and Trade) mechanism under the National Mission on Enhanced Energy Efficiency.”*

CEA in its recommendations has specifically mentioned that international publications indicate a loss of heat value of about 1% for 1 year storage for high rank coal and 3% for low rank coals and thus, considering 3% heat loss, the average loss of heat value for 10 days storage would be about 0.08% or 3 kcal/kg. The CEA has recommended to consider GCV on “as received” basis.

Further, ATE in its Judgment dated December 14, 2012 in Appeal No. 47 of 2012 in the case of MSPGCL vs MERC had expressed concern in regard to the variation of GCV of coal during handling at the generating stations. The relevant extract of the Judgment is quoted below:

*"Before we consider the next issue we would like to express our concern over loss of CV and vast difference between calorific value of fuel „as received” and „as fired”. The coal loses calorific value when stored for very long time in the open due to presence of oxygen in atmosphere. It is understood that presently, due to country wide shortage of coal, power stations have fuel stock for few days only. Any loss of CV in such a short duration needs proper explanation. "*

Further, CERC in Statement of Reasons for CERC Tariff Regulations 2014 states as under:

*“For variations in quantity and quality as received at generating station, provisions of Fuel Supply Agreement between procurer and supplier should be used to settle the deviations and consumers should not be burdened with the additional cost. However, coal once received at Thermal Power Station, entire control of handling and storage till it is fired, is with the Generator. As already brought out, there are marginal losses for limited period of stacking and handling which are totally in control of Generating Company. Proper process of compacting, piling /stacking, reclaiming during the*

short storage period by the generator can effectively control the loss thereby ensuring judicious utilization of costly natural resource and efficiency.

Section 61(c) of the Electricity Act provides that the appropriate Commission shall be guided by the factors which would encourage competition, efficiency, economical use of the resources, good performance and optimum investment. The studies referred above and recommendations of CEA brings out clearly that there is negligible difference between the GCV of coal as received GCV and as fired when the stacking is for 8-10 days. There is no reason for allowing any difference to the benefit of the generator on account of GCV. The gross station heat rate norms fixed by the Commission for various sizes of units have sufficient margin to absorb this negligible difference. In view of the above discussions, the GCV measurement of coal has been shifted to "as received basis" for the purpose of energy charges computation in the Tariff Regulation."

In view of the above, it is proposed to consider the GCV of fuel for computation of Energy charge on 'as received' basis, in line with CERC Tariff Regulations, 2014.

It is proposed to modify the existing Regulation shown below:

"48.4 The Energy Charges shall cover landed fuel cost of primary fuel and secondary fuel oil and shall be worked out on the basis of ex-bus energy sent out from the Generating Station as per the following formula:

Energy Charges (Rs) = Energy Charge Rate in Rs/kWh x ex-bus energy sent out for the month in kWh corresponding to actual generation.

48.5 Energy Charge Rate (ECR) in Rs/kWh shall be computed up to three decimal places and shall be the sum of the cost of normative quantities of primary and secondary fuel for delivering ex-bus one kWh of electricity, and shall be computed as per the following formula:

$$ECR = \frac{[P_p \times (Q_p)_n + P_s \times (Q_s)_n]}{[1-(AUX)_n]} \quad (Rs/kWh)$$

Where,

$P_p$  =landed cost of primary fuel, namely coal or lignite or gas or liquid fuel and limestone, if applicable, in Rs/kg or Rs/cum or Rs/litre, as the case may be;

$(Q_p)_n$  =Quantity of primary fuel required for generation of one kWh of electricity at generator terminals in kg or litre or standard cubic metre, as the case may be, and shall be computed on the basis of normative Gross Station Heat Rate (less heat contributed by secondary fuel oil for coal/lignite based

Generating Stations) and gross calorific value of coal/lignite or gas or liquid fuel as received;

$P_s$  = landed cost of Secondary fuel oil in Rs./ml,

$(Q_s)_n$  = Normative Quantity of Secondary fuel oil in ml/kWh as per Regulation 44.10 and 44.11, and

$AUX_n$  = Normative Auxiliary Energy Consumption as % of gross generation as per Regulation 44.12 to 44.15.

*Provided that the landed cost of primary fuel and secondary fuel for tariff determination shall be based on actual weighted average cost of primary fuel and secondary fuel of the three preceding months, and in the absence of landed costs for the three preceding months, latest procurement price of primary fuel and secondary fuel for the Generating Station, preceding the first month for which the Tariff is to be determined for existing Stations, and immediately preceding three months in case of new Generating Stations shall be taken into account:*

*Provided that the landed cost of fuel shall include price of fuel corresponding to the grade/quality/calorific value of fuel inclusive of royalty, taxes and duties as applicable, transportation cost by rail/road/gas pipe line or any other means, and, for the purpose of computation of energy charges, shall be arrived at after considering normative transit and handling losses as percentage of the quantity of fuel dispatched by the fuel supply company during the month as specified in Regulation 44.17:*

*Provided also that any refund of taxes and duties along with any amount received on account of penalties from fuel supplier shall have to be adjusted in fuel cost:*

*Provided also that the Energy Charges, for the purpose of billing/Fuel Surcharge shall be worked out Station-wise/Unit-wise based on weighted average rate based on actual generation from each Unit."*

#### **4.3.5 Fuel Surcharge Adjustment**

Regulation 49.6 of the MERC MYT Regulations, 2011 specifies the adjustment for FSA. CERC, in its CERC Tariff Regulations, 2014, has added provisions related to data to be provided by the Generation Entity to the beneficiaries, such as GCV, price of fuel, blending ratio, etc.

#### ***"48.6 Adjustment of ECR [Fuel Surcharge Adjustment] on account of variation in price or heat value of fuels***

*Any variation in Price and Gross Calorific Value of coal/lignite or gas or liquid fuel vis-a-vis approved values shall be adjusted on month to month basis on the basis of average Gross*

*Calorific Value of coal/lignite or gas or liquid fuel in stock received and weighted average landed cost incurred by the Generating Entity for procurement of coal/lignite, oil, or gas or liquid fuel, as the case may be for a power Station:*

*Provided that in its bills, the Generation Entity shall indicate Energy Charge Rates at base price of primary and secondary fuel approved by the Commission and the Fuel Surcharge to it separately:*

*Provided further that the Generation Entity shall provide to the Beneficiaries of the generating Station, the details of parameters of GCV and price of fuel for each type of fuel, i.e., domestic coal, imported coal, e-auction coal, lignite, natural gas, RLNG, liquid fuel, etc., as per the forms prescribed by the Commission:*

*Provided also that the details of blending ratio of the imported coal with domestic coal, proportion of e-auction coal and the weighted average GCV of the fuels as received shall also be provided separately, along with the bills of the respective month:*

*Provided also that copies of the bills and details of parameters of GCV and price of fuel, i.e., domestic coal, imported coal, e-auction coal, lignite, natural gas, RLNG, liquid fuel, etc., details of blending ratio of the imported coal with domestic coal, proportion of e-auction coal shall also be displayed month-wise on the website of the Generation Entity, and should be available on its website on monthly basis for a period of three months.”*

## **4.4 *Hydel Generating Stations***

### **4.4.1 *Components of tariff***

The Tariff for sale of electricity from a Hydel Generating Station shall comprise of two parts, namely, Capacity Charge and Energy Charge. The Capacity Charge and Energy Charge shall be computed based on Annual Fixed Charges determined for Hydel Generating Station.

In addition to Annual Fixed Charges to be recovered through Capacity Charge and Energy Charge, the Lease Rent and Water Royalty shall be payable by the beneficiaries in proportion to their respective share in the capacity of the Generating Station on monthly basis.

### **4.4.2 *Norms of Operation for Hydel Generating Stations***

The MERC MYT Regulations, 2011 specify the following norms of operation for Hydel Generating Stations for the second control period is reproduced below:

*“47.1 Normative Annual Plant Availability Factor (NAPF) index for recovery of annual fixed charges*

<b><i>Particulars</i></b>	<b><i>Normative Availability</i></b>
---------------------------	--------------------------------------

<b>Particulars</b>	<b>Normative Availability</b>
<i>Storage and Pondage type plants with head variation between Full Reservoir Level (FRL) and Minimum Draw Down Level (MDDL) of up to 8%, and where plant availability is not affected by silt</i>	90%
<i>Storage and Pondage type plants with head variation between FRL and MDDL of more than 8%, where plant availability is not affected by silt</i>	<i>Plant-specific allowance to be provided in NAPAF for reduction in MW output capability as reservoir level falls over the months. As a general guideline the allowance on this account in terms of a multiplying factor may be worked out from the projection of annual average of net head, applying the formula: (Average head / Rated head) + 0.02 Alternatively in case of a difficulty in making such projection, the multiplying factor may be determined as: (Head at MDDL/Rated head) x 0.5 + 0.52</i>
<i>Pondage type plants where plant availability is significantly affected by silt</i>	85%
<i>Run-of-river type plants</i>	<i>to be determined plant-wise, based on 10-day design energy data, moderated by past experience where available/relevant</i>

The existing norms for Storage and Pondage type plants are proposed to be modified in accordance with CERC Tariff Regulations, 2014. It is observed that in the existing Regulation, there is no norm specified for Pumped Storage Hydel generating station. In view of the same, it is proposed to add a norm for Pumped storage Hydel generating stations as specified in CERC Tariff Regulations, 2014.

The proposed norms of operation for Hydel Generating Stations are shown below:

*“The following Normative Annual Plant Availability Factor (NAPAF) shall apply to Hydel Generating Stations:*

<b>Sr. No.</b>	<b>Particulars</b>	<b>Normative Annual Plant Availability Factor</b>
a)	<i>Storage and Pondage type plants with head variation between Full Reservoir Level (FRL) and Minimum Draw Down Level (MDDL) of up to 8%, and where plant availability is not affected by silt</i>	90%
b)	<i>Storage and Pondage type plants with</i>	<i>The month-wise peaking capacity as</i>

Sr. No.	Particulars	Normative Annual Plant Availability Factor
	<i>head variation between FRL and MDDL of more than 8%, and where plant availability is not affected by silt</i>	<i>provided by the Project authorities in the Detailed Project Report, approved by the relevant authority, shall form the basis of fixation of NAPAF.</i>
c)	<i>Pondage type plants where plant availability is significantly affected by silt</i>	85%
d)	<i>Run-of-river type plants</i>	<i>To be determined plant-wise, based on 10-day design energy data, moderated by past experience where available/relevant</i>

*Provided that a further allowance may be made by the Commission in NAPAF determination under special circumstances, e.g., abnormal silt problem or other operating conditions, and known plant limitations.*

*In case of Pumped storage hydel generating stations, the quantum of electricity required for pumping water from down-stream reservoir to up-stream reservoir shall be arranged by the Beneficiary/ies duly taking into account the transmission losses and distribution losses up to the bus bar of the generating Station, and in return, Beneficiaries shall be entitled to energy equivalent to 75% of the energy utilized in pumping the water from the lower elevation reservoir to the higher elevation reservoir, from the generating Station during peak hours and the generating Station shall be under obligation to supply such quantum of electricity during peak hours:*

*Provided that in the event of the Beneficiaries failing to supply the desired level of energy during off-peak hours, there will be pro-rata reduction in their energy entitlement from the Station during peak hours."*

### **Auxiliary Energy Consumption**

The Auxiliary Energy Consumption as specified by the Commission in its existing MERC MYT Regulations, 2011 for Hydel Generating Stations are as under:

#### ***"47.2 Auxiliary Energy Consumption***

##### ***(a) Surface hydro generating stations***

- i. With rotating exciters mounted on the generator shaft: 0.7%*
- ii. With static excitation system: 1%*

##### ***(b) Underground hydro generating stations***

- i. With rotating exciters mounted on the generator shaft: 0.9%*

ii. *With static excitation system: 1.2%*

#### 47.3 Transformation losses

*From generation voltage to transmission voltage – 0.5% of energy generated”*

It is proposed to continue with the existing norm as the same has also been specified in CERC Tariff Regulations, 2014. Further, CERC has removed Transformation Losses after computing the Auxiliary Energy Consumption of NHPC stations. It is proposed to remove separate norms for transformation losses from generation voltage to transmission voltage from the MERC MYT Regulations, 2011 in accordance with the CERC Tariff Regulations, 2014.

#### 4.4.3 Operation and Maintenance Expenses for Hydel Generating Stations

The MERC MYT Regulations, 2011 specifies the following principles for O&M expense for Hydel Generating Station:

##### *“48 Operation and Maintenance Expenses for Hydro Generating Stations*

###### *48.1 For Existing Stations:*

*(1) The normative O&M expenses for the second Control Period shall be derived on the basis of the average of the actual O&M expenses for the three (3) years ending March 31, 2010, based on the audited financial statements, excluding abnormal O&M expenses, if any, subject to prudence check by the Commission.*

*(2) The average of such O&M expenses shall be considered as the expenses for the financial year ended March 31, 2009, which shall be escalated based on the escalation factor as approved by the Commission for the respective years to arrive at O&M expenses for the base year commencing April 1, 2011.*

*(3) The O&M expenses for each subsequent year shall be determined by escalating the base expenses determined above for FY 2010-11, at the escalation factor of 5.72% to arrive at permissible O&M expenses for each year of the Control Period.*

###### *48.2 For New Stations:*

*(1) O&M expenses for first year of operation shall be specified as 2% of the original project cost (excluding cost of rehabilitation and resettlement works) for the first year of operation.*

*(2) The O&M expenses for each subsequent year shall be determined by escalating the base expenses determined above, at the escalation factor of 5.72%.”*

It is proposed to continue with the same approach of determining the O&M expenses based on average of actual O&M expense for last three years. The escalation rate for third Control Period is considered as 5%.



As regards new Hydel Generating Stations, it is proposed to continue with the same approach of determining the O&M expenses as 2% of the original project cost and further escalated with the escalation factor of 5%.

As discussed in earlier Sections, it is proposed that net income from supply of electricity by the Generation Entity to the housing colonies of its operating staff, after adjusting the expenses incurred for supply of such electricity shall be treated under Non-tariff income for Generation Entity. The Tariff applicable for supply to Housing colonies shall be the tariff of the Distribution Licensee in the area of supply. For computing the net income generated from supply of electricity to housing colonies, separate accounting of the expenses incurred by Generation Entity is necessary. It is proposed that such O&M expenses incurred by Generation Entity shall be allowed separately subject to prudence check of the Commission.

The proposed O&M expense for Hydel Generating Stations with certain modification in timeline and escalation rate is shown below:

***“47.1 For Existing Stations:***

- a) *The Operation and Maintenance expenses including insurance shall be derived on the basis of the average of the actual Operation and Maintenance expenses for the three (3) Years ending March 31, 2015, based on the audited financial statements, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission.*
- b) *The average of such Operation and Maintenance expenses shall be considered as Operation and Maintenance expenses for the Year ended March 31, 2014, and shall be escalated at the escalation rate of 5.72% to arrive at the Operation and Maintenance expenses for the base year commencing April 1, 2015.*
- c) *The O&M expenses for each subsequent year shall be determined by escalating the base expenses determined above for FY 2015-16, at the escalation rate of 5% to arrive at permissible O&M expenses for each year of the Control Period:*  
  
*Provided that the escalation rate shall be considered as 5% per annum at the time of Truing-up the O&M expenses for the different Years during the Control Period.*
- d) *The Operation and Maintenance expenses incurred by the Generation Entity on the housing colonies and related expenses including medical and other facilities, of its operating staff shall be recorded separately and excluded from the above, and shall be allowed separately, subject to prudence check.”*

#### **47.2 For New Stations:**

- a) *O&M expenses shall be fixed at 2% of the original Project cost (excluding cost of rehabilitation and resettlement works) for the first year of commercial operation.*
- b) *The O&M expenses for each subsequent year shall be determined by escalating the base expenses determined above, at the escalation rate of 5%."*

#### **4.4.4 Computation and Payment of Capacity Charges, Energy Charges and Lease Rent for Hydel Generating Stations**

The existing MERC MYT Regulations, 2011 specifies the following Regulation shown below:

*"50.1 The Annual Fixed Charges of a Hydro Generating Station shall be computed on annual basis, based on norms specified under these Regulations, and recovered on monthly basis under capacity charge (inclusive of incentive) and Energy Charge, which shall be payable by the beneficiaries in proportion to their respective share in the capacity of the Generating Station. Further, in addition to Annual Fixed Charges to be recovered through Capacity Charge and Energy Charge, the Lease Rent and Water Royalty shall be payable by the beneficiaries in proportion to their respective share in the capacity of the Generating Station on monthly basis.*

*50.2 The capacity charge (inclusive of incentive) payable to a Hydro Generating Station for a calendar month shall be*

*AFC x 0.5 x NDM / NDY x (PAFM / NAPAF) (in Rupees)*

*Where,*

*AFC = Annual fixed cost specified for the year, in Rupees.*

*NAPAF = Normative Annual Plant Availability Factor in percentage*

*NDM = Number of days in the month*

*NDY = Number of days in the year*

*PAFM = Plant availability factor achieved during the month, in Percentage*

*50.3 The PAFM shall be computed in accordance with the following formula :*

$$PAFM = 10000 \times \sum_{i=1} DC_i / \{ N \times IC \times (100 - AUX) \} \%$$

*Where,*

*AUX = Normative Auxiliary Energy Consumption in percentage*

*DC<sub>i</sub> = Declared capacity (in ex-bus MW) for the ith day of the month which the station can deliver for at least three (3) hours, as certified by the Maharashtra State Load Despatch Centre after the day is over.*

*IC = Installed capacity (in MW) of the complete Generating Station*

*N = Number of days in the month*

*The Energy Charge shall be payable by every beneficiary for the total energy supplied to the beneficiary, during the calendar month, on ex-power plant basis, at the computed Energy Charge rate. Total Energy Charge payable to the Generating Company for a month shall be*

*: (Energy Charge Rate in Rs. /kWh) x {Energy (ex-bus)} for the month in kWh*

*50.4 Energy Charge Rate (ECR) in Rupees per kWh on ex-power plant basis, for a Hydro Generating Station, shall be determined up to three decimal places based on the following formula:*

$$ECR = AFC \times 0.5 \times 10 / \{ DE \times (100 - AUX) \}$$

*Where,*

*DE = Annual Design Energy specified for the Hydro Generating Station, in MWh, subject to the provision in Regulation 46.6 below.*

*50.5 In case actual total energy generated by a Hydro Generating Station during a year is less than the Design Energy for reasons beyond the control of the Generating Company, the following treatment shall be applied on a rolling basis:*

*(i) in case the energy shortfall occurs within ten years from the date of commercial operation of a Generating Station, the ECR for the year following the year of energy shortfall shall be computed based on the formula specified in Regulation 50.4 with the modification that the DE for the year shall be considered as equal to the actual energy generated during the year of the shortfall, till the Energy Charge shortfall of the previous year has been made up, after which normal ECR shall be applicable;*

*(ii) in case the energy shortfall occurs after ten years from the date of commercial operation of a Generating Station, the following shall apply:*

*Suppose the specified annual Design Energy (DE) for the station is DE MWh, and the actual energy generated during the concerned (first) and the following (second) financial years is A1 and A2 MWh, respectively, A1 being less than DE. Then, the design energy to be considered in the formula in Regulation 50.4 of these Regulations for calculating the ECR for the third financial year shall be moderated as (A1 + A2 - DE) MWh, subject to a maximum of DE MWh and a minimum of A1 MWh.*

*(iii) Actual energy generated (e.g., A1, A2) shall be arrived at by multiplying the net metered energy sent out from the station by 100 / (100 - AUX).*

*50.6 In case the Energy Charge Rate (ECR) for a Hydro Generating Station, as computed in Regulation 50.5 above, exceeds eighty (80) paise per kWh, and the actual saleable energy in a year exceeds  $\{ DE \times ( 100 - AUX ) / 10000 \}$  MWh, the Energy Charge for the energy in excess of the above shall be billed at eighty (80) paise per kWh only:*

*Provided that in a year following a year in which total energy generated was less than the design energy for reasons beyond the control of the Generating Company, the Energy Charge Rate shall be reduced to eighty (80) paise per kWh after the energy charge shortfall of the previous year has been made up.*

*50.7 The Maharashtra State Load Despatch Centre shall finalise the schedules for the hydro Generating Stations, in consultation with the beneficiaries, for optimal utilization of all the energy declared to be available, which shall be scheduled for all beneficiaries in proportion to their respective allocations in the Generating Station."*

The above said determination of tariff for Hydel generating station is well accepted by stakeholders in the State and time tested. It is proposed to continue with the same approach for determination of capacity charges, energy charge and lease rent for Hydel generating stations.

