



MAHARASHTRA ELECTRICITY REGULATORY COMMISSION

EXPLANATORY MEMORANDUM

ON

**DRAFT MAHARASHTRA ELECTRICITY REGULATORY
COMMISSION (MULTI YEAR TARIFF) REGULATIONS, 2024**

March 2024

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LIST OF ABBREVIATIONS

AAD	Advance against Depreciation
ACOS	Average Cost of Supply
ABT	Availability Based Tariff
AEML	Adani Electricity Mumbai Limited
AEML-G	Adani Electricity Mumbai Limited- Generation Business
AEML-T	Adani Electricity Mumbai Limited- Transmission Business
AEML-D	Adani Electricity Mumbai Limited– Distribution Business
ATE	Appellate Tribunal for Electricity
ATIL	Adani Transmission (India) Limited
APR	Annual Performance Review
APTCL	Amravati Power Transmission Company Limited
ARR	Aggregate Revenue Requirement
BESS	Battery Energy Storage Systems
BEST	Brihanmumbai 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
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

DoD	Depth of Discharge
DRE	Distributed Renewable Energy
DSM	Deviation and Settlement Mechanism
EA 2003	Electricity Act 2003
ECR	Energy Charge Rate
EE	Energy Efficiency
ESO	Energy Storage Obligations
ESS	Energy Storage Service
ESSD	Energy Storage Service Developer
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
GFA	Gross Fixed Asset
GoM	Government of Maharashtra
HP-DAM	High Price Day Ahead Market
HPO	Hydropower Purchase Obligations
HRD	Human Resource Development
HT	High Tension
HVDC	High Voltage Direct Current
INR	Indian Rupees
InSTS	Intra-State Transmission System
IWC	Interest on Working Capital
JPTL	Jaigad Power Transco Ltd.
KPIs	Key Performance Indicators
kWh	kilo Watt hour
LT	Low Tension

LT-DRAP	Long Term Distribution Licensee Resource Adequacy Plan
MBPPL	Mindspace Business Parks Private Limited
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
MOD	Merit Order Despatch
MoP	Ministry of Power
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
MTR	Mid-Term Review
NAEAF	Normative Annual ESS Availability Factor
NAPAF	Normative Annual Plant Availability Factor
NEP	National Electricity Policy
NEEPCO	North Eastern Electric Power Corporation Limited
NTP	National Tariff Policy
NTPC	National Thermal Power Corporation
OA	Open Access
O&M	Operation and Maintenance
PAF	Plant Availability Factor
PBR	Performance Based Regulation
PFC	Power Finance Corporation
PGCIL	Power Grid Corporation of India Limited
PLF	Plant Load Factor
POA	Partial Open Access

PoC	Point of Connection
PSH	Pumped Storage Hydro
PSPs	Pumped Storage Projects
RA	Resource Adequacy
RAR	Resource Adequacy Requirement
RE	Renewable Energy
REC	Rural Electricity Corporation
RLDC	Regional Load Despatch Centre
ROE	Return on Equity
RPO	Renewable Purchase Obligation
R&D	Research and Development
R&M	Repair and Maintenance
R&M	Renovation and Modernization
RTC	Round the Clock
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SBBR	SBI Base Rate
SECI	Solar Energy Corporation of India Limited
SERC	State Electricity Regulatory Commission
SEZ	Special Economic Zone
SFOC	Secondary Fuel Oil Consumption
SHR	Station Heat Rate
SLDC	State Load Despatch Centre
SPTCL	Sinnar Power Transmission Company Limited
SRAS	Secondary Reserve Ancillary Services
STU	State Transmission Utility
TBCB	Tariff Based Competitive Bidding
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
TPC-D	Tata Power Company Limited – Distribution Business
TRAS	Tertiary Reserve Ancillary Services
TSC	Transmission Service Charges
TSERC	Telangana State Electricity Regulatory Commission
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

Introduction

1.1 Background & Regulatory Framework

1.1.1 As per Section 86 (1) (a) of the Electricity Act, 2003 (“EA 2003” or “the Act”), the State Electricity Regulatory Commissions (SERCs or Commissions) have been assigned the function of determining the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State.

1.1.2 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 and the principles and methodologies specified by the Central Electricity Regulatory Commission (CERC) for determination of the tariff applicable to Generating Companies and Transmission Licensees, while specifying the Terms and Conditions for determination of tariff. Section 61 of the EA 2003 stipulates:

*“61. 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)

1.1.3 The CERC vide its notice dated 4 January, 2024 has published the draft CERC (Terms and Conditions of Tariff) Regulations, 2024 [draft CERC MYT Regulations, 2024] for the Tariff Period from April 1, 2024 to March 31, 2029. In accordance with Section

61(a) of the Act, the Maharashtra Electricity Regulatory Commission (MERC or the Commission) has taken cognizance of draft CERC (Terms and Conditions of Tariff) Regulations, 2024 and Explanatory Memorandum published thereof while framing the Tariff Regulations for the Control Period commencing from April 1, 2025. Also, the Commission has continued with the approach taken while framing the Multi-Year Tariffs, which have been in force in the State from August 2005.

1.1.4 As per Section 62 of the Act, the Commission has to determine the tariff for supply of electricity by a Generating Company to a Distribution Licensee, transmission, wheeling and retail sale of electricity, and may require the Licensee or Generating Company to furnish separate details in respect of generation, transmission and distribution of tariff. The relevant extract of Section 62 of the Act is reproduced herewith:

“62. (1) The Appropriate Commission shall determine the tariff in accordance with provisions of this Act for –

(a) supply of electricity by a generating company to a distribution licensee:

...

(b) transmission of electricity;

(c) wheeling of electricity;

(d) retail sale of electricity:

...

(2) The Appropriate Commission may require a licensee or a generating company to furnish separate details, as may be specified in respect of generation, transmission and distribution for determination of tariff.

...

(5) The Commission may require a licensee or a generating company to comply with such procedures as may be specified for calculating the expected revenues from the tariff and charges which he or it is permitted to recover...”

1.1.5 Also, the National Electricity Policy and Tariff Policy have been notified by the Ministry of Power, Government of India, which provides the guidelines for determination of the revenue requirement and tariff. The National Electricity Policy provides certain guidelines as regards performance norms and the need to provide incentives and disincentives, as reproduced below:

“5.8.5 All efforts will have to be made to improve the efficiency of operations in all the segments of the industry. Suitable performance norms of operations together with incentives and disincentives will need to be evolved along with appropriate arrangement for sharing the gains of efficient operations with the consumers. This will ensure protection of consumers’ interests on the one hand and provide motivation for improving the efficiency of operations on the other”.

1.1.6 The Tariff Policy notified on January 28, 2016 stipulates as under:

“5.11 Tariff policy lays down the following framework for performance-based cost of service regulation in respect of aspects common to generation, transmission as well as distribution...

...

h) Multi Year Tariff

*1) Section 61 of the Act states that the Appropriate Commission for determining the terms and conditions for the determination of tariff shall be guided, inter-alia, by Multi-Year Tariff (MYT) principles. **The framework should feature a five-year control period.** The initial control period may, however, be of 3 year duration for transmission and distribution if deemed necessary by the Regulatory Commission on account of data uncertainties and other practical considerations...”*

1.1.7 The Ministry of Power's (MoP) Electricity (Rights of Consumers) MOP vide MOP Electricity (Second Amendment) Rules, 2023 dated 26 July 2023 has notified the Framework for Financial Sustainability. The MOP Rules 2023 specifies that, the Aggregate Technical and Commercial loss reduction trajectory should be approved by the Commissions for tariff determination in accordance with the trajectory agreed by the State Government and approved by the Central Government under any national scheme or programme, or otherwise. The trajectory determined by the Commission shall be for both collection and billing efficiency, for distribution licensee.

Further, the MOP Rules also refers to compliance of Resource Adequacy requirement specified under MOP Electricity (Amendment) Rules 2022 and 24X7 supply mandate while approving the cost of procurement of power by Distribution Licensee in a transparent manner. Further, the Rules also specifies that, all the prudent costs incurred by the distribution licensee for creating the assets for development and maintenance of distribution system shall be passthrough as per the relevant provisions of the EA 2003 and subject to the conditions specified in the MOP Rules.

The MOP rules also specifies that, the Commission shall undertake the true up of the expenses and specify the framework for sharing of the gains and losses within the licensee and the consumers. Further, the Commission is required to specify the

reasonable Return on Equity, with the assessment of overall risk and the prevalent cost of capital.

Accordingly, the Commission has considered the provisions of the MOP Regulations and the norms specified by the Central Commission while proposing the provisions of the Draft MERC MYT Regulations, 2024.

- 1.1.8 The Commission notified the MERC (Terms and Conditions of Tariff) Regulations, 2005 on August 23, 2005 under Section 61 of the Act. Subsequently, the Commission on February 4, 2011, notified the MERC (Multi Year Tariff) Regulations, 2011 for the Control Period of five (5) financial years from April 1, 2011 to March 31, 2016. The Commission notified the first amendment to the MERC (Multi Year Tariff) Regulations, 2011 on October 21, 2011 related to deferment of the implementation of the MYT framework on account of difficulty in giving effect to the determination of tariff with effect from April 1, 2011.
- 1.1.9 The Commission notified the second amendment to the MERC (Multi Year Tariff) 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 of generation. The Commission notified the third amendment to the MERC (Multi Year Tariff) 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} . On December 8, 2015, the Commission notified the MERC (Multi Year Tariff) Regulations, 2015 [MERC MYT Regulations, 2015], which superseded the MERC (Multi Year Tariff) Regulations, 2011. The Commission notified the first amendment to the MERC MYT Regulations, 2015 on November 29, 2017 related to determination of normative Operation and Maintenance expenses.
- 1.1.10 On August 1, 2019 the Commission notified the MERC (Multi Year Tariff) Regulations, 2019 [MERC MYT Regulations, 2019], which superseded the MERC (Multi Year Tariff) Regulations, 2015. The Commission notified the first amendment to the MERC (Multi Year Tariff) Regulations, 2019 on February 10, 2023, related to threshold limit and other conditions for intra-State Transmission Projects to be developed through Tariff Based Competitive Bidding. The Commission notified second amendment to the MERC (Multi Year Tariff) Regulations, 2019 on 8th June 2023, related to determination of input price of Coal and Lignite from Integrated mine, Regulations related to Financial Principles were added and Illustration for MSLDC.
- 1.1.11 As the current MYT Control Period is coming to end on March 31, 2025, the MERC has formulated the draft Maharashtra Electricity Regulatory Commission (Multi Year Tariff) Regulations, 2024 (hereinafter referred as “draft MERC MYT Regulations,

2024) covering the Generation Business (Conventional), Transmission Business, Distribution Wires Business, Retail Supply Business, SLDC for the next MYT Control Period. Further, the Commission notes the development at national level that, the Ministry of Power vide Gazette Notification dated March 9, 2021 notified Central Transmission Utility of India Limited, as the ‘CTU’ under Division and Demerger of CTU and PGCIL transfer Scheme 2021. Considering this development, the Commission expects that, going forward, the State Transmission Utility (STU) in the state would be also separated from Maharashtra State electricity Transmission Company (MSETCL) and functions as independent planning entity as per the provisions of the Section 39 of the Electricity Act 2003.

- 1.1.12 To facilitate the separation of STU from MSETCL and functions as independent planning body, the Commission in the draft MYT Regulations, 2024 has introduced the separate Chapter for MYT framework for Fees and Charges for State Transmission Utility (STU) and directed the STU to file a Petition for determining STU’s Fees and Charges for the upcoming Control Period similar to Maharashtra State Load Despatch Centre (MSLDC). The details are discussed in the respective chapter.
- 1.1.13 Further, the Commission also notes that, the Forum of Regulators (FOR) constituted a working group to study the need of Energy Storage Systems (ESS) and assessment of value of storage in the wake of large-scale penetration of renewable, as ESS has the potential of supporting the ramping requirement of the grid. The FOR published its report on “Regulatory Framework for Energy Storage and Electric Vehicles” in July 2022.
- 1.1.14 The Working Group observed that ESS could be useful for as an Independent Energy Storage System (IESS), ESS as a Generation asset, Distribution asset, or transmission asset for congestion management. The report also recommends that SERCs should provide the enabling Regulatory framework for encouraging the ESS development in the states. Accordingly, the Commission has introduced a separate chapter for specifying Regulatory framework for ESS including Pumped Storage Hydro Projects. The details are discussed in the respective chapter.
- 1.1.15 Apart from adding the above two new sections in the MYT Regulations, the Commission has introduced the concept of “Uniform Wheeling Charge”, “Ceiling Tariff” and “Supply Margin” to encourage the competition in the Distribution Sector. The details are discussed in the chapter of Distribution tariff Framework.

- 1.1.16 As stated earlier, while formulating the draft MERC MYT Regulations, 2024, the Commission has been guided by the CERC (Terms and Conditions of Tariff) Regulations, 2019 and the draft CERC (Terms and Conditions of Tariff) Regulations, 2024. The Commission has also been guided by the National Electricity Policy, Tariff Policy, relevant Regulations of this Commission and other SERCs, FOR Recommendations on MYT Framework, APTEL Judgments, etc., for the formulation of draft MERC MYT Regulations, 2024.
- 1.1.17 The Commission has proposed modifications to certain clauses vis-à-vis the clauses specified in the MERC MYT Regulations, 2019 (as amended from time to time) based on the experiences in implementation of the MYT Regulations in the previous Control Period, and in order to simplify/clarify/amend certain provisions as considered reasonable. **The rationale for the changes proposed in the MERC MYT Regulations have been elaborated in this Explanatory Memorandum. In cases where no change is proposed, the same has not been explicitly mentioned. Generally, only the clauses where any addition/modification is proposed in the MERC MYT Regulations, 2024 have been discussed in this Explanatory Memorandum.**
- 1.1.18 The Commission while formulating draft MERC MYT Regulation, 2024, has endeavoured to balance the interest of consumers, Generating Companies, ESS Developers, Transmission Licensees, Distribution Licensees, STU and SLDC. Based on the analysis, possible regulatory options for the next Control Period have been discussed in subsequent Chapters.

The Explanatory Memorandum is organised in the following Chapters:

- Chapter 1:** Introduction
- Chapter 2:** General Principles and Multi Year Tariff Framework
- Chapter 3:** Financial Principles
- Chapter 4:** Norms and Principles for determination of Revenue Requirement and Tariff for Generation Companies
- Chapter 5:** Norms and Principles for determination of Revenue Requirement and Tariff for Transmission Business
- Chapter 6:** Norms and Principles for determination of Revenue Requirement and Wheeling Charges for Distribution Wire Business
- Chapter 7:** Norms and Principles for determination of Revenue Requirement and Tariff for Retail Supply Business

- Chapter 8:** Norms and Principles for determination of Fees and Charges for the Maharashtra State Load Despatch Centre (MSLDC).
- Chapter 9:** Norms and Principles for determination of Fees and Charges for the Maharashtra State Transmission Utility (MSLDC).
- Chapter 10:** Norms and Principles for determination of determination of Revenue Requirement and Tariff for Energy Storage Systems (ESS).

2 General Principles & Multi Year Tariff Framework

2.1 Objectives

2.1.1 This Chapter of the Explanatory Memorandum elaborates the General Principles for formulation of Regulations for approval of Aggregate Revenue Requirement (ARR) and Tariff under a Multi-year Tariff (MYT) framework for the fifth Control Period.

The broad objectives of any regulatory framework are to:

- (a) 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;
- (b) Address the risk sharing mechanism between Utilities and consumers based on controllable and uncontrollable factors;
- (c) Ensure financial viability of the sector to attract investment, ensure growth and safeguard the interest of the consumers;
- (d) Establish operational norms for Generation, Transmission, and Distribution businesses;
- (e) Promote operational efficiency.

2.1.2 Long-Term Tariff principles are intended to give clarity to the Generating Companies, Energy Storage System Developers (ESSD), Transmission Licensees, Distribution Licensees, consumers, and the other stakeholders regarding the principles governing the determination of revenue requirement and tariffs in the State of Maharashtra.

For the Generating Companies, ESSD and Licensees, the principles provide clarity on the regulatory framework applicable over the long-term, and help finance growth and operations better, and facilitate improvement in supply quality and customer service. Secondly, the design of efficiency incentives helps promote operational efficiency.

For consumers, improvement in operational efficiency translates into more cost-effective tariffs, as efficient licensees can provide better supply and service, and remain viable.

2.2 Prescribing Norms Vs Prescribing Principles in the Regulations

2.2.1 There are two options to specify trajectories for performance parameters under the Regulations, viz.:

- (a) Prescribing operational and financial norms, based on the analysis of past performance levels vis-a-vis the approved levels and benchmarking with comparable entities across different States or within the State, as appropriate.

(b) Prescribing principles outlining the approach to be followed while determining the ARR.

2.2.2 Both the approaches have their merits and demerits. However, prescribing norms based on the analysis of past performance levels vis-à-vis the approved trajectory of previous Control Period, provides clarity about the roadmap of tariff to the Utilities as well as to the consumers. Regulatory certainty is one of the key objectives of any MYT framework, and hence, it is preferable to specify norms rather than principles, wherever feasible.

2.2.3 FOR Report on “MYT framework and Distribution Margin” mentions in the context of cost plus vis-à-vis performance-based regulations:

“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.”

2.2.4 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.

2.2.5 Further, Para 5.11 (f) of the Tariff Policy, 2016, stipulates as under:

“(f) Operating Norms

Suitable performance norms of operations together with incentives and disincentives would need to be evolved along with appropriate arrangement for sharing the gains of efficient operations with the consumers. Except for the cases referred to in para 5.11(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)

The Commission in the MERC MYT Regulations, 2019 had specified operational norms and norms for O&M Expenses for Generation Business and Transmission Business. The Commission in the draft MERC (MYT) Regulations, 2024 has continued

with the similar approach while defining the operational norms and O&M Expenses for Generation and Transmission with changes in the number of years of data considered for analysis. The details of operational norms and norms for O&M Expenses for Generation and Transmission are provided in the respective chapters.

2.3 Commencement

2.3.1 The Commission, in the draft MERC MYT Regulations, 2024 has specified that, these Regulations shall be applicable for all matters covered under the Regulations for the period with effect from April 1, 2025..

2.4 Definitions

2.4.1 The Commission, in the draft MERC MYT Regulations, 2024 has modified some definitions from earlier MYT Regulations and also added some definitions, as under:

- (1) *“(14) “Battery Energy Storage Systems” or “BESS” or “Project” shall mean the system(s)/projects utilizing methods and technologies such as electrochemical batteries (Lead Acid, Li-ion, solid state batteries, flow batteries, etc.), providing a facility that can store chemical energy and deliver the stored energy in the form of electricity, including but not limited to ancillary facilities (grid support., for example). Such systems may be co-located with RE Generating Stations or may be operated on standalone basis”.*

Rationale: The Commission has proposed to introduce Regulatory framework for ESS which includes Battery Energy storage systems. Introduction of BESS presents a significant opportunity to enhance grid stability, integrate renewables, and unlock economic and environmental benefits for both utilities and consumers. Lowering electricity bills is a direct result of improved grid stability and reduced dependence on expensive peaking plants. This, in turn, can lead to decreased wholesale electricity prices, ultimately benefiting consumers with lower bills. Additionally, the implementation of BESS enhances reliability and resilience by providing backup power during outages, ensuring uninterrupted service for consumers. Furthermore, BESS enables a more sustainable energy mix by facilitating the integration of renewable energy sources. This contributes to a cleaner and more environmentally friendly energy future, aligning with the goal of achieving a sustainable and resilient energy infrastructure.

- (2) *“(27) “Cycle Efficiency of Energy Storage System” means, the ratio of discharge capacity of ESS to charge capacity of ESS in a single cycle, regardless of the self-discharge loss of the ESS”.*

Rationale: The introduction of ESS in the Regulations necessitates a clear definition of cycle efficiency. This key metric, expressed as a percentage, plays a crucial role in

evaluating performance and minimizing energy losses during charging and discharging cycles, ensuring optimal BESS utilization, and maximizing benefits. So, the definition of Cycle Efficiency of Energy Storage System is proposed to be included as above.

- (3) “(34) **“Depth of Discharge”** A battery's depth of discharge (DoD) indicates the percentage of the battery that has been discharged relative to the overall capacity of the battery. Depth of Discharge is defined as the capacity that is discharged from a fully charged battery, divided by battery nominal capacity”.

Rationale: Depth of Discharge is crucial for maximizing the performance, lifespan, and efficiency of BESS.

In terms of performance, it is important to note that deeper discharges can have a negative impact on the power output of the BESS. This means that the system may not be able to deliver the desired amount of power, thus affecting its overall performance. Additionally, the lifespan of the battery can be significantly shortened if frequent deep discharges occur. This is due to the increased stress and degradation that the battery experiences during these cycles. It is crucial to avoid subjecting the battery to excessive deep discharges in order to maintain its longevity. Moreover, efficiency is another factor affected by deep discharges. Higher Depth of Discharge (DoD) levels typically result in increased energy losses during charging and discharging cycles. This means that more energy is wasted, reducing the overall efficiency of the system. Therefore, it is essential to carefully manage the depth of discharges in order to optimize the performance, lifespan, and efficiency of the BESS. So, the definition is proposed to be included as above.

- (4) “(42) **“Energy Storage System”** or **“ESS”** in relation to the electricity system, means a facility where electrical energy is converted into any form of energy which can be stored, and subsequently reconverted into electrical energy and injected back into the grid”.

Rationale: An Energy Storage System (ESS) is fundamentally a facility designed to store electrical energy in an alternative format and subsequently convert it back into usable electricity as required. The stored energy can be derived from diverse sources, including renewable energy like solar or wind power, or even obtained from the grid during off-peak periods. By reintroducing the stored electricity into the grid during times of high demand or insufficient supply, ESS effectively aids in maintaining equilibrium between electricity supply and demand. This sophisticated mechanism plays a crucial role in stabilizing the electrical grid and ensuring a reliable and efficient energy distribution system. Therefore, the definition of Energy Storage Systems is proposed to be included as above.

2.5 Control Period

2.5.1 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 specified in the Regulations.

As stated earlier, the Act stipulates that a Multi-Year Tariff (MYT) framework has to be specified for determination of ARR and Tariffs. The Tariff Policy has stipulated a five-year MYT framework, after the initial Control Period.

2.5.2 MERC MYT Regulations, 2019, the Control Period was defined as five years, from April 1, 2020 to March 31, 2025.

2.5.3 Further, the CERC notifies the Tariff Regulations for every 5-year period, i.e., 2009-2014, 2014-2019, 2019-24. The CERC has recently notified the draft CERC Tariff Regulations, 2024 on January 1, 2024 for the Control Period of five (5) financial years from April 1, 2024 to March 31, 2029.

2.5.4 The Commission is of the view that, it would be appropriate to continue with the five years Control Period Starting from April 1, 2025, which would enable the Commission to be guided by the CERC Tariff Regulations while formulating the MYT Regulations for the next Control Period. Further, a five-year Control Period would give clarity on the ARR and tariff determination process for a longer tenure, thereby introducing a corresponding amount of regulatory certainty to the process. Accordingly, it is proposed to have a Control Period of five (5) financial years, over the period from April 1, 2025 to March 31, 2030. Accordingly, the Control Period has been defined as under in the draft MERC MYT Regulations, 2024:

(25) “Control Period” means the period comprising five Years from April 1, 2025 to March 31, 2030, and as may be extended by the Commission”

2.6 Multi-Year Tariff Framework

2.6.1 Regulation 4 of the MERC MYT Regulations, 2019 specified the following MYT framework applicable till March 31, 2025, in accordance with the specified 5-year Control Period:

- (a) Tariff determination for each year of the Control Period, at the beginning of the Control Period.
- (b) True-up for the first year and second year of the Control Period and provisional true-up for the third year of the Control Period at the time of MTR.

- (c) Provision for Mid-Term Review (MTR) at the end of three years, i.e., the ARR and tariff determined in the MYT Order for the third and fourth year of the Control Period is subject to revision after MTR.
 - (d) True-up for the third and fourth year of the Control Period and provisional true-up for the fifth year of the Control Period at the time of MYT Order for the subsequent Control Period.
- 2.6.2 As stated earlier, the Commission proposes to continue with the Control Period of five years starting from April 1, 2025 upto March 31, 2030. Further, the Commission also proposes to continue with the provisions of the truing-up of the MYT projections with the actual parameters subject to the provisions of the Regulations at the end of the control period.
- 2.6.3 However, with regards to Mid-term Review of MYT projections and revised MYT projections after three years of the Control Period, the Commission noted that, the MERC (Terms and Conditions of Tariff) Regulations, 2005 notified on August 23, 2005, had provision of yearly Truing-up. Subsequently, the Commission while notifying the MERC (Multi Year Tariff) Regulations, 2011, moved from Yearly Truing-up to Mid-Term Review at the end of third year of the Control Period. The Commission continued with the provision of Mid-Term Review in the third and fourth control period. The Commission is of the view that the Generation Companies, Licensees and Utilities in Maharashtra have gained the sufficient experience over a period to project the Aggregate Revenue Requirement over a control period.
- 2.6.4 The comparative analysis of the past period data shows that, the projections approved by the Commission at the time of MYT Orders and actual parameters of ARR are fairly comparable. Further, the Commission also notes that, the major variation in the MYT projections and actual data is on account of the variation in cost of fuel, power purchase, and inter-State Transmission Charges and same is passed through under the Fuel Adjustment Charge (FAC) component of the Z-factor Charge (ZFAC), as an adjustment in the distribution Tariff on a monthly basis subject to post-facto approval of the Commission.
- 2.6.5 The Commission also noted that CERC Tariff Regulations for last three control period have the provision of True-up at the end of the Control Period only and the CERC is continuing with the similar approach for the next Control Period starting from April 1, 2024.
- 2.6.6 In view of the above the Commission is proposing to discontinue with the provision of Mid-Term Review from this Control Period for all Generation Companies, Licensees and other Utilities covered under MYT Framework and move towards the Multi Year Tariff Framework in letter and spirit.

- 2.6.7 While proposing to discontinue with MTR provisions, the Commission notes that, the MYT Regulations 2019, has also the provision of Z-factor Charge (ZOUC) which can take care of the consequential impact of decisions of higher Courts or Tribunals or Review Orders passed by the Commission on the Generating Company or Licensee to be passed through under the ‘Other Uncontrollable Cost’ component of the Z-factor Charge (ZOUC) as an adjustment in the Tariff on a yearly basis for the Control Period. The Commission is proposing minor changes in the ZOUC Formulation to accommodate the variation in the Intra-State Transmission Charges during the Control Period.
- 2.6.8 The Commission expects that, the Generation Companies or Licensees should exercise the provisions of the ZOUC only for the ‘Uncontrollable Cost’ component specified under this Regulation.
- 2.6.9 Accordingly, the Commission has proposed to discontinue with the provision of Mid-Term Review in the Fifth Control Period commencing from April 1, 2025. Tariff shall be determined for each year of the Control Period, at the beginning of the Control Period and True-up for the first, second, third and fourth year of the Control Period and provisional true-up for the fifth year of the Control Period at the end of the Control period along with MYT Order of next Control Period for Generating Companies, Transmission Licensees, Distribution Licensees, SLDC, STU and ESS Developer.
- 2.6.10 Accordingly, the MYT framework for the fifth Control Period is proposed to be modified as under:

“4.1 The Commission shall determine the Tariff and Fees and Charges for matters covered under clauses (i), (ii), (iii), (iv), (v), (vi), (vii), and (viii) of Regulation 3.1, under a Multi-Year Tariff framework with effect from April 1, 2025.

4.2 The Multi-Year Tariff framework shall be based on the following elements, for computation of Aggregate Revenue Requirement and expected revenue from Tariff and Charges for Generating Companies, Energy Storage System Developer (ESSD), Transmission Licensees, Distribution Wires Business, Retail Supply Business, Fees and Charges of MSLDC and STU.

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

Provided that the Distribution Licensee shall propose the category-wise Tariffs for each year of the Control Period including determination of 'ceiling tariff', if necessary, subject to fulfilment of conditions as specified under these Regulations.

Provided further that the performance parameters whose trajectories have been specified in these Regulations shall form the basis of projection for 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, ESS, Transmission Licensees, Distribution Wires Business, Retail Supply Business, MSLDC and STU by the Commission for each year of the Control Period, at the start of the Control Period including determination of 'ceiling tariff', as may be applicable, subject to fulfilment of conditions as specified under these Regulations:*

Provided that the Commission shall also approve the sharing proportion amongst the Transmission System Users of the MSLDC and STU Fees and Charges for the Control Period.

- (iii) *Petition for True-up for the first four years of the Control Period based on audited accounts and provisional true-up for the fifth 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 Generating Company or ESSD, or Licensee or MSLDC or STU*
- (iv) *True-up for the first four years of the Control Period, provisional true-up for the fifth 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 by factors beyond its control (uncontrollable factors) by the Commission.*
- (v) *The mechanism for pass-through of approved gains or losses on account of uncontrollable factors as specified by the Commission in these Regulations.*
- (vi) *The mechanism for sharing of approved gains or losses arising out of controllable factors as specified by the Commission in these Regulations."*

2.7 Petitions to be filed in the Control Period

- 2.7.1 In the earlier Regulations, based on the experience of the Commission in the previous Control Periods and with the aim of ensuring timely issuance of Orders, the Commission has proposed to specify timeline as November 1 for Generating Companies, Transmission Licensees, SLDC, STU, ESS Developers and November 30 for Distribution Licensees.

The timelines for filing of different Petitions during the fifth Control Period, the scope of the Petitions, and the applicable MYT Regulations for true-up for different years, have been proposed as under in the draft MYT Regulations, 2024 are as below.