Further, in case actual generation from a Hydel Generating Station is less than the Design Energy for a continuous period of 4 years on account of hydrology factor, the generating station shall approach CEA with relevant hydrology data for revision of design energy of the station.

Also, it is proposed to revise the Energy charge for any excess energy above net design energy to 90 paise per kWh instead of 80 paise per kWh, in line with CERC Tariff Regulations, 2014.

Hence, existing approach of MERC MYT Regulations, 2011 with certain modification, as discussed above, shall be retained.

#### **4.4.5 Pumped Storage Hydel Generating Station**

It is proposed to consider the provision specified in CERC Tariff Regulations, 2014 with slight modification for Pumped Storage Hydel Generating Station as shown below:

*"50 Pumped Storage Hydro Generating Stations:*

*50.1 The mechanism for billing for existing pumped storage hydel stations shall be in accordance with the Power Purchase Agreement already approved by the Commission, and shall not be in accordance with this Regulation.*

50.2 The fixed cost of a pumped storage hydel generating station achieving COD after April 1, 2016 shall be computed on annual basis, based on norms specified under these Regulations, and recovered on monthly basis as Capacity Charge.

50.3 The capacity charge shall be payable by the Beneficiaries in proportion to their respective allocation in the saleable capacity of the generating Station:

Provided that during the period between the date of commercial operation of the first Unit of the Station and the date of commercial operation of the Station, the annual fixed cost shall be worked out based on the latest estimate of the completion cost for the Station, for the purpose of determining the capacity charge payment during such period.

50.4 The capacity charge payable to a pumped storage hydel generating Station for a calendar month shall be:

$(AFC \times NDM / NDY)$  (in Rupees), if actual Generation during the month is  $\geq 75\%$  of the Pumping Energy consumed by the Station during the month and  $\{(AFC \times NDM / NDY) \times (\text{Actual Generation during the month during peak hours} / 75\% \text{ of the Pumping Energy consumed by the Station during the month})\}$  (in Rupees)}, if actual Generation during the month is  $< 75\%$  of the Pumping Energy consumed by the Station during the month.

Where,

AFC = Annual fixed cost specified for the year, in Rupees

NDM = Number of days in the month

NDY = Number of days in the year

Provided that there would be adjustment at the end of the year based on actual generation and actual pumping energy consumed by the Station during the year.

50.5 The energy charge shall be payable by every Beneficiary for the total energy scheduled to be supplied to the Beneficiary in excess of the design energy plus 75% of the energy utilized in pumping the water from the lower elevation reservoir to the higher elevation reservoir, at a flat rate equal to the average energy charge rate of 20 paise per kWh, on ex power plant basis.

50.6 Energy charge payable to the Generating Entity for a month shall be:  $= 0.20 \times \{\text{Energy Generated (ex-bus) for the month in kWh} - (\text{Design Energy for the month (DEm)} + 75\% \text{ of the energy utilized in pumping the water from the lower elevation reservoir to the higher elevation reservoir for the month})\}$

Where,

DEm = Design energy for the month specified for the hydel generating Station, in kWh

*Provided that in case the energy generated in a month is less than the Design Energy for the month plus 75% of the energy utilized in pumping the water from the lower elevation reservoir to the higher elevation reservoir of the month, then the energy charges payable by the Beneficiaries shall be zero.*

50.7 *The Generating Entity shall maintain the record of daily inflows of natural water into the upper elevation reservoir and the reservoir levels of upper elevation reservoir and lower elevation reservoir on hourly basis.*

50.8 *The generator shall be required to maximize the peak hour supplies with the available water including the natural flow of water.*

*Provided that in case it is established that Generation Entity is deliberately or otherwise without any valid reason, not pumping water from lower elevation reservoir to the higher elevation during off-peak period or not generating power to its potential or wasting natural flow of water, the capacity charges of the day shall not be payable by the Beneficiary.*

*Provided further that for this purpose, outages of the Unit(s)/Station including planned outages and the forced outages up to 15% in a year shall be construed as the valid reason for not pumping water from lower elevation reservoir to the higher elevation during off-peak period or not generating power using energy of pumped water or natural flow of water:*

*Provided also that the total capacity charges recovered during the year shall be adjusted on pro-rata basis in the following manner in the event of total machine outages in a year exceeds 15%:*

$$(ACC)_{adj} = (ACC) R \times (100 - ATO) / 85$$

*Where,*

*(ACC)<sub>adj</sub> – Adjusted Annual Capacity Charges*

*(ACC) R – Annual Capacity Charges recovered*

*ATO - Total Outages in percentage for the year including forced and planned outages*

*Provided further that the generating Station shall be required to declare its machine availability daily on day ahead basis for all the time blocks of the day in line with the scheduling procedure laid down under State Grid Code.”*

## 5 Norms and Principles for determination of Revenue Requirement and Transmission Tariff

### 5.1 Overview of Transmission

Historically, the transmission network in the State of Maharashtra has been developed over the period by the Maharashtra State Electricity Transmission Co. Ltd (MSETCL, which is a successor entity of MSEB), The Tata Power Company Ltd. – Transmission Business (TPC-T), and Reliance Infrastructure Ltd. – Transmission Business (RInfra-T).

GOM notified MSETCL as the State Transmission Utility (STU) vide its GR no. Reform 1004/S.No 8885/Energy-5 dated 17<sup>th</sup> February 2005 in accordance with Section 39 of the Act. Section 39(2) of the Act provides the functions of State Transmission Utility as under:

*“(2) The functions of the State Transmission Utility shall be -*

- (a) to undertake transmission of electricity through intra-State transmission system;*
- (b) to discharge all functions of planning and co-ordination relating to intra-State transmission system with –*
  - (i) Central Transmission Utility;*
  - (ii) State Governments;*
  - (iii) generating companies;*
  - (iv) Regional Power Committees;*
  - (v) Authority;*
  - (vi) licensees;*
  - (vii) any other person notified by the State Government in this behalf;*
- (c) to ensure development of an efficient, co-ordinated and economical system of intra-State transmission lines for smooth flow of electricity from a generating station to the load centres;*
- (d) to provide non-discriminatory open access to its transmission system for use by-*
  - (i) any licensee or generating company on payment of the transmission charges ; or*
  - (ii) any consumer as and when such open access is provided by the State Commission under sub-section (2) of section 42, on payment of the*

*transmission charges and a surcharge thereon, as may be specified by the State Commission:*

*Provided that such surcharge shall be utilised for the purpose of meeting the requirement of current level cross-subsidy:*

*Provided further that such surcharge and cross subsidies shall be progressively reduced 1[\*\*\*] in the manner as may be specified by the State Commission:*

*Provided also that the manner of payment and utilisation of the surcharge shall be specified by the State Commission:*

*Provided also that such surcharge shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying the electricity to the destination of his own use."*

MSETCL, as STU, is responsible for undertaking all activities related to transmission planning, co-ordination and ensuring development of an efficient, co-ordinated and economical system of intra-State transmission for smooth flow of electricity from Generating Stations to the load centres, within the State. The system for conveyance of electricity by transmission lines within the area of the State and including all transmission lines, sub-stations and associated equipment of Transmission Licensees in the State has been defined as the Intra-State Transmission System (InSTS). The onus of InSTS planning lies with MSETCL, as STU.

The Act recognized 'transmission' as a distinct 'Licensed Business' activity to be undertaken by 'Transmission Licensee' in accordance with the licence conditions specified by the Commission in this regard. At present, there are nine (9) Intra-State Transmission Licensees in the State of Maharashtra namely:

- (i) Maharashtra State Electricity Transmission Company Ltd. (MSETCL)
- (ii) Transmission Business of The Tata Power Company Ltd. (TPC-T)
- (iii) Transmission Business of Reliance Infrastructure Ltd. (RInfra-T)
- (iv) Jaigad Power Transco Ltd. (JPTL)
- (v) Adani Transmission (India) Limited (ATIL) (formerly APML-T)
- (vi) Amravati Power Transmission Company Ltd.
- (vii) Sinnar Power Transmission Company Ltd.
- (viii) Maharashtra Eastern Grid Power Transmission Company Ltd. (MEGPTCL)
- (ix) Transmission Business of Vidarbha Industries Power Limited (VIPL-T)



## ***5.1 Applicability***

The proposed Regulations shall apply to the determination of Tariff for access and use of the intra-State transmission system pursuant to a Bulk Power Transmission Agreement or other arrangement entered into with a Transmission System User. Further, in case a new transmission system set up by a new Transmission Licensee is added to the existing system during the Control Period, the Commission shall re-determine the Tariff for InSTS for the remaining years of the Control Period, considering the approved ARR of new Transmission Licensee.

## ***5.2 Components of Tariff***

Regulation 54 of MERC MYT Regulations, 2011 specifies that the transmission charges for access to and use of the intra-State transmission system shall comprise any of the following components or a combination of the following components:

- (i) transmission system access charges;
- (ii) annual transmission charges;
- (iii) per unit charges for energy transmitted; and
- (iv) reactive energy charges.

CERC has specified the reactive energy charges under Indian Electricity Grid Code. The Commission in existing MERC MYT Regulations, 2011 has adopted the same mechanism for reactive energy charges, as specified in Indian Electricity Grid Code, 2010. It may be noted that CERC in its Background Note for notification of IEGC has stated that SERCs will have to devise mechanism for Reactive Power management and compensation thereof, upon careful deliberation and taking into account State Specific factors which could vary from State to State. Further, it is observed that Regulation 9.7 of State Grid Code specify that State Transmission Utility (STU) shall carry out planning studies for Reactive Power compensation of intra-State Transmission System including reactive power compensation at in-State Generating Station's switchyard. No review has been done to existing mechanism of reactive energy charges in relation to adequate metering, energy accounting, billing mechanism, monitoring mechanism, etc. In view of the above it would not be prudent to continue the reactive energy charges without such planning studies and review. Accordingly, it is proposed to remove the reactive energy charges for the transmission system in the State of Maharashtra.

Annual Transmission Charges for each financial year of the Control Period shall provide for the recovery of the ARR of the Transmission Licensee for the respective financial year of the Control Period, as approved by the Commission and comprising the following components:

- i. Operation and maintenance expenses;
- ii. Depreciation;
- iii. Interest on Loan Capital;
- iv. Interest on working capital and deposits from Transmission System Users;
- v. Contribution to contingency reserves;
- vi. Return on Equity Capital;
- vii. Income Tax;

**minus:**

- viii. Income from Open Access Charges
- ix. Non-Tariff income;
- x. Income from Other Business

Recently, CERC has issued an Order in Petition No. 256/TT/2013 on 18 May 2015, on the ATC of the transmission lines owned by MSETCL and conveying electricity to other States, which are to be recovered through the Point of Connection (PoC) transmission charges in accordance with Regulations and Orders of the CERC. Hence, the corresponding ARR has to be excluded from the ARR to be recovered from the beneficiaries in the State of Maharashtra. Also, MSETCL has already recovered the corresponding ARR for previous years from the beneficiaries in the State of Maharashtra, and hence, such over-recovery has to be deducted from the ARR of the future periods, along with associated carrying cost. Hence, the following provisos are proposed to be added:

*"Provided further that the components of the Aggregate Revenue Requirement corresponding to the transmission lines owned by Maharashtra State Electricity Transmission Company Limited (MSETCL) and conveying electricity to other States, being recovered through the Point of Connection (PoC) transmission charges in accordance with the Regulations and Orders of the Central Electricity Regulatory Commission, shall not be recovered from the Annual Transmission Charges determined under these Regulations:*

*Provided also that in case any such components have already been recovered through the intra-State transmission tariff, then such excess recovery shall be deducted from the Aggregate Revenue Requirement of MSETCL for the future years, along with associated holding cost, as applicable:"*

Further, as discussed in earlier Sections, prior period income/expenses shall be allowed by the Commission at the time of Truing-up based on audited accounts, on a case to case basis, subject to prudence check.

### ***5.3 Non-Tariff Income***

In the MERC MYT Regulations, the various heads of Non-tariff Income for the Transmission Business were not listed. It is proposed to list out the indicative heads of Non-tariff Income for the Transmission Business, for greater clarity, as under:

- a) Income from rent of land or buildings;
- b) Income from sale of scrap;
- c) Income from investments;
- d) Income from Delayed Payment Charge;
- e) Interest income on advances to suppliers/contractors;
- f) Income from rental from staff quarters;
- g) Income from rental from contractors;
- h) Income from hire charges from contractors and others;
- i) Supervision charges for capital works;
- j) Income from advertisements;
- k) Income from sale of tender documents;
- l) Any other Non-Tariff Income:

Provided that the interest earned from investments made out of Return on Equity corresponding to the regulated Business of the Transmission Licensee shall not be included in Non-Tariff Income.

### ***5.4 Approval of Provisional Tariff***

In the existing MERC MYT Regulations, 2011, there is no specific provision for determination of provisional tariff in case of new Transmission Licensee. As per the present mechanism, the new Transmission Licensee approaches the Commission for determination of tariff only after the commissioning of transmission system or element of transmission system. The recovery of such approved ARR commences only after the issuance of InSTS Tariff Order by the Commission. In such cases, new Transmission Licensee shall be entitled for carrying cost on unrecovered amount for the period during which no recovery of ARR is done. Hence, there is a need for incorporating the process of approval of provisional tariff for new Transmission Licensee, similar to that existing for new Generating Station/Unit, in order to reduce the carrying cost and providing more clarity in existing framework.

Hence, it is proposed to insert the clauses related to determination and approval of provisional tariff for new Transmission Licensee, on similar lines with the clauses proposed in case of new Generating Station.

It is proposed to add the following clauses in proposed Regulations:

***“55. Petition for determination of Provisional Tariff***

*55.1 A new Transmission Licensee shall file the Petition for determination of provisional Tariff, six months prior to the anticipated date of commercial operation of the transmission assets.*

*55.2 The new Transmission Licensee shall file a Petition for determination of provisional Tariff based on capital expenditure incurred and projected to be incurred up to the date of commercial operation and additional capital expenditure incurred, duly certified by the statutory auditors:*

*Provided that the Petition shall contain details of underlying assumptions for the projected capital cost and additional capital cost, wherever applicable.*

*55.3 The new Transmission Licensee may be allowed provisional Tariff by the Commission from the anticipated date of commercial operation, based on the projected capital expenditure.*

*55.4 If the date of commercial operation is delayed beyond six months from the date of issue of the order approving the provisional Tariff, the provisional Tariff granted shall be deemed to have been withdrawn and the new Transmission Licensee shall be required to file a fresh Petition for determination of Tariff after the date of commercial operation of the Project.*

*55.5 The new Transmission Licensee shall file the Petition for determination of final Tariff within six months from the date of commercial operation, based on the audited capital expenditure and capitalisation as on the date of commercial operation.*

*55.6 The final Tariff determination for the new Transmission Licensee shall be done by the Commission based on prudence check of the audited capital expenditure and capitalisation as on the date of commercial operation.*

*55.7 Where the actual Capital Cost incurred on year to year basis is less than the Capital Cost approved for determination of provisional Tariff by the Commission, by five percent or more, the Transmission Licensee shall refund to the Beneficiaries, the excess Tariff realised corresponding to excess Capital Cost, along with interest at 1.20 times of the Base Rate of State Bank of India, as prevalent on the first day of April of the respective Year, plus one hundred basis points.*

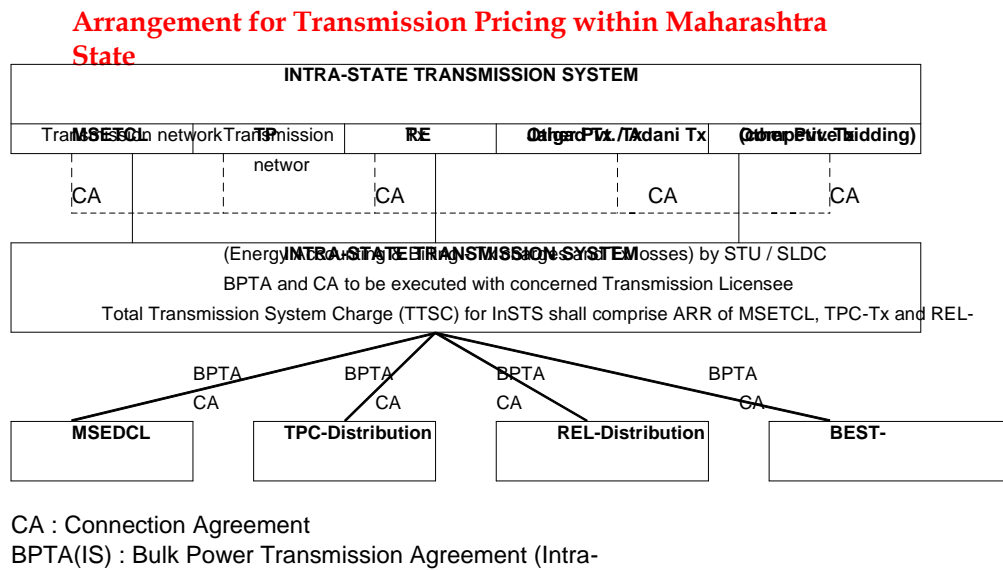
*55.8 Where the actual Capital Cost incurred on year to year basis is more than the Capital Cost approved for determination of provisional Tariff by the Commission, by five percent or more, the Transmission Licensee shall, subject to the approval of the Commission, recover from the Beneficiaries the shortfall in Tariff corresponding to such*

decrease in Capital Cost along with interest at 0.80 times of the Base Rate of State Bank of India, as prevalent on the first day of April of the respective Year, plus one hundred basis points.”