Petition	Details	Timeline
Multi Year Tariff Petition	<ul style="list-style-type: none"> • Truing-up for FY 2022-23 and FY 2023-24 and provisional Truing-up for FY 2024-25 under MERC MYT Regulations, 2019; • ARR for each year from FY 2025-26 to FY 2029-30 under MERC MYT Regulations, 2025; • 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, 2025; • Proposed category-wise Tariff for each year of the Control Period under MERC MYT Regulations, 2025 	November 1, 2025 for Generating Companies, Transmission Licensees, and SLDC, STU, ESS Developers and November 30, 2025 for Distribution Licensee
Truing-up Petitions	<ul style="list-style-type: none"> • Truing-up for FY 2024-25 under MERC MYT Regulations, 2019 • Truing-up for FY 2025-26, FY 2026-27 FY 2027-28 and FY 2028-29 under MERC MYT Regulations, 2024 • Provisional Truing-up for FY 2029-30 under MERC MYT Regulations, 2024 	November 1, 2029 for Generating Companies, Transmission Licensees, SLDC, STU, ESS Developers and November 30, 2029 for Distribution Licensee

2.8 Non-Compliance of the Directions of the Commission:

2.8.1 The Commission has noted that, many times, the directions passed by the Commission in the MYT Orders, or any other Orders are not complied with by the concerned Utilities. As per the provisions of the Electricity Act, 2003, the Electricity Regulatory Commission is Quasi-Judicial Authority and directions of the Commission are legally bounded on the Utilities. The adherence with the directions of the Commission by the Utilities is necessary in the interest of Consumers and implementation of the provisions of the Commission's own Regulations.

2.8.2 Accordingly, to ensure the adherence and timely compliance with the directions of the Commission by the Utilities, the Commission has introduced the provision of deducting upto INR One Crore per default while approving the ARR of the concerned Utility. The proposed Provision of the Regulation 5.2 is as under:

“5.2 Along with the Petition for determination of Tariff or Fees and Charges and Truing-up under these Regulations, the Petitioner shall submit consolidated statement of the status of the adherence of prevailing Regulations and / or the directives of the Commission in the earlier Orders (including Tariff as well as Non-Tariff Orders) along with the justification of non-compliance, if any.

Provided that, in case of non-adherence of the prevailing Regulations and/ or directives of the Commission, with unsatisfactory justification, the Commission may consider the disallowance of ARR upto INR One Crore per default for non-adherence to the directions of the Commission at the time of approval of the ARR of the Petitioner”

2.9 Multi-Year Tariff Petition

2.9.1 The scope of the MYT Petition to be filed in accordance with the draft MERC MYT Regulations, 2024 has been retained in line with the provisions of the Regulation 6 of the MERC MYT Regulations, 2019.

As per the Regulation 6.3 of the MYT Regulations 2019, the Distribution Licensee has to submit the detailed capital investment plan. As the Commission has notified the separate Regulations as MERC (Approval of Capital Investment Schemes) Regulations, 2022 for approval of the Capital Expenditure of the Utilities. Accordingly, the Regulation 6.3 of the draft MYT Regulations 2024 is as under:

“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 it, for which relevant technical and commercial details shall be provided as per the provisions of the Maharashtra Electricity Regulatory Commission (Approval of Capital Investment Schemes) Regulations, 2022 and amendments thereof.”

2.10 Specific trajectory for certain variables

2.10.1 SAIFI and SAIDI

As per Rule 10 of the Ministry of Power (MoP) Rights of Consumer Rules 2022, the State Commissions shall specify trajectory of System Average Interruption Frequency Index (SAIFI), and System Average Interruption Duration Index (SAIDI). The relevant provision of MoP Rules is as below:

*“(3) In view of the increasing pollution level particularly in the metros and the cities with a population 100,000 and above, the distribution licensee shall ensure 24x7 uninterrupted power supply to all the consumers, so that there is no requirement of running the diesel generator sets and accordingly, the **State Commission shall give trajectory of system average interruption frequency index and system average interruption duration index for such cities.**”*

In line with the above MOP notification, the Commission has proposed to have trajectory for Reliability Indices, System Average Interruption Frequency Index (SAIFI), System Average Interruption Duration Index (SAIDI) to monitor and report the supply availability and wires availability.

2.10.2 Aggregate Technical and Commercial (AT&C) loss

As per Rule 20 of the MoP Electricity (Second Amendment) Rules, 2023, the Aggregate Technical and Commercial (AT&C) loss reduction trajectory to be approved by the State Commissions for tariff determination in accordance with the trajectory agreed by the respective State Governments and approved by the Central Government under any national scheme or programme, or otherwise:

*“20. **Framework for Financial Sustainability:** (1) **The Aggregate Technical and Commercial loss reduction trajectory to be approved by the State Commissions for tariff determination shall be in accordance with the trajectory agreed by the respective State Governments and approved by the Central Government under any national scheme or programme, or otherwise.**”*

The Commission has noted the provisions of the MoP Rules to specify the trajectory for AT&C losses. The Commission in existing MYT tariff determination process is specifying the trajectory for Distribution Loss reduction and considering the normative distribution loss for energy balancing of the Distribution Licensees. The Commission also monitors the actual Distribution Loss at the time of Truing-Up process and disallowing the excess power procurement on account of additional losses over and above normative losses.

With regards to the trajectory for AT&C losses, the Commission notes that, for Truing-up process the Commission considers the sales and revenue on accrual basis from the

audited accounts for actual energy balance at the time of Turing-up. The collection efficiency is also monitored separately during the Truing-Up process.

However, considering the provisions of the MoP Rules, it is proposed to specify the Trajectory of AT&C losses for monitoring purpose for the Control Period (From FY 2025-26 to FY 2029-30). Accordingly, the Specific trajectory for certain variables is proposed to be modified as under:

“7.1 The Commission, while approving the Multi-Year Tariff Petition, may stipulate a trajectory for certain variables, including but not limited to transmission losses, distribution losses, Reliability Indices, System Average Interruption Frequency Index (SAIFI), System Average Interruption Duration Index (SAIDI) to monitor and report the supply availability and wires availability, Aggregate Technical and Commercial Losses (AT&C Loss), collection efficiency, and payment efficiency.”

2.11 Controllable and Uncontrollable factors

2.11.1 While formulating the MYT framework, it is essential to clearly specify the controllable factors and uncontrollable factors and their treatment, since the impact on the Utility due to uncontrollable factors is generally considered as a pass-through element in tariffs, while the impact of efficiency gain or loss on account of identified controllable factors has to be adjusted between the Utility and the consumers in a specified manner.

2.11.2 Regulation 8 of the draft MERC MYT Regulations, 2024 specifies the various controllable and uncontrollable factors to be considered and Regulations 9 and 10 provide the mechanism for treatment of gains or losses arising on account of such Uncontrollable and Controllable factors, respectively.

Uncontrollable Factors

2.11.3 The Commission has proposed the indicative list of Uncontrollable factors in the Draft MERC MYT Regulations, 2024, like MERC MYT Regulations, 2019. Further, the Commission has added the intra State transmission charges as one of the uncontrollable parameters considering that these charges are also not in control of Distribution Licensees. MOP’s Electricity amendment Rules 2022, dated 29th December 2022 also considers the intra-State Transmission losses as un-controllable, hence considered the passthrough of the same through Fuel and Power Purchase Adjustment Surcharge (FPPAS) mechanism. The existing Regulation is modified to include the intra-State Transmission losses as under;

“8.1 The “uncontrollable factors” shall comprise the following factors, which were beyond the control of, and could not be mitigated by the Petitioner, as determined by the Commission:

(a) Force Majeure events;

- (b) *Change in law;*
- (c) *Variation in fuel cost on account of variation in price of primary and/or secondary fuel prices;*
- (d) *Variation in sales;*
- (e) *Variation in the cost of power purchase due to variation in the rate of power purchase, subject to clauses in the power purchase agreement or arrangement approved by the Commission;*
- (f) *Variation in inter-State Transmission Charges;*
- (g) *Variation in intra State Transmission Charges.*
- (h) *Variation in market interest rates for long-term loan;*
- (i) *Variation in freight rates and;*

Controllable Factors

2.11.4 The Commission has proposed the indicative list of Controllable factors in the Draft MERC MYT Regulations, 2024, similar to MERC MYT Regulations, 2019 as shown below;

“8.2. Variations or expected variations in the performance of the Petitioner, which may be attributed by the Commission to controllable factors include, but are not limited to the following:

- (a) *Variation in technical and commercial losses;*
- (b) *Variation in operational norms;*
- (c) *Variation in amount of interest on working capital;*
- (d) *Variation in Operation & Maintenance expenses;*
- (e) *Variation in Coal transit losses.”*

2.12 Mechanism of Sharing of Gains and losses on account of uncontrollable and Controllable Factors

2.12.1 Sharing of Gains and Losses on account of Uncontrollable Factors

2.12.1.1 MOP in Rule 14 of Electricity Amendment Rules 2022, dated 29th December 2022, has considered timely recovery of power purchase costs by distribution licensee as under:

“14. Timely recovery of power purchase costs by distribution licensee. - The Appropriate Commission shall within ninety days of publication of these rules, specify a price adjustment formula for recovery of the costs, arising on account of the

variation in the price of fuel, or power purchase costs and the impact in the cost due to such variation shall be automatically passed through in the consumer tariff, on a monthly basis, using this formula and such monthly automatic adjustment shall be trued up on annual basis by the Appropriate Commission:

Provided that till such a methodology and formula is specified by the Appropriate Commission, the methodology and formula specified in the Schedule – II annexed to these rules shall be applicable:

Provided further that the existing methodology and the formula specified by the Appropriate Commission shall suitably be amended in accordance with these rules, to implement the automatic pass through of fuel and power purchase adjustment surcharge, on a monthly basis:

Provided also that in case the distribution licensee fails to compute and charge fuel and power purchase adjustment surcharge within the time line, specified by the Appropriate Commission, except in case of any force majeure condition, its right for recovery of costs on account of fuel and power purchase adjustment surcharge shall be forfeited and in such cases, the right to recovery the fuel and power purchase adjustment surcharge determined during true-up shall also be forfeited and the true up of fuel and power purchase adjustment surcharge by the Appropriate Commission, for any financial Year, shall be completed by 30th June of the next financial year.”

2.12.1.2 MOP in schedule II of Electricity Amendment Rules 2022, dated 29th December 2022, has provided the Formula for Computation of Fuel and Power Purchase Adjustment Surcharge in which it has considered the variation in Intra-State Transmission charges as pass through. The relevant rule is as under:

“Schedule II

Formula for Computation of Fuel and Power Purchase Adjustment Surcharge

...

Where,

Nth month means the month in which billing of fuel and power purchase adjustment surcharge component is done. This fuel and power purchase adjustment surcharge is due to changes in tariff for the power supplied in (n-2)th month

A is Total units procured in (n-2)th Month (in kWh) from all Sources including Long-term, Medium-term and Short-term Power purchases (To be taken from the bills issued to distribution licensees)

B is bulk sale of power from all Sources in (n-2)th Month. (in kWh) = (to be taken from provisional accounts to be issued by State Load Dispatch Centre by the 10th day of each month).

[C is incremental Average Power Purchase Cost (including the change of fuel cost)]²⁶ = Actual average Power Purchase Cost (PPC) from all Sources in (n-2) month (INR/ kWh) (computed) - Projected average Power Purchase Cost (PPC) from all Sources (INR/ kWh)- (from tariff order)

D = Actual inter-state and intra-state Transmission Charges in the (n-2)th Month, (From the bills by Transcos to Discom) (in INR)

... ”

2.12.1.3 Regulation 9 of Draft MERC MYT Regulations, 2024 specifies the method for allowing the gains or losses on account of uncontrollable factors as an adjustment in tariff. Intra-State transmission charges are not in control of Distribution Licensee and MOP has also considered the variation in intra-State transmission charges to be pass through in Electricity Amendment Rules 2022, hence the Commission has considered the intra-State Transmission charges as uncontrollable and included the same in the “F” component of the Z-factor charges. Further, the Z factor charge is automatically pass through as an adjustment in the Tariff on a monthly basis in line with MOP Rule, subject to ex-post facto approval by the Commission on a quarterly basis. In case Distribution Licensee fails to compute Z factor charge within the timelines stipulated in the Regulations, except in case of any Force Majeure, its right for recovery of such cost shall be forfeited and Distribution Licensee shall not be allowed to recover such cost in the True-up proceeding also

2.12.1.4 Further, the consequential impact of decisions of higher Courts or Tribunals or Review Orders passed by the Commission on the Transmission Licensees, Distribution Licensees, MSLDC, STU and Energy Storage system Developer has been passed through under the ‘Other Uncontrollable Cost’ component of the Z-factor Charge (Z_{OUC}).

2.12.2 Mechanism for sharing of Gains and Losses on account of Controllable Factors

2.12.2.1 Regulation 10 of the Draft MERC MYT Regulations, 2024 specifies the method of sharing the gains and losses on account of controllable factors between the Generating Company or Licensee and the Beneficiaries. Since the Commission has proposed separate Chapter for Energy Storage System and STU, the appropriate changes have been proposed in these Regulations to include applicability to Energy Storage System and STU.

3 Power Procurement

3.1 Power Procurement Guidelines

- 3.1.1 The Distribution (Supply) Licensee purchases power from different sources either through long-term or medium-term Power Purchase Agreements (PPA) or through short-term contracts. The Distribution Licensee is required to plan for its future requirement of power in the most effective way. The MERC MYT Regulations, 2019 provides for Licensees to prepare power procurement plan for the Control Period and submit the same for approval of the Commission. The power procurement plan shall comprise of long-term and medium-term contracts between the Generator and the Distribution Licensee which are proposed to continue in the next Control Period. The Distribution Licensee is also required to submit sources from which it proposes to buy short-term power for balance requirement. While planning for power requirement, the Distribution Licensee are expected to consider the Merit Order Despatch (MOD) principles of all Generating Stations, the Quantum of Renewable Purchase Obligation (RPO) specified by the Commission under relevant Regulations, and the targets for Energy Efficiency (EE) and Demand Side Management schemes.
- 3.1.2 The Distribution Licensees also consumes the considerable quantum of energy for its own requirement such as Auxiliary consumption in the substations, transformers, control rooms, own offices and other establishments. The Commission is of the view that, Distribution Licensee should also consider the implementation of Energy Efficiency Schemes under the provisions of the MERC (Demand Side Management Implementation Framework) Regulations, 2010 as amended from time to time. The Distribution Licensees can take efforts to reduce its self-consumption by implementing Energy Efficiency/Conservation measures which shall include but not limited to Distribution Transformer efficiency improvement schemes, deployment of LED bulbs and deployment of energy efficiency fans (BLDC fans, etc.), deployment of five star rated air conditioning units at its offices and other substations related establishments, schemes for voltage management measures and Power Factor improvement, Energy Efficiency monitoring and analytical hardware and software tools.
- 3.1.3 The Distribution Licensee shall submit the existing level of Energy Conservation measure at the beginning of the Control Period and provide the trajectory for reduction in its own energy consumption through proposed Energy Efficiency improvement scheme/plan under Capital Expenditure or Opex Expenditure as part of the MYT Petition alongwith the target of Energy Efficiency related savings, and monitoring plan in line with principles provided the MERC (Demand Side Management Implementation Framework) Regulations, 2010 as amended from time to time. The Distribution

Licensee shall submit its Energy Efficiency Programmes’/Scheme’s Cost Effectiveness Assessment for the expected trajectory.

3.1.4 Based on the submissions of the Distribution Licensees the Commission may specify the Energy Conservation Trajectory for the Control Period and monitor the actual performance at the time of Trueing-Up. The Commission may also allow incentive to the Distribution Licensee for achievement of Energy Efficiency Targets over and above the approved Trajectory, subject to prudence check by the Commission.

3.1.5 Further, the Commission notes that, the Electricity (Amendment) Rules, 2022 notified by the Ministry of Power, Government of India, specifies that the Central Government, in consultation with Central Electricity Authority (CEA) will issue Resource Adequacy Guidelines for assessment of resource adequacy during the generation planning stage (one year or beyond) as well as during the operational planning stage (up to one year). The CEA has notified the Guidelines for Resource Adequacy Planning Framework. The Forum of Regulators (FOR) has published the Model Regulations for Resource Adequacy Requirement in June 2023.

3.1.6 Considering the above developments, the Commission has separately published Draft MERC (Framework for Resource Adequacy) Regulation 2024 on resource adequacy, based on which the Distribution Licensees shall formulate the resource adequacy plan and seek approval of the Commission. The provisions of the Draft MERC RA Regulations, 2024 for Power Procurement Planning are summarised as below:

- Distribution Licensees shall prepare its Long-term Discom Resource Adequacy Plan (LT-DRAP) for a 10-year horizon [Long-term Distribution Licensee Resource Adequacy Plan (LT-DRAP)], on an annual rolling basis, to meet their own peak and electrical energy requirement, which shall be vetted by CEA.
- The Distribution Licensees shall take inputs if required from the Long-term Discom Resource Adequacy Plan (LT-DRAP), Planning Reserve Margin (PRM), capacity credits, etc., while formulating their LT-DRAP and submit their plans to CEA by the month of September for the period starting from the month of April in the subsequent year.
- CEA shall vet the LT-DRAP along with details for meeting the RAR of national peak for the utility may be submitted to SERC/JERC by the month of November for the period starting from the month of April in the subsequent year for their approval.
- The Resource Adequacies studies by the Distribution Licensees would require inputs regarding long-term demand projections, demand pattern, load growth estimates, RE generation profile, technical specification of base load generating stations (ramp rates, minimum technical load, heat rate, start-up cost, time, etc.), generation

capacities (existing and planned), various costs parameters (capital cost, variable cost, O&M costs, start-up and shut-down costs, reserve offers) of the generators, historical forced outage rates and planned maintenance rates of generation capacities, tie line details and transmission expansion plans, RPO / HPO / Energy Storage obligation targets, spinning reserve and planning reserve margins, etc.

- 3.1.7 Accordingly, the Commission has added reference of MERC RA Regulations, 2024 in Regulation 19.1 in its draft MERC MYT Regulation 2024 as shown in below:

19.1 The Distribution Licensee shall prepare a plan for procurement of power to serve the demand for electricity in its area of supply considering the provisions of the MERC (Framework for Resource Adequacy) Regulations, 2024 and submit such plan to the Commission for approval:

Provided that such power procurement plan approved under MERC (Framework for Resource Adequacy) Regulations, 2024 for the Control Period commencing on April 1, 2025, shall be filed along with the Petition for determination of Tariff for the Control Period from April 1, 2025 to March 31, 2030, in accordance with Part A of these Regulations.

3.2 Power Procurement Plan

- 3.2.1 In the MERC MYT Regulations, 2019, the Control Period was of five years and it was specified in Regulation 20 that the Distribution Licensee was required to submit the demand-supply position on an indicative basis and power procurement plan for the five-year period commencing from April 1, 2020, indicating the various sources of power purchase and mix of long/medium/short term power purchase, and steps proposed to optimise the power purchase cost over that period, along with its MYT Petition.
- 3.2.2 As per Section 86 (1) (a) of the EA 2003, the SERC has been assigned the function of promoting generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person. In order to promote generation from RE sources in the State of Maharashtra, the Commission has notified the MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019, the MERC (Renewable Purchase Obligation, its Compliance and Implementation of Renewable Energy Certificate Framework) Regulations, 2019, the MERC (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019 and MERC (State Grid Code) Regulation, 2020. Accordingly, the Commission while Considering Merit Order Despatch Principles under State Grid Code Regulation, RPO Targets, and RA framework has been added in Draft MERC MYT Regulation, 2024.

- 3.2.3 As per the provisions of the Tariff Policy and the Provisions of MERC MYT Regulations 2019, the long-term/medium-term procurement plan shall be cost effective. The Commission is of the view that the Distribution Licensees are required to come up with the least cost plan based on the optimization study using energy modelling tools to optimize its future power procurement subject to the requirement of RA framework.
- 3.2.4 Government of Maharashtra vide GR dated May 8, 2023 has launched Mukhyamantri Saur Krishi Vahini Yojna 2.0 scheme. Aim of this scheme is to interconnect solar PV projects of appropriate size to source solar energy for Agriculture use. Out of the total power consumption of Maharashtra State, 22% is consumed by the agriculture sector, out of which 50% of the total Agriculture load is served during the daytime as per rostering. The Government of Maharashtra provides subsidy to MSEDCL for providing power at economical cost to AG consumers. MSEDCL further cross subsidizes AG consumers by charging higher tariff to the Commercial & Industrial Consumers. Solarization at the AG substation level can help in bringing down the existing average cost of power supply for agriculture. Moreover, this will have added benefits of reliable and better-quality power to farmers during daytime. It also allows MSEDCL, which is an obligated entity to account its mandated solar Purchase Obligation.
- 3.2.5 With this context, the GoM Launched the MSKVY2.0. This Scheme focusses on developing Distributed RE (DRE) power for the Agriculture sector. So far 550 MW of solar generation capacity has been commissioned under MSKVY1.0. MSKVY 2.0 program envisages solarization of 30% agriculture feeders by 2026 which translates into contracting solar power capacity of ~7000 MW by 2026. The Commission expects the result of this scheme in this Control period. The Distribution Licensee is expected to consider the power available under MSKVY2.0 at distribution level while planning for its own power procurement for the Control Period.
- 3.2.6 MoP has notified the ‘Renewable Purchase Obligation (RPO) and Energy Storage Obligation Trajectory till 2029- 30’ Order on 22nd July 2022 and its Corrigendum on 19th September 2022. Also, MoP has notified the ‘The Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022’ on 06th June 2022. Accordingly, the Commission has incorporated the relevant provisions in the amendment to the MERC (Renewable Purchase Obligation, its Compliance and Implementation of Renewable Energy Certificate Framework) (First Amendment) Regulations, 2023. The Distribution Licensees are expected to consider the said amendment to RPO Regulations and plan its power procurement for the Control Period to ensure compliance with said mandate.

3.3 Additional Power Procurement

3.3.1 The Commission has retained the provisions for additional power procurement under Regulation 21.2 which provides for various situations under which the Distribution Licensee is allowed to enter into additional agreement or arrangement for procurement of power. Accordingly, the Regulation 21.2 of Draft MERC MYT Regulation 2024 for additional power procurement as shown below:

“21.2 Where there has been an unanticipated increase in the demand for electricity or a shortfall or failure in the supply of electricity from any approved source of supply during the Year or when the sourcing of power from existing tied-up sources becomes costlier than other available alternative sources, the Distribution Licensee may enter into additional agreement or arrangement for procurement of power.”

4 Financial Principles

4.1 Financial Prudence

4.1.1 The MERC MYT Regulations, 2019, specifies the framework for assessing the Financial Prudence exercised by the Utilities, while determining the ARR and Tariff. The Financial Prudence is to be assessed with regard to the following factors:

- (a) Revenue;
- (b) Revenue Expenditure;
- (c) Capital Expenditure.

4.1.2 The Commission in Draft MERC MYT Regulations 2024 is continuing with the provisions of Financial Prudence in line with the provisions of MERC MYT Regulations 2019. However, the Commission has proposed to introduce the provision for determination of Tariff for the Energy Storage Systems (ESS) and Fees & Charges for the Maharashtra State Transmission Utility (STU) in the draft MERC MYT Regulations, 2024. Accordingly, following revision of the Regulations are proposed by the Commission in the Draft MERC MYT Regulations, 2024:

“22.1 The Generating Company or Energy Storage System Developer or Licensee or STU or MSLDC shall manage its finances in an optimum and prudent manner:

22.2 In determining the Aggregate Revenue Requirement and Tariff, Charges and Fees of the Generating Company or ESSD or Licensee or MSLDC or STU, 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.”

4.1.3 The Regulation 23.4(c) of the MERC MYT Regulations, 2019, specifies for the transparent method of power procurement with an objective of optimising the same in accordance with Regulation 19 viz. Power Procurement Guidelines of the MERC MYT Regulations, 2019. However, the Commission has separately published the MERC (Framework for Resource Adequacy) Regulations, 2024 for Power Procurement Planning of the Distribution Licensees in line with the Resource Adequacy guidelines

issued by the Central Electricity Authority (CEA). The Distribution Licensees are expected to undertake power procurement planning as per the provisions of the MERC RA Regulations, 2024. Accordingly, following revision of the Regulations are proposed in the Draft MERC MYT Regulations, 2024 to add the reference of MERC (RA) Regulations, 2024:

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

.....

(c)transparent method of power procurement, with the objective of optimising the power purchase expenses, as specified under Part-C of these Regulations:”

4.2 Capital Cost and Capital Structure

4.2.1. The Commission had notified the MERC (Approval of Capital Investment Schemes) Regulations, 2022 on 12 July 2022 with an objective to lay down the framework to be followed by all State entities for obtaining the Commission’s in-principal approval for proposed Capital Investment as well as the approval to be granted to the final completed cost.

4.2.2. To align the approval of the Capital Investment Schemes of the Generating Company, ESS Developer, Transmission Licensee, Distribution Licensee, MSLDC and STU under these MYT Regulations, the Commission has proposed to add the following Regulation in the Draft MERC MYT Regulations, 2024:

“23.1 The Capital Investment Scheme becoming part of the Capital Investment Plan and Opex Schemes of the Generating Company or Transmission Licensee or Distribution Licensee or ESSD or MSLDC or STU throughout the Control shall be in accordance with the principles set out under Regulation 3 of the MERC (Approval of Capital Investment Schemes) Regulations, 2022, as amended from time to time.”

4.2.3. The Commission during the process of Mid-Term Review in the fourth Control Period have allowed the funding of the assets through Contingency Reserves Fund. Thus, in order to bring more clarity in terms of the non-consideration of the decapitalisation of certain assets funded through such Contingency Reserves Fund or in case the assets are being claim through Insurance Proceeds, the Commission has proposed to add additional clause in the Draft MERC MYT Regulations, 2024:

“23.2.....

Provided further that unless shifting of an asset from one project to another is of permanent nature, there shall be no de-capitalization of the concerned assets.

(a) In case of hydro generating stations, any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State Government by following a transparent process;

(b) Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy;

(c) Any consumer contribution or grant received from the Central or State Government or any statutory body or authority for the execution of the project, which does not carry any liability of repayment;

(d) Any assets funded through Contribution to Contingency Reserves; and

(e) Any assets funded through proceeds of insurance claims, if any.”

4.2.4. The Regulation 24.7 of the MERC MYT Regulations, 2019 specifies the approval of the Non-DPR Schemes, which is benchmarked upto the ceiling limit of 20% of the of the cumulative amount of capitalisation approved against DPR schemes for that Year for all regulated Utilities. However, in case of MSLDC it was noted that most the Capital Expenditure schemes proposed are significantly lower than the DPR limit of INR One Crore. Further, the capitalisation of the assets is of the nature of office IT equipment viz. Xerox Machine, Laptops, Printer, etc. and thus, cannot be grouped together as one set of DPR scheme. The Commission in this context, noted that, the total capitalisation during the year for MSLDC goes beyond the non-DPR limit of 20%, however, the same cannot be the part of the DPR scheme as discussed above.

4.2.5. Thus, in order to provide more clarity in terms of the approval of the non-DPR schemes in case of MSLDC, the Commission has proposed to add following provisos in the Draft MERC MYT Regulations, 2024:

“23.8 The cumulative 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 cumulative amount of capitalisation approved against DPR schemes for that Year:

Provided that, in case of MSLDC the cumulative amount of capitalisation against non-DPR schemes for any Year shall not exceed Average capital expenditure of past three years actually incurred or 20% of approved capital expenditure of previous years, whichever is lower, in case there is no approved capital expenditure for particular year.

Provided further that the Commission may allow capitalisation against non-DPR schemes for any Year in excess of 20% or such other limit as may have been stipulated by the Commission through Order, on a request made by the Generating Company, ESSD or Licensee or MSLDC.”

- 4.2.6. As discussed in the above chapter of Financial Prudence, the Commission has proposed to introduce the provision of determination of Tariff for the Energy Storage System Developer (ESSD) and Fees & Charges for the Maharashtra State Transmission Utility (STU). Hence, the reference of the ESSD and STU are added in the relevant provisions under the section of ‘Capital Cost and Capital Structure’.
- 4.2.7. Regulations 24, of MERC MYT Regulations, 2019 specifies the ceiling norms to initial spares capitalised as a percentage of plant and machinery cost. Further, the ceiling norms related to transmission system included transmission line, transmission sub-station (brown and green field), Series compensation devices and HVDC substation, GIS, Communication System and Static Synchronous Compensator.
- 4.2.8. However, the Commission in the recent year has noted an increase in the use of EHV underground cables in InSTS systems. Further, CERC in the draft Tariff Regulations, 2024 has proposed the similar provisions for the ceiling norms for the underground cables.
- 4.2.9. Accordingly, the Commission in the draft MYT Regulations 2024, proposes to extend the ceiling norm for the transmission line to the under-ground cable as under:

“23.12 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:

.....

(e) Transmission System and Distribution System

- (i) Transmission Line & Distribution Line including underground cable: 1.0%;*
- (ii) Transmission sub-Station & Distribution sub-Station (green-field): 4.0%;*
- (iii) Transmission sub-Station (brown-field): 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%;*
- (vii) Static Synchronous Compensator: 6.0%.*

-----”

4.3 Consumer Contribution, Deposit Work, Grant and Capital Subsidy

- 4.3.1 As discussed in the above section viz. ‘Capital Cost and Capital Structure’, the Commission during the process of Mid-Term Review in fourth control period have allowed the funding of the assets through Contingency Reserves Fund. Thus, in order

to bring more clarity in terms of the treatment of Capitalisation of certain assets funded through such Contingency Reserves Fund, the Commission has proposed the addition of following clause in the Draft MERC MYT Regulations, 2024:

“25.1 The expenses on the following categories of works carried out by the Generating Company or Licensee or MSLDC or STU 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.

(d) Capital works undertaken by the Licensee by utilisation of Contingency Reserve.”

4.4 Debt-Equity Ratio

4.4.1 Regulation 27 of the MERC MYT Regulation, 2019 specifies the debt-equity ratio to be considered. The capital expenditure made by Licensees and Generation Companies shall be done at an optimum debt: equity ratio, in order to balance the need for providing sufficient returns that can be earned by Licensees and Generation Companies and protecting the interest of consumers. Hence it is necessary to specify the normative Debt-Equity ratio. The existing MERC MYT Regulations, 2019 specify the normative debt: equity ratio of 70:30. In case the actual equity employed is less than 30% of the capital cost, then actual equity is considered for determination of tariff. In case the actual equity employed is more than 30% of the capital cost, then the equity in excess of 30% is considered as normative loan for determination of tariff.

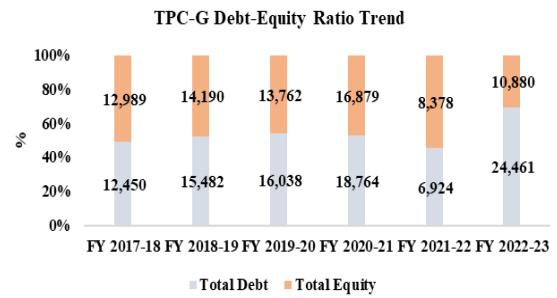
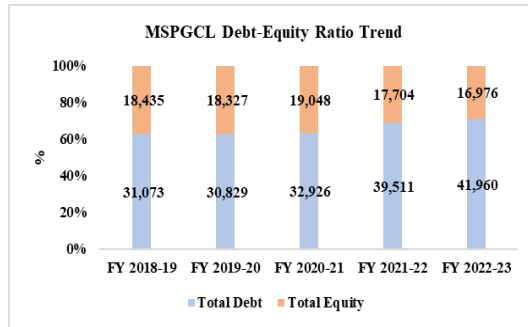
4.4.2 Other SERCs have followed the same normative debt:equity ratio for tariff determination in their respective States. In this context, Clause 5.3 (b) of Tariff Policy stipulates:

“For financing of future capital cost of projects, a Debt: Equity ratio of 70:30 should be adopted. Promoters would be free to have higher quantum of equity investments. The equity in excess of this norm should be treated as loans advanced at the weighted average rate of interest and for a weighted average tenor of the long-term debt component of the project after ascertaining the reasonableness of the interest rates and taking into account the effect of debt restructuring done, if any. In case of equity below the normative level, the actual

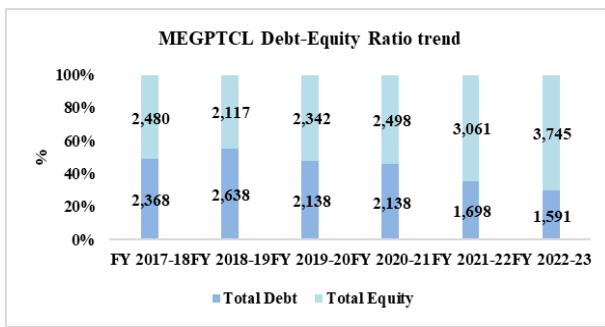
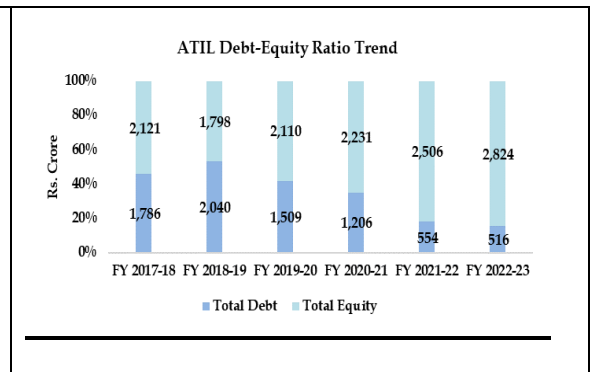
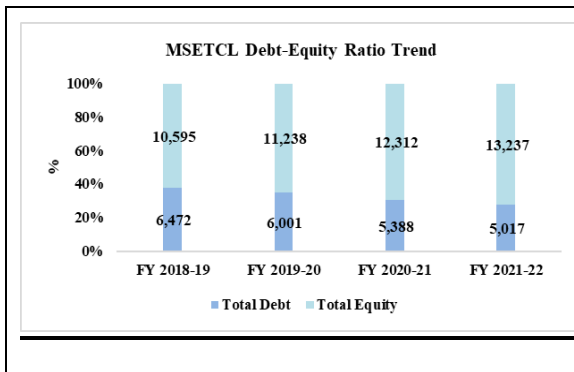
equity would be used for determination of Return on Equity in tariff computations.”

4.4.3 In order to review the ratio of the debt: equity across the Generation, Transmission and Distribution, the Commission has analysed the ratio of actual debt:equity ratio for the following utilities from their books of accounts for the period of five years i.e. FY 2017-18 to FY 2022-23 as under:

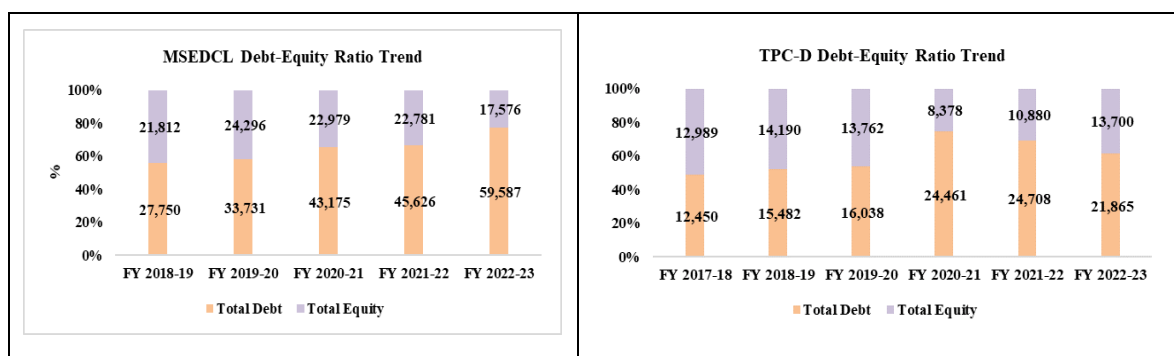
Generation



Transmission



Distribution



Based on the above trend analysis it was observed that, the average debt:equity ratio for the Generation Business is 69:31, Transmission Business 15:85 and Distribution Business is 61:39.

- 4.4.4 The CERC in its Draft CERC (Terms and Conditions of Tariff), 2024 has proposed to continue with the debt:equity ratio of 70:30. Further, several States are also continuing with the debt:equity ratio of 70:30, except Telangana State, where TSERC in its notified Tariff Regulations, 2024 has specified the debt:equity ratio of 75:25 for new projects.
- 4.4.5 The average ratio of the debt:equity is expected to be same across the States for the regulated entities. Thus, it is proposed to continue with the same provision of Debt - Equity ratio of 70:30 for tariff determination of Generation Companies, ESSD, Transmission Licensee and Distribution Licensees during the next Control Period, which is also in line with the Draft CERC Tariff Regulations, 2024 as well as with the MYT Regulations of most of the States.

4.5 Depreciation

- 4.5.1 Regulation 28 of the MERC MYT Regulations, 2019 specifies the principles for computing depreciation. The MERC MYT Regulations, 2019 has specified the straight-line method for determination of depreciation expenses for Generation, Transmission, Distribution Wire and Retail Supply business, and a residual value of 10%. The depreciation rates are in line with the depreciation rates specified by the CERC, the weighted average rate of which works out to approximately 5.28%. 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.
- 4.5.2 The CERC in its Draft CERC (Terms and Conditions of Tariff), 2024 has proposed the loan repayment tenure for the New Projects as 15 years considering that most of the utilities are able to avail the long-terms loans of 15-18 years. The CERC in its draft Regulations has proposed the loan repayment tenure as 12 years for existing projects whereas for new projects the loan tenure is considered as 15 years. With this change

the rate of depreciation will be changed for existing projects and new projects. In case of existing projects, the CERC have retained the Depreciation rate of 5.28% having loan tenure of 12 years, considering that, those projects have already been capitalised.

- 4.5.3 In view of the above the Commission has also reviewed the tenure of long-term loans being offered by the PFC and REC and noted that, the repayment period is in the range of 15 to 20 years both in case of State (Except State DISCOM, upto 12 years) utilities and Private utilities.
- 4.5.4 Accordingly, the Commission has proposed the Depreciation rate for the New Capital Schemes or New Assets of the Generating Company, or Licensee or MSLDC or STU or ESSD proposed to be capitalised after 1 April 2025, to 15 years under the straight-line method and retain the existing depreciation rate for the existing assets of the Generating Company or Licensee or MSLDC or Energy Storage System Developer. Accordingly, the following clauses are proposed by the Commission for Depreciation in the draft MERC MYT Regulations, 2024:

“27.1 The Generating Company, Licensee, Energy Storage system Developer, MSLDC and STU shall be permitted to recover depreciation on the value of fixed assets used in their respective businesses, 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 for the Existing Capital Schemes or Existing Assets of the Generating Company or Licensee or ESSD or MSLDC or STU 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 Company or Licensee or Energy Storage system Developer or MSLDC or STU shall ensure that once the individual asset is depreciated to the extent of seventy percent, remaining depreciable value as on 31st March of the year closing after the period of twelve years from the Commercial Operation Date or the date of assets capitalised shall be spread over the balance Useful Life of the asset including the Extended Life, as provided in this Regulation:

Provided further that the Generating Company or Licensee or Energy Storage system Developer or MSLDC or STU shall submit all such details or documentary evidence as may be required, to substantiate the above claims.

(c) Depreciation for the New Capital Schemes or New Assets of the Generating Company or Licensee or MSLDC or STU or Energy Storage system Developer shall be computed annually based on the straight-line method at the rates specified in the Annexure II to these Regulations:

Provided that the Generating Company or Licensee or MSLDC or STU or Energy Storage system Developer shall ensure that once the individual asset is depreciated to the extent of seventy percent, remaining depreciable value as on 31st March of the year closing after the period of fifteen years from the Commercial Operation Date or the date of assets capitalised shall be spread over the balance Useful Life of the asset including the Extended Life, as provided in this Regulation:

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

(d) 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 ninety per cent of the allowable capital cost of the asset:

Provided that the Generating Company, ESSD or Licensee or MSLDC or STU shall submit certification from the Statutory Auditor for the capping of depreciation at ninety per cent of the allowable capital cost of the asset:

Provided further that the salvage value of Information Technology equipment and computer software shall be considered at zero per cent of the allowable capital cost.

(e) Where the Emission Control System is implemented within the original scope of the generating station and the date of commercial operation of the generating station or unit thereof and the date of operation of the Emission Control System are the same, depreciation of the generating station or unit thereof including the Emission Control System shall be computed in accordance with Clauses (a) to (c) of this Regulation.

(f) Depreciation of the Emission Control System of an existing or a new generating station or unit thereof where the date of operation of the emission control system is subsequent to the date of commercial operation of the generating station or unit thereof, shall be computed annually from the date of operation of such emission control system based on straight line method, with salvage value of 10%, over a period of—

(i) Twenty-five years, in case the generating station or unit thereof is in operation for fifteen years or less as on the date of operation of the emission control system; or

(ii) balance useful life of the generating station or unit thereof plus fifteen years, in case the generating station or unit thereof is in operation for more than fifteen years as on the date of operation of the emission control system; or

(iii) ten years or a period mutually agreed by the generating company and the beneficiaries, whichever is higher, in case the generating station or unit thereof has completed its useful life.

27.2 Land other than the land held under lease and the land for reservoir in case of Hydro Generating Station or Pumped Storage Hydro Project 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, 2025, shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to March 31, 2025, 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 The depreciation on capital investment schemes undertaken by Generating Companies or Generating Businesses shall be allowed proportionately correlated to the remaining tenure of the Power Purchase Agreement with the Distribution Licensee.

27.6 Depreciation on capital investment schemes shall be computed annually from the date of operation of such capital investment based on straight line method, with salvage value of 10%, over a period of—

(i) Twenty-five years, in case the principal asset is in operation for fifteen years or less as on the date of operation of the capital investment; or

(ii) balance useful life of the principal asset plus fifteen years, in case the principal asset is in operation for more than fifteen years as on the date of operation of the capital investment.

27.7 Depreciation shall be re-computed for assets capitalised at the time of Truing-up at the end of the Control Period, based on documentary evidence of assets

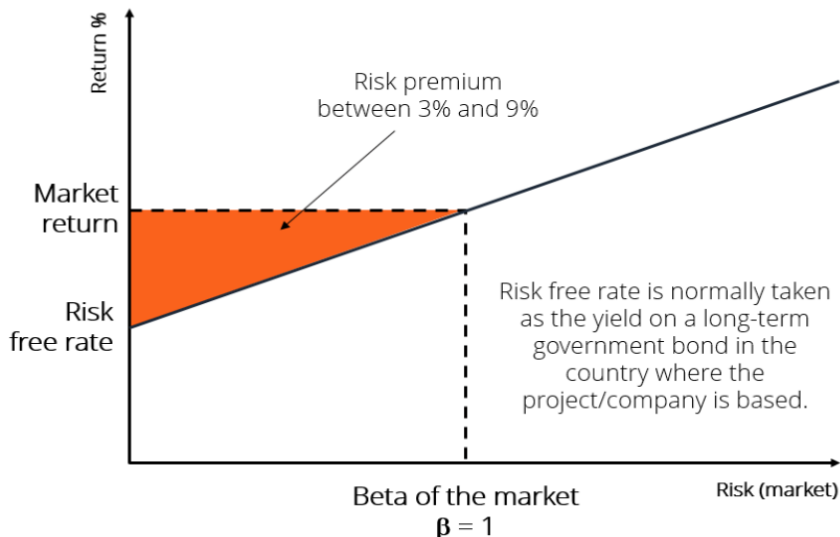
capitalised by the Petitioner, subject to the prudence check of the Commission, such that the depreciation is allowed proportionately from the date of capitalisation.

27.8 The Generating Company or Licensee or MSLDC or STU shall submit the depreciation computations separately for assets added upto March 31, 2025, and assets added on or after April 1, 2025.”

4.6 Return on Equity

- 4.6.1 Regulation 29 of the MERC MYT Regulations, 2019 specifies the principles for allowing Return on Equity (RoE). The MERC MYT Regulations, 2019 specifies the rate of return on equity for Generating Companies, Transmission Licensees, SLDC, and Distribution Wires business upto 15.50% and for Retail Supply Business upto 17.50%.
- 4.6.2 Under any business, an investor expects certain rate of return for equity infused. In the regulated business, the return on the utility’s investment is allowed in terms of Return on Equity. Prior to MERC MYT Regulation 2019, the RoE was allowed at a single rate i.e., 15.50% for all the regulated utilities except Retail Supply Business, where the RoE was allowed at 17.50% considering the service is given to the end consumers associated with higher risks as compared to other businesses viz. Generation, Transmission, Distribution Wires, MSLDC.
- 4.6.3 Clause (d) of Section 61 of the Act provides that the Commission while specifying the terms and conditions for determination of tariff, shall be guided by the principle of “safeguarding of consumers interest and at the same time, recovery of cost of electricity in a reasonable manner”.
- 4.6.4 The Commission felt necessary to revisit the cost of equity across the Generation, Transmission and Distribution Business based on the current market conditions. To assess the same, the Commission has adopted the Capital Asset Pricing Model (CAPM) method, which most widely used method to assess the Cost of Equity.
- 4.6.5 The Capital Asset Pricing Model (CAPM) is a model that describes the relationship between the expected return and risk of investing in a security. It shows that the expected return on a security is equal to the risk-free return plus a risk premium, which is based on the beta of that security. Below is an illustration of the CAPM concept. ¹

¹ <https://corporatefinanceinstitute.com/resources/valuation/unlevered-beta-asset-beta/>



4.6.6 The formula for the Expected Return is provided as under:

$$\text{Expected Return } (R_e) = R_f + \beta (R_m - R_f),$$

R_f = Risk Free Rate,

β = Beta,

R_m = Market Returns

“Expected return” (R_e) is a long-term assumption about how an investment will play out over its entire life.

4.6.7 The beta (denoted as “ β ” in the CAPM formula) is a measure of a stock’s risk (volatility of returns) reflected by measuring the fluctuation of its price changes relative to the overall market. In other words, it is the stock’s sensitivity to market risk. For instance, if a company’s beta is equal to 1.5 the security has 150% of the volatility of the market average. However, if the beta is equal to 1, the expected return on a security is equal to the average market return. A beta of -1 means security has a perfect negative correlation with the market. ¹

4.6.8 Unlevered beta is the beta of a company without the impact of debt. It is also known as the volatility of returns for a company, without taking into account its financial leverage. It compares the risk of an unlevered company to the risk of the market. It is also commonly referred to as “asset beta” because the volatility of a company without any leverage is the result of only its assets. The Unlevered Beta can be calculated based on the following formula:¹

$$\text{Unlevered Beta} = \frac{\beta}{\left(1 + \left(1 - \text{Tax Rate}\right) \times \frac{\text{Total Debt}}{\text{Total Equity}}\right)}$$

4.6.9 The risk-free rate (R_f) is the minimum return an investor expects for any investment, as it is the return of a risk-free asset, typically a government bond. This rate serves as a

benchmark for assessing potential investments, grounding the return expectations in a certain degree of reality. It is generally considered the rate of a government bond of the country where the investment will take place.²

4.6.10 The Commission for the purpose of estimating the cost of equity has considered the listed companies across the Generation, Transmission and Distribution, where, the 3 years Beta value were considered for the respective listed companies, Risk free return is considered at 7.16%, which is 10 years G-Sec yield, Average Market Return (R_m) is considered as 16.31% for 15 years BSE Power Index (2009 to 2023). Accordingly, the Expected Return (R_e) across Generation, Transmission and Distribution Sector is estimated as under:

Type of Service	Company Name	Beta (3 years)	Unlevered Beta	RoE %	Market Cap	Debt (INR Cr)	Equity (INR Cr)	D:E
Thermal Generation	NTPC Ltd.	0.70	0.35	10.36%	3,04,378	2,21,626	1,47,023	1.51
	Tata Power	1.39	0.63	12.89%	1,05,382	52,923	28,787	1.84
	Adani Power	2.47	1.27	18.81%	2,01,872	42,350	29,876	1.42
Hydro Generation	NHPC	0.86	0.56	12.30%	65,243	29,540	36,899	0.80
	SJVN	0.44	0.26	9.57%	35,879	14,059	13,860	1.01
Transmission	Power Grid	0.61	0.30	9.93%	2,22,377	1,26,661	83,015	1.53
	Adani Transmission	1.54	0.56	12.24%	1,14,065	31,382	11,749	2.67
	Kalpataru	0.96	0.63	12.89%	10,682	3,786	4,721	0.80
Distribution	CESC	1.30	0.70	13.53%	17,179	14,263	10,910	1.31

4.6.11 In view of above estimates, it is evident that, at present the expected cost of equity across the entire value chain ranges from 10.00% to 14.00%, which is significantly lower than the Regulated RoE provided by the Commission.

4.6.12 The Commission in the MERC MYT Regulations, 2019 allowed the Base RoE at 14.00% for all Utilities except Retail Supply Business, where the Base RoE is allowed

² <https://www.financestrategists.com/wealth-management/valuation/capital-asset-pricing-model/>

at 15.50%. The Commission further allowed the Additional RoE for all Utilities upto 1.50% except Retail Supply Business, where the Additional RoE is allowed at 2.00%.

4.6.13 Thus, based on the above estimates of the Cost of Equity, the Commission proposes to revise the split between the RoE of 15.50%, where the Base RoE is proposed to be reduced from 14.00% to 11.00% and the Performance linked RoE proposed to be increased upto 4.50% for all Utilities, except Retail Supply Business. In case of Retail Supply Business, the Commission has proposed to introduce the Supply Margin at 5 Paisa/ kVAh (or kWh) across all the Distribution Licensees. The detailed explanation is provided under the Retail Supply Business Chapter.

4.6.14 The Commission has further proposed to revisit the Performance linked parameters in case of Thermal & Hydro Generating stations. As regards Thermal generating Stations, the Commission has proposed additional ROE of 1.25% if the generating station has free governor mode in draft MERC MYT Tariff Regulations 2024. Further, another performance parameter is also introduced related to availability of the generating station during peak hours to ensure availability of power during peak hours, which is maximum 1% of RoE. Other two performance parameter of incremental Ramp-up rate and Mean Time Between Failure (MTBF) are retained from MERC MYT Tariff Regulations 2019 with modification in % incentive of RoE. Maximum incremental Ramp-up rate proposed in draft MERC MYT Tariff Regulations 2024 is 1.25% of RoE and Mean Time between failure as 1% of RoE. Relevant Para of the draft MERC MYT Tariff Regulations 2024 is as under:

“28.4 In case of a thermal generating Unit, with effect from April 1, 2025, at the time of true-up:

(a) A Performance Linked Return on Equity of 0.25% shall be allowed for every incremental ramp rate (ramp-up or ramp-down) of 0.25% per minute achieved over and above the ramp rate of 1% per minute, subject to ceiling of additional rate of Return on Equity of 1.25%, for the year in which such ramp rate is achieved:

Provided that the Performance Linked Return on Equity shall be allowed on pro-rata basis for incremental ramp rate of more than 0.25% per minute.

Provided further that the MSLDC shall formulate the procedure for certification of Ramp Rate of thermal plants and submit for the approval of the Commission upon undertaking the due consultation of the stakeholders.

(b) A Performance Linked Return on Equity shall be allowed as per the following schedule:

(i) 0.50% for Unit that achieves Mean Time Between Failure (MTBF) of at least 45 days;

(ii) 0.75% for Unit that achieves Mean Time Between Failure (MTBF) of at least 90 days;

(iii) 1.00% for Unit that achieves Mean Time Between Failure (MTBF) of at least 120 days:

Provided that the Mean Time Between Failure (MTBF) shall be computed as provided in Annexure-III to these Regulations:

(c) A Performance Linked Return on Equity shall be allowed for the thermal generating units available during the peak hours subject to ceiling of 1.00% as per the following schedule:

(i) If availability during peak hours >90%, then the additional Return on Equity shall be 1.00%.

(ii) If availability during peak hours <90% but >85%, then the additional Return on Equity shall be 0.50%

(iii) If availability during peak hours <85% but >75%, then the additional Return on Equity shall be 0.25%

Provided further that the equity base for the respective Unit shall be considered in proportion to the installed capacity of the generation station, in case the tariff is determined for the generation station as a whole.

Provided further that in case of an existing and new thermal generating unit, a Performance Linked Return on Equity of 1.25% shall be provided if the thermal generating station is operational under Free Governor Mode Operation (FGMO)."

4.6.15 In MERC MYT Tariff Regulation 2019, the additional rate of RoE is allowable only for thermal Units and the Commission has considered the rate of RoE of 14% for hydro stations. Hence, to make hydro equitable with other generation in the fifth Control Period the Commission is proposing to introduce additional rate of RoE based on performance. Accordingly, the Commission has decided to propose additional RoE on three new performance linked parameters, free governor mode operation, availability of the generating station during peak hours and Mean Time Between Failure. Additional ROE of 1.25% if the generating station has free governor mode, Maximum additional RoE of 2.25%, Maximum additional RoE of 1% for Mean Time Between Failure has been considered in draft MERC MYT Tariff Regulations 2024. Relevant Para of the draft MERC MYT Tariff Regulations 2024 is as under:

"28.5 In case of a hydro generating Unit, with effect from 1.4.2025, at the time of true-up:

(a) A Performance Linked Return on Equity shall be allowed as per the following schedule:

(i) 0.50% for Unit that achieves Mean Time Between Failure (MTBF) of at least 45 days;

(ii) 0.75% for Unit that achieves Mean Time Between Failure (MTBF) of at least 90 days;

(iii) 1.00% for Unit that achieves Mean Time Between Failure (MTBF) of at least 120 days:

Provided that the Mean Time Between Failure (MTBF) shall be computed as provided in Annexure-III to these Regulations:

(b) A Performance Linked Return on Equity shall be allowed for the hydro generating units available during the peak hours subject to ceiling of 2.25% as per the following schedule:

(i) If availability during peak hours >95%, then the additional Return on Equity shall be 2.25%.

(ii) If availability during peak hours <95% but >90%, then the additional Return on Equity shall be 2.00%.

(iii) If availability during peak hours <90% but >85%, then the additional Return on Equity shall be 1.50%

(iv) If availability during peak hours <85% but >75%, then the additional Return on Equity shall be 1.00%

Provided further that the equity base for the respective Unit shall be considered in proportion to the installed capacity of the generation station, in case the tariff is determined for the generation station as a whole.

Provided further that in case of an existing and new hydro generating unit, a Performance Linked Return on Equity of 1.25% shall be provided, if the hydro generating station is operational under Free Governor Mode Operation (FGMO)."

28.6 In case of Transmission, a Performance Linked of Return on Equity shall be allowed on Transmission Availability, at time of truing up as per the following schedule:

(a) For every 0.5% over-achievement in Transmission Availability up to Transmission Availability of 99.50% for AC System and 96.50% for HVDC bi-pole links and HVDC back-to-back stations, rate of return shall be increased by 2.25%;

(b) For every 0.25% over-achievement in Transmission Availability above 99.50% for AC System and 96.50% for HVDC bi-pole links and HVDC back-to-back stations, rate of return shall be increased by 0.75%, subject to ceiling of Performance Linked Return on Equity of 3.75%;

Provided that Performance Linked of Return on Equity shall be allowed on pro-rata basis for incremental Availability higher than Target Availability:

Provided further that Target Availability for additional rate of Return on Equity shall be as per Regulation 78.

Provided further that in case of an existing and new transmission system, Performance Linked Return on Equity of 0.75% shall be provided, if the transmission system is operational with data telemetry, communication system up to load dispatch centre or protection system for more than 95% based on the report submitted by the MSLDC.

28.7 In case of Distribution Wires Business, a Performance Linked Return on Equity shall be allowed on Wires Availability at the time of true-up as per the following schedule:

(a) The target Wires Availability for recovery of base rate of return on equity shall be 97.75% for all Distribution Licensees.

(b) For every 0.25% over-achievement in Wires Availability, rate of return shall be increased by 0.50%, subject to ceiling of additional rate of Return on Equity of 4.50%;

(c) Wires Availability shall be computed in accordance with the following formula:

Wires Availability = (1 - (SAIDI / 8760)) x 100:

Provided that the System Average Interruption Duration Index (SAIDI) shall be calculated from the automated measurement records through Smart Meters and in accordance with the definition specified in MERC (Electricity Supply Code and Standards of Performance for Distribution Licensees, including Power Quality) Regulations, 2021, as amended from time to time.

28.8 In case of the Retail Supply Business, the Supply Margin upto 5.00 Paisa/kVAh inclusive of Income Tax component shall be allowed for all the Retail Supply Licensees for each financial year over the Control Period based on the following principles:

(a) The Supply Margin of upto 2.00 Paisa/kVAh shall be allowed at the time of true-up based as per the following schedule:

(i) If Collection Efficiency is below 99% upto 95%, then the Performance Linked Supply Margin 2.00 Paisa/kWh shall be reduced to 0.50 Paisa/kVAh.

(ii) If Collection Efficiency is below 95%, then the Performance Linked Supply Margin 2.00 Paisa/kWh shall be further reduced to 0.50 Paisa/kVAh.

(iii) If % of Assessed Bill is above 1.00% upto 1.50%, then the Performance Linked Supply Margin 2.00 Paisa/kWh shall be reduced to 0.50 Paisa/kVAh.

(iv) If % of Assessed Bill is above 1.50%, then the Performance Linked Supply Margin 2.00 Paisa/kWh shall be further reduced to 0.50 Paisa/kVAh.

28.9 The Commission may either disallow the capitalisation claimed against the respective DPR Scheme, in part or in full, as appropriate, or allow lower Return on Equity on such investment in the following cases:

(a) If the in-principle approval has not been obtained for the Capital Investment Scheme in accordance with Regulation 4.3 of the MERC (Approval of Capital Investment Schemes) Regulations, 2022; or

(b) If the Applicant is unable to establish the benefits as submitted in the Application for in-principle approval either fully or partly; or

(c) If asset replacement has been permitted despite not meeting criteria specified in Regulation 3.23 of MERC (Approval of Capital Investment Schemes) Regulations, 2022.”

4.6.16 The Summary of the proposed Base as well as Performance Linked RoE for the Generation, Transmission and Distribution Wires is provided as under:

Particulars	Proposed Base ROE %	Proposed Additional RoE	Max RoE (Proposed)%	Performance parameters for additional ROE
Thermal	11.00	Upto 4.50%	15.50	<ul style="list-style-type: none"> Incremental Ramp rate above 1% per minute Mean Time (in days) between Failure Free Governor Mode Operation (FGMO) Availability during peak hours >95%
Hydro	11.00	Upto 4.50%	15.50	<ul style="list-style-type: none"> Mean Time (in days) Between Failure Free Governor Mode Operation (FGMO) Availability during peak hours >95%

Particulars	Proposed Base ROE %	Proposed Additional RoE	Max RoE (Proposed)%	Performance parameters for additional ROE
Hydro (PSP) and BESS	18.00	-	18.00+/-1%	<ul style="list-style-type: none"> Linked with Ramp Rate of ESS. If Ramp Rate is below 75%, ROE shall be reduced upto 1%. If Ramp Rate is above 75% ROE shall be increased upto 1%
Transmission	11.00	Upto 4.50%	15.50	<ul style="list-style-type: none"> Over achievement in targeted availability Data telemetry and Communication system
Distribution (W)	11.00	Upto 4.50%	15.50	<ul style="list-style-type: none"> Over achievement in targeted Wires availability
Distribution (R&S)*	Supply Margin @ 5 Paisa/kVAh (or kWh)			<ul style="list-style-type: none"> Introduction of supply margin
SLDC	14.0		14.00	<ul style="list-style-type: none"> No additional ROE proposed. Performance linked incentive (3% of Net ARR)
STU	14.0		14.00	<ul style="list-style-type: none"> No additional ROE proposed. Performance linked incentive (3% of Net ARR)

4.6.17 It was further observed that, the Commission in its recent MTR Order in case of Distribution Business had directed the Distribution Licensees to submit the automated records through Smart Meters for determination of the SAIDI in lines with the principles provided under MERC (Electricity Supply Code and Standards of Performance for Distribution Licensees, including Power Quality) Regulations, 2021. Accordingly, the Commission has proposed the conditions for the submission for SAIDI details through automated records from Smart Meter for the Distribution Wires Business to avail the Performance Linked RoE.