### 5.5 Transmission Pricing Framework

Presently, the intra-State transmission pricing framework in the State of Maharashtra is based on a “Postage Stamp” approach which is simple to understand and implement, and is also a time tested approach.

The recovery of ARR of Transmission Licensees or Transmission Service Charge (TSC) in case of competitively awarded transmission projects, as the case may be, shall be based on a ‘pooled cost’ principle wherein the ARR/TSC of all the Transmission Licensees will be pooled together and shared among the Transmission System Users based on their share in the coincident peak demand and non-coincident peak demand of the State. The block diagram shown below depicts the present mechanism for recovery of ARR within the State of Maharashtra.



Regulations 64 and 65 of MERC MYT Regulations, 2011 specifies the method for determination of Intra-State Transmission tariff and sharing of total transmission capacity.

CERC has notified Regulations on pricing methodology for inter-State transmission system (ISTS), to make it in line with the requirements of National Electricity Policy and Tariff Policy. The salient features of the CERC (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 and amendments thereof are given below:

- (i) Based on the yearly Transmission Charges of inter-State Transmission System Transmission Licensees and transmission losses in network, the Implementing Agency shall compute the Point of Connection charges and Loss Allocation Factors for all DICs:
  - a. Using load-flow based methods; and
  - b. Based on the Point of Connection charging method;
- (ii) The Point of Connection (PoC) methodology is based on a hybrid method, which brings together the strengths of both the Marginal Participation and the Average Participation Method;
- (iii) The sharing of ISTS transmission charges between designated ISTS customers shall be computed for an application period and shall be determined in advance and shall be subject to periodic true-up as specified subsequently in the Regulations;
- (iv) The sharing of ISTS transmission charges shall be based on the technical and commercial information provided by various designated ISTS customers, ISTS Transmission Licensees, and any other relevant entity, including the NLDC, RLDCs and SLDCs, to the Implementing Agency;
- (v) The mechanism for sharing of ISTS charges shall ensure that:-
  - a. The yearly Transmission Charge of the ISTS Licensees are fully and exactly recovered; and
  - b. Any adjustment towards yearly Transmission Charge on account of change in commissioning schedule of elements of the power system and change in factors constituting the transmission charge, approved by the Commission, e.g., FERV, Changes in interest rates shall be fully and exactly recovered, etc., as specified subsequently in the Regulations;
- (vi) The Point of Connection transmission charges shall be computed in terms of Rupees per Mega Watt per month and transmission charges for short-term open access transactions shall be in terms of Rupees per Mega Watt hour and shall be applicable for the duration of short-term open access approved by the RLDC/NLDC.
- (vii) The applicable transmission losses for the ISTS shall be declared in advance and shall not be revised retrospectively.

This method was introduced to address the problems in the application of the regional Postage Stamp method, which required all the users of a system in a region

to pay same price/MW of allotted transmission capacity. However, due to increasing short-term transactions over the grid, allotment of power plant capacities of one region to the beneficiaries in the other regions, etc., the grid and its usage is getting more and more complex every day. Some of the main triggers are change in the configuration of ISTS, changing nature of use of transmission system by various other users and problem of pancaking, etc.

In this regard, the implementation of the distance sensitive approach in the State of Maharashtra would require the following aspects to be addressed:

- (i) Whether the system data for implementation of POC charge method is available in the State.
- (ii) Careful evaluation of implications for various Distribution Licensees on account of power flow from source (generating stations) to various regions.
- (iii) The POC method is yet to be fully implemented by CERC, and a hybrid approach is presently in force.

As regards the implementation of POC method, certain steps have been taken at the State level. The Commission's Order dated 26 June, 2015 in Case No. 57 of 2015 for intra-State Transmission Tariff states as under:

*"86. For considering introduction of the PoC methodology at the State level, several Intra-State level Transmission System data inputs and preparatory steps are required. In this context, the Commission, in its Order in Case No. 56 of 2013, had directed the STU to undertake a detailed study relating to the introduction of the PoC methodology in Maharashtra. The study would cover the preparatory work required for implementation of the PoC methodology, the data requirements, time-lines, and the approach and methodology for collection and collation of the data. The STU was also asked to consult with the Transmission Licensees, MSLDC and TSUs.*

*87. On 28 February, 2015, the STU submitted a report of the study conducted so far in collaboration with the Indian Institute of Technology (IIT), Mumbai. The STU and IIT resource persons also made a presentation, at which several issues were discussed and flagged, including the need to assess the probable impact of the proposed mechanism on the TSUs, and for a road map outlining the pre-requisites including data requirements, formats, etc. along with timelines. STU may submit the final report to the Commission by 31 August, 2015."*

In view of the above, at this stage, considering the fact that the Postage Stamp approach is simple, easy to understand and implement, and is also a time tested approach, it is preferable to continue with the uniform Postage Stamp approach across the State of Maharashtra.

However, the Commission may, after conducting a detailed study and due regulatory process, change the existing transmission pricing framework to one considering factors like voltage, distance, direction and quantum of flow based on adoption of the methodology specified by the CERC, during this Control Period or afterwards, whenever the Commission may deem appropriate.

Accordingly, the existing approach of determination of Intra-State Transmission tariff including the determination of Total Transmission System Cost (TTSC), Base Transmission Capacity Rights and Base Transmission tariff and the approach of sharing of TTSC by long term Transmission System Users, is proposed to be retained in the third Control Period.

In addition to the above, certain changes have been proposed, as under:

As per the existing approach of determining pooled Total Transmission System Cost (TTSC), approved ARR of Transmission Licensee has been considered.

In future, competitively awarded Transmission project may come in the State. In such case, while determining TTSC, the ARR as per the annual Transmission Service Charge quoted by the winning bidder shall be considered for aggregation under TTSC.

Further, it is also clarified that in case new Transmission Licensee is added to the intra-State transmission network during the Control Period, then Base Transmission Capacity Rights and Base Transmission Tariff for such licensee shall be re-determined for each remaining year of the Control period based on the Regulations.

It is also proposed to clarify that in case of long-term Open Access consumers, where the data of CPD and NCPD will not be available, the Allotted Transmission Capacity for such consumers shall be considered in lieu of the average of CPD and NCPD, for calculating the Base Transmission Capacity Rights (Base TCR).

Accordingly, the proposed clauses are as under:

**"61. Determination of Intra-State Transmission Tariff**

61.1 *The aggregate of the yearly revenue requirement for all Transmission Licensees; less the deductions, as approved by the Commission over the Control Period, shall form the "Total Transmission System Cost" (TTSC) of the Intra-State transmission system, to be recovered from the Transmission System Users (TSUs) for the respective year of the Control Period, in accordance with the following Formula:*

$$TTSC_{(t)} = \sum_{i=1}^n (ARR_i - NTI_i - OI_i)$$



Where,

$TTSC_{(t)}$  = Pooled Total Transmission System Cost of year (t) of the Control Period;

$n$  = Number of Transmission Licensee(s);

$ARR_i$  = Yearly revenue requirement approved by the Commission for  $i^{th}$  Transmission Licensee for the yearly period (t) of the Control Period;

$NTI_i$  = Approved level of Non-Tariff Income for  $i^{th}$  Transmission Licensee for the yearly period (t) of the Control Period;

$OI_i$  = Approved level of income from Other Business of the  $i^{th}$  Transmission Licensee for the yearly period (t) of the Control Period;

Provided that in case of transmission system projects undertaken in accordance with the Guidelines for competitive bidding for transmission under Section 63 of the Act, the Aggregate Revenue Requirement as per the annual Transmission Service Charges (TSC) quoted by such projects, shall be considered, for aggregation under the TTSC.

- 62.1 The Commission shall approve yearly 'Base Transmission Capacity Rights' as average of Coincident Peak Demand and Non-Coincident Peak Demand for TSUs as projected for 12 monthly period of each year (t) of the Control Period, representing the "Capacity Utilisation' of Intra-State transmission system and accordingly determine yearly 'Base Transmission Tariff', in accordance with the following formula:

$$\begin{aligned} &\text{Base Transmission Capacity} \\ &\text{Rights (Base TCR) for the} \\ &\text{yearly period (t)} \end{aligned} = \sum_{u=1}^n ([\mathbf{CPD}(t) + \mathbf{NCPD}(t)]/2)$$

Where,

$CPD_{(t)}$  = Average of projected monthly Coincident Peak Demand for the yearly period (t) of Control Period for each long term Transmission System User (u)

$NCPD_{(t)}$  = Average of projected monthly Non-Coincident Peak Demand for the yearly period (t) of Control Period for each long term Transmission System User (u):

Provided that for the first year of the Control Period, the Base Transmission Capacity Rights for all long-term Transmission System Users shall be determined based on average monthly CPD and NCPD of the long term Transmission System Users prevalent during the 12 months prior to date of effectiveness of these Regulations or 12 months prior to filing of the Petition by the Transmission Licensees, depending on availability of such data:

*Provided further that the Allotted Capacity for long-term Open Access consumers shall be considered in lieu of the average monthly CPD and NCPD for calculating the Base Transmission Capacity Rights:*

*Provided also that the yearly CPD and NCPD or the Allotted capacity, as the case may be, to be considered for determination of the subsequent yearly Base Transmission Capacity Rights shall be computed at the beginning of the Control Period based on the past trend and on the basis of demand projections made by various long-term TSUs connected to the Intra-State transmission system as part of their MYT Petitions for the Control Period:*

*Provided also that on completion of each year of the Control Period, MSLDC shall submit the recorded CPD and NCPD data or the Allotted capacity, as the case may be, for past 12 months in respect of each long-term Transmission System User and on the basis of the same, the Base TCR shall be suitably revised at the time of Mid-Term Review and at the end of the Control Period.*

61.3 *Base Transmission Tariff for each Year shall be determined as ratio of approved ‘TTSC’ for intra-State transmission system and approved ‘Base Transmission Capacity Rights’ and shall be denominated in terms of “Rs/kV/month” (for long-term/medium-term usage) or in terms of “Rs/kWh” (for short-term bilateral open access transactions usage, short-term collective transactions over Power Exchange and for Renewable Energy transactions) in accordance with the following formula:*

$$\begin{array}{l} \text{Base Transmission Tariff}_{(t)} \\ \text{(long-term/medium-term)} \\ \text{(Rs/kV/month or Rs/MW/day)} \end{array} = \text{TTSC}_{(t)} / \text{Base TCR}_{(t)}$$

$$\begin{array}{l} \text{Base Transmission} \\ \text{Tariff}_{(t)} \text{ (Short-term)} \\ \text{(Rs/kWh)} \end{array} = \frac{\text{TTSC}_{(t)}}{\sum_{i=1}^n \text{(Energy Transmitted by Tx } i)}$$

*Where,*

*TTSC<sub>(t)</sub> = Pooled cost for InSTS for yearly period (t) of the Control Period;*

*Base TCR<sub>(t)</sub> = Base Transmission Capacity Rights for the yearly period (t);*

*n = Total number of Transmission Licensee(s) in that particular year of Control Period;*

*Tx<sub>i</sub> = i<sup>th</sup> Transmission Licensee:*

*Provided that the energy units transmitted by each Transmission Licensee shall be based on the projections made by each Transmission Licensee as part of its MYT Petition for the Control Period and as approved by the Commission:*

*Provided further that any revisions in Base Transmission Capacity Rights and Base Transmission Tariff as determined in Regulations 61.2 and 61.3 due to the variation in the actual and approved CPD and NCPD shall be made at the time of Mid-Term Review and at the end of the Control Period:*

*Provided also that in case new Transmission Licensees are added to the intra-State transmission network during the Control Period, then the TTSC, Base Transmission Capacity Rights and Base Transmission Tariff as referred under Regulations 61.1, 61.2 and 61.3 shall be re-determined for each remaining year of the Control Period.*

## **62. Sharing of TTSC by long-term TSUs**

62.1 *The long-term Transmission System Users shall share the TTSC of the intra-State transmission system in the proportion of Base Transmission Capacity Rights of each Transmission System User to the total Base Transmission Capacity Rights allotted in the intra-State transmission system.*

62.2 *The Annual Transmission Charge payable by a long-term Transmission System User shall be computed in accordance with the following formula:*

$$ATC(u)_{(t)} = TTSC_{(t)} \times ([Base\ TCR(u)]_{(t)} / \sum_{u=1}^n [Base\ TCR(u)]_{(t)})$$

*Where,*

*ATC(u)<sub>(t)</sub> = Annual Transmission Charges to be shared by long-term Transmission System User (u) for the yearly period (t);*

*Base TCR (u) = [CPD(u)<sub>(t)</sub> + NCPD(u)<sub>(t)</sub>] / 2*

*Where,*

*Base TCR represents the Base Transmission Capacity Right of each Transmission System User (u) for the yearly period (t);*

*CPD (u)<sub>(t)</sub> = Average Coincident Peak Demand of the Transmission System User (u) for the yearly period (t);*

*NCPD (u)<sub>(t)</sub> = Average Non-coincident Peak Demand of the Transmission System User (u) for the yearly period (t);*

*Provided that the Allotted Capacity for long-term Open Access consumers shall be considered in lieu of the average monthly CPD and NCPD for calculating the Base TCR for long-term Open Access consumers."*

## 5.6 *Regulating Transmission Licensees & Performance Standards*

### 5.6.1 *Regulating Capital Investment*

As regards the Capital Investment Plan, Regulation 58 of MERC MYT Regulations, 2011 specifies as under:

#### *“58 Capital Investment Plan*

*58.1 The Transmission Licensee shall submit a Capital Investment Plan with full details of its proposed capital expenditure projects to the Commission for approval along with the Business Plan:*

*Provided that the Capital Investment Plan shall be submitted for each year of the second Control Period.*

*58.2 The Capital Investment Plan shall be a least cost plan for undertaking investments on strengthening and augmentation of the intra-State transmission system of the Transmission Licensee.*

*58.3 The Capital Investment Plan shall cover all capital expenditure projects of a value exceeding Rs. Ten (10) crore and shall be in such form as may be stipulated by the Commission from time to time.*

*58.4 The Capital Investment Plan shall be accompanied by such information, particulars and documents as may be required including but not limited to the information such as number of bays, name, configuration and location of grid substations, substation capacity (MVA), transmission line length (ckt-km) showing the need for the proposed investments, alternatives considered, cost/benefit analysis and other aspects that may have a bearing on the transmission charges.*

*58.5 The Capital Investment Plan of the Transmission Licensee shall be consistent with the transmission system plan for the intra-State transmission system developed in accordance with the MERC (Transmission Open Access) Regulations, 2005 as amended from time to time.*

*58.6 The Commission shall review the Capital Investment Plan along with the Business Plan submitted by the Transmission Licensee taking into consideration the prudence of the proposed expenditure and estimated impact on transmission charges in accordance with Regulation 7.*

*58.7 The Transmission Licensee shall submit, along with the application for determination of Aggregate Revenue Requirement or along with the application for Mid-term Performance Review, as the case may be, details showing the progress of capital expenditure projects, together with such other information, particulars or documents as the Commission may require to assess such progress.*

## **59 Capital Cost**

*59.1 For the purpose of determination of tariff, the Capital Cost for a Transmission Project and additional capitalisation thereof, shall be allowed in accordance with the provisions outlined under Regulation 27 and Regulation 28 respectively.*

*59.2 The provisions of Accounting Standards (AS10): Accounting for Fixed Assets of the Institute of Chartered Accountants of India, as amended from time to time, shall apply, to the extent not inconsistent with these Regulations, in determining the original cost of capital expenditure projects and/or original cost of fixed assets capitalized.*

*59.3 The amount of any contributions made by Transmission System Users towards works for access to the intra-State transmission system of the Transmission Licensee shall be deducted from the original cost for such project for the purpose of calculating the Equity Capital as provided in these Regulations.”*

As discussed in earlier sections, the need for submission of a Business Plan is proposed to be discontinued in next Control Period. Hence, it is proposed that the Transmission Licensee shall submit a detailed capital investment plan, financing plan and physical targets for each year of the Control Period for strengthening and augmentation of the intra-State transmission system of the Transmission Licensee, meeting the requirement of load growth, improvement in quality of supply, reliability, metering, reduction in congestion, etc., to the Commission for approval, as a part of the Multi-year Aggregate Revenue Requirement for the entire Control Period.

It is also proposed that when the transmission line or substation is dedicated for evacuation of power from a particular generating station or for transmitting power to a particular distribution sub-station, the Generation Entity and Transmission Licensee or Distribution Licensee shall endeavour to commission the generating station and the transmission system or distribution system simultaneously as far as practicable.

Further, in case a transmission system or an element thereof is prevented from regular service for reasons not attributable to the Transmission Licensee or its supplier or its contractors but is on account of the delay in commissioning of the concerned generating station or in commissioning of the upstream or downstream transmission system or distribution system, the Transmission Licensee may approach the Commission through an appropriate Petition for approval of the date of commercial operation of such transmission system or an element thereof.