4.7 Interest on Loan

4.7.1 Regulation 30 of the MERC MYT Regulations, 2019 specifies the principles for allowing interest on long-term loans, with interest being calculated based on weighted average Rate of Interest of actual loan portfolio during the year for truing up and repayment of loan being considered equal to the depreciation.

4.7.2 Further, the Regulation 30.10 of the MERC MYT Regulations, 2019 specifies for the Refinancing of loans, where 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.

- 4.7.3 The Commission has noted that, in some cases the interest cost has increased as a result of terms and conditions of refinancing. The Commission clarifies that, in case of refinancing, the interest rate of the refinance loan shall be lower than, the actual weighted average rate of interest of the respective entity. In addition, re-financing shall not be subject to any adverse terms and conditions and any additional cost towards such conditions mentioned under the refinanced loan agreement shall not be considered for the purpose of determination of ARR. Further, the Commission continues to retain the provision related to the refinancing of the loan should be done from banks and financial institutions recognised by Reserve Bank of India (RBI).
- 4.7.4 Accordingly, the Commission proposes the following modifications under Interest on Loan in the Draft MERC MYT Regulations, 2024:

“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 refinancing shall not be done if it results in net increase on interest:

Provided further that rate of interest of the refinanced loan shall be lower than the weighted average rate of interest of actual loan portfolio:

Provided also that the re-financing shall not be subject to any adverse terms and conditions and additional cost and conditions of refinanced loan agreement shall not be considered for the purpose of determination of ARR:

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4.8 Interest on Working Capital

- 4.8.1 Regulation 32 of the MERC MYT Regulations, 2019 specifies the principles for computing the normative working capital requirement for different regulated Businesses and the Interest on Working Capital (IoWC) to be allowed thereon.
- 4.8.2 As per the existing provisions of the MERC MYT Regulations, 2019, for computation of working capital, the cost of coal or lignite and limestone towards the stock of 15 days for pit-head generating stations and 30 days for the non-pit head generating stations. The CERC in the existing as well as Draft MYT Regulations, 2024 have proposed the cost of coal or lignite and limestone towards the stock of 10 days for pit-head generating stations and 20 days for the non-pit head generating stations. Thus, the Commission

also proposes to consider the similar provisions in lines with the Draft CERC Tariff Regulations, 2024.

- 4.8.3 The following modification under Interest on Working Capital in the Draft MERC MYT Regulations, 2024 are proposed:

“ 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 ten days for pit-head Generating Stations and twenty 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)Normative Operation and Maintenance expenses for one month;

(v)Maintenance spares at one per cent of the opening Gross Fixed Assets for the Year; and

*(vi)Receivables for sale of electricity equivalent to forty-five days of the sum of annual fixed charges and energy charges approved in the Tariff Order for ensuing year/s, computed at target availability and excluding incentive, if any:
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, depending on the modalities of payment:”

4.9 Income Tax

4.9.1 Regulation 34 of the MERC MYT Regulations, 2019 specifies the principles for the recovery of the Income Tax grossed up with the Return on Equity, including Additional Return on Equity through the Tariff charged to the Beneficiary/ies.

4.9.2 Regulation 34.3 of the MERC MYT Regulations, 2019 specifies the grossing-up of the Return on Equity with the effective tax rate, whereas per Regulation 34.4 the effective tax rate shall be considered on the basis of actual tax paid in respect of financial year in line with the provisions of the relevant Finance Acts by the concerned Generating Company or Licensee or MSLDC, as the case may be.

- 4.9.3 In case of the Regulated Business the Income Tax recovery is allowed only on the income from the Return on Equity. In case if any Utility having multiple other businesses, pays the Corporate Tax as a result of performance of the Utility in the other businesses, it may not be appropriate to recover the Corporate Tax from the consumers of the Utility as an effect of the provision of effective tax rate based on the actual tax paid by the Utility.

As discussed above the scope of Income tax liability in terms of regulated business is limited to income on account of Return on Equity allowed to the Utility. Accordingly, the Commission proposes the revision in the provisions of recovery of Income Tax by grossing-up of the RoE with the rate of Minimum Alternate Tax (MAT) applicable for the respective financial year or actual tax paid, whichever is lower.

- 4.9.4 Further, in case of the Retail Supply Business, the Commission has proposed to introduce the Supply Margin of 5 Paisa/kVAh (or kWh) across all the Distribution Licensees, which includes the Income Tax component. Hence, no separate Income Tax recovery shall be allowed for the Retail Supply Business during the entire Control Period.
- 4.9.5 Accordingly, the Commission proposes the following modifications in the provisions of Income Tax in the Draft MERC MYT Regulations, 2024:

“33.1 The Income Tax for the Generating Company or Licensee (except Distribution Retail Supply Business) or MSLDC or STU for the regulated business shall be allowed on Return on Equity, including Performance Linked Return on Equity at the rate of Minimum Alternate Tax (MAT) applicable for the respective financial year or actual tax paid, whichever is lower, through the Tariff charged to the Beneficiary/ies, subject to the conditions stipulated in Regulations 33.2 to 33.5:

Provided that no Income Tax shall be considered on the amount of efficiency gains and incentive approved by the Commission, irrespective of whether or not the amount of such efficiency gains and incentive are billed separately:

Provided further that no Income Tax shall be considered on the amount of income from Delayed Payment Charges or Interest on Delayed Payment or Income from Other Business, as well as on the income from any source that has not been considered for computing the Aggregate Revenue Requirement:

Provided also that the Income Tax shall be computed for the Generating Company as a whole, and not Unit-wise/Station-wise.

33.2 The rate of Return on Equity, including the rate of Performance Linked Return on Equity as allowed by the Commission under Regulation 28 of these

Regulations shall be grossed up with the MAT rate or actual tax paid, which ever lower, for the previous year.

Provided that in case the Generating Company or Licensee or MSLDC or STU for the regulated business has not paid any Income Tax for respective year, the Tax Rate shall be considered as zero at the time of Truing-up, subject to prudence check.

33.3 The Base Rate of Return on Equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate of Return on Equity / (1-t),

Where “t” is the Minimum Alternate Tax (MAT) rate or the actual tax rate including surcharge and cess, whichever is lower.

Illustration: -

In case Minimum Alternate Tax (MAT) is 17.472% including surcharge and cess:

Base rate of return on equity = 15.50/(1-0.17472) = 18.781%

33.4 Variation between the Income Tax estimated by the Commission for future year during MYT Order and the Income Tax approved by the Commission for the respective Year after truing up for respective year, shall be allowed for recovery as part of the Aggregate Revenue Requirement at the time of Truing-up, subject to prudence check.

33.5 No separate Income Tax shall be allowed for the Distribution Retail Supply Business as Supply Margin has been arrived after considering provision for Income Tax.”

4.10 Contribution to Contingency Reserves

4.10.1 Regulation 35 of the MERC MYT Regulations, 2019 specifies the principles for allowing Contribution to Contingency Reserves.

4.10.2 The existing provision specifies the Contribution to Contingency reserves to be allowed in the range of 0.25% to 0.50% of the original cost of fixed assets. Considering the range provided in the existing Regulations, some of the utilities are proposing the Contribution to Contingency reserves as 0.50% of the original cost of the fixed assets as part of the Tariff Petition, however, while approving the Contribution to Contingency Reserves, the Commission has allowed 0.25% of the original fixed cost of the assets. Thus, to provide more clarity in terms of the Contribution to Contingency reserves, the Commission proposes to restrict the investment to 0.25% instead of providing range of 0.25% to 0.50%.

- 4.10.3 Further, most of the Utilities have sought the clarity on the financial instruments allowed under the Indian Trust Act, 1982. The Commission notes that, in the past due to lack of clarity, some of the the utilities had invested in the equity linked financial instruments, which were disallowed by the Commission with the clarification for the investment of the Contribution to Contingency reserves in the specific Tariff Orders. Accordingly, for the sake of clarity across all the Utilities, the Commission has proposed to specify the types of financial instruments under which the Utilities can invest the Contribution to Contingency Reserves.
- 4.10.4 The Commission during the process of Mid-Term Review have allowed the funding of the assets through Contingency Reserves Fund. While allowing the funding of assets through Contingency Reserves Fund, the Commission has provided clarifications for utilisation of the Contingency Reserves Funds. The Commission proposes to provide those clarifications in the Draft MERC MYT Regulations, 2024 as below:
- 4.10.5 Following modification are proposed in the Contribution to Contingency Reserves in the Draft MERC MYT Regulations, 2024:

“34.1 Where the Licensee has made a contribution to the Contingency Reserve, a sum not less than 0.25 per cent of the original cost of fixed assets shall be allowed annually towards such contribution in the calculation of Aggregate Revenue Requirement:

Provided that where the amount of such Contingency Reserves exceeds five (5) per cent of the original cost of fixed assets, no further contribution shall be allowed:

Provided further that such contribution shall be invested in securities authorised under the Indian Trusts Act, 1882 such as Treasury Bills, Sovereign Bonds, Zero Coupon Bonds or similar kind of financial instruments, within a period of six months of the close of the Year:

Provided also that if the Licensee does not invest the amount of contribution to Contingency Reserves in authorised securities within a period of six months of the close of the Year, then the contribution allowed in the calculation of Aggregate Revenue Requirement shall be disallowed at the time of true-up:

Provided also that if the Licensee does not invest the amount of contribution to Contingency Reserves in authorised securities for two consecutive Years, then the contribution to Contingency Reserves shall not be allowed in the calculation of Aggregate Revenue Requirement from the subsequent Year onwards.

34.2 The Contingency Reserve shall not be drawn upon during the term of the Licence except to meet such charges on account of:

(a) Expenses or loss of profits arising out of accidents, strikes, acts of God included, but not limited to lightning, storm, action of the elements, earthquakes, flood, torrential rains, drought and natural disaster 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 the Contingency Reserve shall be computed after making do adjustments for any other compensation that may have been received by the Licensee as part of an insurance cover and Government Grant, if any.

Provided that, the drawl of such expenses shall be treated as consumer contribution in accordance with Regulations 25.1 of these Regulations:

Provided further that the Licensee shall obtain the Commission's prior approval for drawal of Contingency Reserve by submitting the necessary justification for the drawal of Contingency Reserve along with documentary evidence.

34.3 No diminution in the value of Contingency Reserve as mentioned above shall be allowed to be adjusted as a part of Tariff.”

5 Norms and Principles for determination of Revenue Requirement and Tariff for Generation Companies

This Chapter deals with the issues related to the tariff applicable for a Generating Company supplying power to the Distribution Licensees in the State of Maharashtra.

5.1 Background

5.1.1 Maharashtra State Power Generating Company Limited (MSPGCL), Tata Power Company Limited - Generation Business (TPC-G) and Adani Electricity Mumbai Limited - Generation Business (Formerly Reliance Infrastructure Ltd.- Generation Business) 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.

5.1.2 In the second Control Period, MSPGCL commissioned new Generating Units, viz., Khaparkheda Unit 5 and Bhusawal Unit 4 and 5, for which the tariff has been determined by applicable MYT Regulations. The Vidarbha Industries Power Limited – Generation Business (VIPL-G) had also entered into Power Purchase Agreement with erstwhile RInfra-D and the Commission had approved the capital cost and determined its tariff in the second Control Period.

5.1.3 During the third Control Period, MSPGCL commissioned new Generating Units, viz., Koradi Units 8,9 &10, Chandrapur Unit 8 & 9 and Parli Unit 8.

5.1.4 During the fourth Control Period, as per the data received by MSPGCL, Koradi Unit 7 is decommissioned. There is no data given for Parli Units 3, 4 and 5 by MSPGCL, Unit 6 by TPC-G and VIPL-G's Butibori Unit, so these Units are not considered in the analysis. The summary of generating stations and their installed capacity is given in the following Tables:

Table 1: Generating Stations of MSPGCL

Station / Unit	No of Units	Installed Capacity	
		Capacity of each Unit in MW	Total Capacity in MW
Coal based and Gas based Thermal			
Uran (Gas)			672
<i>Unit 5,6,7,8</i>	<i>4</i>	<i>108</i>	<i>432</i>

Station / Unit	No of Units	Installed Capacity	
		Capacity of each Unit in MW	Total Capacity in MW
<i>WHR_AO, WHR_BO</i>	2	120	240
Khaparkheda			1340
<i>Unit 1,2,3,4</i>	4	210	840
<i>Unit 5</i>	1	500	500
Paras			500
<i>Unit 3 & 4</i>	2	250	500
Bhusawal			1210
<i>Unit 3</i>	1	210	210
<i>Unit 4 & 5</i>	2	500	1000
Nashik			630
<i>Unit 3,4,5</i>	3	210	630
Parli			750
<i>Unit 6,7,8</i>	3	250	750
Koradi			2190
<i>Unit 6</i>	1	210	210
<i>Unit 8,9,10</i>	3	660	1980
Chandrapur			2920
<i>Unit 3,4</i>	2	210	420
<i>Unit 5,6,7,8,9</i>	5	500	2500
Sub-Total			10842
Hydro			
Koyna			1956
Vaitarna	1	60	60
Bhira	2	40	80
Tillari	1	66	66
Others			168
Ghatghar Pump storage	2	125	250
Sub-Total			2580
Total			13422

Table 2: Generating Stations of TPC-G

Sr. No	Station Name	Type and Fuel	Status	Unit Details	Capacity
1	Trombay	Thermal - Coal/Oil	Operational	Unit-5 (1 x 500 MW)	930 MW
		Thermal - Gas	Operational	Unit-7 (1 x 180 MW)	
		Thermal - Coal	Operational	Unit-8 (1 x 250MW)	
2	Khopoli	Hydro	Operational		72 MW
3	Bhivpuri	Hydro	Operational		75 MW
4	Bhira	Hydro	Operational		300 MW
Total					1377 MW

Table 3: Generating Stations of AEML-G

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

5.1.5 The Commission proposes to determine Generation tariffs using a performance-based approach linked to efficiency parameters, which would be used to provide incentives based on actual performance.

5.2 Common Issues for Thermal and Hydro Generating Stations

Procedure for determination of Tariff

5.2.1 The Regulation 39.3 of MERC MYT Regulations, 2019 provides the Generating Company to adopt a reasonable basis for allocation of capital cost relating to common facilities and allocation of joint and common costs across all Stages or Units. The Commission in Case No. 221 of 2022 dated 31 March 2023 has provided the detailed methodology for the allocation of fixed cost for TPC-G under directive section. The Commission in this Order has specified that, integrated Utility shall maintain the separate allocation statement for all the cost pertaining to the Regulated and Non-Regulated businesses and further allocation of Regulated Cost to Generation, Transmission and Distribution Businesses. Further the separate allocation of Regulated Expenses of O&M of Head Office for Generation, Transmission and Distribution Businesses. The components of the O&M expenses shall be allocated as per the formulation provided by the Commission in the Order dated 31 March 2023.

5.2.2 Further, in case of multiple generation sources like Thermal Units, Hydro Units or Gas based generation, the proportionate allocation of O&M expenses, direct expenses, other finance charges, depreciation, interest on loan, interest on working capital, ROE and Non-tariff Income shall be as specified by the Commission in the Order dated 31 March 2023.

5.2.3 Accordingly, the Commission has included the Regulation 39.4 in the MERC MYT Regulations, 2024 for providing the allocation methodology for computation of fixed charges for stage or Unit belonging to integrated Utility engaged in Generation, Transmission and Distribution of electricity as below:

“38.3----

Provided further that in case the Commission has undertaken study for allocating common cost to unit/station of Generating Company, then such Generating Company shall allocate the cost as per Commission’s Order in that regards.”

Renovation and Modernization (R&M)

5.2.4 The MERC MYT Regulations, 2019 specifies the treatment for Renovation & Modernization to be undertaken by the old Generating Stations. The Clause 11(g) of Tariff Policy 2016 also specifies the need of Renovation and modernization of generation plants to encouraged for higher efficiency levels even though they may have not completed their useful life. This R&M shall not include periodic overhauls. The Tariff Policy also proposes that, the MYT framework of SERC should specify treatment to the capital investments for renovation and modernization and an incentive framework to share the benefits of efficiency improvement between the utilities and the beneficiaries with reference to revised and specific performance norms to be fixed by the Appropriate Commission.

5.2.5 Accordingly, the Commission is retaining the provisions of Renovation & Modernization in the Draft MYT Regulations, 2024, however, the Commission is adding the provisions of special allowance as an alternative for the generating company who are not opting for Renovation & Modernization. However, the Commission clarifies that, the generating companies opting for R&M shall not be eligible for Special Allowance.

Hence, proposed R&M Regulations in MERC MYT Regulations, 2024 is as under:

“42. Renovation & Modernisation

42.1 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 Generating Company 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.

Provided that the generating company opting for Renovation and Modernization (R&M) shall not be eligible for Special Allowance under Regulation 43 of these Regulations;

42.2 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.

42.3 In case of gas/ liquid fuel based open/combined cycle thermal generating Unit, 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.

42.4 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.”

Special Allowance

- 5.2.6 The MERC MYT Regulations, 2019 doesn't have any provision related to Special Allowance in lieu of R&M. The Commission in Multi Year Tariff Regulations 2011 had first time introduced the Special Allowance of INR 5 Lakh/MW/year on the similar lines as specified by the CERC Tariff regulations 2009. However, in subsequent MYT Regulations, the provision of Special Allowance was dropped as same was not availed by any generating company.
- 5.2.7 Some of Generating Companies during Stakeholder consultation for MERC CAPEX Regulation 2022 and during the MTR processing had requested for provision of Special Allowance as an alternative to the Renovation and Modernisation. The Commission also notes that, MERC Capex Regulations, 2022 proposes to take up major repair or refurbishment work under Operation & Maintenance, however the Generating Companies are requesting that such major overhauling activities are not currently covered under O&M provisions.
- 5.2.8 Considering the concerns raised by Generating Companies, the Commission has proposed to introduce the provision of “Special Allowance” in line with the provisions

of the Draft CERC MYT Regulations, 2024. As per these provisions, the generating company, can avail a 'Special Allowance', for the coal-based/ lignite-based thermal and Hydro power plants that have completed their useful life, in lieu of Renovation and Modernization and additional capital expenditure required for efficient operation of the generating stations including capital expenditures arising out of a change in law, award of arbitration, compliance of directions/ orders of any statutory authority, order/ decree of any court of law and force majeure conditions.

- 5.2.9 The Commission further clarifies that no additional capitalization of any type is admissible once this special allowance is claimed by the Generating Company. The value of the Special Allowance is proposed to be INR 10.75 Lakh/MW per year similar to draft CERC Tariff Regulations, 2024.

Accordingly, proposed Special Allowance Regulations in MERC Tariff Regulation 2024 is as under:

“43. Special Allowance for Coal-based/Lignite fired Thermal and Hydro Generating Station

43.1 In the case of coal-based/lignite fired thermal, and Hydro generating stations who have completed the useful life may opt to avail of a 'special allowance' in accordance with the norms specified in this Regulation, as compensation for meeting the requirement of expenses towards additional capital expenditure as per MERC (Approval of Capital Investment Schemes) Regulations, 2022, including capital expenditure arising out of change in law, award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law, and force majeure.

43.2 In case, if the generation plant opts for Special allowance, such Special Allowance shall be included in the annual fixed cost, however, any upward revision of the capital cost or relaxation in the applicable operational norms if any allowed by the Commission shall not be allowed.

Provided that such option shall not be available for a generating station or unit thereof for which Renovation and Modernization has been undertaken and the expenditure has been admitted by the Commission before the commencement of these Regulations;

Provided further that, if the generating plant or unit opted for the Special Allowance for the Control Period and subsequently plans for Renovation and Modernisation during the Control Period as per the provisions of the Regulation 43 of these Regulations, such Plant or Unit shall not be entitled for Specific Allowance for the remaining Control Period from the date of approval of R&M proposal of the Plant or Unit by the Commission.

43.3 The Generating Company shall submit the details of all work to be undertaken through special allowance, with the MYT petition, for the approval of the Commission, which shall be granted after prudence check of reasonableness of the cost estimates, cost-benefit analysis, and such other factors as may be considered relevant by the Commission.

Provided that, the Special Allowance admissible to a generating station shall be maximum upto INR 10.75 lakh per MW per year for the control period.

Provided also that, the Generating Company opting for special allowance shall not be allowed to capitalise the assets created through special allowance and shall not be eligible for Depreciation, Return of Equity, Interest on Loan on such assets created through special allowance.

43.4 In the event of a generating station availing of Special Allowance, the expenditure incurred upon or utilized from Special Allowance shall be maintained separately by the generating station, and details of the same shall be made available to the Commission with the Truing-up petition.

43.5 The Special Allowance allowed under this Regulation shall be transferred to a separate fund for utilization towards Renovation & Modernization and additional capitalization.

Provided that unutilized fund will lapse if not utilized during the year.

43.6 provided further that no additional capitalization of any type under Capex Regulations, 2022 is admissible once this special allowance is claimed by the Generating Company.”

Annual Fixed Charges

5.2.10 The Regulation 41 of Draft MERC MYT Regulations, 2024 specifies the components of Annual Fixed Charges. The Commission has added a new proviso in Regulation 41 of MERC MYT Regulations, 2024 related to treatment of Special allowance, in which if Special Allowance in lieu of R&M, if opted then Special Allowance shall be recovered separately and shall not be considered for the computation of working capital.

5.2.11 This proviso has been added considering that work undertaken under Special Allowance are not part of regular O&M activities.

Accordingly, the Regulation 41 of Draft MERC MYT Regulations, 2024 is proposed as under:

“41. Annual Fixed Charges

The Annual Fixed Charges shall comprise the following components:

- (a) Operation & Maintenance Expenses;*
- (b) Depreciation;*
- (c) Interest on Loan Capital;*
- (d) Interest on Working Capital;*
- (e) Return on Equity Capital;*

Less:

- (f) Non-Tariff Income:*

*Provided that Depreciation, Interest on Loan Capital, Interest on Working Capital, Return on Equity, and Income tax for Thermal and Hydro Generating Stations shall be allowed, in accordance with the provisions specified in **Part D** of these Regulations:*

Provided that Special Allowance in lieu of R&M, if opted in accordance with the provisions of the Regulation 43 of these regulations, shall be recovered separately and shall not be considered for computation of working capital.

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, if the income/expenses in that prior period have been allowed on actual basis, subject to prudence check:

Provided also that all penalties and compensation payable by the Generating Company to any party for failure to comply with any directions or for damages, as a consequence of the orders of the Commission, Courts, etc., shall not be allowed to recover through the Aggregate Revenue Requirement:

Provided also that the Generating Company shall maintain separate details of such penalties and compensation paid or payable by the Generating Company, if any, and shall submit them to the Commission along with its Petition.

Operational Norms for Thermal generating Stations

5.2.12 The MERC MYT Regulations, 2019 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 4: Operational Norms for Generation Utility

Norms of Operation	Treatment given in tariff
Plant Availability Factor (PAF)	Recovery of Annual Fixed Charges
Plant Load Factor (PLF)	Incentive for higher generation

Norms of Operation	Treatment given in tariff
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
Transit Loss (%)	Sharing of gains and losses on account of controllable factors

5.2.13 The Commission notes that, the draft CERC Tariff Regulations, 2024 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.

5.2.14 The Commission in its MERC MYT Regulations 2019 had taken similar view and provided relaxed norms to the old Generating Stations Commissioned before August 2005. The Commission is proposing to continue with the similar approach and considering the norms proposed by the CERC in the Draft MYT Regulations, 2024. The Commission has also reviewed the actual operational performance data of generating companies for the past 5 years and notes that, operational performance of most of the plants is near to normative parameters. The Commission has analysed the actual performance of existing generating stations for deciding the proposed norms for next Control Period.

5.2.15 Accordingly, the Commission proposes 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 commissioned prior to August 2005. The Commission in draft MERC MYT Regulations, 2024, has proposed the operational norms for existing as well as new generating stations.

5.2.16 The approach adopted for the above norms of operation in the proposed Regulations is discussed below:

Plant Availability Factor

5.2.17 The MERC MYT Regulations, 2019 specifies the target Availability for full recovery of Annual Fixed Charges as 85%, for existing and new generating stations, with exceptions for a few MSPGCL's Generating stations.

5.2.18 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. The relaxed norms have been specified for some of MSPGCL's existing Generation Stations.

5.2.19 For MSPGCL Generating Stations, where relaxed norms have been specified, the actual performance parameters of Generating Stations for the past five years, i.e., from FY 2018-19 to FY 2022-23 has been analysed as against the normative target availability.

5.2.20 The Availability norms specified for MSPGCL's old stations are relaxed norms and were fixed considering the recommendation of Central Research Power Institute (CPRI). Also, it was anticipated that the coal availability was likely to improve during the present Control Period, due to anticipatory measures taken by MSPGCL to improve the availability of coal. In spite of this, the actual availability is lower than relaxed norms, maybe due to running of older plants on Technical Minimum for which additional relaxation in operational norms are provided. Further, the Commission has noted that for Bhusawal TPS actual availability for FY 2019-20 and FY 2020-21 is more than 90% and for Nashik TPS the actual availability for FY 2020-21 is more than 95% and in FY 2021-22 it is around 84.44%, the Commission has observed that actual performance has improved in past years, hence no relaxation for these stations are proposed. Similarly, for Koradi TPS (excluding Unit No. 8, 9 and 10), the actual availability for FY 2020-21 is 76.73%, which proves that generating station can easily be available more than 75%. Hence, relaxed norms are retained for Chandrapur TPS (excluding Unit No. 8 and 9) and for Koradi TPS (excluding Unit No. 8, 9 and 10) norms are revised to 75.00%, for the next Control Period.

5.2.21 In light of the foregoing, it is proposed that target availability for full recovery of Annual Fixed Charges for the next Control Period shall be **85% for all Thermal Generating Stations** except those covered in the following table:

Table 5: Target Availability for Old Generating Stations of MSPGCL

Particulars	Target Availability
Koradi TPS (excluding Unit No. 8, 9 and 10)	75.00%
Chandrapur TPS (excluding Unit No. 8 and 9)	80.00%

Gross Station Heat Rate

5.2.22 Station Heat Rate (SHR) is an indicator of power plant efficiency, and it depends on the age, generation capacity, and technology of the generating unit. The CERC, in its draft Tariff Regulations 2024, has considered the technology, configuration, and

operating level of different power plants and accordingly different SHR have been fixed for thermal and gas turbine/combined cycle power plants. The practice followed by the CERC covers all the dimensions of a generating Unit, which may have a bearing on the SHR. The data available in this regard suggests that the various factors affecting the Station Heat Rate are vintage, size, past generating history, past maintenance practices, condition of plant, etc.

5.2.23 The Commission in the MERC MYT Regulations, 2019 specified SHR for existing and new generating stations having different Unit sizes, viz., 200/210/250 MW sets, 300 MW Sets, 500 MW sets and 600 MW and above sets, except MSPGCL's old stations. The Commission has specified the SHR for MSPGCL's old stations based on the average of the actual 5-year data and proposed measures to be taken for improvement of performance of those generating stations.

5.2.24 The existing MERC MYT Regulations, 2019 specifies the norms for SHR for existing Generating Station as under:

Particulars	200/210/250 MW sets	300 MW Sets	500 MW and above sets	600 MW and above sets (super-critical boilers)
Station Heat Rate kcal/kWh	2430	2400	2375	2230

5.2.25 It is proposed to specify the normative SHR for existing Generating Stations in line with norms stipulated in draft CERC Tariff Regulations, 2024 except for 300 MW set. As regards the 300 MW set, there is no existing generating station, hence intermediate norm of 2385 kcal/kWh between 200/210/250 MW set (2400 kcal/kWh) and 500 MW (2375 kcal/kWh) has been considered. Accordingly, the SHR norms for existing Stations except for the old Generating Stations of MSPGCL and TPC-G Unit 5 are shown in the Table below:

Particulars	200/210/250 MW sets	300 MW set	500 MW sets (Sub-critical boilers)	600 MW and above sets (super-critical boilers)
Station Heat Rate kcal/kWh	2400	2385	2375	2230

5.2.26 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. Also, it is further clarified that, for Generating Stations having combination of 200/210/250/300 MW sets, 500 MW sets and 600 MW and above sets, the normative gross Station Heat Rate shall be the weighted average Station Heat Rate of the combinations.

5.2.27 Further, the Commission has analysed the past performance of the thermal generating stations of TPC-G, AEML-G and MSPGCL in the context of SHR and it is observed that, in case of MSPGCL's Stations, for some years the SHR are higher while for some years it is lower than normative SHR. Further, it is observed that the 5-year average of actual SHR of these generating stations are almost near to the normative SHR. In case of TPC-G Unit 8 and AEML-G (DTPS), the 5-year average of actual SHR of these Station for FY 2018-19 to FY 2022-23 were lower than the normative SHR Accordingly while proposing the SHR norms for the next Control Period, the Commission is of the view that the MSPGCL should also take effort to perform better for all the years in the next Control period. The data shows that for some of the years, these plants have been achieving the performance better than the normative performance and they should continue with the similar performance. Hence, the Commission is not proposing any relaxation in the normative parameters and retaining the same SHR norms for the next Control Period for MSPGCL's old Stations. The proposed norms for SHR for MSPGCL's generating Stations are as under:

Table 6: Station Heat Rate norms for MSPGCL's Generating Stations (kcal/kWh)

Koradi excl. Unit No. 8, 9 and 10	Khaparkhed a excl. Unit No. 5	Chandrapur excl. Unit No. 8 & 9	Nashik	Bhusawal excl. Unit No. 4 and 5	Parli excl. Unit No. 6, 7 and 8
2622	2630	2688	2754	2787	2886

5.2.28 Also, SHR norm for TPC-G Unit 5 is also proposed to retain as 2549 kcal/kWh considering that 5-year actual SHR is 2553 kcal/kWh, which is very close to normative SHR. Regarding the gas stations, viz., Uran and TPC-G Unit 7, SHR norm of 2035 kcal/kWh for combined cycle operation and 2900 kcal/kg for Open cycle has been proposed to retain for next Control Period, considering that 5-year actual SHR is very close to normative SHR.

5.2.29 Further, for new generating stations, the MERC MYT Regulations, 2019 provides for computation of Gross Station Heat Rate as 1.05 times of the Design Heat Rate of Station/unit. Draft CERC Tariff Regulations, 2024 has retained the norms for 200/210/250 MW set as 1.05 times of the Design Heat Rate of Station/unit, while it has

revised the norms for 500 MW set and above to reflect the current operational efficiencies of the stations by reducing the margin above Design Heat rate to 4.00% from the current level of 5.00%. It is proposed to adopt the approach followed by the CERC. Hence, Gross SHR for new generating stations shall be 1.05 times the Design Heat rate of Station/unit for 200/210/250 MW set and 1.04 times of Design Heat rate of Station/unit for 500 MW sets and above.

5.2.30 The Design SHR for New Generating Stations proposed in the Draft MERC Tariff Regulations, 2024, are as under:

Pressure Rating (kg/cm²)	150	170	170	247	247	270	270
SHT/RHT (°C)	535/535	537/537	537/565	537/565	565/593	593/593	600/600
Type of Boiler Feed Pump	Electrical Driven	Turbine driven	Turbine driven	Turbine driven	Turbine driven	Turbine driven	Turbine driven
Maximum Turbine Cycle Heat Rate (kcal/kWh)	1955	1950	1935	1900	1850	1810	1800
Minimum Boiler Efficiency							
Sub-Bituminous Indian Coal	0.86	0.86	0.86	0.86	0.86	0.865	0.865
Bituminous Imported Coal	0.89	0.89	0.89	0.89	0.89	0.895	0.895
Maximum Design Unit Heat Rate (kcal/kWh)							
Sub-Bituminous Indian Coal	2273	2267	2250	2222	2151	2105	2081
Bituminous Imported Coal	2197	2191	2174	2135	2078	2034	2022

Auxiliary Consumption

Coal Based Generating Stations

5.2.31 The Draft MERC MYT Regulations, 2024 proposes the norm of Auxiliary Consumption for coal based Generating Stations as under:

Auxiliary consumption	With Natural Draft cooling tower or without cooling tower
(i) 200 MW series	8.50%
(ii) 300/330/350/500 MW & above	
Steam driven boiler feed pumps	5.75 %
Electrically driven boiler feed pumps	8.00%

5.2.32 For existing and new Generating Unit/Stations, it is proposed to retain the Auxiliary Consumption norm for various technologies and Unit sizes as under:

(a) Coal-based generating stations:

Auxiliary consumption	With Natural Draft cooling tower or without cooling tower
(i) 200 MW series	8.50%
(ii) 300/330/350/500 MW & above	
Steam driven boiler feed pumps	5.75%
Electrically driven boiler feed pumps	8.00%

Provided further that existing Additional Auxiliary Energy Consumption are also retained as follows for plants with Dry Cooling Systems:

Type of Dry Cooling System	(% of gross generation)
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%

5.2.33 It is also proposed to retain the existing norms of Auxiliary Consumption for FGD for draft MERC MYT Regulations 2024 as:

“46.14...

Provided also that for thermal Generating Stations with Flue Gas De-sulphuriser (FGD), additional Auxiliary Energy Consumption shall be allowed as follows:

200/250 MW series: 1.2%

300/330/350/500 MW & above: 1.0%

Provided also that for thermal Generating Stations with any additional equipment that has been mandated by Statutory Authorities, additional Auxiliary Energy Consumption shall be allowed on case-to-case basis after prudence check.”

5.2.34 Regarding the actual performance of TPC-G and AEML-G, it has been observed that the actual Auxiliary Consumption for the Generating Units of TPC-G and AEML-G for the last five years (i.e., FY 2018-19 to FY 2022-23) has been lower than the normative value of Auxiliary Consumption specified by the Commission.

5.2.35 The norms for auxiliary consumption for MSPGCL’s old stations are already as per relaxed norms. These existing norms for old stations of MSPGCL were decided considering the recommendations of CPRI. Also, it was envisaged that the recommendations of CPRI shall be implemented by Generating Stations for improving the performance of old generating stations. However, the actual auxiliary consumption is higher than relaxed norms.

5.2.36 In view of the above, the Commission intends to continue with the existing auxiliary norms in order to encourage the efficiency measures to be taken by plants to reduce the

Auxiliary Consumption. Further, the Commission notes that, the actual variation in the Auxiliary consumption of these plant is compensated through sharing and these plants also receive the compensation under compensation framework for operation below 85% as technical minimum compensation. In view of this, norms for Auxiliary consumption for old generating stations for MSPGCL are retained as under:

Table 7: Norms for Auxiliary Consumption for Old Generating Stations of MSPGCL

Stations	Auxiliary Energy Consumption
Koradi TPS excluding Unit No. 8, 9 and 10	10.81%
Khaparkheda TPS excluding Unit No. 5	9.70%
Chandrapur TPS excluding Unit No. 8 and 9	7.80%
Nashik TPS	10.75%
Bhusawal TPS excluding Unit No. 4 and 5	10.96%

Gas Turbine/Combined Cycle Generation Stations

5.2.37 The actual performance of existing Gas Generating Stations viz. Uran and TPC-G Unit 7 is better than the normative auxiliary consumption specified.

5.2.38 It is proposed to retain the norm for Auxiliary Consumption for Gas Turbine /Combine Cycle Generating Station in line with draft CERC Tariff Regulations, 2024, as under:

Gas Turbine/Combined Cycle generating stations:

- (i) Combined cycle : 2.75%
- (ii) Open cycle : 1.0%

Lignite Fired Generating Stations

5.2.39 Since, no Lignite Fired Generating Station exists in the State, it is proposed to consider the norm for Auxiliary Consumption in line with draft CERC Tariff Regulations, 2024, as under:

“Lignite-fired thermal generating stations:

46.18 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 specified in Regulation 46.13:

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 specified in Regulation 46.13:”

Emission Control System

5.2.40 It is proposed to continue with the norms of Auxiliary Consumption for Emission Control System as specified in MERC Tariff Regulations 2019. The proposed norms of Auxiliary Consumption for Emission Control System in Draft MERC Tariff Regulations 2024 are as below:

“46.19 Normative Auxiliary Energy Consumption for Emission Control System (AUXen) of thermal generating stations shall be:

Sl.	Name of Technology	AUXen (as per cent of gross generation)
(1)	<i>For reduction of emission of sulphur dioxide</i>	
a)	<i>Wet Limestone based FGD system (without Gas-to-Gas heater)</i>	<i>1.0%</i>
b)	<i>Lime Spray Dryer or Semi dry FGD System</i>	<i>1.0%</i>
c)	<i>Dry Sorbent Injection System (using Sodium bicarbonate)</i>	<i>NIL</i>
d)	<i>For CBFC Power plant (furnace injection)</i>	<i>NIL</i>
e)	<i>Sea water based FGD system (without Gas-to-Gas heater)</i>	<i>0.7%</i>
(2)	<i>For reduction of emission of oxide of nitrogen</i>	
a)	<i>Selective Non-Catalytic Reduction system</i>	<i>NIL</i>
b)	<i>Selective Catalytic Reduction system</i>	<i>0.2%</i>

Provided that where the technology is installed with “Gas to Gas” heater, AUXen specified above shall be increased by 0.3% of gross generation.”

Secondary Fuel Oil Consumption

5.2.41 The MERC MYT Regulations, 2019 specify the norm for Secondary Fuel Oil Consumption as under:

- (a) *Coal-based generating stations: 0.50 ml/kWh*
- (b) *Lignite-Fired generating stations except based on CFBC technology: 1.5 ml/kWh*
- (c) *Lignite-Fired generating stations based on CFBC technology: 1.00 ml/kWh*

5.2.42 The Secondary Fuel Oil Consumption norm is proposed in accordance with the norms specified in draft CERC Tariff Regulations, 2024 as under, with exceptions discussed separately:

- (a) *Coal-based generating stations: 0.50 ml/kWh*
- (b) *Lignite-Fired generating stations except based on CFBC technology: 1.5 ml/kWh*
- (c) *Lignite-Fired generating stations based on CFBC technology: 1.00 ml/kWh*

5.2.43 The Commission has analysed the performance of Generating Stations vis-a-vis normative Secondary Fuel Oil Consumption levels during the fourth Control Period.

5.2.44 The TPC-G Unit 5 has 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 Unit 5 fires liquid fuels as primary fuel also, and hence, it is not possible to distinguish between primary fuel and secondary fuel oil consumption. Further, TPC-G Unit 8, average Secondary Fuel Oil Consumption for the last 4 years (FY 2018-19 to FY 2021-22) is 0.29 ml/kWh, which is substantially lower than the Secondary Fuel Oil consumption norm of 0.50 ml/kWh specified by the Commission.

5.2.45 The average Secondary Fuel Oil Consumption of AEML-G for the last 5 years (FY 2018-19 to FY 2022-23) is 0.11 ml/kWh, which is substantially lower than the Secondary Fuel Oil consumption norm of 0.50 ml/kWh specified by the Commission.

5.2.46 The norms for Secondary Fuel Oil Consumption (SFOC) for MSPGCL’s old stations are relaxed norms. These existing norms for old stations of MSPGCL were fixed considering the recommendation of CPRI. Also, it was anticipated that recommendations of CPRI will be implemented for improving the performance of old generating stations. The actual SFOC for the MSPGCL generating stations are higher than relaxed norms. For the next Control Period, the Commission does not intend to give further relaxation in SFOC norms and proposes to continue with the existing norms.

5.2.47 In view of this, norms for Secondary Fuel oil consumption for old generating stations for MSPGCL are as under:

Table 8: Norms for Secondary Fuel Oil Consumption for Old Generating Stations of MSPGCL

Stations	Secondary Fuel Oil Consumption (ml/kWh)
Koradi TPS TPS excluding Unit No. 8, 9 and 10	2.81
Khaparkheda TPS excluding Unit No. 5	1.20
Chandrapur TPS excluding Unit No. 8 and 9	1.00
Nashik TPS	1.00

Stations	Secondary Fuel Oil Consumption (ml/kWh)
Bhusawal TPS excluding Unit No. 4 and 5	1.40
Parli TPS excluding Unit No. 6, 7 and 8	2.00

Transit Loss

5.2.48 Transit and handling losses occur 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.

5.2.49 For transit loss norms for Generating Unit/Stations, the Draft MERC MYT Regulations, 2024 specify as under:

“46.21 Transit and handling losses –

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:

(a) Pit head Generating Stations : 0.2%

(b) 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.”

5.2.50 The average Transit losses of MSPGCL for the last 5 years (FY 2018-19 to FY 2022-23) is lower than the Transit losses norm of 0.8 % specified by the Commission except for Khaparkheda Unit 1 to 5 for which 5 years average (FY 2018-19 to FY 2022-23) transit losses are 1.50%.

5.2.51 The Commission has proposed to retain the existing norms, which are in line with the CERC Tariff Regulations 2019, for Transit and handling losses. It is noted that, the CERC in its draft Tariff Regulations, 2024 has also retained the existing norms.

Operation and Maintenance Expenses for Thermal Generating Stations

5.2.52 MERC MYT Regulations, 2019 specifies norms in terms of INR Lakh per MW for generating stations/unit that achieved COD on or after August 26, 2005. However, for other generating stations that achieved COD before August 26, 2005, principles have been specified for determination of O&M Expenses for the Control Period based on past approved O&M Expenses.

O&M expenses for Generating Stations/Units that achieved COD before August 26, 2005

5.2.53 The Commission in MERC MYT Regulations, 2019, has specified the principles for the determination of O&M expenses for Generating Stations/units that achieved COD before August 26, 2005. 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. However, these 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, 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. In view of this, it is proposed to continue with the existing approach for specifying principle for Generating Stations/units that achieved COD before August 26, 2005.

5.2.54 For determination of O&M Expenses for next Control Period, at time of MYT Order, the average of O&M Expenses for the period from FY 2019-20 to FY 2023-24 is required to be escalated at the respective escalation rate for FY 2022-23, FY 2023-24 and FY 2024-25, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2025.

5.2.55 The Commission also notes that, the CERC is also providing similar treatment to the older plants. The Draft CERC Tariff Regulations, 2024 specifies the common norm for all the existing and new generating stations except for very old generating stations like Tanda TPS Unit 1.

5.2.56 Accordingly, the provision of the Draft MYT Regulations 2024 for determination of O&M expenses for Generating Stations/units that achieved COD before August 26, 2005, is as under:

“47.1 Generating Stations/Units that achieved COD before August 26, 2005

a) The Operation and Maintenance expenses for Generating Stations which achieved COD before the date of coming into effect 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 Trued-up Operation and Maintenance expenses after adding/deducting the share of efficiency gains/losses, for the five Years ending March 31, 2024, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission:

Provided that, the impact of the wage revision if any during the Trued-up year shall be included in the O&M expenses while determining the norms for the O&M expenses for the future year.

Provided that the average of such Operation and Maintenance expenses shall be considered as Operation and Maintenance expenses for the Year ended March 31, 2022, and shall be escalated at the respective escalation rate for FY 2022-23, FY 2023-24 and FY 2024-25, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2025:

Provided further that the escalation rate for FY 2022-23, FY 2023-24 and FY 2024-25 shall be computed by considering 50% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past five financial years as per the Office of Economic Advisor of Government of India and 50% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past five financial years as per the Labour Bureau, Government of India:

Provided also that at the time of true-up for each Year of this Control Period, the Operation and Maintenance expenses, excluding water charges and including insurance, shall be derived on the basis of the Final Trued-up Operation and Maintenance expenses after adding/deducting the sharing of efficiency gains/losses, for the base year ending March 31, 2025, excluding abnormal expenses, if any, subject to prudence check by the Commission, and shall be considered as the Base Year Operation and Maintenance expenses.

c) The Operation and Maintenance expenses for each subsequent year shall be determined by escalating these Base Year expenses of FY 2024-25 by an inflation factor with 50% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past five financial years as per the Office of Economic Advisor of Government of India and 50% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past five financial years as per the Labour Bureau, Government of India, as reduced by an efficiency factor of 1% of Average escalation factor or as may be stipulated by the Commission from time to time, to arrive at the permissible Operation and Maintenance expenses for each year of the Control Period:

Provided that, in the Truing-up of the O&M expenses for any particular year of the Control Period, an inflation factor with 50% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past five financial years (including the year of Truing-up) and 50% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past five financial years (including the year of Truing-up), as reduced by an efficiency factor of 1% of derived inflation factor or as may be stipulated by the Commission from time to time, shall be applied to arrive at the permissible Operation and Maintenance Expenses for that year.

d) 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 considering the norms of specific water consumption notified by the Ministry of Environment, Forest and Climate Change:

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 Company, subject to prudence check.

e) Provisioning of expenses shall not be considered as actual expenses at the time of true-up, and only expenses as actually incurred shall be considered.

f) A Generating Company may undertake Opex schemes for system automation, new technology and IT implementation, etc., and such expenses may be allowed over and above normative O&M Expenses, subject to prudence check by the Commission as per the provisions of the MERC (Approval of Capital Investment Schemes) Regulations, 2022:

Provided that the Generating Company shall submit detailed justification, cost benefit analysis, and life-cycle cost analysis of such schemes as against capex schemes, and savings in O&M expenses, if any as per the provisions of the MERC (Approval of Capital Investment Schemes) Regulations, 2022.

g) The Commission may consider any request for revision of the normative O&M expenses on account of consideration of some Schemes under O&M rather than Capital Investment on case-to-case basis, depending on the justification to be submitted by the Applicant and the life-cycle cost analysis:

Provided that if actual O&M expenses are lower than normative O&M expenses on this account, then no sharing of efficiency gains shall be done to that extent.

h) If the Generating Station or Unit opts for Special Allowance as per the provisions of the Regulation 44 of these Regulations, the applicable O&M norms for such Generating

Station/Unit shall be as per the provisions of the Regulation 48.2 below of these Regulations for the respective category and type of the Generator. “

O&M expenses for Generating Stations/Units that achieved COD on or after August 26, 2005

5.2.57 The existing Regulations allow the O&M expenses for new Generating Stations that achieved COD after August 26, 2005 based on per MW norms. The Draft CERC Tariff Regulations, 2024 also allows the O&M expenses for new Generating Stations on the basis of per MW norms. Hence, existing approach of specifying per MW norms with some modification is being retained.

Norms for Coal based Generating Stations

5.2.58 The MERC MYT Regulations, 2019 specify the norm for O&M expenses for Coal based new generating station on per MW basis, as reproduced below:

“47.2...

a) *For Coal based Generating Station*

<i>Particulars in INR Lakh/MW</i>	<i>200/210/250 MW Sets</i>	<i>300/330/350 MW Sets</i>	<i>500 MW Sets</i>	<i>600/660 MW Sets</i>	<i>800 MW and above sets</i>
<i>FY 2020-21</i>	<i>27.89</i>	<i>21.08</i>	<i>18.54</i>	<i>14.99</i>	<i>13.49</i>
<i>FY 2021-22</i>	<i>28.89</i>	<i>21.84</i>	<i>19.21</i>	<i>15.53</i>	<i>13.97</i>
<i>FY 2022-23</i>	<i>29.93</i>	<i>22.63</i>	<i>19.9</i>	<i>16.09</i>	<i>14.48</i>
<i>FY 2023-24</i>	<i>31.01</i>	<i>23.44</i>	<i>20.62</i>	<i>16.67</i>	<i>15</i>
<i>FY 2024-25</i>	<i>32.13</i>	<i>24.29</i>	<i>21.36</i>	<i>17.27</i>	<i>15.54</i>

Provided that for the Generating Stations having combination of above Sets, the weighted average value for operation and maintenance expenses shall be allowed: ...”

- (i) It may be noted that the Draft CERC Tariff Regulations, 2024 specifies 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, 2019 specifies the norms for four categories. Further, MSPGCL generating stations commissioned during present Control Period are within the applicable categories specified in present Regulations.

The following approach has been considered for norms for new Coal based Generating station:

For computation of norms for various categories, the actual O&M expenses for existing generating stations have been considered excluding water charges and including insurance shall be derived on the basis of the average of the Trued-up Operation and Maintenance expenses after adding/deducting the share of efficiency gains/losses. The category-wise generating stations considered are as under:

- a. 200/210/250 MW sets- Paras Unit 3 & 4, Parli Unit 6, 7 & 8 and TPC-G Unit 8
- b. 500 MW sets - Bhusawal Unit 4 & 5, Chandrapur Unit 8&9 and Khaparkheda Unit 5
- c. 600/660 MW sets – Koradi Unit 8, 9 & 10

- (ii) The above derived actual O&M expenses, for FY 2017-18 to FY 2021-22 have been considered for analysis purposes. The derived actual O&M expenses norms for the category has been computed per MW based on installed capacity. The five-year average of derived actual O&M expenses norms on per MW basis for these categories has been considered as norms for FY 2019-20. The O&M expenses includes the wage revision allowed by the Commission also. Hence, there is no separate treatment to wage revision is not required. Further, the O&M norms shall include the impact of wage revisions, so no separate wage revisions shall be allowed in the next control period over and above normative O&M Expenses.
- (iii) The yearly inflation factor computed by considering 50% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past five financial years as per the Office of Economic Advisor of Government of India and 50% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past five financial years as per the Labour Bureau, Government of India.
- (iv) FY 2019-20 derived norms in INR Lakh/MW then further escalated by yearly CPI: WPI: 50:50 for FY 2020-21 (3.71%) and FY 2021-22 (4.94%). In view of the impact of the COVID-19 pandemic on actual O&M expenses, it is felt that before proceeding further with the determination of norms; the impact needs to be nullified. Hence, average CPI and WPI of 5year (From FY 2016-17 to FY 2020-21) with 50% weightage inflation has been computed as 3.71%, which has been considered to escalate the derived norms of FY 2021-22 to arrive at O&M norms for FY 2022-23, FY 2023-24 and FY 2024-25. After arriving at the O&M norms for the base year ending March 31, 2025, FY 2025-26 and onwards norms are determined considering previous year escalation rate with efficiency factor. Where, efficiency factor is 1% of previous year escalation rate. The following table provides the summary of escalation rate for each year of the control period:

	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
WPI: CPI (50:50)	3.71%	(3.71*(1-1%=3.67%)	3.64%	3.60%	3.56%	3.53%

(v) As no generating Stations are available for 300/350 MW set, hence, the existing norms of 2024-25 has been escalated by same proportion, 200/210/250 MW set norms have been increased from FY 24 to FY 25. Base value for FY 2025 has been derived then the base value has been escalated by escalation rates worked-out in above para (iv) for remaining year of the next Control period.

5.2.59 The proposed norms are for new Generating Stations coming up in the next Control Period, hence, the consideration of actual trued-up O&M expenses excluding water chares, subject to prudence check, would reflect the reasonable cost of O&M for such new generating Stations.

5.2.60 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.

5.2.61 MERC in its Tariff Regulations, 2019 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, 2019. It is proposed to retain same multiplying factor as specified in MERC in its Tariff Regulations, 2019.

5.2.62 The proposed O&M expenses norm for New Coal based Generating Stations in the Draft MERC MYT Regulations 2024 are shown below:

“47.2

a) *For Coal based Generating Stations:*

Particulars INR Lakh/MW	200/210/250 MW Sets	300/330/350 MW Sets	500 MW Sets	600/660 MW Sets
2025-26	40.00	30.24	29.22	20.12
2026-27	41.45	31.35	30.28	20.85
2027-28	42.94	32.49	31.37	21.6
2028-29	44.47	33.66	32.49	22.37
2029-30	46.04	34.86	33.64	23.16

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 1.4.2020 in the same Station:

200/210/250 MW	Additional 5 th & 6 th Units	0.90
	Additional 7 th & more Units	0.85
300/330/350 MW	Additional 4 th & 5 th Units	0.90
	Additional 6 th & more Units	0.85
500 MW and above	Additional 3 rd & 4 th Units	0.90
	Additional 5 th & above Units	0.85

Norms for Lignite based Generating Stations

5.2.63 The MERC MYT Regulations, 2019 specifies the norms for new Lignite based generation stations for fourth Control Period. However, there is no Lignite based Generating Stations in State of Maharashtra till date. 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 considering the proposed increase in the norms by the CERC from Tariff Regulations, 2019 to Draft CERC Tariff Regulations, 2024. The proportion is applied on the existing norm for FY 2024-25. Further, such norms for FY 2025-26 have been escalated at the escalation rate of 3.71% to arrive at the O&M expense norm for each year of the fourth Control Period.

“47.2...

b) For Lignite based Generating Stations:

<i>Particulars</i>	<i>Lignite based Unit/Stations INR Lakh/MW</i>
<i>FY 2025-26</i>	<i>21.43</i>
<i>FY 2026-27</i>	<i>22.23</i>
<i>FY 2027-28</i>	<i>23.05</i>
<i>FY 2028-29</i>	<i>23.91</i>
<i>FY 2029-30</i>	<i>24.79</i>

Norms for Gas Turbine/Combined Cycle Generating Stations

The MERC MYT Regulations, 2019 specifies norms for Gas Turbine and Combined Cycle Generating Stations for the fourth Control Period. For specifying the norms for

Gas Turbine/Combined Cycle Generating Stations and Small Gas Turbine Generating Stations (less than 50 MW Unit size) for Fifth Control Period the Commission has adopted the methodology similar to the methodology considered for deriving the norms for Lignite based Generating Stations. The proposed norm for Gas Turbine/Combined Cycle Generating Stations is shown below:

“47.2...

c) Gas Turbine/Combined Cycle Generating Stations

<i>Particulars INR Lakh/MW</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 2025-26</i>	<i>15.32</i>	<i>17.73</i>	<i>14.88</i>
<i>FY 2026-27</i>	<i>15.89</i>	<i>18.38</i>	<i>15.43</i>
<i>FY 2027-28</i>	<i>16.48</i>	<i>19.07</i>	<i>16.00</i>
<i>FY 2028-29</i>	<i>17.09</i>	<i>19.77</i>	<i>16.60</i>
<i>FY 2029-30</i>	<i>17.72</i>	<i>20.51</i>	<i>17.21</i>

Computation and Payment of Capacity Charges and Energy Charges for Thermal Generating Stations

5.2.64 The existing MERC MYT Regulations, 2019 specifies the provisions for determination of Capacity Charge for Thermal Generating Stations. The Commission is proposing to retain the same without any modifications.

Energy Charges

5.2.65 The existing MERC MYT Regulations, 2019 specifies the provisions for determination of Energy Charge for Thermal Generating Stations. The Commission is proposing to continue, with some modifications, as discussed below.

5.2.66 The Commission in MYT Tariff Regulations, 2019 has considered the “GCV as billed” for computation of Energy Charges. The Commission in MYT Tariff Regulations, 2019 has allowed a normative GCV loss of 300 kcal/kg as the difference in “GCV as billed” and “GCV as received”.

5.2.67 Further, the Commission has provided relaxation in GCV loss vide its Orders i.e., Case No. 296 of 2019, Case No. 180 of 2020 (review order) and Case No. 227 of 2022. The Commission in its Review Order in Case No. 231 of 2023 has allowed relaxation of

325 kcal/kg in loss of GCV in addition to 300 kcal/kg for FY 2023-24 and relaxation of 275 kcal/kg FY 2024-25.

- 5.2.68 Further, by analysing the last five-year GCV loss data given by MSPGCL it is found that the average of GCV loss from FY 2018-19 to FY 2023-24 (H1) is 761 kcal/kg. The Commission also noted various communications of MSPGCL with the Secretary (Coal), Ministry of Coal and Coal India Ltd on issues related to coal sampling like shifting to auger machine coal sampling instead of manual sampling, non-random road mode sampling, top layer sampling, non-random conveyor belt sampling etc.
- 5.2.69 In view of relaxation provided by the Commission in various review orders and efforts demonstrated by MSPGCL for sampling methodology, the Commission in the Draft MYT Regulations, 2024 is proposing to further relax the normative GCV loss of 300 kcal/kg to 650 Kcal/kg as the difference in “GCV as billed” and “GCV as received”. The Commission also clarifies that the normative GCV losses shall not be allowed for washed and imported coal.
- 5.2.70 The Commission in MYT Tariff Regulations, 2019 has allowed a normative GCV stacking loss of 85 kcal/kg for pithead stations and 120 kcal/kg for non-pithead stations as the difference in “GCV as received” and “GCV as fired”. Further, it is noted that the CERC Regulations 2019 and Draft CERC Regulations 2024 have proposed a uniform margin of 85 kcal/kg without differentiating between pithead and non-pithead stations. Hence, the Commission in the Draft MYT Regulations, 2024 is proposing to align stacking loss norms with the provisions of the Draft CERC MYT Regulations, 2024.
- 5.2.71 Accordingly, the proposed Regulation of Energy charge in Draft MYT Regulations, 2024 is as under:

“50...

B. Energy Charges

50.5 The Energy Charges shall cover landed cost of primary fuel and secondary fuel oil and shall be worked out on the basis of total energy scheduled to be supplied to the Beneficiary/ies during the calendar month on ex-power plant basis, at the Energy Charge Rate of the month (with fuel price adjustment) as per the following formula:

Energy Charges (INR) = (Energy Charge Rate in INR/kWh) x [Scheduled Energy (ex-bus) for the month in kWh]

Provided also that in case of supply of coal or lignite from the integrated mine(s), the landed cost of primary fuel shall be based on the input price of coal or lignite, as the case may be, as computed in accordance with these Regulations.

50.6 Energy Charge Rate (ECR) in INR/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:

$$ECR = \frac{[P_p \times (Q_p)_n + P_s \times (Q_s)_n + SRC \times LPR]}{[1-(AUX_n + AUX_{en})]} \quad (INR/kWh)$$

Where, P_p = landed cost of primary fuel, namely coal or lignite or gas or liquid fuel and limestone, if applicable, in INR/kg or INR/cum or INR/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 billed by supplier less:

(a) Actual loss in calorific value of coal between “as billed by supplier” and “as received at generating station”, subject to the maximum loss in calorific value of 650 kcal/kg; and

(b) actual stacking loss subject to the maximum stacking loss of 85 kcal/kg for pithead stations and non-pithead stations;

P_s = landed cost of Secondary fuel oil in INR/ml,

$(Q_s)_n$ = Normative Quantity of Secondary fuel oil in ml/kWh as per Regulations 46.11 and 46.12, and

SRC = Specific reagent consumption on account of revised emission standards (in g/kWh);

LPR = Weighted average landed price of reagent for Emission Control System (in INR/kg);

AUX_n = Normative Auxiliary Energy Consumption as % of gross generation as per Regulations 46.13 to 46.17;

AUX_{en} = Normative Auxiliary Energy Consumption of Emission Control System as % of gross generation as per Regulation 46.18:

...”

Norms and Principles for Hydro Generating Stations

Components of Tariff

- 5.2.72 The Tariff for sale of electricity from a Hydro Generating Station shall comprise two parts, namely, Capacity Charge and Energy Charge. The Capacity Charge and Energy Charge shall be computed based on Annual Fixed Charges determined for Hydro Generating Station.
- 5.2.73 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.
- 5.2.74 The Commission is proposing to continue with the existing provisions for computation of Tariff for Hydro Generating Stations in the Draft MERC MYT Regulations, 2024 as below

Operation Norms for Hydro generating Stations

- 5.2.75 The MERC MYT Regulations, 2019 specifies the norms of operation for Hydro Generating Stations, viz., Availability and Auxiliary Consumption.

Normative Annual Plant Availability Factor (NAPAF)

- 5.2.76 Regulation 48 of Draft MERC MYT Regulations, 2024 for computation of Normative Annual Plant Availability Factor (NAPAF) for Storage and Pondage type plants, are as below:

“48.1 The following Normative Annual Plant Availability Factor (NAPAF) shall apply to Hydel Generating Stations:

Sr. No.	Particulars	Normative Annual Plant Availability Factor
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 head variation between FRL and MDDL of more than 8%, and where plant availability is not affected by silt</i>	<i>The month-wise peaking capacity as provided by the Project authorities in the Detailed Project Report, approved by the relevant authority, shall form the basis of fixation of NAPAF.</i>

Sr. No.	Particulars	Normative Annual Plant Availability Factor
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.