### 5.6.2 Regulating Operational Performance: Norms of Operation

Regulation 60 of the MERC MYT Regulations, 2011, specifies the Norms of Operation and the incentive mechanism, respectively, as reproduced below:

***“60 Norms for operation***

*60.1 Target availability for full recovery of annual transmission charges*

*(a) AC system: 98 per cent*

*(b) HVDC bi-pole links: 92 per cent*

*(c) and HVDC back-to-back stations: 95 per cent*

*Note 1: Recovery of annual transmission charges below the level of target availability shall be on pro rata basis. At zero availability, no transmission charges shall be payable.*

*Note 2: The target availability shall be calculated in accordance with procedure provided in the Annexure-II to these Regulations and to be certified by Maharashtra State Load Despatch Centre.*

*60.2 The Transmission Licensee shall be entitled to incentive on achieving annual availability beyond the target availability, in accordance with the following formula:*

*Incentive = Annual Transmission Charges x [Annual availability achieved – Target Availability] / Target Availability; Where, Annual transmission Charges shall correspond to Aggregate Revenue Requirement for each year of the Control Period for the particular Transmission Licensee within the State:*

*Provided that no incentive shall be payable above the availability of 99.75% for AC system and 98.5% for HVDC system: Provided further that the computation of incentive/disincentive shall be undertaken during mid-term performance review and at the end of Control Period.”*

Regulation 38 of the CERC Tariff Regulations, 2014 specifies the norms of operation for a Transmission Licensee, as under:

***"Norms of operation for transmission system***

*38. Normative Annual Transmission System Availability Factor (NATAF): shall be as under:*

*For recovery of Annual Fixed Charges:*

*(1) AC system: 98%*

*(2) HVDC bi-pole links and HVDC back-to-back stations: 95%*

*For incentive consideration:*

*(1) AC system: 98.50%*

(2) HVDC bi-pole links and HVDC back-to-back Stations: 96%

Provided that for new HVDC stations, NATAF shall be considered as 95% for first three years of operations for the purpose of incentive:

Provided further that no incentive shall be payable for availability beyond 99.75%:

Provided also that for AC system, two trippings per year shall be allowed. After two trippings in a year, additional 12 hours outage shall be considered in addition to the actual outage:

Provided also that in case of outage of a transmission element affecting evacuation of power from a generating station, outage hour shall be multiplied by a factor of 2."

From the above, it can be seen that CERC has specified two different targets, one for recovery of Annual Fixed Charges and another for computing the incentive, unlike the approach adopted in the previous Tariff Regulations, wherein, the target availability was the same for recovery of Annual Fixed Charges and for computing the incentive.

For setting the Target Availability for the next Control Period, the actual Availability of Transmission Licensees in the State has been compared with the Target Availability for the period from FY 2011-12 to FY 2013-14, as tabulated below:

**Table 20: Actual Availability of Transmission Utilities**

Particulars		FY 2011-12	FY 2012-13	FY 2013-14	Target Availability
		Actual Availability	Actual Availability	Actual Availability	
MSETCL	HVAC	99.72%	99.71%	99.72%	98.00%
	HVDC	96.55%	97.54%	98.40%	92.00%
RInfra-T	HVAC	99.77%	99.77%	99.76%	98.00%
TPC-T	HVAC	99.46%	99.56%	99.59%	98.00%
JPTL	HVAC	98.11%	98.43%	99.19%	98.00%

*Source: True-Up Orders of respective Transmission Utilities.*

It is evident that the Transmission Utilities have consistently achieved Availability levels higher than the Target Availability and have benefitted in the form of incentives as specified in the Regulations for the over-achievement vis-a-vis the targeted Availability. In line with the approach adopted by the CERC and in order to further encourage the Transmission Utilities to improve their performance, it is proposed to have different target Availability levels for recovery of Annual Fixed Charges and for incentive computation.

The proposed availability targets for the third Control Period based on availability targets are as under:

*"57.1 Target availability for the Transmission Licensee shall be as under:*

***For full recovery of Annual Transmission Charges:***

*(a) AC system: 98%*

*(b) HVDC bi-pole links and HVDC back-to-back stations: 95%*

***For incentive consideration:***

*(a) AC system: 99%*

*(b) HVDC bi-pole links and HVDC back-to-back stations: 96%*

Note 1:

*Recovery of annual transmission charges below the level of target availability shall be on pro-rata basis, and at zero availability, no transmission charges shall be payable.*

Note 2:

*The target availability shall be computed in accordance with procedure provided in the Annexure-II to these Regulations and be certified by MSLDC*

*57.2 The Transmission Licensee shall be entitled to incentive on achieving annual availability beyond the target availability, in accordance with the following formula:*

*Incentive = Annual Transmission Charges x [Annual availability achieved – Target Availability] / Target Availability;*

*Where,*

*Annual transmission Charges shall correspond to Aggregate Revenue Requirement for each year of the Control Period for the particular Transmission Licensee within the State:*

*Provided that no incentive shall be payable above the availability of 99.75% for AC system and 98.5% for HVDC system:*

*Provided further that for AC system, two trippings per year shall be allowed, and after two trippings in a year, additional 12 hours outage shall be considered in addition to the actual outage:*

*Provided also that in case of outage of a transmission element affecting evacuation of power from a generating Station, outage hours shall be multiplied by a factor of 2:*

*Provided also that the computation of incentive/disincentive shall be undertaken during Mid-Term Review and at the end of Control Period."*



### 5.6.3 Regulating Operating Performance: O&M Norms

In the MERC MYT Regulations, 2011, the O&M norms for Transmission Licensees are linked to Transmission line length (ckt-km) and substation related assets (number of bays). The Commission would like to continue with the same approach and it is proposed to derive the O&M norms for the Transmission Licensees in the State of Maharashtra based on parameters such as line length in circuit km and number of bays. O&M expenses comprise Employee expenses, Repair & Maintenance expenses and Administrative & General expenses. With increase in transmission capacity and corresponding increase in asset base, the manpower resources and repairs and maintenance activities needs to be augmented adequately to cater to the enhanced maintenance requirement (preventive and break-down) of the asset base. There is a direct co-relation between O&M expenses and on-line transmission/network parameters, number of bays and transmission line length (ckt-km) put into service.

#### Comparison of O&M expense norms amongst the Intra-State Transmission licensees in Maharashtra

At present, the Intra-State transmission system (InSTS) within Maharashtra comprises the transmission network of MSETCL, TPC-T, RInfra-T, ATIL, JPTL, MEGPTCL and VIPL-T. While the transmission licences have also been issued in case of APTCL and SPTCL, the transmission assets of these Transmission Licensees are yet to achieve COD and become operational. The nature of Transmission Licensees varies significantly on the technical, financial and operational front. The State Transmission Utility-MSETCL, operates at voltage level ranging from 66 kV to 400 kV. The transmission network of MSETCL also includes around 1504 ckt-km of HVDC lines from Chandrapur to Padghe. However, TPC-T and RInfra-T operate at a voltage level ranging from 66 kV to 220 kV. JPTL, ATIL, MEGPTCL and VIPL-T own and operate limited network. The following Table shows a comparison of the technical configuration of the Transmission Utilities in Maharashtra in terms of MVA capacity, transmission line length in ckt km and number of bays (Average of Opening and Closing) for FY 2013-14.

**Table 21: Technical Configuration of Transmission Licensees**

Particulars	Units	MSETCL	TPC-T	RInfra-T	APML-T	JPTL
Transmission line length	Ckt-km	40482.00	1126.45	538.66	438.00	330.00
No of bays	Nos.	11285	1093	486	4	4
Transmission line length/Bay	Ckt Km/bay	3.59	1.03	1.11	109.50	82.50

Source: True up Orders for Transmission Licensees

For the purpose of analysis and for deriving O&M norms, the 'Bay' has been considered as a set of accessories that are required to connect an electrical equipment such as Transmission line, Bus Section Breakers, Potential Transformers, Power Transformers, Capacitors and Transfer Breaker and the feeders emanating from the bus. Further, the Bays considered here include only the ones at the Transmission substation and thus exclude any bays of the Generating Station switchyard whose maintenance is usually the responsibility of the Generation Entity.

In the above table, the ratios of Transmission line length to number of bays have been derived to compare the technical configuration of the Transmission Licensees. The ratio brings out the structural difference in network configuration and topology amongst the Transmission Licensees in the State of Maharashtra, and shows that there exists significant difference in the network configuration of Transmission Licensees.

### **Comparison of O&M expenses of the Intra-State Transmission licensees in Maharashtra with that of CTU (PGCIL)/CERC norms**

The CERC Tariff Regulations, 2014 has specified the norms for O&M expenses for Transmission Licensees handling Inter State Transmission of power. CERC has specified voltage wise norms and separate norms for line assets and substation assets. The O&M norm specified by CERC is reproduced below:

"29. *Operation and Maintenance Expenses:*

.....

(3) *Transmission system*

(a) *The following normative operation and maintenance expenses shall be admissible for the transmission system:*

<b>Norms for sub-stations (in Rs Lakh per bay)</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
765 kV	84.42	87.22	90.12	93.11	96.2
400 kV	60.3	62.3	64.37	66.51	68.71
220 kV	42.21	43.61	45.06	46.55	48.1
132 kV and below	30.15	31.15	32.18	33.25	34.36
400 kV Gas Insulated Substation	51.54	53.25	55.02	56.84	58.73
<b>Norms for AC and HVDC lines (in Rs Lakh per km)</b>					
Single Circuit (Bundled Conductor with six or more sub-conductors)	0.707	0.731	0.755	0.78	0.806
Single Circuit (Bundled Conductor with four sub-conductors)	0.606	0.627	0.647	0.669	0.691
Single Circuit (Twin & Triple Conductor)	0.404	0.418	0.432	0.446	0.461
Single Circuit (Single Conductor)	0.202	0.209	0.216	0.223	0.23
Double Circuit (Bundled conductor with four or more sub-conductors)	1.062	1.097	1.133	1.171	1.21

<b>Norms for sub-stations (in Rs Lakh per bay)</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Double Circuit (Twin & Triple Conductor)	0.707	0.731	0.755	0.78	0.806
Double Circuit (Single Conductor)	0.303	0.313	0.324	0.334	0.346
Multi Circuit (Bundled conductor with four or more sub-conductors)	1.863	1.925	1.989	2.055	2.123
Multi Circuit (Twin & Triple Conductor)	1.24	1.282	1.324	1.368	1.413
<b>Norms for HVDC Stations</b>					
HVDC Back-to-back stations (Rs. Lakh per 500 MW)	578	627	679	736	797
Rihand-Dadri HVDC bi-pole scheme (Rs. Lakh)	1511	1637	1774	1922	2082
Talcher-Kolar HVDC bi-pole scheme (Rs. Lakh)	1173	1271	1378	1493	1617
Balia-Bhiwadi HVDC bi-pole scheme (Rs. Lakh)	1537	1666	1805	1955	2119

*Provided that operation and maintenance expenses for new HVDC bi-pole scheme for a particular year shall be allowed pro-rata on the basis of normative rate of operation and maintenance expense for 2000 MW, Talcher-Kolar HVDC bi-pole scheme for the respective year:*

*Provided further that the O&M expenses norms for HVDC bi-pole line shall be considered as Single Circuit quad AC line.*

*(b) The total allowable operation and maintenance expenses for the transmission system shall be calculated by multiplying the number of bays and kms of line length with the applicable norms for the operation and maintenance expenses per bay and per km respectively.*

*(c) The operation and maintenance expenses of communication system forming part of inter-state transmission system shall be derived on the basis of the actual O&M expenses for the period of 2008-09 to 2012-13 based on audited accounts excluding abnormal variations if any after prudence check by the Commission. The normalized O&M expenses after prudence check, for the years 2008-09 to 2012-13 shall be escalated at the rate of 3.02% for computing base year expenses for FY 2012-13 and 2013-14 and at the rate of 3.32% for escalation from 2014-15 onwards."*

It can be noticed that CERC has specified the transmission length based norm on per km basis rather than on the basis of per ckt km, since it has stipulated separate norms for single circuit line as well as double circuit lines. Further, CERC has made distinction in terms of type of conductor as well.

It may be noted that the normative O&M expenses allowed by CERC for PGCIL are much higher than that specified by SERCs, which may be on account of the fact that the PGCIL network comprises largely of 400 kV and 220 kV transmission system, whereas the voltages at State level are primarily 66 kV to 220 kV with a smaller share of 400 kV lines in case of MSETCL and 66kV to 220 kV in case of TPC-T and RInfra-T.

Further, the CERC norms have been specified after taking into account the prudently incurred O&M expenses incurred by PGCIL. As long as similar treatment of specifying the O&M norms based on the prudently incurred O&M expenses is followed, Transmission Licensees will not be at any disadvantage and will be able to recover the prudently incurred O&M expenses incurred by them.

In view of the above, for the third Control Period, the O&M norms for the transmission Business are proposed to be specified, based on prudently incurred O&M expenses by Transmission Licensees and voltage-wise O&M expenses per bay and per ckt km. The total allowable O&M expenses for the transmission system is to be computed by multiplying the number of bays and km of line length with the applicable norms for O&M expenses on per bay and per km basis, respectively.

### **Proposed formulation of O&M norms**

Since, there exists significant difference in the network configuration of Transmission Licensees; it would not be prudent to specify a common norm for all Transmission Licensees. Hence, it is proposed to continue with the same approach as adopted in MERC MYT Regulations, 2011, and separate norms have been derived for each Transmission Licensee to address characteristic features and historical development of transmission network and operating structure of these Transmission Licensees.

While deriving O&M norms for a Transmission Licensee, it is required to consider the spread and nature of the transmission asset base. Hence, it is proposed to continue with existing approach of deriving the norms in terms of number of bays (representing Substation Asset related expenses) and in terms of length of transmission line (representing line related expenses). Therefore, norms have been proposed in terms of 'per ckt km basis' and 'per bay basis'.

In addition to the above, considering the network configuration across Transmission Licensees, it is proposed to continue to derive O&M norms for the following set of voltage classes:

1. HVDC
2. 765 kV
3. 400 kV
4. Above 66 kV but lower than 400 kV (220 kV, 132 kV, 110 kV, 100 kV)
5. 66 kV and lower

However, in case of TPC-T and Rlnfra-T, due to their limited voltage levels of operation, O&M norms are being specified only for the last two voltage levels appearing in the above list, i.e., (a) Above 66 kV but lower than 400 kV and (b) 66 kV

and lower. Also, in case of other new Transmission Licensees, O&M norms are proposed only for corresponding voltage levels of asset base.

Further, for deriving the norms for different set of voltages, it is required to understand the spread of the existing assets (i.e., transmission lines and bays) amongst these set of voltages. For this purpose, the necessary data for assets related to transmission lines and bays have been sought from the Transmission Licensees. However, no data were received from the Transmission Licensees in this regard. Therefore, the segregation of norms amongst the set of voltages has been considered with the available data.

Further, as regards MSETCL, the norms derived from past data based on time series analysis already includes the impact of wage revision in FY 2013-14. Hence, there is no need to adjust norms for such impact of pay revision for future years.

The methodology for formulation of O&M norms is elaborated as under:

- a) The actual O&M expenses of Transmission Licensees, subject to prudence check by the Commission, have been considered for FY 2011-12 to FY 2013-14. Since, the actual data was available only for MSETCL, TPC-T, RInfra-T and JPTL, the norms have been proposed for these Transmission Licensees.
- b) The year-wise O&M expenses (from FY 2011-12 to FY 2013-14) have been allocated amongst bays and transmission line length (ckt km) in the ratio of normative O&M expenses derived for bays and transmission lines, with existing asset base for transmission lines and bays. The allocation ratio for allocating O&M expense between bays and transmission lines has been assumed separately for each year for each Transmission Licensee, based on their assets for respective year.
- c) Based on the above allocation to bays and transmission lines, O&M expenses per circuit-km (Rs. Lakh/ckt-km) and O&M expenses per bay (Rs. Lakh/bay) have been computed for each year (FY 2011-12 to FY 2013-14) by dividing the O&M expenses for lines/bays with the total line length in km/total number of bays in respective years.
- d) Secondly, actual O&M expenses per ckt-km and per bay as computed above have been further allocated voltage-wise by assigning appropriate weightage based on normative O&M expenses and the asset base constituting bays and transmission lines at various voltage classes.
- e) The norm for the next Control Period for various voltage classes has been derived based on average of actual O&M expenses per ckt-km and per bay for the period from FY 2011-12 to FY 2013-14 in terms of Rs. Lakh/ckt-km and

Rs. Lakh/bay for each Transmission Licensee. The average norm so derived has been escalated by escalation factor of 5.72%, (which was considered while deriving the norms under MERC MYT Regulations, 2011) till final year of second Control Period, considering the trend of actual norm.

- f) Further, escalation factor of 5% has been applied to derive applicable O&M norm for respective yearly periods of the next Control Period.
- g) It is evident that norms for TPC-T and JPTL are showing a decreasing trend having 2 year CAGR of negative 4% and 3%, respectively, hence, average of norms for period from FY 2011-12 to FY 2013-14 has been considered as norm for first year of third Control Period. Further, escalation factor of 5% has been applied to derive applicable O&M norm for subsequent years of the next Control Period.
- h) Approach for deriving O&M norms for HVDC in case of MSETCL is based on principles adopted for regional transmission network under CERC Tariff Regulations, 2014. MSETCL is operating and maintaining 500 kV, 1500 MW HVDC bipole line between Chandrapur and Padghe. For deriving the O&M expenses of this HVDC bipole line, the same is compared with that of the Rihand-Dadri HVDC line owned by PGCIL, which has a similar technical specification. Akin to Chandrapur-Padghe line, Rihand-Dadri HVDC line is a bipole 500 kV line with a transmission capacity of 1500 MW. The only difference between Rihand-Dadri HVDC bipole and Chandrapur-Padghe HVDC bipole is in terms of their length (1634 ckt km for Rihand-Dadri HVDC line and 1504 ckt km for Chandrapur-Padghe HVDC). CERC Tariff Regulations, 2014 specified O&M norms for Rihand-Dadri HVDC line. Since Chandrapur-Padghe has a similar configuration with the Rihand-Dadri line, a similar O&M norm as specified by CERC is considered.
- i) Since, there is no actual network at voltage level of 765 kV of MSETCL, the norms for transmission line and bay for 765kV have been considered with pro-rata adjustment with existing norms for 765 kV and 400 kV.