5.2.77 The Commission notes that, the CERC in its draft Tariff Regulations 2024 has also retained the existing norms for NAPAF for Hydro Generating Stations. Accordingly, the Commission is also not retaining the norms for NAPAF for Hydro Generating Stations in line with the draft CERC Tariff Regulations 2024.

Auxiliary Consumption

5.2.78 The Commission notes that, the CERC in its draft Tariff Regulations 2024 has retained the existing norms for Auxiliary consumptions for Hydro Generating Stations. Accordingly, the Commission is also proposing to retain the provisions of the normative Auxiliary Energy Consumption specified by the Commission in the MERC MYT Regulations, 2019 for Hydro Generating Stations in the Draft MERC MYT Regulations, 2024 as below:

“48.2 The following Normative Auxiliary Energy Consumption shall apply to hydro Generating Stations:

Type of Station	Installed Capacity above 200 MW	Installed Capacity up to 200 MW
<i>Surface Hydro Generating Station</i>		
<i>Rotating Excitation</i>	0.7%	0.7%
<i>Static Excitation</i>	1.0%	1.2%
<i>Underground Hydro Generating Station</i>		
<i>Rotating Excitation</i>	0.9%	0.9%
<i>Static Excitation</i>	1.2%	1.3%

Operation and Maintenance Expenses for Hydro Generating Stations

- 5.2.79 MERC MYT Regulations, 2019 specify the principles for computation of O&M Expenses for existing Hydro Generating Stations/units, similar to the principles specified for Generating stations that achieved COD before August 26, 2005. For new Hydro Generating Stations, the O&M Expenses shall be fixed at 2% of original project cost for first year of commercial operation.
- 5.2.80 It is one of the objectives of the MYT framework to move from the methodology of specifying the principles to specifying norms for performance parameters and controllable factors. However, Hydro Generating Stations are old Stations and are commissioned before the Regulatory regime. Hence, it would be difficult to specify the norms for such Stations. In view of this, it is proposed to continue with the existing approach for specifying principle for Hydro Generating Stations. However, for new Hydro generating Stations, the existing norm is proposed to be continued for next Control Period.
- 5.2.81 For determination of O&M Expenses for next Control Period, at time of MYT Order, the average of O&M Expenses for the period from FY 2019-20 to FY 2023-24 is required to be escalated at the respective escalation rate for FY 2022-23, FY 2023-24 and FY 2024-25, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2025.
- 5.2.82 Accordingly, the Commission proposes to retain the provisions of the MYT Regulations 2019 without any change for determination O&M expenses for Hydro Generating Stations/units in the Draft MERC MYT Regulations, 2024.

6 Norms and principles for determination of revenue requirement and Transmission Tariff

6.1 Overview of Transmission

6.1.1 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 erstwhile (MSEB), The Tata Power Company Ltd. – Transmission Business (TPC-T), and Adani Electricity Mumbai Ltd. – Transmission Business (AEML-T).

6.1.2 GOM notified MSETCL as the State Transmission Utility (STU) vide its GR No. Reform 1004/S.No 8885/Energy-5 dated 17th 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.”

- 6.1.3 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 and from Inter-State resources 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.
- 6.1.4 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.
- 6.1.5 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 Adani Electricity Mumbai Ltd. (AEML-T)
 - (iv) Jaigad Power Transco Ltd. (JPTL)
 - (v) Adani Transmission (India) Limited (ATIL)
 - (vi) Amravati Power Transmission Company Ltd. (APTCL)
 - (vii) Sinnar Power Transmission Company Ltd. (SPTCL)
 - (viii) Maharashtra Eastern Grid Power Transmission Company Ltd. (MEGPTCL)
 - (ix) Transmission Business of Vidarbha Industries Power Limited (VIPL-T)

In the latest Mid Term Review (MTR) proceedings for the fourth MYT Control Period, the Commission has undertaken MTR of all intra-State Transmission Licensees and issued the Orders except for SPTCL.

6.2 **Applicability**

- 6.2.1 Regulation 74 of Draft MYT Regulations, 2024 specifies the applicability that the Regulations contained in this Part 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, which are not covered under Regulation dealing with adoption of tariff through Tariff Based Competitive Bidding (TBCB) Route under Section 63 of the Act:
- 6.2.2 Further, the Commission vide first Amendment to the MERC MYT Regulations, 2019, specified a threshold Limit as INR 500 Crore excluding land cost, for the development of Intra-State Transmission System through TBCB. While specifying the threshold, the Commission had clarified that it will review the above Threshold Limit while framing the MYT Regulations for next Control Period based on the progress of projects achieved under TBCB under current Control Period till FY 2024-25.
- 6.2.3 The Commission while proposing Threshold Limit has observed that the Standard Bidding Guidelines and the Standard Bidding Documents do not specify any Threshold Limit for Transmission Project to be considered under TBCB mode. The Commission notes that, as per the STU planning, there are large number of small transmission lines whose estimated cost would be below INR 500 Crore. Further, the Commission while notifying the threshold limit had taken the cue from National Committee on Transmission that the project should not be too small as it will not attract competitive tariff.
- 6.2.4 Further, the Commission has specified the Threshold Limit of INR 500 Crore considering the submission of STU to increase the Threshold Limit for safe, secure, disciplined and economic grid operations along with flexibility to STU to take up any project of strategic importance/faster executed through Cost Plus approach with prior approval of the Commission.
- 6.2.5 The Commission also notes that, the project costs of the new projects are expected to be increased over a period of time specifically in Mumbai Metropolitan Region (MMR) and the Commission does not find it appropriate to specify different Threshold Limit for MMR and rest of Maharashtra.
- 6.2.6 Thus, the Commission in the Draft MYT Regulation, 2024 proposes to retain the present threshold limit to INR 500 Crore excluding land cost, to keep the competition

high among experienced licensees, and, at the same time, discourage the influx of non-serious bidders and manage smaller qualifications.

6.3 **Components of Tariff**

6.3.1 Regulation 57 of MERC MYT Regulations, 2019 specifies that transmission charges for access to and use of the intra-State transmission system shall comprise any of the following components or combination of the following components:

- (a) Transmission system access charges;
- (b) Annual transmission charges;
- (c) Per unit charges for energy transmitted and;
- (d) Reactive energy charges

6.3.2 Further, this Regulation also specifies that components of Aggregate Revenue Requirement of the Transmission Licensee for respective year of the Control Period as under:

- (a) Operation and maintenance expenses;
- (b) Depreciation;
- (c) Interest on Loan Capital;
- (d) Interest on working capital and deposits from Transmission System Users;
- (e) Contribution to contingency reserves;
- (f) Return on Equity Capital;
- minus:*
- (g) Income from Open Access charges;
- (h) Non-Tariff income;
- (i) Income from Other Business, to the extent specified in these Regulations:

6.4 **Petition for determination of provisional Tariff**

6.4.1 Regulation 58 of the MYT Regulations, 2019 contains specific provisions related to determination of provisional tariff for the Transmission Licensee. As per existing Regulations, new Transmission Licensee has to file a Petition for approval of provisional tariff six months prior to anticipated COD of the transmission system.

6.4.2 For approval of provisional tariff for Transmission Licensee, the Commission in the Draft MERC MYT Regulations, 2024, proposes to continue with the existing provisions for the next Control Period.

6.5 Determination of Intra-State Transmission Tariff

- 6.5.1 Regulation 64 of MYT Regulations, 2019 specifies the transmission pricing framework applicable for the State of Maharashtra. Presently, the intra-State transmission pricing framework in the State of Maharashtra is based on a “Postage Stamp” approach. In this framework, 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.
- 6.5.2 From the experience of the past two Control Periods, the Commission views that Postage Stamp approach is simple, easy to understand and implement, and is also a time-tested approach, hence, it is proposed to continue with the uniform Postage Stamp approach across the State of Maharashtra.
- 6.5.3 However, it is proposed to clarify the treatment in case of new Distribution Licensees whose monthly CPD and NCPD data is not available at the time of determination of Base TCR, as under:

“82.3.

...

*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 **Error! Reference source not found.**, **Error! Reference source not found.** and **Error! Reference source not found.** shall be re-determined for each remaining Year of the Control Period.”*

- 6.5.4 Further, in the past, the Commission has been determining the Intra-State Transmission Tariff on a suo-motu basis, based on the ratio of CPD and NCPD of the Distribution Licensees and the approved ARR of all the Transmission Licensees. In this regard, it is proposed to direct the State Transmission Utility to file the Petition for determination of Intra-State Transmission Tariff one month after the last date of filing of MYT/MTR Petitions by Transmission Licensees, based on the CPD and NCPD and the ARR sought by the Transmission Licensees in their respective Petitions, as under:

“82.5. The State Transmission Utility shall file the Petition for determination of Intra-State Transmission Tariff for the MYT Control Period latest by November 30, 2024 on the basis of Base Transmission Capacity Rights of each TSU, and the

summation of the Aggregate Revenue Requirement projected by the Transmission Licensees for each Year of the Control Period:

- 6.5.5 Further as discussed in General Section, the Commission has proposed to discontinue with the provision of Mid-Term Review in the Fifth Control Period commencing from April 1, 2025. Accordingly, the revised provisions of the draft MYT Regulations, 2024 are as under:

“82.5.

...

Provided that the State Transmission Utility shall file the Petition for true-up of share of intra-State transmission tariff for FY 2025-26 to FY 2028-29 and provisional true-up of share of intra-State transmission tariff for FY 2029-30 latest by November 30, 2029—on the basis of the actual CPD and NCPD of Transmission System Users in the respective years, or the quantum of Short-term/Medium-Term Open Access applied for by the Deemed Distribution Licensee for the available period, as applicable.”

6.6 Capital Investment Plan

- 6.6.1 Regulation 59 of the MYT Regulations, 2019 contains specific provisions related to the capital expenditure under non-DPR scheme. Accordingly to harmonise the provisions of MERC Draft MYT Regulations, 2024 and MERC CAPEX Regulations 2022 the Commission has added the reference of the MERC CAPEX Regulations 2022 in the MERC Draft MYT Regulations, 2024.

6.7 Operational norms

- 6.7.1 Regulation 60 of MERC MYT Regulations, 2019 specifies the Norms for operation and incentive mechanism for the Transmission Licensee. There are two separate norms of transmission availability, viz., norm for recovery of Annual Transmission Charges and norm for incentive.
- 6.7.2 The Commission has analysed the performance of Transmission Licensees in the State of Maharashtra for the past period. The actual transmission availability achieved for the period from FY 2016-17 to FY 2021-22 is shown below:

Table 9 Actual Transmission System Availability for FY 2016-17 to FY 2021-22

Licensee	System	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2021-22	FY 2022-23
MSETCL	HVDC	97.07%	96.41%	95.89%	99.64%	93.64%	94.27%

Licensee	System	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2021-22	FY 2022-23
	HVAC	99.64%	99.61%	99.58%	99.59%	99.67%	99.67%
AEML-T	HVAC	99.80%	99.84%	99.75%	99.78%	99.87%	99.69%
TPC-T	HVAC	99.63%	99.48%	99.50%	99.75%	99.89%	99.87%
JPTL	HVAC	98.82%	99.63%	99.67%	99.58%	99.77%	99.63%
ATIL	HVAC	99.86%	99.83%	99.92%	99.93%	99.87%	99.81%
APTCL	HVAC	99.83%	99.52%	99.75%	99.85%	99.91%	99.95%
MEGPTCL	HVAC	99.86%	99.77%	99.76%	99.72%	99.88%	99.96%
VIPL-T	HVAC	99.86%	99.94%	99.78%	99.97%	100.00%	100.00%

6.7.3 From the above Table, it is observed that all Transmission Licensees have maintained the transmission system availability more than target availability required for recovery of Annual Transmission Charges. Also, all Transmission Licensees have availed incentive for maintaining higher transmission system availability.

6.7.4 It is evident that the Transmission Licensees 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.

6.7.5 Further, the Availability norm of 99% for incentive for HVAC system is already stringent and also no incentive is applicable for transmission availability above 99.75%. Also, these norms are in line with the norms specified by the CERC in its Tariff Regulations.

6.7.6 In view of the above, it is proposed to continue with the existing norms for operation and incentive mechanism for next Control Period as well. Further, it is specified in the definition of Availability that Availability of a transmission system for any period shall not exceed hundred per cent.

6.7.7 Further the Commission observes that the data telemetry and communication are important components for the transmission system. Accordingly, additional RoE of 0.75% shall be provided, if the transmission system is operational with data telemetry, communication system up to load dispatch centre or protection system for more than 95%. Thus, the Commission in Draft MYT Regulation 2024, proposes to add a new proviso in as under:

“28.6.

...

Provided further that in case of an existing and new transmission system, Performance Linked Return on Equity of 0.75% shall be provided, if the transmission system is operational with data telemetry, communication system up to load dispatch centre or protection system for more than 95% based on the report submitted by the MSLDC.”

6.8 Operation and Maintenance Expenses for Transmission

- 6.8.1 In the MYT Regulations, 2019, the Commission notes that with increase in transmission capacity and the corresponding increase in asset base, the manpower resources and repairs and maintenance activities are expected to be increased to cater to the enhanced maintenance requirement (preventive and break-down) of the asset base. Hence, there is a direct co-relation between O&M expenses and on-line transmission/network parameters, such as substation (transformation capacity/number of bays) and transmission line length (ckt-km) put into service.
- 6.8.2 Accordingly, in the MYT Regulations, 2019, the Commission has specified the O&M norms for Transmission Licensees which are linked to Transmission line length (ckt-km) and sub-station related assets (number of bays). Moreover, a separate norm for MSETCL, AEML-T, TPC-T and JPTL and a combined norms for the new transmission licensees, other existing transmission licensees and additional voltages for TPC-T and AEML-T was specified by the Commission.
- 6.8.3 The Commission has noted that from 2019 onwards, the CERC has introduced the norm for transformers in terms of INR Lakh per MVA by allocating the existing substation related expenses, which was earlier accounted within the Norms for Sub-station bays. The Commission is of the view that, the Transformer and related Switchgear are the major components of the transmission system, and their maintenance expenses are required to be monitored separately instead of including in the Substation Bay.
- 6.8.4 Accordingly, the Commission while determining the O&M Norms under the Draft MYT Regulation, 2024, has proposed to introduce the O&M norms linked with Transmission line length (in ckt-km), and sub-station related assets (no. of bays and the Transformation capacity in MVA).
- 6.8.5 Under the Draft MYT Regulation, 2024, the Commission has also proposed to specify separate norms for MSETCL, TPC-T, AEML-T, ATIL, JPTL, APTCL, MEGPTCL and VIPL-T. Furthermore, for the new transmission licensees, the Commission has specified the norms is based on norms specified for MSETCL, except for 765 kV and 400 kV which is based on norms of MEGPTCL and JPTL respectively under the Draft MYT Regulation, 2024.

Comparison of Network configuration amongst the Intra-State Transmission licensees in Maharashtra

- 6.8.6 At present, the InSTS within Maharashtra comprises the transmission network of MSETCL, TPC-T, AEML-T, ATIL, JPTL, APTCL, MEGPTCL and VIPL-T. While the transmission licence has been issued in case of SPTCL, the transmission assets of this Licensee are yet to achieve COD and become operational.
- 6.8.7 The nature of Transmission Licensees varies significantly on the technical, financial and operational aspects. The State Transmission Utility-MSETCL, operates at voltage level ranging from 66 kV to 400 kV/765 kV AC. The transmission network of MSETCL also includes around 1504 ckt-km of HVDC lines from Chandrapur to Padghe. However, TPC-T and AEML-T operate at a voltage level ranging from 66 kV to 220 kV. JPTL, ATIL, APTCL, MEGPTCL and VIPL-T own and operate limited network. JPTL, ATIL and APTCL operate at voltage level of 400 kV. VIPL-T operates at voltage level of 220 kV and MEGPTCL operates at voltage of 400 kV to 765 kV. Further, TPC-T and AEML-T also has mix of overhead lines and underground cables, while all other Licensees have overhead lines.
- 6.8.8 The following Table shows a comparison of the technical configuration of the Transmission Utilities in transmission line length in ckt km and number of bays (Average of Opening and Closing) at 400 kV equivalent for FY 2021-22 is as below:

Table 10: Technical Configuration of Transmission Licensees

Sl. No.	Licensee	Transmission Line Length (ckt-km)	Number of Bays (Nos.)	Transmission line length per bay (ckt-km/bay)
1	MSETCL	24,739	1,749	14.14
2	ATIL	438	6	73.00
3	MEGPTCL	1,678	70	23.83
4	VIPL-T	2	1	4.12
5	AEML-T	223	28	8.07
6	TPC-T	484	97	5.00
7	JPTL	330	4	82.50
8	APTCL	220	2	111

Source: Data from Transmission Licensees

- 6.8.9 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 and shows that there exists significant difference in the network configuration of Transmission Licensees.

6.8.10 Further, the Commission has proposed to add interconnecting transformers as an equipment connected through bays as below:

“79.1.

...

For the purpose of applying normative O&M expenses under these Regulations, a ‘Bay’ shall mean a set of accessories that are required to connect an electrical equipment such as Transmission Line, Bus Section Breakers, Power Transformers, Potential Transformer, Inter-Connecting Transformers, Capacitors and Transfer Breaker and the feeders emanating from the bus at sub-Station of Transmission Licensee. Further, the Bays referred to shall include only the Bays at the Transmission substation and shall exclude any Bays of the Generating Station switchyard whose maintenance is usually the responsibility of the Generating Company:”

6.8.11 The Commission is of the view that it has proposed to retain the above definition in the Draft MYT Regulation 2024. Further, a new clause for the transformation capacity is proposed to be inserted as below:

“79.1.

...

Further, for the purpose of applying normative O&M expenses under these Regulations, ‘Transformation Capacity’ shall be considered as the capacity of the Inter-Connecting Transformer or the Power Transformer as the case may be.”

6.8.12 In the past, the Commission has noted that, there are certain Bays that are unutilized, hence are not entitled for Normative O&M Expenses. The Commission proposes to continue with this provision in the Draft MERC MYT Regulations, 2024, as under:

“79.1.

...

Provided also that the number of Bays considered for allowing O&M expenses shall exclude the unutilised Bays...”

Comparison of O&M Expenses amongst the Intra-State Transmission licensees in Maharashtra

6.8.13 As per the provisions of the MERC MYT Regulations, 2011, 2015 and 2019, the Commission has approved the normative O&M expenses for intra-State Transmission Licensees and allowed sharing of efficiency gains or losses with respect to the actual

O&M expenses. The actual and normative O&M expenses for Transmission Licensees have been compared for FY 2020-21 and FY 2021-22 of the fourth control period as shown in the following table:

Table 11: O&M Expenses for Transmission Licensees (INR Crore)

Licensee	FY 2020-21			FY 2021-22		
	Normative	Actual (Approved)	Gain/(loss)	Normative	Actual (Approved)	Gain/(loss)
MSETCL	1,794.11	1,760.41	33.70	1,901.92	1,941.63	(39.71)
ATIL	12.27	11.26	1.01	12.78	12.07	0.71
MEGPTCL	107.73	99.24	8.49	111.61	104.39	7.22
VIPL-T	0.49	0.86	(0.37)	0.51	1.00	(0.49)
AEML-T	52.14	77.34	(25.20)	54.44	58.78	(4.34)
TPC-T	171.94	251.65	(79.71)	178.88	277.65	(98.77)
JPTL	4.53	4.28	0.25	4.69	4.59	0.10
APTCL	1,794.11	1,760.41	33.70	1,901.92	1,941.63	(39.71)

6.8.14 From the above table, it is observed that actual O&M expense are higher than normative O&M expenses for AEML-T, VIPL and TPC-T for both years. Further, the Commission notes that the increase in actual O&M expense for AEML-T is majorly due to Non-DPR Capex items (including IDC) now re-classified as R&M Expenses. Further, for TPC-T, the increase in actual O&M expense was majorly due to increase in A&G expense.

6.8.15 Further, for all other Licensees, the actual O&M Expenses are significantly lower than normative O&M Expenses for FY 2020-21 and FY 2021-22. Thus, Commission proposes to compute the norms for the Next Control period as the net entitlement after sharing gains/losses of O&M expenses based on the revised normative as approved by the Commission in the MTR Orders and normalized O&M Expenses after deducting one-time expenses as approved by the Commission in the recent MTR Orders.

Comparison of O&M expenses of the Transmission licensees in the State with CTU (PGCIL) norms

6.8.16 The CERC Tariff Regulations, 2019 has specified the norms for O&M expenses for Transmission Licensees handling Inter-State Transmission of power. The CERC has specified voltage-wise norms and separate norms for transmission line (INR Lakh per ckt-km), bays (INR Lakh per bays) and transformer (INR Lakh per MVA). Further, the CERC in draft Tariff Regulation, 2024 has specified the O&M norm as below:

"35. Operation and Maintenance Expenses:

.....

(3) **Transmission system** (a) *The following normative operation and maintenance expenses shall be admissible for the transmission system:*

Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
Norms for Sub-station bays (INR Lakh per bay)					
765 kV	36.28	38.41	40.68	43.07	45.61
400 kV	25.91	27.44	29.06	30.77	32.58
220 kV	18.14	19.21	20.34	21.54	22.81
132 kV and below	12.96	13.72	14.53	15.38	16.29
Norms for Transformers (INR Lakh per MVA or MVAR)					
O&M expenditure per MVA or per MVAR (INR Lakh per MVA or per MVAR)	0.229	0.242	0.257	0.272	0.288
Norms for AC and HVDC lines (in INR Lakh per km)					
Single Circuit (Bundled Conductor with six or more sub-conductors)	1.220	1.292	1.368	1.448	1.534
Single Circuit (Bundled Conductor with four sub- conductors)	1.045	1.107	1.172	1.241	1.315
Single Circuit (Twin & Triple Conductor)	0.697	0.738	0.782	0.828	0.876
Single Circuit (Single Conductor)	0.348	0.369	0.391	0.414	0.438
Double Circuit (Bundled conductor with four or more sub-conductors)	1.830	1.938	2.052	2.173	2.301
Double Circuit (Twin & Triple Conductor)	1.220	1.292	1.368	1.448	1.534
Double Circuit (Single Conductor)	0.523	0.554	0.586	0.621	0.657
Multi Circuit (Bundled conductor with four or more sub-conductors)	3.212	3.401	3.601	3.814	4.038
Multi Circuit (Twin & Triple Conductor)	2.138	2.264	2.398	2.539	2.689
Norms for HVDC Stations					
HVDC Back-to-Back stations (Lakh per MW)	2.15	2.27	2.41	2.55	2.70
Gazuwaka BTB (INR Lakh/MW)	1.89	2.00	2.12	2.25	2.38
HVDC bipole scheme (INR Lakh/MW)	1.13	1.20	1.27	1.34	1.42

Provided that the O&M expenses for the GIS bays shall be allowed as worked out by multiplying 0.70 of the O&M expenses of the normative O&M expenses for bays;

...”

- 6.8.17 Further, the Commission notes that the 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. Moreover, the CERC has made distinction in terms of type of conductor as well.
- 6.8.18 It is noted that the CERC has retained the norm for transformers in terms of INR Lakh per MVA from FY 2024-25 onwards in the Draft Tariff Regulations 2024, by allocating the existing substation related expenses, which was earlier accounted within the Norms for Sub-station bays.
- 6.8.19 Further, the CERC norms have been specified after taking into account the 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 O&M expenses incurred by them.
- 6.8.20 The Commission in MERC MYT Regulations, 2019 specified norms for O&M Expense based on the prudent actual O&M Expenses by Transmission Licensee and voltage-wise O&M expenses per bay and per ckt-km. However, the Commission in the draft MYT Regulations, 2024, proposes the norms for O&M Expense after considering the sharing gains/losses based on the revised normative O&M Expenses as approved by the Commission in the MTR Orders.
- 6.8.21 Further, in draft MYT Regulation, 2024, the Commission proposes to the O&M Expenses per bay, per ckt-km and per MVA capacity similar to the CERC Draft MYT Regulations 2024. The total allowable O&M Expenses for the transmission system is to be computed by multiplying the number of bays, total MVA capacity and ckt. km of line length with the applicable norms for O&M expenses on per bay, per transformation capacity and per ckt. km basis, respectively.

Formulation of proposed O&M norms

- 6.8.22 The Commission in the MYT Regulations, 2019 had specified normative O&M Expenses for MSETCL, AEML-T, TPC-T and JPTL and combined norms for ATIL, MEGPTCL, and additional voltages for TPC-T and AEML-T because that time, these Licensees were having limited data availability to specify a separate O&M Norms for them.
- 6.8.23 However, considering the data availability for the fifth control period, the Commission in the Draft MYT Regulation, 2024, has proposed a separate norm for MSETCL, AEML-T, TPC-T, JPTL, ATIL, MEGPTCL, VIPL-T and APTCL. The Commission has also proposed the norms for new licensees similar to MSETCL, except for 765 kV and 400 kV level which are similar to norms of MEGPTCL and JPTL respectively.

6.8.24 The CERC has introduced the Norm for transformers in terms of INR Lakh per MVA by allocating the existing substation related expenses, which was earlier accounted within the Norms for Sub-station bays. The relevant extract from the CERC Approach Paper, 2019 is as under:

“21.4. The O&M expenses of transmission substation comprises O&M expenses for transformer, reactors, bays, compensation devices, transmission lines, control room switchgears, DC system, switchyard etc. When the number of bays increases, there will be a corresponding increase in switchgear panel in the control room. However, there may not be increase in the capacity of transformer and other components of the substations. As an alternative, the O&M expenses may need to worked out on the basis of MVA capacity instead of individual components else some weightage may be accorded to different components.”

6.8.25 The Commission notes that, the bifurcation of norms between substation (Per MVA) and bays (Per No. of bays) under the substation assets would allow separate recovery for substation and bays, to avoid excess O&M recovery through bays in case where, there is an extension of bays in the substation, without any increase in MVA capacity.

6.8.26 Thus, the Commission while determining the O&M Norms for the Fifth Control Period, under the Draft MYT Regulation, 2024, proposes to introduce the O&M norms to be linked with Transmission line length (in ckt-km) and sub-station related assets (no. of bays and the Transformation capacity in MVA).

6.8.27 Further, due unavailability of actual assets allocation between the substation and bays the Commission has proposed to allocate the O&M expense of the substation assets in 50:50 between per no. of bays and per MVA Capacity, similar to the methodology adopted by the CERC in Draft Tariff Regulation, 2024.

6.8.28 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, 100 kV, 110 kV)
5. 66 kV and lower

6.8.29 However, in case of TPC-T, VIPL-T and AEML-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. Similarly, in case of JPTL, APTCL and ATIL, O&M norms are being specified only for 400 kV level. Further, in case of other new Transmission Licensees, O&M norms are proposed for all voltage levels.

Base Expenses

6.8.30 The Commission has considered Trued up O&M Expenses of three years of third control period i.e., FY 2017-18 to FY 2019-20 and two years of forth control period i.e. FY 2020-21 & FY 2021-22 for deriving the norms for Fifth Control Period. The FY 2017-18 and FY 2018-19 are considered to average out the impact of COVID-19 during FY 2020-21 and FY 2021-22.

6.8.31 Further, the Commission while determining the Norm for the Fifth Control Period has considered the net entitlement after sharing gains/losses based on the revised normative O&M Expenses as approved by the Commission in the MYT and MTR Orders for FY 2017-18 to FY 2021-22, keeping in view that prudent O&M Expenses should be set as Norm to ensure efficiency and performance in transmission licensees.

Escalation Factor

6.8.32 The MERC MYT Regulations, 2019 specifies the computation of inflation factor based on Consumer Price Index (CPI) and Wholesale Price Index (WPI), which is applicable for computation of O&M expenses for the transmission Licensees. For the fifth Control Period the Commission has considered data for new series starting from 2011-12 of WPI and CPI.

6.8.33 The yearly inflation factor computed by considering 30% weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past five financial years as per the Office of Economic Advisor of Government of India and 70% weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past five financial years as per the Labour Bureau, Government of India.

6.8.34 FY 2019-20 derived norms in per ckt km, per bay and per MVA is then further escalated by yearly CPI: WPI as 70:30 for FY 2020-21 (4.24%) and FY 2021-22 (5.06%). In view of the impact of the COVID-19 pandemic on actual O&M expenses, it is felt that before proceeding further with the determination of norms; the impact needs to be nullified. Hence, average CPI and WPI of 5 year (From FY 2016-17 to FY 2020-21) with 50% weightage inflation has been computed as 4.24%, which has been considered to escalate the derived norms of FY 2021-22 to arrive at O&M norms for FY 2022-23, FY 2023-24 and FY 2024-25. After arriving at the O&M norms for the base year ending March 31, 2025, FY 2025-26 and onwards norms are determined considering previous

year escalation rate with efficiency factor. Where, efficiency factor is 1% of previous year escalation rate.

The following inflation factors has been considered for computation of norms for the next control period:

	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
CPI: WPI (70:30)	4.24%	4.20% [4.24*(1-1%) = 4.20%]	4.16%	4.12%	4.08%	4.03%

Methodology for Computation of O&M Expense

6.8.35 The methodology for formulation of O&M norms for MSETCL, TPC-T, AEML-T, JPTL, ATIL, MEGPTCL, VIPL-T and APTCL is elaborated as under:

- (a) The net entitlement after sharing gains/losses of O&M expenses, based on the revised normative and normalised actual O&M Expenses as approved by the Commission in the MYT/MTR Orders have been considered for FY 2017-18 to FY 2021-22.
- (b) For normalisation of the actual O&M expenses, the Commission has factored the following expenses heads appropriately as below:
 - a. For JPTL, the A&G Expenses for FY 2020-21 excludes the write off tower expense, as it is a one time in nature.
 - b. For MSETCL, impact of Wage Revision payment has been considered during normalisation.
 - c. For AEML-T, the additional amount in PF contribution due to the Hon'ble Supreme Court Judgment has not been considered into actual O&M Expenses for FY 2019-20 to FY 2021-22.
 - d. For TPC-T, energy charges are not considered during normalisation of FY 2018-19 to FY 2021-22 for computing O&M Expenses norms for a license.

For other licensees, the net entitlement is considered after sharing of gain and losses without any normalisation.