Accordingly, the O&M norms proposed for MSETCL, TPC-T, RInfra-T, JPTL for the next Control Period is as under:

Table 22: O&M Norms of Transmission Licensees

<b>MSETCL</b>									
Voltage Level	Actual for FY 2011-12	Actual for FY 2012-13	Actual for FY 2013-14	3 Year average	Derived for FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
<b>Rs. Lakh/ckt km</b>									
HVDC (Rs. Lakh)	1492.00	1577.00	1667.00	-		1774.00	1922.00	2082.00	2255.64
765 kV	0.00	0.00	0.00	0.00	0.00	0.92	0.97	1.02	1.07
400 kV	0.55	0.50	0.62	0.56	0.62	0.65	0.69	0.72	0.76
>66 kV<&lt;400 kV	0.22	0.20	0.25	0.22	0.25	0.26	0.27	0.29	0.30
66 kV and less	0.14	0.12	0.15	0.14	0.15	0.16	0.17	0.18	0.18
<b>Rs. Lakh/bay</b>									
765 kV	0.00	0.00	0.00	0.00	0.00	162.19	170.30	178.82	187.76
400 kV	96.91	89.42	109.85	98.73	110.34	115.86	121.65	127.74	134.12
>66kV<&lt;400 kV	14.05	12.96	15.93	14.31	15.99	16.79	17.63	18.51	19.44
66 kV and less	2.94	2.71	3.32	2.99	3.34	3.51	3.68	3.87	4.06

<b>TPC-T</b>									
Voltage Level	Actual for FY 2011-12	Actual for FY 2012-13	Actual for FY 2013-14	3 Year average	Derived for FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
<b>Rs. Lakh/ckt km</b>									
>66kV<&lt;400 kV	0.98	1.00	0.91	0.96	0.96	0.96	1.01	1.06	1.11
<b>Rs. Lakh/bay</b>									
>66kV<&lt;400 kV	25.72	25.89	23.64	25.08	25.08	25.08	26.34	27.65	29.04
66 kV and less	5.38	5.41	4.94	5.25	5.25	5.25	5.51	5.78	6.07

<b>RInfra-T</b>									
<b>Voltage Level</b>	<b>Actual for FY 2011-12</b>	<b>Actual for FY 2012-13</b>	<b>Actual for FY 2013-14</b>	<b>3 Year average</b>	<b>Derived for FY 2015-16</b>	<b>FY 2016-17</b>	<b>FY 2017-18</b>	<b>FY 2018-19</b>	<b>FY 2019-20</b>
<b>Rs. Lakh/ckt km</b>									
>66kV&<400 kV	0.30	0.43	0.53	0.42	0.47	0.50	0.52	0.55	0.57
<b>Rs. Lakh/bay</b>									
>66kV&<400 kV	14.20	20.40	25.29	19.96	22.31	23.43	24.60	25.83	27.12
66 kV and less	2.97	4.27	5.28	4.17	4.66	4.90	5.14	5.40	5.67

<b>JPTL</b>									
<b>Voltage Level</b>	<b>Actual for FY 2011-12</b>	<b>Actual for FY 2012-13</b>	<b>Actual for FY 2013-14</b>	<b>3 Year average</b>	<b>Derived for FY 2015-16</b>	<b>FY 2016-17</b>	<b>FY 2017-18</b>	<b>FY 2018-19</b>	<b>FY 2019-20</b>
<b>Rs. Lakh/ckt km</b>									
400 kV	0.31	0.41	0.29	0.34	0.34	0.34	0.35	0.37	0.39
<b>Rs. Lakh/bay</b>									
400 kV	55.07	73.15	51.04	59.75	59.75	59.75	62.74	65.88	69.17



#### 5.6.4 Treatment of Transmission Loss

As regards the transmission loss, Regulation 69 of MERC MYT Regulations, 2011 specifies as under:

***“69 Transmission losses***

*69.1 The energy losses in the transmission system of the Transmission Licensee, as determined by the State Load Despatch Centre and approved by the Commission, shall be borne by the Transmission System Users in proportion to their usage of the intra-State transmission system:*

*Provided that the Commission may stipulate a trajectory for transmission losses in accordance with Regulation 9 as part of the multi-year tariff framework applicable to the Transmission Licensee.*

*Provided that any variation between the actual level of transmission losses, as determined by the State Load Despatch Centre and the approved level shall be dealt with, as part of the Mid-term Performance Review, in accordance with the mechanisms provided in Regulation 11.”*

As per the existing mechanism, transmission losses are recorded and available with State Load Despatch Centre on monthly basis. Since, the approach of sharing of transmission losses amongst the Transmission System Users is simple and tested approach, it is proposed to continue with existing approach of treatment of uniform transmission loss across the intra-State transmission system to be borne by all transmission system users in proportion to their usage of the intra-State Transmission System.

## 6 Norms and Principles for Determination of Wheeling Charges for Distribution Wires Business

The Distribution Licensees in the State of Maharashtra receive electricity at the Transmission to Distribution (T<>D) interface points through the Intra-State Transmission System (InSTS). From the T<>D interface, the electricity is distributed to the individual consumers' premises using the distribution network. The business of owning and operating the distribution network is called as the Distribution Wires Business (Wires Business), as distinct from the Retail Supply Business, which has a contract with the consumer for supply of electricity and enters into power purchase contracts for the required quantum of electricity.

### 6.1 *ARR for Wire Business*

For the third Control Period, it is proposed that Aggregate Revenue Requirement of the Wires Business shall be recovered through the wheeling charges of the Distribution Licensee and shall comprise the following:

- a) Operation and maintenance expenses;
- b) Depreciation
- c) Interest on Loan Capital
- d) Interest on working capital and deposits from Distribution System Users
- e) Return on Equity Capital
- f) Provision for Bad and doubtful debts
- g) Income Tax
- h) Contribution to contingency reserves

Wheeling charges = Aggregate Revenue Requirement, as computed above, minus:

- i) Non-tariff income; and
- j) Income from Other Business.

Prior period income/expenses shall be allowed by the Commission at the time of Truing-up based on audited accounts, on a case to case basis, subject to prudence check.

Further, it is clarified that all penalties and compensation payable by the Licensee to any party for failure to meet any Standards of Performance or for damages, as a consequence of the orders of the Commission, Courts, Consumer Grievance Redressal Forum, and Ombudsman, shall not be allowed to be recovered through ARR.

## ***6.2 Separation of Accounts for Wire related and Retail Supply related business***

Section 62 of the Act requires the SERC to determine the tariff for Wheeling and Retail supply of electricity. Section 42 of the Act requires the SERC to introduce Open Access in the distribution system in a phased manner and stipulates the duties of the Distribution Licensee with respect to such supply shall be of a common carrier providing non-discriminatory open access. Also, under Section 9 of the Act, captive consumers are required to pay wheeling charges for availing Open Access, and are exempted from payment of cross-subsidy surcharge and additional surcharge. Therefore, wheeling charges are to be paid by any person for availing Open Access using the Distribution Licensee's network.

The Commission, in its various Tariff Orders for Distribution Licensees, has directed the Distribution Licensees to separate the accounting of wires related costs and supply related costs, which is essential for un-bundling of cost and tariff components and forms a pre-requisite for appropriate determination of wheeling charges and affects open access transactions as mandated under the Act. The need for segregation of wires costs in terms of voltage level (HT and LT level) has also been emphasised.

The existing MERC MYT Regulations, 2011 also stipulate that the Distribution Licensees should maintain separate records for Distribution Wire Business and Retail Supply Business, as reproduced below:

### ***"71 Separation of accounts***

*71.1 Every Distribution Licensee shall make a separate application for determination of tariff for-*

*(a) Distribution Wires Business;*

*(b) Retail Supply of electricity;*

*Provided that every Distribution Licensee shall maintain separate records for the Distribution Wires Business and Retail Supply Business and shall prepare an Allocation Statement to enable the Commission to determine the tariff, pursuant to each such application made by the Distribution Licensee. "*

During the proceedings under second Control Period, RInfra-D and TPC-D have submitted the separate formats for Wire Business and Retail Supply Business. MSEDCL has provided the provisional allocation to Wire and Supply Business based on allocation ratios. The Commission has granted distribution licence to RInfra-D in 2011 and to TPC-D in 2014. TPC-D is a parallel licensee in RInfra-D area as well as in BEST area. Thus, RInfra-D, BEST, and TPC-D do not have monopoly distribution licence in their respective licence areas.

As per the provisions of the EA, 2003, the Commission is required to determine the Wheeling charges for use of Distribution system of the Distribution Licensee. For determination of Wheeling charges, the Commission requires separate ARR of the Distribution Licensee for the Wires Business. During the tariff proceedings in the second Control Period, Distribution Licensees have submitted the separation of ARR in Wire Business and Retail Supply Business. Based on the submissions made by the Distribution Licensees, it is observed that allocation of certain ARR components between Wire and Retail Supply Business varies amongst the Distribution Licensees. The Following table shows allocation of ARR components used by Distribution Licensees:

**Table 23: Allocation of ARR Expenses into Wire Business and Retail Supply Business**

Particulars	RInfra-D (Average of FY 2011-12 to FY 2013-14)		TPC-D (Average of FY 2012-13 and FY 2013-14)		MSEDCL (FY 2013-14)	
	Wires (%)	Supply (%)	Wires (%)	Supply (%)	Wires (%)	Supply (%)
Power Purchase Expenses	0%	100%	0%	100%	0%	100 %
Depreciation	87%	13%	95%	5%	90%	10 %
Interest on Long Term Capital	90%	10%	94%	6%	90%	10 %
Interest on Working Capital	49%	51%	11%	89%	100%	0 %
Interest on Consumer deposit	22%	78%	0%	100%	11%	89 %
Bad Debts Written off	15%	85%	9%	91%	10%	90 %
Income Tax	0%	100%	0%	100%	0%	100 %
Intra-State Transmission charges	0%	100%	0%	100%	0%	100%
Contribution to contingency reserves	88 %	12%	95%	5%	0%	100%
Return on Equity	90 %	10%	93%	7%	89%	11%
Non-Tariff Income	15 %	85%	43%	57%	0%	100%

From the table, it can be observed that heads such as Power Purchase expenses, Intra-State Transmission charges and Income Tax are not allocated at all to the wires business.

Every utility has been allocating a certain percentage of bad debts to the Wires which may signify the non-recovery of Wheeling Charge and the Commission has also kept the allocation ratio at 10% (Wires) and 90% (Supply).

For the proposed Regulations, it is intended to provide the Allocation Matrix for segregation of ARR components between Distribution Wire Business and Retail Supply Business. In case, the complete accounting segregation has not been done between the Distribution Wires Business and Retail Supply Business of the Distribution Licensee, the ARR of the Distribution Licensee shall be apportioned between the Distribution Wires Business and Retail Supply Business in accordance with the following proposed Allocation Matrix where any Distribution Licensee is not able to submit separate accounts for Distribution Wire Business and Retail Supply Business. If Distribution Licensees submit their own allocation then the same may be considered by the Commission. The proposed Allocation Matrix is as under:

**Table 24: Proposed Allocation Matrix**

<b>Particulars</b>	<b>Distribution Wires Business (%)</b>	<b>Retail Supply Business (%)</b>
Power Purchase Expenses	0%	100%
Inter-State Transmission Charges	0%	100%
Intra-State Transmission Charges	0%	100%
Operation & Maintenance Expenses	65%	35%
Depreciation	90%	10%
Interest on Long-term Loan Capital	90%	10%
Interest on Working Capital	10%	90%
Interest on Consumer Security Deposits	10%	90%
Bad Debts Written off	10%	90%
Income Tax	90%	10%
Contribution to Contingency Reserves	90%	10%
Return on Equity	90%	10%
Non-Tariff Income	10%	90%

Further, it is also clarified that above Allocation Matrix shall be applied for all or any of the heads of expenditure or revenue, where the actual accounting separation has not been done between Distribution Wires Business and Retail Supply Business.

### **6.3 Non-Tariff Income**

In the MERC MYT Regulations, the various heads of Non-tariff Income for the Distribution Wires Business were not listed. It is proposed to list out the indicative heads of Non-tariff Income for the Distribution Wires Business, for greater clarity, as under:

- a) *Income from rent of land or buildings;*
- b) *Income from sale of scrap;*
- c) *Income from investments;*
- d) *Income from Delayed Payment Charge;*
- e) *Income from Interest on Delayed Payment*
- f) *Interest income on advances to suppliers/contractors;*
- g) *Income from rental from staff quarters;*
- h) *Income from rental from contractors;*
- i) *Income from hire charges from contactors and others;*
- j) *Income from consumer charges levied in accordance with Schedule of Charges approved by the Commission;*
- k) *Supervision charges for capital works;*
- l) *Income from advertisements;*
- m) *Income from sale of tender documents;*
- n) *Any other Non-Tariff Income:*  
*Provided that the interest earned from investments made out of Return on Equity corresponding to the regulated Business of the Distribution Wires Business shall not be included in Non-Tariff Income.*

### **6.4 Recovery of the Wires Cost**

The method of recovery of the wires cost from the consumers needs to be suitably addressed in the proposed Regulations. The following two mechanisms can be used for recovery of wheeling charges:

- On energy wheeled basis - in terms of Rs/kWh
- On contracted capacity basis - in terms of Rs/kW/month

In this context, the Tariff Policy notified by the Government of India stipulates as follows:

*“8.5.4 ...The fixed costs related to network assets would be recovered through wheeling charges.*

*8.5.5 Wheeling charges should be determined on the basis of same principles as laid down for intra-state transmission charges and in addition would include average loss compensation of the relevant voltage level.”*

Regulation 81 of the MERC MYT Regulations, 2011 specifies as under:

***“81 Determination of Wheeling Charges***

*81.1 The Commission shall specify the wheeling charge of Distribution Wires Business of the Distribution Licensee in its Order passed under sub-section (3) of Section 64 of the Act:*

*Provided that the charges payable by a Distribution System User under this Part H may comprise any combination of fixed/demand charges, and variable charges, as may be stipulated by the Commission in such Order.”*

The Commission in MYT Orders has determined the wheeling charges for the Distribution Licensees, except BEST, based on the above said Regulation. It is proposed to continue with the same approach to determine the Wheeling charges in the next Control Period also.

## **6.5 Distribution Loss**

Every element in a power system (a line or a transformer, etc.) offers resistance to power flow and thus consumes some energy while performing the duty expected of it. The cumulative energy consumed by all these elements is classified as **Technical Loss**. Losses that occur on account of non-performing and under-performing meters, wrong application of multiplying factors, defects in CT and PT circuitry, meters not read, pilferage by manipulating or by-passing of meters, theft by direct tapping, etc., correspond to energy consumed but not metered or billed and are hence, categorised as **Commercial Loss**. The combination of “Technical” and “Commercial” losses in the electricity distribution business is termed as **Distribution loss**.

The distribution loss reduction has been one of the primary benchmarks for measuring the performance of a Distribution Utility. The Commission, in the existing MERC MYT Regulations, 2011 as well as in Multi Year Tariff Orders has adopted the distribution loss reduction approach for measuring the performance of Distribution Licensees.

The following Table shows the actual distribution loss achieved by the Distribution Licensees during the second Control Period:

**Table 25: Distribution Loss (%)**

Particulars	2011-12		2012-13		2013-14	
	Target	Achieved	Target	Achieved	Target	Achieved
<b>MSEDCL</b>	16.27%	16.03%	15.77%	14.67%	15.03%	14.00%
<b>RInfra-D</b>	9.05%	9.46%	9.46%	10.24%	9.46%	9.50%
<b>TPC-D</b>	-	0.92%	1.02%	1.35%	1.12%	0.99%
<b>BEST*</b>	9.00%	7.69%	7.50%	6.61%	7.00%	5.90%

Source: Mid-term Orders issued by the Commission

\*Based on Mid Term Review Petition submitted by BEST

From the table, it is evident that all Distribution Licensees have been able to achieve the target distribution losses stipulated by the Commission.

While deciding the further trajectory of distribution losses, it is necessary to take into account the submissions of the Distribution Licensees, including capital expenditure projected and approved. In such a case, it would not be appropriate to specify the trajectory of distribution loss in the proposed Regulations. Hence, it is proposed that the Commission will approve the trajectory of the Distribution Losses while approving the Multi Year Tariff Order for third Control Period.

### **Wheeling Loss determination**

The Commission, in its MYT Order and Mid Term Performance Review Order, has determined the wheeling loss applicable in kind for wheeling transactions, based on the technical loss at various voltage levels. The Commission has always maintained that the Open Access consumers have to bear only the technical losses in the system, and should not be asked to bear any part of the commercial losses. However, for determination of wheeling loss, the technical loss of distribution system needs to be projected by the Utilities in their respective Petitions. Hence, it is proposed that the Commission shall determine the wheeling loss trajectory for the Utilities based on the MYT Petition submitted by the Utilities.



## 6.6 Operation & Maintenance Expenses - Norm for Wires Business

The O&M expenses comprise Employee Expenses, R&M Expenses and A&G expenses, and constitute a significant part of the Aggregate Revenue Requirement of the Distribution Licensee.

In the existing MERC MYT Regulations, 2011, the norms for O&M expenses have been separately specified for Distribution Wire Business and Supply Business based on three parameters:

- (iii) Wheeled energy (for Wire Business) or Energy sales (Retail Supply Business) - (Rs./kWh)
- (iv) Number of consumers (Rs. Lakh/'000 Consumers)
- (v) Opening GFA (% of Opening GFA)

While deriving the norms for second Control period, Employee expenses have been linked to Wheeled energy or energy sales and Number of consumers in proportion of 50:50. A&G expenses have been linked to Number of Consumers, and R&M expenses to Opening GFA. These norms were allocated in the following proportion:

**Table 26: Parameters for O&M Expenses Norms**

Particulars	Linked Parameter	Weightage	Allocation	
			Wire	Supply
Employee Expenses	Wheeled Energy or Energy Sales	50%	60%	40%
	Number of Consumers	50%	60%	40%
A&G Expenses	Number of Consumers	100%	50%	50%
R&M Expenses	Opening GFA	100%	90%	10%

It is proposed to continue with Wheeled Energy or Energy sales and number of consumers, while the average of Opening and Closing GFA shall be considered, for computing the norms for O&M expenses. Further, weightage of components of O&M expenses amongst these parameters is considered same as shown in the above said table.

The computation of O&M expense norms for Wire Business has been discussed below:

### **Allocation of O&M expenses to Wire and Retail Supply Business**

As discussed earlier, in MERC MYT Regulations, 2011, the composite norms have been computed for both Wire and Retail Supply Business and such norms were allocated in

the ratio as shown in the above said table. For all Distribution Licensees, the same allocation ratio is applied. However, during the second Control Period, Distribution Licensees such as RInfra-D and TPC-D have allocated the O&M expenses to Wire and Retail Supply business and accordingly, the wheeling charges has been determined for both Distribution Licensees. MSEDCL in its MYT Petition has allocated the O&M expenses based on allocation ratios. BEST, in its MYT Petition, has also submitted the provisional allocation between Wire and Retail Supply Business.

While computing norms for O&M expenses for third Control period, the Commission has used the actual allocation adopted by the Distribution Licensees during the second MYT Control Period.

### Variation in Actual O&M expenses

For determining the norms for O&M expenses, the Commission has analysed the actual O&M expenses , subject to prudence check, of the Distribution Licensees for last three years, i.e., from FY 2011-12 to FY 2013-14. The O&M expenses are as under:

**Table 27: Variation in Actual O&M Expenses**

Particulars	DISCOM	FY 2011-12	FY 2012-13	FY 2013-14	2-Year CAGR
Employee Expenses	MSEDCL	2298.53	3120.88	4027.92	32%
	RInfra-D	427.04	486.54	554.50	14%
	BEST	220.75	252.63	322.10	21%
	TPC-D	36.95	45.86	56.29	23%
A&G Expenses	MSEDCL	290.00	314.00	539.61	36%
	RInfra-D	139.96	152.65	150.16	4%
	BEST	85.09	95.42	100.75	9%
	TPC-D	55.82	69.29	81.82	21%
R&M Expenses	MSEDCL	569.00	610.63	752.30	15%
	RInfra-D	167.01	184.40	203.66	10%
	BEST	35.84	42.70	41.31	7%
	TPC-D	16.48	16.97	19.64	9%
Total O&M Expenses	MSEDCL	3157.53	4045.51	5319.84	30%
	RInfra-D	734.01	823.59	908.31	11%
	BEST	341.68	390.75	464.16	17%

Particulars	DISCOM	FY 2011-12	FY 2012-13	FY 2013-14	2-Year CAGR
	TPC-D	109.25	132.12	157.76	20%

It is evident from the above table that the increase in O&M expenses in last three years is in the range of 11%-30%. It is also observed that the above said increase in O&M expenses includes the impact of wage agreement; hence, there is no need to consider the separate impact while computing the norms for O&M expenses. Further, it may be noted that such high increase in O&M expenses is not desirable. Hence, while computing the norms, only reasonable increase in O&M expenses has been considered.

### Variation in base parameters

As discussed earlier, norms have been specified in terms of three base parameters viz., wheeled energy or energy sales, number of consumers and Opening GFA. The growth of these parameters over the last three years is as under:

**Table 28: Variation in Base Parameters**

DISCOM	Wire Business			Retail Supply Business			2 Yr CAGR	
	FY 2011-12	FY 2012-13	FY 2013-14	FY 2011-12	FY 2012-13	FY 2013-14	Wire	Supply
<b>Energy Wheeled or Energy Sales (MU)</b>								
MSEDCL	95433.00	97846.00	99575.00	76067.84	77614.00	79682.50	2.15%	2.35%
RInfra-D	9995.79	10399.59	10299.27	6386.93	6207.18	6467.96	1.51%	0.63%
BEST	4642.89	4703.68	4624.28	4286.05	4392.95	4351.52	-0.20%	0.76%
TPC-D	3010.83	3301.58	3510.07	5850.88	6600.40	6538.01	7.97%	5.71%
<b>Number of Consumers (Nos.)</b>								
MSEDCL	19462901	20367444	20949126	19462901	20367444	20949126	3.75%	3.75%
RInfra-D	2836933	2869442	2903789	2510129	2542638	2473085	1.17%	-0.74%
BEST	1002000	1024369	1020353	1002000	1024369	1020353	0.91%	0.91%
TPC-D	41114	46296	54328	367918	373100	485032	14.95%	14.82%
<b>Opening GFA (Rs. Crore)</b>								
MSEDCL	17384.91	23377.50	28777.00	1931.66	2597.50	3197.00	28.66%	28.65%
RInfra-D	3349.22	3636.75	3811.34	506.94	506.55	495.25	6.68%	-1.16%
BEST	1574.55	1654.96	1758.18	174.95	183.88	195.35	5.67%	5.67%
TPC-D	670.23	842.73	1043.39	21.61	36.72	67.47	24.77%	76.69%

It is evident that wheeled energy or energy sales has shown lower growth of around 0.63% to 2.35%. However, in case of BEST, negative growth of -0.20% has been observed for Wire Business. The increase in Opening GFA is substantial in case of MSEDCL and TPC-D, on account of higher capitalisation. However, in case of RInfra-D, negative growth of -1.16% in GFA has been shown for Supply Business.

### **Proposed formulation of norms for O&M Expenses**

The growth in base parameters is different amongst the Distribution Licensees. The allowable O&M expenses for Distribution Licensees are the product of norms of O&M Expenses and value of base parameter.

The methodology for formulation of O&M norms is elaborated as under:

- a) The actual O&M expenses of Distribution Licensees, subject to prudence check, have been considered for FY 2011-12 to FY 2013-14. The O&M Expenses for Wire and Retail Supply Business have been computed based on Order of the Commission or allocation followed by the Licensee.
- b) The actual value of base parameters for FY 2011-12 to FY 2013-14 have been considered based on the approved value in the Order of the Commission and philosophy adopted by the Commission in such Orders.
- c) For deriving the actual expense ratios, Employee expenses have been linked to Wheeled energy or energy sales and Number of consumers in proportion of 50:50. A&G expenses have been linked to Number of Consumers and R&M expenses to Opening GFA.
- d) Based on the above allocation, actual expense ratios have been computed for each year (FY 2011-12 to FY 2013-14) by dividing the Employee expenses, A&G expenses and R&M expenses by respective base parameters. The actual norms have been computed in terms of Rs./kWh for Energy Wheeled and Energy sales, Rs. Lakh/'000 consumers for Number of Consumers, and % of Opening GFA.
- e) The norm for the next Control Period for Energy wheeled and Energy Sales and Number of Consumers have been derived based on average of norms for the period from FY 2011-12 to FY 2013-14. The average norm so derived has been escalated by escalation factor of 5.72%, (which was considered while deriving the norms under MERC MYT Regulations, 2011) till final year of second Control Period.
- f) Further, escalation factor of 5% has been applied to derive applicable O&M norm for Energy wheeled & Energy Sales and Number of Consumers, for the respective yearly periods of the next Control Period.
- g) The norms for Opening GFA have been considered based on average of norms for last three years (FY 2011-12 to FY 2013-14). No escalation has been considered for norms linked to GFA.

- h) It is observed that Employee expenses and R&M expenses for RInfra-D have increased in FY 2012-13 and again reduced in FY 2013-14. Considering the increase in such expenses as abnormal, the trend has been adjusted considering expenses for FY 2011-12 and FY 2013-14.
- i) For TPC-D, no norms for number of consumers have been specified, in line with MERC MYT Regulations, 2011, as the consumer base is still not developed sufficiently, especially in the Wires Business. Both, Employee expenses and A&G expenses have been linked to Energy Wheeled for Wire business and Energy Sales for Retail Supply business.

Accordingly, the O&M norm proposed for Distribution Licensees for Wire Business for the next Control Period is as follows:

**Table 29: Norms for O&M Expenses for Distribution Wire Business**

Discom	Actual for FY 2011-12	Actual for FY 2012-13	Actual for FY 2013-14	3 Year average	Derived for FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
<b>Corresponding to Wheeled Energy (paise/kWh)</b>									
MSEDCL	7.23	9.57	12.14	9.64	10.78	11.32	11.88	12.48	13.10
RInfra-D	12.27	13.65	15.94	13.95	15.60	16.38	17.19	18.05	18.96
BEST	14.26	16.11	22.49	17.62	19.69	20.68	21.71	22.80	23.94
TPC-D	10.27	13.20	14.43	12.63	14.12	14.82	15.56	16.34	17.16
<b>Corresponding to Consumers in Wire/Supply Business (Rs. Lakh/'000 consumers)</b>									
MSEDCL	4.29	5.37	7.06	5.57	6.23	6.54	6.86	7.21	7.57
RInfra-D	7.48	8.51	9.09	8.36	9.34	9.81	10.30	10.81	11.35
BEST	10.86	12.06	15.13	12.68	14.17	14.88	15.62	16.41	17.23
TPC-D	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Corresponding to Opening GFA (% of Opening GFA)</b>									
MSEDCL	2.95%	2.35%	2.35%	2.55%	2.85%	2.50%	2.50%	2.50%	2.50%
RInfra-D	4.67%	4.73%	4.97%	4.79%	5.35%	4.00%	4.00%	4.00%	4.00%
BEST	2.05%	2.32%	2.11%	2.16%	2.42%	2.25%	2.25%	2.25%	2.25%
TPC-D	1.98%	1.61%	1.69%	1.76%	1.97%	1.50%	1.50%	1.50%	1.50%

Further, it is proposed to clarify on the base parameters and manner in which they are to be considered while determining the O&M expenses. The following has been clarified to bring in more clarity in the computation of normative O&M expenses:

- i. The quantum of energy wheeled during the year shall consider the entire quantum of energy wheeled through the distribution system and shall be considered on the basis of the target Distribution Losses approved by the Commission in the Order for the respective year.
- ii. The term 'Consumers in Distribution Wires Business' shall mean consumers using the distribution network of a Distribution Licensee, including consumers taking supply from other sources.
- iii. For computing the allowable O&M expenses for any year, the quantum of energy wheeled during the year, average number of consumers during the year, and average of opening and closing Gross Fixed Assets shall be considered.

As discussed earlier, the allowable O&M Expenses shall be derivative of the increase in base parameter and norms for that base parameter. The proposed norms of O&M expenses have been escalated by an escalation factor of 5%. It has been taken into account that the reasonable O&M expenses would be allowed to the Distribution Licensee considering the expected rise in CPI and WPI. However, the increase in allowable O&M expenses depends not only on the escalation factor of 5%, but also on the increase in the base parameter, on year-to-year basis. Hence, effective increase in allowable O&M expenses shall be higher than 5%.

For illustration purposes - In case of MSEDCL, it may be noted that the norms of O&M expenses in proposed Regulations are lower than existing norms specified in MERC MYT Regulations, 2011. The effective increase in O&M expenses being allowed is computed below.

The actual O&M expenses for Wire Business for FY 2013-14 = Rs. 3363.63 Crore.

The projected base parameters considering the 2-year CAGR of base parameters (from FY 2011-12 to FY 2013-14) would be as under:

- Energy Wheeled - 108,808 MU
- Number of Consumers - 2,33,93,942 Nos.
- Opening GFA for Wire Business - Rs. 49727 Crore

Considering the proposed Norms and above said base parameters, the allowable O&M expenses for FY 2016-17 would be Rs. 4004 Crore.

Hence, the effective growth in O&M expenses allowed over FY 2013-14 levels, works out to 5.98% (3 year CAGR).

Thus, even though the norms of O&M expenses appear to have been reduced, the Distribution Licensee would get reasonable increase in O&M expenses.

## ***6.7 Capital Expenditure***

Distribution business is capital intensive in nature, requiring significant capital investment for meeting the electricity demand of existing and new consumers. The Commission, under its MERC Guidelines for In-principle Clearance of Proposed Investment Schemes, has specified the procedure for approval of investment plan of the Distribution Licensee.

The Guidelines are intended to verify the prudence of capital investments made by Utilities for various purposes such as creation of new infrastructure to meet load growth, to meet statutory requirements, to strengthen the existing system and increase efficiency, etc. In addition to the MERC MYT Regulations, 2011, the said Guidelines lay down certain procedures to ensure that capital investment schemes being proposed are necessary and justified, and do not impose an unnecessary burden on consumers by way of tariff.

The capital expenditure made by the Distribution Licensee has significant bearing on the ARR in the form of depreciation, Interest on loans, and Return on Equity claimed for the new assets added. Therefore, all the investment proposed by the licensee requires to be checked for prudence by the Commission well before the actual expenditure is made.

It is essential that the Licensees should file the year-wise investment plan for the Control Period. The existing MERC MYT Regulations, 2011 mandates the Distribution Licensee to submit the Capital Investment Plan and Financing Plan along with the Business Plan Petition. As discussed earlier, since the Business Plan has been discontinued in the third Control Period, the Distribution Licensee needs to file the Capital Investment Plan along with MYT Petition. It is clarified that Distribution Licensee, while making the Investment Plan should give priority to schemes related to load growth, loss reduction and quality improvement. The licensee should address the following aspects while making the investment plan:

- i. The investment should be made in an economic and transparent manner.



- ii. Financial as well as social cost-benefit analysis should be done for all investment schemes.
- iii. All schemes having capital investment of more than Rs. 10 Crore should be submitted with detailed project report along with the investment plan.
- iv. Investment plan shall also include the capitalisation schedule and financing plan.
- v. Once the capitalisation is achieved, the benefits actually accrued to the system should be captured and submitted to the Commission, in accordance with the Guidelines specified by the Commission.

It is proposed that Distribution Licensee shall file separate Capital Investment Plan for Distribution Wires Business and Retail Supply Business.

The Commission shall approve the Investment Plan for the Control Period, taking into account the existing network conditions, expected load growth, etc., as part of the Order on Multi Year Tariff filed by the Distribution Licensees.

The following Regulations have been proposed with certain modifications in existing Regulations:

**“70. Capital Investment Plan**

- 70.1 *The The Distribution Licensee shall submit a detailed Capital Investment Plan, financing plan and physical targets for each year of the Control Period for strengthening and augmentation of its distribution network, meeting the requirement of load growth, reduction in distribution losses, improvement in quality of supply, reliability, metering, reduction in congestion, etc., to the Commission for approval, as a part of the Multi-year Tariff Petition for the entire Control Period.*
- 70.2 *The Capital Investment Plan shall be a least cost plan for undertaking investments and shall cover all capital expenditure projects of a value exceeding Rs. Ten Crore or such other amount as may be stipulated by the Commission from time to time and shall be in such form as may be stipulated by the Commission from time to time.*
- 70.3 *The Capital Investment Plan shall be accompanied by such information, particulars and documents as may be required including but not limited to the information such as number of distribution sub-stations, consumer sub-stations, transformation capacity in MVA and details of distribution transformers of different capacities, HT:LT ratio as well as distribution line length showing the need for the proposed investments, alternatives considered, cost/benefit analysis and other aspects that may have a bearing on the Wheeling Charges:*

*Provided that the Distribution Licensee shall submit separate details of Capital Investment being undertaken in each Distribution Franchisee area within its Licence area.*

- 70.4 *The Commission shall consider the Capital Investment Plan along with the Multi-year Aggregate Revenue Requirement for the entire Control Period submitted by the Distribution Licensee taking into consideration the prudence of the proposed expenditure and estimated impact on Wheeling Charges.*
- 70.5 *The Distribution Licensee shall submit, along with the Petition for determination of Wheeling Charges, or along with the Petition for Mid-term Performance Review, as the case may be, details showing the progress of capital expenditure projects, together with such other information, particulars or documents as the Commission may require to assess such progress."*

## **6.8 Provision for Bad and Doubtful Debts**

Regulation 78.6 of MERC MYT Regulations, 2011 specifies as under:

*"78.6 Provision for Bad and doubtful debts*

*78.6.1 The Commission may allow a provision for bad and doubtful debts upto 1.5 % of the amount shown as receivables in the audited accounts of the Distribution Licensee, duly allocated for the Wires Business:*

*Provided that where the amount of such provisioning for bad and doubtful debts exceeds five (5) per cent of the amount shown as receivables in the audited accounts of the Distribution Licensee duly allocated for the Wires Business, no such appropriation shall be allowed which would have the effect of increasing the provisioning beyond the said maximum."*

It is proposed to further clarify the provisions for bad and doubtful debt as under:

**"72. Provision for Bad and Doubtful Debts**

*For any Year, the Commission may allow a provision for bad and doubtful debts up to 1.5 % of the amount shown as Trade Receivables or Receivables from Wheeling Charges in the audited accounts of the Distribution Licensee for that Year:*

*Provided that the Commission, in its MYT Order, shall provisionally approve provision for bad and doubtful debts for each Year of the Control Period, based on the actual provision for bad and doubtful debts made by the Distribution Licensee in the latest Audited Accounts available for the Petitioner, as allowed by the Commission:*

*Provided further that such provision allowed by the Commission for any Year shall not exceed the actual provision for bad and doubtful debts made by the Distribution Licensee in the audited accounts of that Year, duly allocated for the Distribution Wires Business, excluding the provision made by the Distribution Licensee for unbilled revenue at the end of the year:*

*Provided also that in the Year when the cumulative provisioning for bad and doubtful debts allowed by the Commission, duly allocated for the Distribution Wires Business, exceeds five per cent of the amount shown as Trade Receivables or Receivables from Wheeling Charges in the audited accounts of the Distribution Licensee, no such appropriation shall be allowed, which would have the effect of increasing the cumulative provisioning beyond the said maximum:*

*Provided also that the actual amount of bad and doubtful debts written off by the Distribution Licensee shall have to be adjusted by the Distribution Licensee against the accumulated provision for bad and doubtful debts and shall not be allowed separately as an expense in the Aggregate Revenue Requirement of the Distribution Licensee.*

## **6.9 Wheeling Charge Determination**

The wheeling charges of the Distribution Licensee shall be determined by the Commission on the basis of an Application for determination of tariff made by the Distribution Licensee in accordance with the MYT Regulations. It is proposed that the Wheeling Charges may be denominated in terms of Rupees/kWh or Rupees/kW/month, for the purpose of recovery from the Distribution System User, or any such denomination, as stipulated by the Commission from time to time.

As regards the determination of tariff, it is clarified that the Commission may require the Distribution Licensee to file separate Petition for determination of tariff for Distribution Wires Business and Retail Supply Business.

Further, it is clarified that in case of a Deemed Distribution Licensee whose tariff is yet to be determined by the Commission till the date of effectiveness of these Regulations, the Commission may determine the ceiling Wheeling Charges that may be charged by such Deemed Distribution Licensee till such time as considered appropriate by the Commission.

## **7 Norms and Principles for Determination of Revenue Requirement and Tariff for Retail Supply Business**

The Retail Supply Tariff of a Distribution Licensee shall provide for the recovery of the aggregate revenue requirement of the Distribution Licensee for the financial year, as reduced by the amount of non-tariff income, income from Other Business and receipts on account of cross-subsidy surcharge and additional surcharge, as approved by the Commission. The ARR for Retail Supply Business shall comprise the following: -

- a) Cost of own power generation / power purchase expenses;
  - b) Inter-State Transmission Charges;
  - c) Intra-State Transmission Charges;
  - d) Operation and Maintenance expenses;
  - e) Depreciation;
  - f) Interest on Loan Capital;
  - g) Interest on working capital;
  - h) Interest on consumer security deposits;
  - i) Provision for Bad and doubtful debts; and
  - j) Contribution to contingency reserves;
  - k) Return on Equity Capital;
  - l) Income Tax;
- minus:
- m) Non-Tariff income;
  - n) Income from Other Business, to the extent specified in these Regulations;
  - o) Receipts on account of Cross-Subsidy Surcharge;
  - p) Receipts on account of Additional Surcharge;

The prior period income/expenses shall be allowed by the Commission at the time of Truing-up based on audited accounts, on a case to case basis, subject to prudence check.