- (c) The Transmission line length, and number of bays have been considered from the true up MYT/MTR Orders and transformation capacity is considered based on data submitted by licensees to the Commission for respective years.
- (d) The year-wise O&M expenses (from FY 2017-18 to FY 2021-22) have been allocated amongst substation assets and transmission line length in the ratio of existing asset base. Further, due to unavailability of assets allocation between the substation and bays under the substation assets, the Commission has proposed to allocate the O&M expense of the

substation assets in 50:50 between bays and MVA Capacity, like the methodology adopted by the CERC in Draft Tariff Regulation, 2024 for every transmission licensee.

- (e) Further, the Commission notes that ATIL, APTCL and VIPL-T does not have transformer asset, so the Commission has proposed to allocate the O&M expense of substation assets to bays only.
- (f) Based on the above allocation to substation, bays and transmission lines, O&M expenses per MVA (INR Lakh/MVA), per bays (INR Lakh/bay) and per circuit-km (INR Lakh/ckt-km) have been computed for each year by dividing the O&M expenses for lines/bays/substation with the total line length in km/total number of bays/MVA capacity in respective years.
- (g) During the computation of the weightage for GIS bays is considered as 0.7 of AIS bays. Further, actual O&M expenses per ckt-km, per bays and per MVA as computed above have been further allocated voltage-wise by assigning appropriate weightage factor as considered by the Commission while deriving the norms for the MYT Regulations 2019.
- (h) The norm for the next Control Period for various voltage classes has been derived based on average of the norm derived for FY 2017-18 to FY 2021-22 in terms of INR Lakh/ckt-km, INR Lakh/MVA and INR Lakh/bay for each Transmission Licensee.
- (i) Further, the average norm so derived has been escalated by inflation factor as discussed above to derive applicable O&M norm for respective years of the next Control Period.

6.8.36 The Commission, in the MYT Regulation 2019, has specified O&M norms for HVDC in case of MSETCL Chandrapur-Padghe line on pro-rata basis for transmission line length of Rihand-Dadri HVDC line, as specified by CERC in Tariff Regulations 2019. However, CERC in the Draft MYT Regulations has proposed a single norm for HVDC bipole schemes in INR Lakh/MW. Accordingly, the Commission has computed the Norms for HVDC line of MSETCL in INR Lakh, considering the capacity of the line as 1500 MW and has proposed to retain the earlier approach of applying the CERC norm in the Draft MYT Regulations 2024.

6.8.37 Further, it is to be noted that the Control Period of CERC is FY 2024-25 to FY 2028-29. Thus, the Commission has proposed to extend the norm for FY 2029-30 based on the trend for the period of FY 2025-26 to FY 2028-29. Accordingly, the O&M norms proposed for MSETCL, TPC-T, AEML-T, JPTL, ATIL, MEGPTCL, VIPL-T and APTCL for the next Control Period are as under:

Table: O&M Norms of MSETCL, TPC-T, AEML-T, JPTL, ATIL, MEGPTCL, VIPL-T and APTCL

MSETCL	Proposed				
Voltage Level	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
INR Lakh/ckt km					
HVDC (INR Lakh)	1,800	1,905	2,010	2,130	2,253
765 kV					
400 kV	0.83	0.86	0.90	0.94	0.98
Less than 400kV and greater than 66kv	0.32	0.34	0.35	0.37	0.38
66 kV and less	0.21	0.22	0.23	0.23	0.24
INR Lakh/Bay					
765 kV	85.55	89.10	92.77	96.55	100.45
400 kV	61.10	63.65	66.27	68.97	71.75
Less than 400kV and greater than 66kv	8.86	9.23	9.61	10.00	10.40
66 kV and less	1.83	1.91	1.99	2.07	2.15
INR Lakh/MVA					
765 kV	0.29	0.30	0.31	0.32	0.34
400 kV	0.21	0.22	0.23	0.24	0.25
Less than 400kV and greater than 66kV	0.14	0.15	0.16	0.16	0.17
66 kV and less	0.14	0.15	0.16	0.16	0.17

JPTL	Proposed				
Voltage Level	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
INR Lakh/ckt km					
400 kV	0.55	0.57	0.59	0.62	0.64
INR Lakh/Bay					
400kV	48.44	50.46	52.53	54.67	56.88
INR Lakh/MVA					
400kV	0.09	0.09	0.10	0.10	0.10

TPC-T	Proposed				
Voltage Level	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
INR Lakh/ckt km					
220kV	7.28	7.58	7.89	8.21	8.55
132kV	7.28	7.58	7.89	8.21	8.55
INR Lakh/Bay					
above 66 kV and less than 400 kV	17.25	17.97	18.71	19.47	20.26
66 kV and less	3.57	3.72	3.87	4.03	4.19
INR Lakh/MVA					
above 66 kV and less than 400 kV	0.42	0.44	0.46	0.48	0.49
66 kV and less	0.42	0.44	0.46	0.48	0.49

AEML-T	Proposed				
Voltage Level	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
INR Lakh/ckt km					
220kV	0.81	0.84	0.88	0.91	0.95
INR Lakh/Bay					
220kV	26.19	27.28	28.41	29.56	30.76
33kV	5.42	5.64	5.88	6.12	6.36
INR Lakh/MVA					
220kV	0.57	0.59	0.62	0.64	0.67
33kV	0.57	0.59	0.62	0.64	0.67

MEGPTCL	Proposed				
Voltage Level	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
INR Lakh/ckt km					
765kV	1.36	1.42	1.48	1.54	1.60
400 kV	0.97	1.01	1.05	1.10	1.14
INR Lakh/Bay					
765kV	118.84	123.78	128.88	134.13	139.54
400 kV	84.89	88.42	92.06	95.81	99.67
INR Lakh/MVA					
765 Kv	0.58	0.60	0.62	0.65	0.68
400kV	0.42	0.44	0.46	0.47	0.49

VIPL-T	Proposed				
Voltage Level	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
INR Lakh/ckt km					
220kV	3.37	3.51	3.66	3.81	3.96
INR Lakh/Bay					
220kV	20.34	21.18	22.05	22.95	23.88

* No Transformer capacity; recovery only through lines and bays

ATIL	Proposed				
Voltage Level	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
INR Lakh/ckt km					
400 kV	0.72	0.75	0.78	0.81	0.84
INR Lakh/Bay					
400 kV	157.49	164.03	170.79	177.75	184.92

* No Transformer capacity; recovery only through lines and bays

APTCL	Proposed				
Voltage Level	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
INR Lakh/ckt km					
400 kV	0.51	0.53	0.55	0.57	0.60
INR Lakh/Bay					
400 kV	167.75	174.73	181.92	189.33	196.97

* No Transformer capacity; recovery only through lines and bays

6.8.38 As discussed above the O&M norms for the new transmission licensee are based on norms specified for MSETCL, except for 765 kV lines & 400 kV lines, bays and substation which is based on norms of MEGPTCL & JPTL respectively.

6.8.39 For the HVDC line, the Commission has proposed O&M norm for HVDC station as proposed by the CERC in Draft Tariff Regulations, 2024 in INR Lakh/MW for HVDC back-to-back station and HVDC bipole scheme. If any HVDC line commissions during the fifth control period having different technology, the Commission may determine the separate norms for such line on case-to-case basis in accordance with these Regulations.

6.8.40 The following are the applicable norms for New Licensees for the next Control Period:

Table 12: O&M Norms of new Transmission Licensees commissioned after April 1, 2025

Voltage Level	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
HVDC Station*					
HVDC Back-to-Back stations (INR Lakh per MW)	2.15	2.27	2.41	2.55	2.70
HVDC bipole scheme (INR Lakh per MW)	1.13	1.20	1.27	1.34	1.42
INR Lakh/ckt km					
765 kV	1.36	1.42	1.48	1.54	1.60
400 kV	0.55	0.57	0.59	0.62	0.64
Less than 400 kV and greater than 66 kV	0.32	0.34	0.35	0.37	0.38
66 kV and less	0.21	0.22	0.23	0.23	0.24
INR Lakh/Bay					
765 kV	85.55	89.10	92.77	96.55	100.45
400 kV	48.44	50.46	52.53	54.67	56.88
Less than 400 kV and greater than 66 kV	8.86	9.23	9.61	10.00	10.40
66 kV and less	1.83	1.91	1.99	2.07	2.15
INR Lakh/MVA					
765 kV					
400 kV	0.29	0.30	0.31	0.32	0.34
Less than 400 kV and greater than 66 kV	0.21	0.22	0.23	0.24	0.25
66 kV and less	0.09	0.09	0.10	0.10	0.10

6.9 O&M Expenses for GIS Bays

6.9.1 As per CEA Guidelines for Distribution Utilities for development of Distribution Infrastructure, 2018 explains about Life Cycle Cost (LLC) Comparison between AIS and GIS substations as under:

*“3. The initial capital investment is more in GIS as compared to AIS / Hybrid but due to less maintenance cost over the years, **the overall higher initial cost can be recovered in subsequent years through savings in maintenance cost of GIS S/S.** However, after considering the less requirement of land cost, the difference in initial capital cost of GIS and AIS is very less now a days. Also, for evaluation of overall substation project cost, the Life Cycle Cost (LCC) should be considered, including primary hardware cost, maintenance cost, operation cost, outage cost and disposal costs etc.”*

6.9.2 Further, in the same guidelines, CEA has also evaluated the life cycle assessment for GIS and AIS as below:

Table 13: Typical LLC Evaluation of AIS and GIS

Life Cycle Cost	Air Insulated Substation (AIS)	Hybrid Substation	Gas Insulated Substation (GIS)
Plant and Engineering	100%	90%	80%
Real Estate	100%	60%	40%
Primary Equipment	100%	110%	120%
Secondary Equipment	100%	100%	100%
Earthworks, Civil works, Structures	100%	90%	60%
Electrical Assembly and Erection	100%	80%	70%
Maintenance	100%	70%	50%
Outage	100%	70%	50%
LLC After 10 Years	100%	Max. 80%	Max. 70%

Source: CEA Guidelines for Distribution Utilities

6.9.3 From the above table, the Commission notes that the maintenance expenses for GIS are 50% of AIS. Further, CERC in the draft Regulations has also retained the provision of O&M Norms for GIS as 0.7 of AIS.

Thus, the Commission in this view, has proposed to retain the provision of MYT Regulations, 2019 in the Draft MERC MYT Regulations 2024.

6.10 Separate norms for O&M Expenses

6.10.1 The Commission during the MTR Orders noted that some the Transmission Licensees have not been spending enough on Repairs & Maintenance, on account of various reasons, and are diverting the funds allocated to R&M to employee expenses and A&G expenses or vice versa as shown in the graphs below:

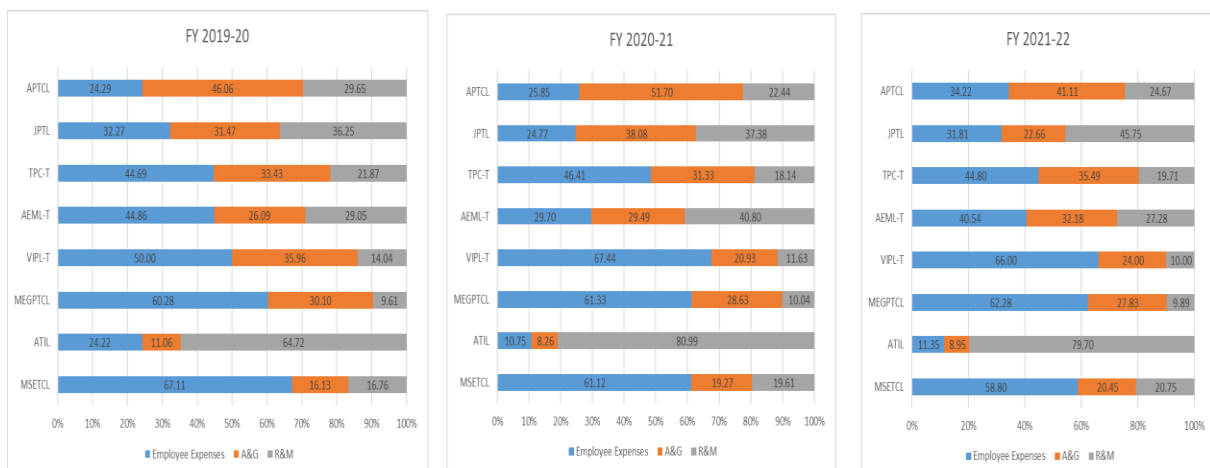


Figure 1: % allocation of Emp, R&M and A&G in O&M across the years

6.10.2 The Commission notes that, it will be difficult to benchmark the utilisation of O&M Expenses under each head for the transmission licensees, considering the differences exist in O&M activities in terms of network configuration at different voltage levels.

6.10.3 Thus, the Commission is of the view that to maintain the quality of supply to consumers, an optimum R&M expenses are essential and has hence, proposed to add the following proviso for the Minimum contribution of R&M Expenses to 20% of total O&M Expenditure:

“79.11. Within the O&M expenses, the expenditure on Repairs & Maintenance shall be minimum 20% of the total O&M expenses.

Provided that, if the expenses on R&M falls below 20% of total O&M expenses allowed under these Regulations, then such savings in R & M shall not be set off against other heads of O&M expenses:

Provided also that this minimum limit of R&M shall not be applicable for Transmission Licensee for the first five years after commencement of operations as a Transmission Licensee.”

6.10.4 Further, the Commission in the Capex Regulations, 2022 has allowed capital investment under R&M separately, which would certainly, increases the expenses under the R&M in the next control period.

6.11 Determination of Intra State Transmission Tariff

6.11.1 Regulation 2.1 (87) of MERC MYT Regulations, 2019 specifies the definition for the Transmission System User as below:

(87) “Transmission System User” for the purpose of these Regulations means the Distribution Licensees and long-term Open Access Users, but excludes partial Open Access Users;

6.11.2 In view of above, POA consumers are not TSUs. However, the Commission notes that POA consumers need to pay the transmission charges as well as they have to share TCR to the extent of their demand. Hence, demand of partial OA consumers’ needs to be included in the demand of Distribution Licensees as they are connected to the network of Distribution Licensee.

6.11.3 Further, POA consumers availing STOA are liable to pay transmission charges. Thus, if POA consumers’ demand is excluded from the demand of Distribution Licensee then they will not contribute to Base TCR and in turn to transmission charges. Thus, the Commission in Draft MYT Regulation 2024, proposes to modify the provisions of MYT Regulation 2019 as under:

*“2.1. (100). **Transmission System User**” for the purpose of these Regulations means the Distribution Licensees and long-term Open Access Users;*

82.2

Provided further that the Allotted Capacity for long-term Open Access Users shall be considered in lieu of the average monthly CPD and NCPD for calculating the Base Transmission Capacity Rights:

“83.2

Provided that the Allotted Capacity for long-term Open Access Users, shall be considered in lieu of the average monthly CPD and NCPD for calculating the Base TCR for such Open Access Users:”

6.11.4 Also, the Commission notes that as per the prevailing transmission pricing framework TTSC of InSTS is the result of capital investment made by all the Transmission Licensees to meet the demand of TSUs as a pool. As per principles of pooled ARR, such TTSC is shared by all the consumers of Maharashtra, irrespective of calculating the benefits to the consumers of particular TSU. It means capital investment made by MSETCL is shared by all the consumers of Maharashtra including MSEDCL, AEMLD, TPC-D, BEST etc. The demand of POA consumers for transmission usage and units consumed by them are catered by InSTS network.

6.11.5 Accordingly, the Commission harmonises the provisions of MERC Draft MYT Regulations, 2024 and MERC DOA Regulations 2016 and its amendment, as under in the proposed Draft MYT Regulation 2024:

“83.1. 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.

Provided that a Partial Open Access Consumer shall pay the Transmission Charges to the Distribution Licensee instead of the Transmission Licensee for using a transmission network which shall be passed on to the STU within the stipulated time period as specified under Regulations 14.5 of MERC Distribution Open Access Regulation, 2016 and its amendment thereof.”

6.12 Billing and Payment of InSTS Charges

6.12.1 As per the provision of the Maharashtra Green Hydrogen Policy, 2023, as notified by Government of Maharashtra dated 17 October 2023, which envisaged promotion of production of Green hydrogen from Renewable Energy Sources in the state. Further,

the policy states that the green hydrogen projects in the state shall be entitled for rebate on InSTS charges.

6.12.2 Accordingly, the Commission in MERC Draft MYT Regulations, 2024 is proposing the waiver in the InSTS charges for the consumers engaged in the manufacturing of Green Hydrogen using RE Sources as under:

“85.4. Consumer setting up manufacturing Units exclusively for Green Hydrogen Manufacturing during the period from 1.4.2025 to 31.03.2030 shall be exempted from levy of intra-state transmission charges to the extent stipulated in table below, on the Renewable Energy sourced through Open Access:

Sr	Category	Period of COD	Number of years from COD	% of Transmission Charges Waiver
1	Existing Exclusive Manufacturing Units for Green Hydrogen		10	100%
2	Exclusive Manufacturing Units for Green Hydrogen	1.4.2025 to 31.03.2027	10	100%
3	Exclusive Manufacturing Units for Green Hydrogen	1.4.2027 to 31.03.2028	10	75%
4	Exclusive Manufacturing Units for Green Hydrogen	1.4.2028 to 31.03.2030	10	50%

7 Distribution Wires Business

7.1 Objective

- 7.1.1 The MYT Regulations, 2019 provides the principles for the determination of the Operation & Maintenance (O&M) Expenses and determination of Wheeling Charges & Losses.
- 7.1.2 This chapter will cover the new aspects proposed to be implemented under the Wires Business of Electricity in the State of Maharashtra covering the following new proposals:
- a. Operation & Maintenance Expenses
 - b. Formula for the determination of Wheeling Charges

7.2 Capital Investment Plan

- 7.2.1 Distribution business is capital intensive in nature, requiring significant capital investment for meeting the electricity demand of existing and new consumers. The Commission had notified its MERC (Approval of Capital Investment Schemes) Regulations, 2022 on 12 July 2022. This Regulation aims to lay down the framework to be followed by all State entities for obtaining the Commission's in-principal approval for proposed Capital Investment as well as the approval to be granted to the final completed cost.
- 7.2.2 The Regulation 74 of the MYT Regulations, 2019 provides the Distribution Licensee to submit is 'Capital Investment Plan' as part of the MYT Petition for the entire Control Period. The Commission in the Draft MYT Regulations, 2024 proposes to link the MERC (Approval of Capital Investment Schemes) Regulations, 2022, as the governing Regulations for the in-principal approval of the 'Capital Investment Schemes' proposed by the Distribution Licensee as part of the 'Capital Investment Plan' for its Wires Business for the entire 5th Control Period.
- 7.2.3 In addition, as discussed, under the General Section above, the Commission has proposed to take-up the True-up process of the 5th Control Period at the time of the MYT filing process for the next Control Period.
- 7.2.4 Accordingly, the following clauses are proposed in the Draft MYT Regulations, 2024:
- “91.1
- Provided that all the Capital Investment Schemes forming part of the Capital Investment Plan proposed by the Distribution Licensee for its Wires Business shall be submitted and in-principally approved first in lines with the provisions defined under*

the MERC (Approval of Capital Investment Schemes) Regulations, 2022 and its amendments thereof.

91.4 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.

91.5 The Distribution Licensee shall submit, along with the Petition for determination of Wheeling Charges, 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.”

7.3 Operation and Maintenance Expenses

7.3.1 The Operation and Maintenance Expenses comprises of Employee Expenses, Administration & General (A&G) Expenses and Repairs & Maintenance (R&M) Expenses. The O&M Expenses contributes significant part of the ARR of Wires Business ARR.

7.3.2 The MERC MYT Regulations, 2011 specified the Normative O&M Expenses for second Control Period. However, the subsequent MYT Regulations viz. 2015 & 2019 specifies the principles for allowing the O&M Expenses instead of Normative O&M over the respective Control Period. These principles considers the average of the past year O&M expenses, after adding/deducting the sharing of efficiency gains/losses, as Base Year expenses, which shall be escalated by an inflation factor with 30% weightage to the average yearly inflation derived based on the monthly WPI of the past five financial years as per the Office of Economic Advisor of Government of India and 70% weightage to the average yearly inflation derived based on the monthly CPI for Industrial Workers (all-India) of the past five financial years as per the Labour Bureau, Government of India. The inflation rate thus derived shall be reduced by an efficiency factor of 1% or as may be stipulated by the Commission from time to time.

7.3.3 The O&M Norms specified MYT Regulations, 2011, were common across all the Distribution Licensees derived in terms of Sales, Gross Fixed Assets & Number of Consumers, for each Financial Year (FY) of the Control Period. O&M Expenses were escalated by considering factor of WPI & CPI and applying it on the input parameters viz. Employee, A&G and R&M expenses. However, this was not depicting the correct derivation of the O&M Expenses required by the Distribution Utility. The O&M expenses in terms of Distribution Wire Business is primarily linked to the consumers being served, followed by the infrastructure viz. Gross Fixed Assets (GFA) being used by the respective Distribution Licensee. Thus, linking the O&M expenses with the consumer and GFA growth would result in derivation of the Output based norms.

7.3.4 Thus, the Commission hereby proposes to provide the output-based O&M norms for each licensee instead of common norms, considering that, every licensee have its own GFA and consumers base, which grows based on the services provided by the Licensee in its area of supply. Such growth in GFA and consumer base are specific for each licensee operating in the State of Maharashtra.

7.3.5 To propose the norms, the Commission has observed the following growth in the GFA & Consumer base for the respective licensees:

No. of Consumers						
Particulars	FY18	FY19	FY20	FY21	FY22	5 Y CAGR
MSEDCL	2,54,84,372	2,66,05,683	2,77,84,429	2,84,67,894	2,88,73,382	3.17%
TPC-D	7,85,227	7,00,990	7,19,998	7,29,328	7,42,098	-1.40%
AEML-D	23,86,911	24,56,084	24,70,990	24,86,761	25,06,885	1.23%
BEST	10,49,387	10,36,694	10,39,939	10,44,368	10,46,713	-0.06%
MBPPL	118.00	135.00	143.00	139.00	131.00	2.65%
GEPL	75.00	75.00	91.00	86.00	91.00	4.95%

GFA (Wires + Supply)						(In INR Crore)
Particulars	FY18	FY19	FY20	FY21	FY22	5 Y CAGR
MSEDCL	48,716	51,062	53,481	56,044	58,186	4.54%
TPC-D	2,445	2,624	2,761	2,911	3,068	5.84%
AEML-D	5,558	5,873	6,382	7,203	8,171	10.11%
BEST	2,418	2,522	2,708	2,870	2,967	5.25%
MBPPL	44.77	47.38	48.04	48.68	48.82	2.19%
GEPL	16	25	30	30	30	16.33%

7.3.6 To derive the norms, the Commission has considered the following steps:

Step 1:

- Approved O&M Expenses post considering the sharing of Gains/losses and impact of wage revision from FY 2017-18 to FY 2021-22 are considered.
- Such approved O&M expenses is then allocated into Wires & Retail Supply Business in the ratio of 65:35, where in case of Distribution Wires Business 65% of the total O&M Expenses are allocated.

Step 2:

- The allocated O&M Expenses for the Wires Business is further allocated in the ratio of 10:90, where 10% share corresponds to consumer growth, while remaining 90% share

corresponds to GFA growth, which has significantly higher share in the overall GFA of the Distribution Business.

- Such allocated share is further linked with the number of consumers and average GFA approved for FY 2017-18 to FY 2021-22 and the actual norms in INR Lakh/'000 Consumers and % of GFA for (Distribution Wires Business) is derived. In case of Deemed SEZs viz. MBPPL, GEPL & KRCIPPL, the number consumers are in the range of hundreds, thus, the norms linked with number of consumers are derived in case of Deemed SEZs as INR Lakh/100 Consumers.

Step 3:

- Such derived norms are then averaged, which is then further adjusted with the y-o-y 1% efficiency factor from FY 2025-26 to FY 2029-30.

7.3.7 In case of the Deemed Distribution Licensee, who are yet to get fully operationalised in terms of their expected Demand to serve and Deemed Distribution Licensees, whose tariff is yet to be determined by the Commission, the O&M Expenses shall be determined on case-to-case basis at the time of MYT approval process.

7.3.8 The MYT Regulations, 2019 provides for the approval of impact of Wage Revision, if any, at the time of true-up for any Year, based on documentary evidence and justification to be submitted by the Petitioner. However, since, the O&M norms are being derived after consideration of the Wage Revision impact, the Commission in the Draft MYT Regulations, 2024 proposes that, impact of wage revision shall not be allowed over and above the normative O&M expenses allowed by the Commission.

7.3.9 The Commission further proposes to continue with the provision of maintaining R&M as 20% of the total approved O&M Expenses as provided in the MYT Regulations, 2019.

7.3.10 Accordingly, the Commission proposes the following O&M Norms for the Retail Supply Business in the Draft MYT Regulations, 2024:

“92.1 The Distribution Licensees shall be permitted to recover Operation and Maintenance expenses relating to the Distribution Wires Business as specified in the norms below for each year of the Control Period:

Explanation: *For the purpose of applying normative O&M expenses with respect to Gross Fixed Assets (GFA) growth under these Regulation, the average GFA pertaining to Distribution Wires Business (in INR Crore) shall be multiplied by the O&M Norms in terms of “percentage of Average GFA”, for the respective years.*

For applying normative O&M expenses with respect to Consumer’s growth, the O&M Norms in terms of “INR Lakhs/'000 Consumers” or “INR Lakhs/'00 Consumers” (in

case of Deemed Distribution Licensees) shall be multiplied by the total Wheeling Consumers inclusive of full Open Access Consumers, if any, of the Distribution Wires Business.

Provided that the Partial Open Access consumers are embedded within the Wheeling Consumers of the Distribution Wires Business, hence, no separate addition of such Partial Open Access consumers will be allowed to avoid double accounting:

Provided further that the Distribution Licensee shall submit the details of its consumer base having the break-up of its direct consumers, Partial Open Access consumers and Full Open Access consumers for the respective years at the time of filing MYT Petition for Distribution Wires Business:

MSEDCL	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of Average GFA – Wires)	8.20%	8.12%	8.03%	7.95%	7.87%
O&M (INR Lakhs/'000 Consumers)	1.60	1.58	1.57	1.55	1.53

TPC-D	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of Average GFA – Wires)	4.88%	4.83%	4.78%	4.73%	4.69%
O&M (INR Lakhs/'000 Consumers)	1.89	1.87	1.86	1.84	1.82

AEML-D	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of Average GFA – Wires)	12.02%	11.90%	11.78%	11.66%	11.55%
O&M (INR Lakhs/'000 Consumers)	3.28	3.24	3.21	3.18	3.15

BEST	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of Average GFA – Wires)	13.34%	13.20%	13.07%	12.94%	12.81%
O&M (INR Lakhs/'000 Consumers)	3.44	3.41	3.38	3.34	3.31

MBPPL	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of Average GFA – Wires)	5.84%	5.78%	5.73%	5.67%	5.61%
O&M (INR Lakhs/'00 Consumers)	22.48	22.26	22.04	21.82	21.60

GEPL	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of Average GFA – Wires)	4.68%	4.64%	4.59%	4.54%	4.50%
O&M (INR Lakhs/'00 Consumers)	14.63	14.48	14.34	14.19	14.05

KRCIPPL	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of Average GFA – Wires)	2.54%	2.52%	2.49%	2.47%	2.44%
O&M (INR Lakhs/'00 Consumers)	7.86	7.78	7.70	7.62	7.55

Provided that in case of the Distribution Licensee or the Deemed Distribution Licensee whose tariff is yet to be determined by the Commission till coming into force of these Regulations, the Commission may determine the O&M Norms on case-to-case basis.

92.2 The impact of wage revision shall not be allowed over and above the O&M expenses approved by the Commission.

92.3 In case the expenditure on Repairs & Maintenance falls below 20% of total O&M expenses allowed under these Regulations, then such savings in Repairs & Maintenance shall not be set off against other heads of O&M expenses:

Provided that this limitation shall not be applicable for Deemed Distribution Licensees for the first five years after commencement of operations as a Distribution Licensee.

92.4 A Distribution Licensee may undertake Opex schemes for system automation, new technology and IT implementation, etc., and such expenses may be allowed over and above normative O&M Expenses, subject to prudence check by the Commission:

Provided that the Distribution Licensee shall submit detailed justification, cost benefit analysis, and life-cycle cost analysis of such schemes as against capex schemes, and savings in O&M expenses, if any.

92.5 The Commission may consider any request for revision of the normative O&M expenses of the Distribution Licensee on account of consideration of some Schemes under O&M rather than Capital Investment on case-to-case basis, depending on the justification to be submitted by the Applicant and the life-cycle cost analysis:

Provided that if actual O&M expenses are lower than normative O&M expenses on this account, then no sharing of efficiency gains shall be done to that extent.”

7.4 Wheeling Charges

7.4.1 The Ministry of Power vide its Electricity (Second Amendment) Rules, 2024, dated 17 January 2024 has provided the formula for the determination of Wheeling Charges. The relevant extract of the referred rules is provided as under:

“(1) Wheeling charges – Wheeling charges shall be computed as per following formula:

$$\text{Wheeling Charge} = \frac{\text{Annual Revenue Requirement towards wheeling}}{\text{Energy Wheeled during the year}}$$

Provided that the Appropriate Commission may determine wheeling charges at different voltage levels, separately, in accordance with the above formula.”

7.4.2 The Commission in its every Tariff Order for the Distribution Wires Business has been separately determining the Wheeling Charges for the different voltage levels since FY 2015-16 onwards. The mechanism for the determination of such Wheeling Charges is also in lines with the formula provided under the MoP's Rules referred above. However, in compliance to the MoP's rules, the Commission proposes to add New Regulation for the determination of Wheeling Charges, for bringing in more clarity.