It is further clarified that all penalties and compensation payable by the Licensee to any party for failure to meet any Standards of Performance or for damages, as a consequence of the orders of the Commission, Courts, Consumer Grievance Redressal Forum, and Ombudsman, shall not be allowed to be recovered through ARR.

### ***7.1 Distribution Loss***

The impact of Distribution Loss in Retail Supply Business is on the quantum of power purchase requirement and the revenue that is billed. It is clarified that the power purchase requirement shall be computed by grossing up the sales with the approved distribution losses, and the impact of efficiency gains/losses w.r.t. target distribution losses shall be computed in terms of additional revenue billed or loss of revenue, and shared in accordance with the sharing mechanism specified in the MYT Regulations.

As discussed in earlier Section, it is proposed that the Commission shall approve the trajectory of Distribution Losses while approving the Multi Year Tariff Order for third Control Period.

The Distribution Licensee shall be required to submit the details of circle-wise/division-wise distribution losses for the relevant years, including the distribution losses in each Franchisee area, in accordance with the formats prescribed by the Commission:

### ***7.2 Collection Efficiency***

In addition to the above distribution losses, there is also a loss in revenue collected due to non-realisation of billed amount. The revenue loss due to non-realisation of billed amount affects the cash flows of the Distribution Licensee. As discussed earlier, "Collection Efficiency" shall be considered as controllable factor. Hence, same approach as considered for Distribution Losses is proposed for Collection Efficiency, and the trajectory may be given while approving the Multi Year Tariff Order for third Control Period.

### ***7.3 Power Procurement***

The Distribution (Supply) Licensee purchases power from different sources either through long-term Power Purchase Agreements or medium-term Power Purchase Agreements or through short-term contracts.

For effective implementation of the Multi Year Tariff Framework, it is important that the Distribution Licensees prepare their Power procurement plan for the Control Period and

submit the same to the Commission for approval. It is also important to establish the guidelines for long-term, medium-term and short-term power procurement by Distribution Licensees.

The existing MERC MYT Regulations, 2011 specify the guidelines for electricity purchase, requirements of Power procurement Plan, approval of power purchase agreement/arrangement and additional short term procurement, which is proposed to be continued.

### **Power Procurement Plan**

Regulation 7 of the MERC MYT Regulations, 2011 mandated the Distribution Licensee to submit the power procurement plan as a part of the Business Plan Petition to be filed before the Commission, prior to the filing of MYT Petition. Since, the Business Plan Petition is proposed to be discontinued in the proposed MYT Regulations, the Distribution Licensee is required to submit the power procurement plan as a part of its MYT Petition. The Commission shall approve such power procurement plan in its MYT Order for the Control Period.

The power purchase agreement or arrangement is the prime requirement of Retail Supply Business. The Distribution Licensee has to foresee the requirement of power and enter into necessary power purchase agreements/arrangements. The existing MERC MYT Regulations, 2011 mandates the Distribution Licensee to prepare power procurement plan for five years. It is proposed to increase the term of the plan from 5 years to 10 years to have longer-term projections of requirement and planning for arrangement of power to meet the requirement. For the third Control Period, the power procurement plan for first four years, i.e., from FY 2016-17 to FY 2019-20 shall be considered for determination of ARR and tariff.

Further, it is clarified that power procurement plan shall comprise of quantitative forecast of the unrestricted base load and peak load demand for its area of supply. Also, Distribution Licensee shall also take into account the estimate of quantities of electricity supply from its own generation, if any.

In view of the above, the existing Regulations for Power Procurement Plan with certain changes are proposed as under:

***“19 Power procurement plan***

19.1 *The Distribution Licensee shall prepare a plan for procurement of power to serve the demand for electricity in its area of supply and submit such plan to the Commission for approval:*

*Provided that such power procurement plan shall be submitted for the ten-year period commencing on April 1, 2016, along with the Petition for determination of Tariff for the Control Period from April 1, 2016 to March 31, 2020, in accordance with Part A of these Regulations:*

*Provided further that the Aggregate Revenue Requirement and proposed Tariff for the Control Period from April 1, 2016 to March 31, 2020 shall be based on the power procurement plan for the first four years, i.e., the period from April 1, 2016 to March 31, 2020, which shall form part of the power procurement plan for the ten-year period commencing on April 1, 2016:*

*Provided also that the power procurement plan submitted by the Distribution Licensee may include long-term, medium-term and short-term power sources of power procurement, in accordance with these Regulations.*

19.2 *The power procurement plan of the Distribution Licensee shall comprise of the following:*

- (a) A quantitative forecast of the unrestricted base load and peak load for electricity within its area of supply;*
- (b) An estimate of the quantities of electricity supply from the identified sources of power purchase including own generation, if any;*
- (c) An estimate of availability of power to meet the base load and peak load requirement:*

*Provided that such estimate of demand and supply shall be on month-wise in Mega-Watt (MW) as well as expressed in Million Units (MU).*

- (d) Standards to be maintained with regard to quality and reliability of supply, in accordance with the relevant Regulations of the Commission;*
- (e) Measures proposed to be implemented as regards energy conservation, energy efficiency, and Demand Side Management;*

(f) *The requirement for new sources of power procurement including augmentation of own generation capacity, if any, and identified new sources of supply, based on (a) to (e) above;*

(g) *The plan for procurement of power including sources of power, quantities and cost estimates for such procurement:*

*Provided that the forecast/estimate contained in the long-term procurement plan shall be separately stated for peak and off-peak periods, in terms of quantities of power to be procured (in millions of units of electricity) and maximum demand (in MW):*

*Provided further that the forecasts/estimates for the Control Period from FY 2016-17 to FY 2019-20 shall be prepared for each month over the Control Period:*

*Provided also that the long-term procurement plan shall be a cost-effective plan based on available information regarding costs of various sources of supply.*

*Explanation – for the purpose of this Regulation, the term “peak period” shall mean such block of three or more continuous hours during a twenty-four (24) hour period representing maximum power demand for the Distribution Licensee.*

19.3 *The forecast/estimate shall be prepared using forecasting techniques based on past data and reasonable assumptions regarding the future:*

*Provided that the forecast/estimate shall take into account factors such as overall economic growth, consumption growth of electricity-intensive sectors, advent of competition in the electricity sector, trends in captive power, impact of loss reduction initiatives, improvement in Generating Station Plant Load Factors and other relevant factors.*

19.4 *Where the Commission has specified a percentage of the total consumption of electricity in the area of a Distribution Licensee to be purchased from co-generation and/or renewable sources of energy, the power procurement plan of such Distribution Licensee shall include the plan for procurement from such sources up to the specified level.*

19.5 *The Distribution Licensee shall be required to forward a copy of the power procurement plan to the State Transmission Utility for verification of its consistency with the transmission system plan for the intra-State transmission*



*system, prepared in accordance with Regulations of the Commission governing Transmission Open Access:*

*Provided that the Distribution Licensee shall also consult the State Transmission Utility at the time of preparation of the power procurement plan, to ensure consistency of such plan with the transmission system plan.*

- 19.6 *The Commission shall approve the power procurement plan for the Control Period as part of its Order on the MYT Petition for the Control Period.*
- 19.7 *The Distribution Licensee may, as a result of additional information not previously known or available to it at the time of submission of the procurement plan under Regulation 19.1, apply for a modification in the power procurement plan, for the remainder of the Control Period, as part of the Petition for Mid-term Performance Review under Regulation 8.*
- 19.8 *The Commission may, as a result of additional information not previously known or available to the Commission at the time of approval of the procurement plan under Regulation 19.6, if it so deems, either on suo motu basis or on a Petition filed by the Distribution Licensee, modify the procurement plan of the Distribution Licensee for the remainder of the Control Period, as part of the Mid-term Review."*

### **Approval of Power Purchase Agreement/Arrangement**

Section 62(1)(a) of the Act provides that the Commission shall determine the tariff in accordance with the provisions of the Act for the supply of electricity by a Generation Entity to a Distribution Licensee, whereas Section 63 of the Act provides that the tariff determined through a transparent Competitive Bidding Process shall be adopted by the Commission. It may be noted that both these Sections intends to have competitiveness, transparency, and fairness in determination of tariff.

Section 86(1)(b) of the Act confers powers to the Commission to regulate the 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 through agreements for purchase of power for distribution and supply within the State.

The existing MERC MYT Regulations, 2011 specify the terms and conditions of approval of power purchase agreement /arrangement. As per the existing approach, the prior approval of the Commission is a must for any power purchase agreement or

arrangement to come into effect, for any procurement on stand-by basis and for any change or modification in the existing arrangement. It is proposed to continue with the same approach.

It may be noted that the Distribution Licensees are required to procure power from Renewable Energy sources to meet their Renewable Purchase Obligation (RPO), as specified by the Commission, from time to time. Hence, it is clarified that the prior approval of the Commission shall not be required in accordance with this Regulation for purchase of power from Renewable Energy sources at generic/preferential tariff determined by the Commission, for meeting its RPO Obligations.

It may be noted that the cost of power purchase amounts to approximately 70-75% of the total cost of supply to the consumers. It is very important to regulate electricity purchase and to ensure the fairness and competitiveness of price at which electricity is procured. Section 86 (2) of the Act stipulates that the Commission shall ensure the transparency while exercising its power and discharging the functions. In view of the above, it is proposed that the process of previous publication shall be followed for approval of the power purchase agreement or arrangement.

As discussed above, the Act confers powers to the Commission to regulate the electricity purchase and procurement process of Distribution Licensees including the price at which electricity shall be procured. As regards the determination of tariff under Section 62 of the Act for procurement of power from Generation Entity or licensee or any other source, after the approval for procurement of power and Power Purchase Agreement, the Commission determines the tariff of Generation Entity for supply of electricity under Section 62(1)(a) of the Act. During determination of tariff, it may happen that the tariff envisaged at time of approval of power purchase agreement or arrangement is much lower than the actual level of tariff.

To avoid such ambiguity, the competitiveness of such tariff may be reviewed at time of approval of power purchase agreement or arrangement with the tariff prevalent in the market.

Further, it may be noted that Section 62 is a substantive provision and Section 63 is an exception provided to determination of tariff under Section 62. Hence, Distribution Licensee may undertake the competitive bidding other than Section 63 of the Act with prior approval of the Commission. Hence, for approval of power purchase agreement or arrangement, competitiveness of such tariff may also be reviewed with regard to tariff discovered through Competitive bidding under Section 63 of the Act or otherwise.

It is proposed that the Commission shall give the approval of power purchase agreement or arrangement subject to certain modifications or conditions as it may stipulate in the said Order of the approval including ceiling tariff for sale of electricity under power purchase agreement or arrangement.

In view of the above, the following Regulations are proposed:

***“20 Approval of power purchase agreement/arrangement***

*20.1 Every agreement or arrangement for power procurement, including on a Standby basis, by a Distribution Licensee from a Generation Entity or Licensee or from other source of supply, any change to an existing agreement or arrangement for power procurement, shall come into effect only with the prior approval of the Commission:*

*Provided that the prior approval of the Commission shall not be required for purchase of power from Renewable Energy sources at generic/preferential tariff determined by the Commission, for meeting its RPO.*

*20.2 The Petitioner shall submit the duly filled up draft notice for the Commission's approval, based on the template prescribed by the Commission, before receiving the intimation regarding publication under Regulation 20.3.*

*20.3 Upon receipt of a complete Petition accompanied by the requisite information, particulars and documents in compliance with all the requirements specified in this Regulation, the Petition shall be admitted and the Commission or its Secretary or the designated Officer shall intimate to the Petitioner that the Petition is ready for publication.*

*20.4 The Petitioner shall, within three (3) days of an intimation given to it in accordance with Regulation 20.3, publish a notice, in at least two English and two Marathi language daily newspapers widely circulated in the area to which the Petition pertains, outlining the salient features of the proposed agreement or arrangement for power procurement and the impact on the power procurement cost and Tariff, and such other matters as may be stipulated by the Commission, and inviting suggestions and objections from the public:*

*Provided that the Petitioner shall make available a hard copy of the complete Petition, to any person, at such locations and at such rates as may be stipulated by the Commission:*

*Provided further that the Petitioner shall also provide the Petition filed before the Commission along with all regulatory filings, information, particulars and documents in the manner so stipulated by the Commission, on its internet website:*

*Provided also that the web-link to the information mentioned in the second proviso to this Regulation shall be easily accessible, archived for downloading and shall be prominently displayed on the Petitioner's internet website:*

*Provided also that the Petitioner may be exempted by the Commission from providing any such information, particulars or documents, which are confidential in nature.*

20.5 *The Commission shall consider a Petition for approval of power procurement agreement or arrangement having regard to the approved power procurement plan of the Distribution Licensee and the following factors:*

- (a) Requirement for power procurement under the approved power procurement plan;*
- (b) Adherence to a transparent process of bidding either in accordance with guidelines issued by the Central Government under Section 63 of the Act, or otherwise;*
- (c) Adherence to the terms and conditions for determination of Tariff specified under Part E of these Regulations;*
- (d) Competitiveness of the Tariff vis-a-vis the Tariff prevalent in the market and/or Tariff discovered through competitive bidding under Section 63 of the Act or otherwise:*

*Provided that the Distribution Licensee may seek prior approval of the bidding documents for competitive bidding proposed to be undertaken other than under Section 63 of the Act:*

*Provided further that the Commission may prescribe guidelines for such bidding process;*

- (e) Availability (or expected availability) of capacity in the intra-State transmission system for evacuation and supply of power procured under the agreement/arrangement;*
- (f) Need to promote co-generation and generation of electricity from renewable sources of energy.*

26.7 *Upon completion of the consideration of the power procurement agreement or arrangement, the Commission shall:*

- (a) issue an Order approving the power procurement agreement or arrangement, subject to such modifications and conditions as it may stipulate; or*
- (b) reject the Petition for reasons to be recorded in writing."*

#### ***7.4 Operation & Maintenance Expenses Norm for Retail Supply Business***

As discussed earlier, the Norms for O&M expenses for Supply Business have been linked to Energy Sales, Number of Consumers and Opening GFA of Supply Business.

The methodology for formulation of norms for O&M expenses has already been discussed, while discussing the O&M norms for the Distribution Wires Business.

Further, it is proposed to clarify on the base parameters and manner in which they are to be considered while determining the O&M expenses, as under:

- a) The consumers in Retail Supply Business shall mean consumers being supplied electricity by the Distribution Licensee, including consumers being supplied through the distribution network of another Distribution Licensee.
- b) For computing the allowable O&M expenses for any year, the quantum of sales during the year, average number of consumers during the year, and average of opening and closing Gross Fixed Assets shall be considered.
- c) At the time of Truing-up along with the Mid-term Review or at the end of the Control Period, the allowable O&M expenses for any year shall be based on the norms for O&M expenses specified by the Commission in this Regulation and actual quantum of sales during the year, actual average number of consumers during the year, and actual average of opening and closing Gross Fixed Assets based on documentary evidence of assets capitalised, subject to the prudence check of the Commission.

Further, it is clarified that in case of a Deemed Distribution Licensee whose tariff is yet to be determined by the Commission till the date of effectiveness of these Regulations, the Commission may determine the O&M Norms on case to case basis.

Accordingly, the O&M norms proposed for Distribution Licensees for Retail Supply Business for the next Control Period are as follows:

**Table 30: Norms for O&M Expenses for Retail Supply Business**

Discom	Actual for FY 2011-12	Actual for FY 2012-13	Actual for FY 2013-14	3 Year average	Derived for FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
<b>For Energy Sales (paise/kWh)</b>									
MSEDCL	6.04	8.04	10.11	8.07	9.01	9.46	9.94	10.44	10.96
RInfra-D	14.23	16.33	17.48	16.01	17.89	18.79	19.73	20.72	21.75
BEST	10.30	11.50	15.93	12.58	14.06	14.76	15.50	16.27	17.09
TPC-D	10.57	10.84	13.38	11.60	12.96	13.61	14.29	15.01	15.76
<b>For Consumers in Wire/Supply Business (Rs. Lakh/000 consumers)</b>									
MSEDCL	3.11	3.84	5.13	4.03	4.50	4.72	4.96	5.21	5.47
RInfra-D	5.63	5.97	6.61	6.07	6.79	7.12	7.48	7.86	8.25
BEST	8.65	9.59	11.73	9.99	11.17	11.73	12.31	12.93	13.57
TPC-D	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Opening GFA (% of Opening GFA of Retail Supply Business)</b>									
MSEDCL	2.95%	2.35%	2.35%	2.55%		2.50%	2.50%	2.50%	2.50%
RInfra-D	2.07%	2.43%	2.90%	2.47%		2.50%	2.50%	2.50%	2.50%
BEST	2.05%	2.32%	2.11%	2.16%		2.25%	2.25%	2.25%	2.25%
TPC-D	14.95%	9.24%	2.97%	9.05%		5.00%	5.00%	5.00%	5.00%

## **7.5 Provision for bad and doubtful debts**

As discussed earlier, the existing Regulations regarding the provision for bad and doubtful debt is proposed with certain modifications as under:

### ***“81 Provision for Bad and Doubtful Debts***

*The Commission may allow a provision for bad and doubtful debts up to 1.5 % of the amount shown as Trade Receivables or Receivables from Sale of Electricity in the audited accounts of the Distribution Licensee for that Year:*

*Provided that the Commission, in its MYT Order, shall provisionally approve provision for bad and doubtful debts for each Year of the Control Period, based on the actual provision for bad and doubtful debts made by the Distribution Licensee in the latest Audited Accounts available for the Petitioner, as allowed by the Commission:*

*Provided further that such provision allowed by the Commission for any Year shall not exceed the actual provision for bad and doubtful debts made by the Distribution Licensee in the audited accounts of that Year, duly allocated to the Retail Supply Business, excluding the provision made by the Distribution Licensee for unbilled revenue at the end of the year:*

*Provided also that in the Year when the cumulative provisioning for bad and doubtful debts allowed by the Commission, duly allocated for the Retail Supply Business exceeds five per cent of the amount shown as Trade Receivables or Receivables from Sale of Electricity in the audited accounts of the Distribution Licensee, no such appropriation shall be allowed, which would have the effect of increasing the cumulative provisioning beyond the said maximum:*

*Provided also that the actual amount of bad and doubtful debts written off by the Distribution Licensee shall be adjusted by the Distribution Licensee against the accumulated provision for bad and doubtful debts and shall not be allowed separately as an expense in its Aggregate Revenue Requirement.*

## **7.6 Capital Investment Plan**

As discussed in earlier Section, the Distribution Licensee shall be required to submit the separate Capital Investment Plan for its Retail Supply Business. Since Business plan is discontinued in the third Control Period, the Distribution Licensee shall submit the Capital Investment Plan along with Multi Year Tariff Petition. It is proposed that, for Retail Supply Business, the Capital Investment Plan shall be a least cost plan for

undertaking investment and shall cover all capital expenditure projects of value exceeding Rs. One Crore or such amount as stipulated by the Commission.

Accordingly, the following is proposed for Capital Investment Plan for Retail Supply Business in accordance with the proposed provisions of Capital Investment Plan for Wire Business:

***“79. Capital Investment Plan***

*79.1 The Distribution Licensee shall submit a detailed Capital Investment Plan, financing plan and physical targets for each year of the Control Period for meeting the requirement of growth in number of consumers, reduction in distribution losses, metering, etc., to the Commission for approval, as a part of the Multi-year Tariff Petition for the entire Control Period.*

*79.2 The Capital Investment Plan shall be a least cost plan for undertaking investments and shall cover all capital expenditure projects of a value exceeding Rs. One Crore or such other amount as may be stipulated by the Commission and shall be in such form as may be stipulated by the Commission from time to time.*

*79.3 The Capital Investment Plan shall be accompanied by such information, particulars and documents as may be required showing the need for the proposed investments, alternatives considered, cost/benefit analysis and other aspects that may have a bearing on the Tariff for retail supply of electricity.*

*79.4 The Commission shall consider the Capital Investment Plan along with the Multi-year Aggregate Revenue Requirement for the entire Control Period submitted by the Distribution Licensee taking into consideration the prudence of the proposed expenditure and estimated impact on the Tariff for retail supply of electricity.*

*79.5 The Distribution Licensee shall submit, along with the Petition for determination of the Tariff for retail supply of electricity, or along with the Petition for Mid-term Performance Review, as the case may be, details showing the progress of capital expenditure projects, together with such other information, particulars or documents as the Commission may require to assess such progress.”*

**7.7 Non-tariff Income**

In the MERC MYT Regulations, the various heads of Non-tariff Income for the Retail Supply Business were not listed. It is proposed to list out the indicative heads of Non-tariff Income for the Retail Supply Business, for better clarity, as under:

- a) Income from rent of land or buildings;



- b) Income from sale of scrap;
- c) Income from investments;
- d) Income from Delayed Payment Charge;
- e) Income from Interest on Delayed Payment;
- f) Interest income on advances to suppliers/contractors;
- g) Income from rental from staff quarters;
- h) Income from rental from contractors;
- i) Income from hire charges from contractors and others;
- j) Supervision charges for capital works;
- k) Income from consumer charges levied in accordance with Schedule of Charges approved by the Commission;
- l) Income from recovery against theft and/or pilferage of electricity;
- m) Income from advertisements;
- n) Income from sale of tender documents;
- o) Any other Non-Tariff Income:

Further it is clarified that the interest earned from investments made out of Return on Equity corresponding to the regulated Business of the Retail Supply Business shall not be included in Non-Tariff Income.

### ***7.8 Receipt on account of Cross Subsidy Surcharge and Additional Surcharge***

It is proposed that the amount received by the Distribution Licensee by way of Cross Subsidy Surcharge and Additional Surcharge, if any, as approved by the Commission in accordance with the Regulations of the Commission governing Distribution Open Access, shall be deducted from the ARR for determining the Tariff for retail supply of electricity by such Distribution Licensee.

## **7.9 Retail Supply Tariff Determination**

Tariff for retail supply Business of the Distribution Licensee shall be determined by the Commission on the basis of an Application for determination of tariff made by the Distribution Licensee.

The tariff for retail supply has been determined in the State based on Average Cost of Supply, in the second Control Period. Such Average Cost of Supply has been computed as the ratio of ARR of the Distribution Licensee and Estimated Sales for Distribution Licensee in its area of Supply.

Further, as per Section 62(3) of the Act, the Commission, while determining the tariff, shall differentiate according to consumer's load factor, power factor, voltage, total consumption of electricity during any specified period or the time at which the supply is required or the geographical position of any area, the nature of supply and the purpose for which the supply is required.

Accordingly, it is proposed to add the following:

### ***"86. Determination of Retail Supply Tariff***

- 86.1 The Commission may categorize consumers on the basis of their load factor, power factor, voltage, total consumption of electricity during any specified period or the time at which the supply is required or the geographical position of any area, the nature of supply and the purpose for which the supply is required.*
- 86.2 The retail supply tariff for different consumer categories shall be determined on the basis of the Average Cost of Supply, computed as the ratio of the Aggregate Revenue Requirement of the Distribution Licensee for the Year, determined in accordance with Regulation 77, to the total sales of the Distribution Licensee for the respective Year.*
- 86.3 The Commission shall endeavour to gradually reduce the cross-subsidy between consumer categories with respect to the Average Cost of Supply in accordance with the provisions of the Act.*
- 86.4 While determining the tariff, the Commission shall also keep in view the cost of supply at different voltage levels and the need to minimise tariff shock to consumers."*

Further, in case of a Deemed Distribution Licensee whose tariff is yet to be determined by the Commission till the date of effectiveness of these Regulations, it is clarified that the Commission may determine the ceiling Tariff for retail supply that may be charged

by such Distribution Licensee till such time as considered appropriate by the Commission.

## 8 Norms and Principles for Determination of Fees and Charges of MSLDC

### 8.1 Background

The Maharashtra State Load Dispatch Centre (MSLDC) is the apex body to ensure integrated operation of the power system in the State of Maharashtra. Section 32 of the Act confers various functions on MSLDC including the optimum scheduling and dispatch of electricity within the State, monitoring of grid operations, energy accounting, supervision and control over InSTS, etc. MSLDC presently operates as the strategic functional unit of State Transmission Utility (MSETCL), for discharging various functions specified under Section 32 of the Electricity Act, 2003.

Section 32 (3) of the Act stipulates that MSLDC may levy and collect such fees and charges from the Generating Companies and Licensees engaged in intra-State transmission of electricity as may be specified by the State Commission. At present, the Commission determines the MSLDC fees and charges through a separate Order on the Budget Petition filed by MSLDC. Further, Section 181 (2) (g) of the Act confers powers on the Commission to frame the Regulations for determination of such fees and charges to be levied by MSLDC.

Accordingly, the Commission decided to frame Regulations for determination and levy of MSDLC fees and charges. The Commission had also published the draft MERC (Levy and Collection of Fees and Charges by State Load Despatch Centre) Regulations, 2014, and invited comments and suggestions from stakeholders on the same. The Commission has considered the comments and suggestions received from the stakeholders and modified the draft MERC (Levy and Collection of Fees and Charges by State Load Despatch Centre) Regulations, 2014.

However, the Commission is now of the view that it would be more appropriate to incorporate these specific clauses for MSLDC as a part of the MERC MYT Regulations, 2015, rather than having a separate Regulation for the same. Accordingly, the outcome of that regulatory process has been considered as an input, and the relevant clauses have been incorporated in the proposed MYT Regulations, which has been discussed as under:

## **8.2 Capital Investment Plan**

As regards the Capital Investment Plan, it is proposed to adopt the similar approach as in case of Generation Entity or Licensees. The Capital Investment Plan shall be submitted by MSLDC as part of its Multi Year Tariff Petition. Such detailed Capital Investment Plan shall also include Financing Plan, physical targets for each year based on operational requirements and recommendations of various Committees constituted for strengthening and ring fencing of MSLDC.

Since the quantum of investments is low as compared to other Utilities, it is proposed that Capital Investment Plan shall cover the projects of value exceeding Rs. One (1) Crore or any other limit as may be stipulated by the Commission from time to time. The plan to be submitted will contain detailed information on investments, fees/charges, cost-benefit analysis, etc., that will show a growth trajectory over the third Control Period.

The Commission shall review the Capital Investment Plan along with the Multi-year ARR for the entire Control Period.

In view of the above, the following regulations are proposed to be added:

### ***“89. Capital Investment Plan***

*89.1 The MSLDC shall submit a detailed capital investment plan, financing plan and physical targets for each year of the Control Period based on the operational requirements prescribed by the Commission and recommendations of various Committees constituted for looking into matters related to strengthening and ring fencing of the State Load Despatch Centres by the Ministry of Power, Government of India or any such other statutory authorities, to the Commission for approval, as a part of the Multi-year Aggregate Revenue Requirement for the entire Control Period.*

*89.2 The Capital Investment Plan shall be a least cost plan for undertaking investments and shall cover all capital expenditure projects of a value exceeding Rs. One crore or any other limit as may be stipulated by the Commission from time to time and shall be in such form as may be stipulated by the Commission.*

*89.3 The Capital Investment Plan shall be accompanied by such information, particulars and documents as may be required showing the need for the proposed investments, alternatives considered, cost/benefit analysis and other aspects that may have a bearing on the MSLDC Fees and Charges.*

*89.4 The Commission shall consider the Capital Investment Plan along with the Multi-year Aggregate Revenue Requirement for the entire Control Period submitted by*

*the MSLDC taking into consideration the prudence of the proposed expenditure and estimated impact on MSLDC Fees and Charges.*

*89.5 The MSLDC shall submit, along with the Petition for determination of Aggregate Revenue Requirement or along with the Petition for Mid-term Performance Review, as the case may be, details showing the progress of capital expenditure projects, together with such other information, particulars or documents as the Commission may require to assess such progress."*

### **8.3 LDC Development Fund**

It may be noted that CERC (Fees and Charges of Regional Load Despatch Centre and Other related matters) Regulations, 2009 introduced creation and maintenance of a separate fund called 'LDC Development Fund'. These provisions have also been retained in the CERC (Fees and Charges of Regional Load Despatch Centre and Other related matters) Regulations, 2015. The objective of such creation of LDC fund is to have own internal accrual for carrying out capital works.

It is important to take into account the submission of MSLDC for creating and analysing the benefits or use of such LDC Fund. It is proposed to include enabling provision for creation of such LDC fund, if the Commission finds it appropriate. Accordingly, the following Regulation is proposed in draft MYT Regulations:

#### ***"90 LDC Development Fund***

*The Commission may permit MSLDC to create and maintain a separate development fund for such purposes and from such sources of income, as the Commission may consider appropriate, on a Petition filed by MSLDC."*

### **8.4 Annual Fixed Charges for MSLDC**

It is proposed that Annual Fixed Charges for MSLDC shall comprise of the following:

- a) Operation and Maintenance expenses;
- b) Regional Load Despatch Centre (RLDC) Fees and Western Regional Power Committee (WRPC) Charges;
- c) Depreciation;

- d) Interest on Loan Capital;
  - e) Interest on working capital
  - f) Return on Equity Capital;
  - g) Income Tax;
- minus:
- h) Income from Open Access Charges
  - i) Non-Tariff income:

The prior period income/expenses shall be allowed by the Commission at the time of Truing-up based on audited accounts, on a case to case basis, subject to prudence check.

It is clarified that all penalties and compensation payable by the MSLDC to any party for failure to meet its obligations or for damages, as a consequence of the orders of the Commission and Courts shall not be allowed to be recovered through ARR. It is also proposed that the MSLDC shall maintain separate details of such penalties and compensation paid or payable by the MSLDC, if any, and shall submit the same to the Commission along with the Petitions to be submitted under these Regulations.

### ***8.5 Operation and Maintenance expenses***

It is proposed to specify the principles for determination of allowable O&M expenses to MSLDC. It is proposed that O&M expenses for MSLDC for third Control Period shall be computed as under:

*"91.1 The Operation and Maintenance expenses shall be derived on the basis of the average of the actual Operation and Maintenance expenses for the three Years ending March 31, 2015, based on the audited financial statements, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission.*

*91.2 The average of such Operation and Maintenance expenses shall be considered as Operation & Maintenance expenses for the Year ended March 31, 2014 shall be escalated at the escalation rate of 5.72% to arrive at the Operation and Maintenance expenses for the base year commencing April 1, 2015:*

*Provided that the O&M expenses for the base year may be adjusted so as to absorb the impact of addition of employees during the Control Period, which may be proposed by the MSLDC in line with the recommendations of the Gireesh Pradhan Committee Report, subject to necessary prudence check by the Commission.*

91.3 *The O&M expenses for each subsequent year shall be determined by escalating the base expenses determined above for FY 2015-16, at the escalation rate of 5% per annum to arrive at permissible O&M expenses for each year of the Control Period:*

*Provided that the escalation rate shall be considered as 5% per annum at the time of truing up the O&M expenses for the different Years during the Control Period."*

## **8.6 RLDC Fees and WRPC Charges**

As RLDC Fees and WRPC Charges are paid by the MSLDC in accordance with the CERC (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2015 or any other regulations notified by the Central Commission. Hence, such charges are allowed to be recovered through its ARR. In addition to the above, the charges payable to WRPC are also proposed to be allowed to be recovered by the State Load Despatch Centre through the fees and charges.

Accordingly, the following regulations have been proposed:

### ***" 93. RLDC Fees and WRPC Charges***

93.1 *The RLDC Fees and Charges payable by the MSLDC in accordance with the relevant Orders issued by the Central Electricity Regulatory Commission from time to time shall be allowed to be recovered by the MSLDC through the Fees and Charges as approved by the Commission.*

93.2 *The WRPC Charges payable to the WRPC's Secretariat shall be allowed to be recovered by the MSLDC through the Fees and Charges as approved by the Commission.*

93.3 *The MSLDC shall have to produce documentary proof towards payment of such Charges at the time of Mid-Term Review or Truing up:*

*Provided that any variation between the approved RLDC Fees and Charges and WRPC Charges and that actually paid by the MSLDC shall be considered during the true-up as per audited accounts, subject to prudence check and any other factor considered appropriate by the Commission."*

## **8.7 Non-Tariff Income**

It is proposed to list out the indicative heads of Non-tariff Income for the MSLDC for greater clarity, as under:

- a) *Income from sale of scrap;*
- b) *Income from investments;*



- c) *Income from Delayed Payment Charge;*
- d) *Interest income on advances to suppliers/contractors;*
- e) *Income from rental from staff quarters;*
- f) *Income from sale of tender documents;*
- g) *Any other Non-Tariff Income:*

It is clarified that the interest earned from investments made out of Return on Equity of the MSLDC shall not be included in Non-Tariff Income.

### **8.8 Sharing of MSLDC Charges**

For sharing of MSLDC Charges, it is proposed to have same approach as considered for sharing of transmission charges based on Transmission Capacity Rights.

In addition to this, it is also proposed that SLDC charges will be shared with Open Access consumers including partial Open Access consumers in proportion to the duration for which they were granted Open Access during the concerned billing period.

The following mechanism is proposed for sharing of MSLDC Charges:

#### **“ 95. Sharing of MSLDC Charges**

95.1 *The MSLDC Charges payable by the Beneficiaries shall be computed in accordance with the following formula:*

$$AFC(u)_{(t)} = AFC_{(t)} \times \frac{([Base\ TCR(u)]_{(t)} / \sum_{i=1}^n [Base\ TCR(u)]_{(t)})}{\sum_{i=1}^n (Base\ TCR(u)_{(t)})}$$

Where,

$AFC(u)_{(t)}$  = MSLDC Charges to be shared by the Beneficiary (u) for the yearly period (t);

$Base\ TCR(u) = [CPD(u)_{(t)} + NCPD(u)_{(t)}] / 2$

Where,

$Base\ TCR$  represents the Base Transmission Capacity Right of each Beneficiary (u) for the yearly period (t);

$CPD(u)_{(t)}$  = Average Coincident Peak Demand of the Beneficiary (u) for the yearly period (t);

$NCPD(u)_{(t)}$  = Average Non-coincident Peak Demand of the Beneficiary (u) for the yearly period (t):

*Provided that the Allotted Capacity for full Open Access consumers shall be considered in lieu of the average monthly CPD and NCPD for calculating the Base TCR for Open Access consumers.*

94.2 *The MSLDC Charges approved for the year shall be equally spread over the 12 months of the year and MSLDC Charges per MW per month shall be computed by MSLDC in accordance with the following Formula:*

*Monthly MSLDC Charges (Rs. / MW / Month)*

$$= [AFC(u)_{(t)} \div \sum_{i=1}^n [Base\ TCR(u)]_{(t)} \sum_{i=1}^n (BaseTCR(u)(t))] \div 12$$

94.3 *The Open Access consumers including partial Open Access consumers shall be liable for payment of the MSLDC Charges in proportion to the duration for which they were granted Open Access during the concerned billing period."*

## **8.9 Other Fees and Charges**

In addition to the Annual Fixed Charges, following Fees have also been proposed as applicable for discharging various functions of MSLDC:

- a) Registration or Connection Fees per connection from all users connecting to the Intra-State Transmission System;
- b) Scheduling Fees per day for intra-State short-term Open Access transactions;
- c) Re-scheduling Fees for each revision in schedule after the finalization of schedules by the MSLDC on a day-ahead basis or for non-submission of schedule as per State Grid Code requirements;
- d) Short-term Open Access Application Processing Fees;

The MSLDC shall recover the above mentioned Fees as approved by the Commission from time to time.

It is also proposed that the revenue from all above Fees and charges shall be considered for adjustment of Annual Fixed Charges in subsequent years unless the same forms part of the LDC Development Fund.

## ***8.10 Billing, Payment of Charges and Collection***

It is proposed to add certain provisions regarding the billing, payment of charges and collection to streamline the financial transactions. The provisions related to the rebate and late payment surcharge have been separately considered, as discussed in earlier section of this Discussion Paper.

The following provisos are proposed to be added:

### ***“97. Billing and Payment of Charges***

*97.1 The MSLDC shall raise monthly bill for MSLDC Charges on every Long-term Beneficiary and Medium-Term Open Access consumer on the first working day of the month for the MSLDC Charges of preceding month.*

*97.2 The monthly bill for MSLDC Charges shall be payable within fourteen days of receipt of bill by the Long-term Beneficiaries and the Medium Term Open Access consumers.”*