7.4.3 Further, the Commission had issued the "Guidelines for allocation of assets and cost at different voltage levels of distribution" on 21 July 2022 with a following objectives:

- *"To design a uniform methodology of allocation of assets and cost to Wire and Supply Business and subsequently the network / wire costs allocated into EHT, HT and LT voltages;*
- *To lay down the approach and methodology for identification / allocation of assets and cost to different Voltage level of distribution business;*
- *To determine the fair and comparable wheeling charges so as to have justified recovery of wire charges from the consumers of that particular voltage level;*
- *The need for voltage-wise allocation of cost is identified in order to allocate costs of consumers in a fair and justified manner, corresponding to their voltage of installation and consequent usage of network assets."*

7.4.4 The Commission as part of the information query to all the Distribution Licensees sought the details of the Voltage Assets allocation based on the set excel format. However, no such details were provided by the Distribution Licensee neither the reason for submission of such details was provided by any of the Distribution Licensees. Thus, to determine the correct wheeling charges are different voltage levels, the Commission has included the guidelines as Annexure III to the Draft MYT Regulations, 2024 and proposed the additional proviso mandating all the Distribution Licensees to submit its voltage wise assets allocations in accordance with the methodology provided under the referred guidelines.

7.4.5 Accordingly, the Commission proposes the following new Regulations for the Wheeling Charges under the Distribution Wires Business of Draft MYT Regulations, 2024:

"96.1 The Commission shall determine the Wheeling Charges for High Tension (HT) and Low Tension (LT) voltage level for the Distribution Wires Business in terms of the following formula:

Wheeling Charges for HT Consumers

$$(\text{INR/kVAh}) = \frac{W_{ARR(HT)} * 10}{EW_{HT}}$$

Where,

$W_{ARR(HT)}$ = ARR of Distribution Wires Business pertaining to HT level in INR Crore.

EW_{HT} = Projected Wheeling Energy pertaining to HT level in Million kVAh or M kVAh.

Wheeling Charge for LT Consumers

$$(INR/kWh) \text{ or } (INR/kVAh) = \frac{W_{ARR(LT)} * 10}{EW_{LT}}$$

Where,

$W_{ARR(LT)}$ = ARR of Distribution Wires Business pertaining to LT level in INR Crore.

EW_{LT} = Projected Wheeling Energy pertaining to LT level in Million kWh or MU or M kVAh as the case may be.

Provided that in case the Commission adopts the kVAh based Tariff at LT level, the Wheeling Charges for LT Consumers shall then be determined in INR/kVAh.

96.2 The Distribution Licensee shall submit the actual allocation of its voltage wise assets in accordance with the Commission's notified Guidelines for allocation of assets and cost at different voltage levels of distribution, dated 21 July 2022 (annexed as **Annexure III**), as part of its Tariff Petition:

Provided that the Annual Revenue Requirement of the Distribution Wires Business pertaining to HT and LT voltage level may be allocated by considering such actual voltage wise asset details submitted by the Distribution Licensee.

96.3 In case more than one distribution licensees are operating within the specified geographic area out of distribution licence area, the Commission may determine uniform wheeling charge at different voltage level for the use of distribution wires by users/consumers of distribution wire business within the same geographic area, as per the following formula:

A. Uniform Wheeling Charge for HT Consumers:

$$(INR/kVAh) = \frac{\sum(W_{HT1}, W_{HT2}, \dots, W_{HTn}) * 10}{\sum(EW_{HT-D1}, EW_{HT-D2}, \dots, EW_{HT-Dn})}$$

Where,

W_{HTn} = ARR of the nth Distribution Wires Business pertaining to HT level in INR Crore

EW_{HT-Dn} = Projected Wheeling Energy pertaining to HT level of nth Distribution Wires Business in Million kVAh or M kVAh.

B. Uniform Wheeling Charge for LT Consumers:

$$(INR/kWh) \text{ or } (INR/kVAh) = \frac{\sum(W_{LT1}, W_{LT2}, \dots, W_{LTn}) * 10}{\sum(EW_{LT-D1}, EW_{LT-D2}, \dots, EW_{LT-Dn})}$$

Where,

W_{LTn} = ARR of the nth Distribution Wires Business pertaining to LT level in INR Crore

EW_{LT-Dn} = Projected Wheeling Energy pertaining to LT level of nth Distribution Wires Business in MU or MkvAh, as the case may be.

Provided that the Commission shall stipulate the modalities for operationalisation of the Uniform Wheeling Charge and Uniform Wheeling Loss through separate Order or Practice Directions from time to time, as may be necessary.

96.4 *The development of distribution wire network in case of more than one Distribution Licensee catering to the same geographic area shall be guided through competitive framework, as far as practicable and principles for development of distribution network shall be outlined through separate Order or practice directions by the Commission from time to time.*

96.5 *The settlement of the Uniform Wheeling Charges on monthly basis to the extent of the consumers wheeling energy from the wires of the other Distribution Licensee, shall be ensured amongst the Distribution Licensees.*

Provided that in case of under-recovery or over-recovery by either of the Distribution Licensees shall be adjusted at the time of truing-up, subject to prudence check.”

8 Retail Supply of Electricity

8.1 Objectives

- 8.1.1 The MYT Regulations, 2019 provides the methodology for the determination of the Operation & Maintenance (O&M) Expenses and determination of consumer category-wise Retail Supply Tariff based on the Average Cost of Supply (ACoS) with gradual reduction in Cross-Subsidy.
- 8.1.2 This chapter will cover the new aspects proposed to be implemented under the Retail Supply Business of Electricity in the State of Maharashtra covering the following new proposals:
- a. Modification of the Components of the Annual Revenue Requirement (ARR)
 - b. Operation & Maintenance Expenses
 - c. Framework and provisos for the implementation of the Supply Margin.
 - d. Framework and provisos for the implementation of the Ceiling Tariff.

8.2 Components of Aggregate Revenue Requirement for Retail Supply Business

- 8.2.1 Following ARR components for the Retail Supply of Electricity are provided under the MYT Regulations, 2019:

“81.1 The Tariff for retail supply of the Distribution Licensee shall provide for the recovery of the Aggregate Revenue Requirement of the Retail Supply Business for the respective Years of the Control Period, as approved by the Commission and comprising the following components:

- (a) Cost of own power generation /power purchase expenses;*
- (b) Inter-State Transmission Charges;*
- (c) Intra-State Transmission Charges;*
- (d) MSLDC Fees & Charges;*
- (e) Operation and Maintenance expenses;*
- (f) Depreciation;*
- (g) Interest on Loan Capital;*
- (h) Interest on working capital;*
- (i) Interest on consumer security deposits;*
- (j) Provision for Bad and doubtful debts; and*
- (k) Contribution to contingency reserves;*

(l) Return on Equity Capital;

(m) Income Tax;

minus:

(n) Non-Tariff income;

(o) Income from Other Business, to the extent specified in these Regulations;

(p) Receipts on account of Cross-Subsidy Surcharge;

(q) Receipts on account of Additional Surcharge:”

8.2.2 The Commission in this Draft MYT Regulations, 2024 proposes to introduce and implement the ‘Supply Margin’. The ‘Supply Margin’ is proposed to replace the ‘Return on Equity’ of the Retail Supply Business, which is the one of the components of the Retail Supply Business ARR.

8.2.3 The following clauses are proposed in the Draft MYT Regulations, 2024:

“99.1 The Tariff for retail supply of the Distribution Licensee shall provide for the recovery of the Aggregate Revenue Requirement of the Retail Supply Business for the respective Years of the Control Period, as approved by the Commission and comprising the following components:

(a) Cost of own power generation /power purchase expenses;

(b) Inter-State Transmission Charges;

(c) Intra-State Transmission Charges;

(d) MSLDC Fees & Charges;

(e) Operation and Maintenance expenses;

(f) Depreciation;

(g) Interest on Loan Capital;

(h) Interest on working capital;

(i) Interest on consumer security deposits;

(j) Provision for Bad and doubtful debts; and

(k) Contribution to contingency reserves;

(l) Supply Margin;

minus:

(n) Non-Tariff income;

(o) Income from Other Business, to the extent specified in these Regulations;

(p) Receipts on account of Cross-Subsidy Surcharge;

(q) Receipts on account of Additional Surcharge:”

*Provided that Depreciation, Interest on Loan Capital, Interest on working capital, Interest on consumer security deposits, Contribution to Contingency Reserves, **Supply Margin**, and Income Tax for Retail Supply Business shall be allowed in accordance with the provisions specified in Part D of these Regulations:*

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, if the income/expenses in that prior period have been allowed on actual basis, subject to prudence check:

Provided also 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, etc., shall not be allowed to be recovered through the Aggregate Revenue Requirement:

Provided also that the Distribution Licensee shall maintain separate details of such penalties and compensation paid or payable by the Licensee, if any, and shall submit them to the Commission along with its Petition.”

8.2.4 The third proviso of Regulation 81.2 of the MYT Regulations, 2019 provides for the determination of area-wise Tariff for Distribution Licensee based on the performance parameters as may be stipulated by the Commission. The Commission in this draft MYT Regulations, 2024 is proposing to move towards implementation of the Ceiling Tariff in case of Parallel Distribution licensee operations, to introduce the retail supply competition in letter and spirit as per the provisions of the Electricity Act, 2003.

8.2.5 The following new proviso is proposed in the Draft MYT Regulations, 2024:

“99.2 The Tariff for retail supply by the Distribution Licensee shall be determined by the Commission on the basis of a Petition for determination of Tariff filed by the Distribution Licensee in accordance with Part B of these Regulations:

Provided that the Aggregate Revenue Requirement of the Distribution Licensee shall be allocated or apportioned between the Distribution Wires Business and Retail Supply Business in accordance with the provisions of Regulation 88:

Provided further that the Tariff for retail supply may comprise any combination of fixed/demand charges, energy charges, and any other charges, for the purpose of recovery from the consumers, as may be stipulated by the Commission:

Provided also that the Commission may determine the area-wise Tariff for Distribution Licensee based on the performance parameters as may be stipulated by the Commission:

Provided also that in case of Parallel Distribution Licensee operating in same geographical area, the Commission shall adopt the approach to determine ‘Ceiling Tariff’ from April 1, 2025 onwards subject to fulfilment of the certain specified conditions so as to enable retail supply competition:

Provided also that in case of a Deemed Distribution Licensee whose tariff is yet to be determined by the Commission till the date of coming into effect of these Regulations, 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.”

8.3 Capital Investment Plan

8.3.1 The Commission has notified its MERC (Approval of Capital Investment Schemes) Regulations, 2022 on 12 July 2022. This Regulation aims to lay down the framework to be followed by all State entities for obtaining the Commission’s in-principal approval for proposed Capital Investment as well as the approval to be granted to the final completed cost.

8.3.2 The Regulation 83 of the MYT Regulations, 2019 provides the Distribution Licensee to submit is ‘Capital Investment Plan’ as part of the MYT Petition for the entire Control Period. The Commission in the Draft MYT Regulations, 2024 proposes to link the MERC (Approval of Capital Investment Schemes) Regulations, 2022, as the governing Regulations for the in-principal approval of the ‘Capital Investment Schemes’ proposed by the Distribution Licensee as part of the ‘Capital Investment Plan’ for its Retail Supply Electricity Business for the entire 5th Control Period.

8.3.3 Further, as discussed in the General Section of the Explanatory Memorandum, the Commission has proposed to drop the MTR Process and undertake the True-up at the end of the 5th Control Period alongwith the filing of MYT tariff Petition for 6th Control Period.

8.3.4 Accordingly, the following clauses are proposed in the Draft MYT Regulations, 2024:

“101.1 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.

101.2 The Capital Investment Plan shall be a least cost plan for undertaking investments and shall cover all capital expenditure projects of a value exceeding INR 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.

101.3 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.

Provided that all the Capital Investment Schemes forming part of the Capital Investment Plan proposed by the Distribution Licensee for its Retail Supply Business shall be submitted and in-principally approved first in lines with the provisions defined under the MERC (Approval of Capital Investment Schemes) Regulations, 2022 and its amendments thereof.

101.4 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.

101.5 The Distribution Licensee shall submit, along with the Petition for determination of the Tariff for retail supply of electricity, details showing the progress of capital expenditure projects, together with such other information, particulars or documents as the Commission may require in assessing such progress.

Provided that in case the Commission adopts the Ceiling Tariff in the common area of supply, the Distribution Licensees shall still submit its ARR application for the retail supply of electricity showing the progress of capital expenditure projects, together with such other information, particulars or documents as the Commission may require to assess such progress.”

8.4 Operation and Maintenance Expenses

8.4.1 The Operation and Maintenance Expenses comprises of Employee Expenses, Administration & General (A&G) Expenses and Repairs & Maintenance (R&M) Expenses. The O&M Expenses contributes significant part of the ARR i.e., second major contributor in the Retail Supply Business ARR after the Power Purchase Expenses.

8.4.2 The MERC MYT Regulations, 2011 specified the Normative O&M Expenses for second Control Period. However, the subsequent MYT Regulations viz. 2015 & 2019 specifies the principles for allowing the O&M Expenses instead of Normative O&M over the respective Control Period. These principles considers the average of the past

year O&M expenses, after adding/deducting the sharing of efficiency gains/losses, as Base Year expenses, which shall be escalated by an inflation factor with 30% weightage to the average yearly inflation derived based on the monthly WPI of the past five financial years as per the Office of Economic Advisor of Government of India and 70% weightage to the average yearly inflation derived based on the monthly CPI for Industrial Workers (all-India) of the past five financial years as per the Labour Bureau, Government of India. The inflation rate thus derived shall be reduced by an efficiency factor of 1% or as may be stipulated by the Commission from time to time.

8.4.3 The O&M Norms specified MYT Regulations, 2011, were common across all the Distribution Licensees derived in terms of Sales, Gross Fixed Assets & Number of Consumers, for each Financial Year (FY) of the Control Period. O&M Expenses were escalated by considering factor of WPI & CPI and applying it on the input parameters viz. Employee, A&G and R&M expenses. However, this was not depicting the correct derivation of the O&M Expenses required by the Distribution Utility. The O&M expenses in terms of Distribution Retail Supply Business is primarily linked to the consumers being served, followed by the infrastructure viz. Gross Fixed Assets (GFA) being used by the respective Distribution Licensee. Thus, linking the O&M expenses with the consumer and GFA growth would result in derivation of the Output based norms.

8.4.4 In view of the above, the Commission in this Draft MERC MYT Regulations, 2024 proposes the output-based O&M norms for each licensee instead of common norms, considering that, every licensee have its own GFA and consumers base, which grows based on the services provided by the Distribution Licensee in its area of supply. Such growth in GFA and consumer base are specific for each licensee operating in the State of Maharashtra.

8.4.5 To propose the norms, the Commission has noted the growth in the GFA & Consumer base for the respective licensees, which is provided under **Para. 7.3.5** above.

8.4.6 To derive the norms, the Commission has considered the following steps:

Step 1:

- Approved O&M Expenses post considering the sharing of Gains/losses and impact of wage revision from FY 2017-18 to FY 2021-22 are considered.
- Such approved O&M expenses is then allocated into Wires & Retail Supply Business in the ratio of 65:35, where in case of Retail Supply Business 35% of the total O&M Expenses are allocated.

Step 2:

- The allocated O&M Expenses for the Retail Supply Business is further allocated in the ratio of 90:10, where 90% share corresponds to consumer growth, while remaining 10% share corresponds to GFA growth, since the major infrastructure in the Retail Supply Business is metering and billing infrastructure, which has significantly lower share in the overall GFA of the Distribution Business.
- Such allocated share is further linked with the number of consumers and average GFA approved for FY 2017-18 to FY 2021-22 and the actual norms in INR Lakh/'000 Consumers and % of GFA for (Retail Supply Business) is derived. In case of Deemed SEZs viz. MBPPL, GEPL & KRCIPPL, the number consumers are in the range of hundreds, thus, the norms linked with number of consumers are derived in case of Deemed SEZs as INR Lakh/100 Consumers.

Step 3:

- Such derived actual norms are then averaged, which is then further adjusted with the y-o-y 1% efficiency factor from FY 2025-26 to FY 2029-20.

8.4.7 In case of the Deemed Distribution Licensee, who are yet to get fully operationalised in terms of their expected Demand to serve and Deemed Distribution Licensees, whose tariff is yet to be determined by the Commission, the O&M Expenses shall be determined on case-to-case basis at the time of MYT approval process.

8.4.8 The MYT Regulations, 2019 provides for the approval of impact of Wage Revision, if any, at the time of true-up for any Year, based on documentary evidence and justification to be submitted by the Petitioner. However, since, the O&M norms are being derived after consideration of the Wage Revision impact, the Commission in the Draft MYT Regulations, 2024 proposes that, impact of wage revision shall not be allowed over and above the normative O&M expenses allowed by the Commission.

8.4.9 The Commission further proposes to continue with the provision of maintaining R&M as 20% of the total approved O&M Expenses as provided in the MYT Regulations, 2019.

8.4.10 Accordingly, the Commission proposes the following O&M Norms for the Retail Supply Business in the Draft MYT Regulations, 2024:

“102.1 The Distribution Licensees shall be permitted to recover Operation and Maintenance expenses relating to the Retail Supply of electricity as specified in the norms below for each year of the Control Period:

Explanation: *For the purpose of applying normative O&M expenses with respect to Gross Fixed Assets (GFA) growth under these Regulation, the average GFA pertaining*

to Retail Supply Business (in INR Crore) shall be multiplied by the O&M Norms in terms of “percentage of Average GFA”, for the respective years.

For applying normative O&M expenses with respect to Consumer’s growth, the O&M Norms in terms of “INR Lakhs/’000 Consumers” or “INR Lakhs/’00 Consumers” (in case of Deemed Distribution Licensees) shall be multiplied by the total Retail Supply Consumers, if any, of the Retail Supply Business.

Provided that the Partial Open Access consumers are embedded within the Retail Supply Consumers of the Retail Supply Business, hence, no separate addition of such Partial Open Access consumers will be allowed to avoid double accounting:

Provided further that the Distribution Licensee shall submit the details of its consumer base having the break-up of its direct consumers, Partial Open Access consumers and Full Open Access consumers for the respective years at the time of filing MYT Petition for its Retail Supply Business.

MSEDCL	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of Average GFA - Retail Supply)	4.41%	4.37%	4.33%	4.28%	4.24%
O&M (INR Lakhs/’000 Consumers)	7.74	7.67	7.59	7.51	7.44

TPC-D	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of Average GFA - Retail Supply)	3.98%	3.94%	3.90%	3.86%	3.82%
O&M (INR Lakhs/’000 Consumers)	9.17	9.08	8.99	8.90	8.81

AEML-D	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of Average GFA - Retail Supply)	8.49%	8.40%	8.32%	8.23%	8.15%
O&M (INR Lakhs/’000 Consumers)	15.88	15.72	15.56	15.41	15.25

BEST	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of Average GFA - Retail Supply)	7.18%	7.11%	7.04%	6.97%	6.90%
O&M (INR Lakhs/’000 Consumers)	16.69	16.52	16.36	16.20	16.03

MBPPL	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of Average GFA - Retail Supply)	10.47%	10.36%	10.26%	10.16%	10.06%
O&M (INR Lakhs/’00 Consumers)	108.97	107.88	106.80	105.73	104.67

GEPL	FY 26	FY 27	FY 28	FY 29	FY 30
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O&M (% of average GFA - Retail Supply)	4.27%	4.22%	4.18%	4.14%	4.10%
O&M (INR Lakhs/'00 Consumers)	70.89	70.19	69.48	68.79	68.10

KRCIPPL	FY 26	FY 27	FY 28	FY 29	FY 30
O&M (% of average GFA - Retail Supply)	45.18%	44.72%	44.28%	43.83%	43.40%
O&M (INR Lakhs/'00 Consumers)	42.71	42.29	41.86	41.44	41.03

Provided that in case of the Distribution Licensee or the Deemed Distribution Licensee tariff is yet to be determined by the Commission till coming into force of these Regulations, the Commission may determine the O&M Norms on case-to-case basis.

102.2 The impact of wage revision shall not be allowed over and above the O&M expenses approved by the Commission.

102.3 In case the expenditure on Repairs & Maintenance falls below 20% of total O&M expenses allowed under these Regulations, then such savings in Repairs & Maintenance shall not be set off against other heads of O&M expenses:

Provided that this limitation shall not be applicable for Deemed Distribution Licensees for the first five years after commencement of operations as a Distribution Licensee.

102.4 A Distribution Licensee may undertake Opex schemes for system automation, new technology and IT implementation, etc., and such expenses may be allowed over and above normative O&M Expenses, subject to prudence check by the Commission:

Provided that the Distribution Licensee shall submit detailed justification, cost benefit analysis, and life-cycle cost analysis of such schemes as against capex schemes, and savings in O&M expenses, if any.

102.5 The Commission may consider any request for revision of the normative O&M expenses of the Distribution Licensee on account of consideration of some Schemes under O&M rather than Capital Investment on case-to-case basis, depending on the justification to be submitted by the Applicant and the life-cycle cost analysis:

Provided that if actual O&M expenses are lower than normative O&M expenses on this account, then no sharing of efficiency gains shall be done to that extent.”

8.5 Receipt of Cross Subsidy Surcharge

- 8.5.1 The Commission in its Tariff Orders across all Distribution Licensees have approved the Cross-Subsidy surcharge regularly in lines with the Tariff Policy, 2016, i.e., by allowing category-wise Cross-subsidy Surcharge within 20% of the approved ACoS for the respective FYs.
- 8.5.2 The Ministry of Power through its amendments to the Electricity Rules, 2022, dated 29 December 2022 provides the determination of surcharge by the Commission under Section 86(1)(a) of the Electricity Act, 2003, for the consumers seeking Open Access shall be within 20% of the ACoS.
- 8.5.3 Accordingly, to bring more clarity, the Commission proposes the add new proviso in the Draft MYT Regulations, 2024:

“107.1 The Cross-Subsidy Surcharge determined by the Commission as part of the MYT Tariff Order in accordance with the Regulation 14.7 of the MERC (Distribution Open Access) Regulations, 2016, as amended from time to time.

Provided that the Cross-Subsidy Surcharge determined by the Commission for the respective consumer categories shall not be exceeding the 20% (twenty percent) of the Average Cost of Supply approved by the Commission for the respective financial years over the Control Period.

107.2 The amount received by the Distribution Licensee by way of Cross-Subsidy Surcharge, as approved by the Commission, shall be deducted from the Aggregate Revenue Requirement in determining the Tariff for retail supply of electricity by such Distribution Licensee.”

8.6 Receipt of Additional Surcharge

- 8.6.1 The Commission in its Tariff Order across all Distribution Licensees have determined the Additional Surcharge limited to the per unit fixed cost of the Power Purchase cost.
- 8.6.2 Recently, the Ministry of Power through its amendments to the Electricity Rules, 2024, dated 10 January 2024 provides the determination of additional surcharge by the Commission shall not be more than the per unit fixed cost of power purchase of the distribution licensee concerned.
- 8.6.3 Accordingly, to bring more clarity, the Commission proposes the add new proviso in the Draft MYT Regulations, 2024:

“108.1 The Additional Surcharge determined by the Commission as part of the MYT Tariff Order in accordance with the Regulation 14.8 of the MERC (Distribution Open Access) Regulations, 2016, as amended from time to time.

Provided that the Additional Surcharge determined by the Commission for the respective consumer categories shall not be more than the per unit fixed cost of power purchase of the Distribution Licensee concerned.

108.2 The amount received by the Distribution Licensee by way of Additional Surcharge, as approved by the Commission, shall be deducted from the Aggregate Revenue Requirement for determining the Tariff for retail supply of electricity by such Distribution Licensee.”

8.7 Distribution Losses

8.7.1 The Regulation 90 of the MYT Regulations, 2019, provides as under:

“The power purchase requirement of the Distribution Licensee at the Transmission-Distribution interface point, shall be computed by grossing up the sales with the distribution losses approved by the Commission:

Provided that the Commission may stipulate the target distribution losses in accordance with Regulation 7 as part of the Order on the Multi-Year Tariff Petition:

Provided further that the Distribution Licensee shall submit the details of area-wise distribution losses for the relevant years, in accordance with the formats prescribed by the Commission:

Provided also that the area-wise distribution losses shall separately indicate the distribution losses in each Distribution Franchisee area within its Licence area, for the relevant years.”

8.7.2 The Ministry of Power vide its Electricity Amendments Rules, 2023, dated 26 July 2023 provides for the Aggregate Technical and Commercial (AT&C) loss reduction trajectory to be approved by the State Commissions for tariff determination shall be in accordance with the trajectory agreed by the respective State Governments and approved by the Central Government under any national scheme or programme, or otherwise.

8.7.3 In this context, the Commission presently as part of the MYT proceedings specifies trajectory for the Distribution Loss, which is required for Power Purchase & Energy Balance of licensee. However, the AT&C losses are linked to the Collection Efficiency. Thus, the existing accounting in terms of Distribution Loss is on accrual basis, whereas the receipt of the Collection Efficiency is linked to Cash Receipts.

8.7.4 Accordingly, the Commission proposes to continue with the Distribution Loss trajectory for energy balancing and power purchase, however, to ensure that compliance with the MoP Rules, the Commission also proposes to specify the trajectory for AT &

C loss for the MYT control period for monitoring purpose in the MYT Orders in the fifth control period.

- 8.7.5 Accordingly, the Commission proposes to add new proviso in the Draft MYT Regulations, 2024 as below:

“109.1 The power purchase requirement of the Distribution Licensee at the Transmission-Distribution interface point, shall be computed by grossing up the sales with the distribution losses approved by the Commission:

Provided that the Commission may stipulate the target distribution losses in accordance with Regulation 7 as part of the Order on the Multi-Year Tariff Petition:

Provided that the Distribution Licensee shall submit the details of area-wise distribution losses for the relevant years, in accordance with the formats prescribed by the Commission:

Provided also that the area-wise distribution losses shall separately indicate the distribution losses in each Distribution Franchisee area within its Licence area, for the relevant years.

109.2 The Distribution Licensee as a part of its MYT Petition shall submit the AT&C Loss trajectory agreed by the State Governments and approved by the Central Government under any National Scheme or Programme, or otherwise:

Provided that the Commission may stipulate trajectory for AT&C losses in its Order on the MYT Petition filed by Distribution Licensee.”

8.8 Time of Day Tariff

- 8.8.1 The Commission had introduced the concept of Time-of-Day Tariff for the HT Industrial Consumers since 2000 with an intention of flattening the load curve post observing a wide gap between maximum demand and minimum demand. Over a period the ToD tariff was introduced at LT level for the loads upto 20 kW, with additional charges during peak hours and rebates in tariff during off-peak hours. However, the time slots have remained unchanged till date since the introduction of the ToD concept.
- 8.8.2 The Commission has received requests from Distribution Licensees for the review of ToD Structure during the MYT Proceeding of 4th Control Period. Accordingly, the Commission conducted the Study “to understand the changes in consumption pattern and load curve of Distribution Licensees and design the TOD Tariff structure which helps in optimizing power procurement expenses and also encourage demand response schemes.”
- 8.8.3 The study report was published by the Commission on 1 November 2022. Further some Distribution Licensees proposed the revised ToD structure in the recent MTR Petition

and some of the licensees proposed to submit the revised ToD structure during the MYT proceedings of the 5th Control Period.

- 8.8.4 Meanwhile the MoP vide Amendment to the Electricity Rules, 2023 dated 14th June 2023 has added new Rule as 8A regarding the ToD Tariff. The relevant extract of the Rules is provided as under:

“(8A) Time of Day Tariff.-The Time of Day tariff for Commercial and Industrial consumers having maximum demand more than ten Kilowatt shall be made effective from a date not later than 1st April, 2024 and for other consumers except agricultural consumers, the Time of Day tariff shall be made effective not later than 1st April, 2025 and a Time of Day tariff shall be made effective immediately after installation of smart meters, for the consumers with smart meters:

Provided that, the Time-of-Day Tariff specified by the State Commission for Commercial and Industrial consumers during peak period of the day shall not be less than 1.20 times the normal tariff and for other consumers, it shall not be less than 1.10 times the normal tariff:

Provided further that, tariff for solar hours of the day, specified by the State Commission shall be at least twenty percent less than the normal tariff for that category of consumers:

Provided also that the Time-of-Day Tariff shall be applicable on energy charge component of the normal tariff:

Provided also that the duration of peak hours shall not be more than solar hours as notified by the State Commission or State Load Despatch Centre.

Explanation: - For the purposes of this rule, the expression “solar hours” means the duration of eight hours in a day as specified by the State Commission.”

- 8.8.5 The Commission with an intention to comply with the MoP’s rules referred above and considering the recommendations of the ToD study conducted during 2022 has proposed to introduce the ToD Tariff as part of the Draft MERC MYT Regulations, 2024.
- 8.8.6 The Commission has proposed to introduce ToD Tariff at State Level instead of specific to Distribution Licensees, since the load curve of all the four major Distribution Licensees in the State are similar as per the ToD study conducted.
- 8.8.7 Further, the Commission has proposed to introduce the ToD Tariff for the seasonal months viz. October to December, January to March and April to September and

incentivise the Tariff of the ToD consumers during the Solar Hours viz. 0900 Hrs to 1600 Hrs.

- 8.8.8 Such seasonal ToD tariffs are specified for Industrial & Commercial (HT & LT) and other consumers upto 20 kW as applicable. Accordingly, the following provision is proposed in the Draft MYT Regulations, 2024:

113.1 The Time-of-Day Tariff shall be applicable to all the Distribution Licensees operating in the State from the date of issuance of the MYT Tariff Order for the Control Period.

113.2 Distribution Licensee shall propose ToD tariff for its consumers with load of 10 kW and above based on following indicative time slots and tariff as percentage of Energy Charge:

<i>ToD Tariff (Additional Charges or (Rebate) in INR/kVAh (or kWh)</i>				
<i>09:00 to 16:00 Hrs</i>	<i>16:00 to 20:00 Hrs</i>	<i>20:00 to 00:00 Hrs</i>	<i>00:00 to 06:00 Hrs</i>	<i>06:00 to 09:00 Hrs</i>
<i>80% of the normal rate of Energy Charge</i>	<i>120% of the normal rate of Energy Charge</i>	<i>110% of Normal Rate of Energy Charge</i>	<i>80% of the normal rate of Energy Charge</i>	<i>110% of the Normal Rate of Energy Charge</i>

Provided that Distribution Licensee may proposed seasonal ToD tariff in its Tariff Petition:

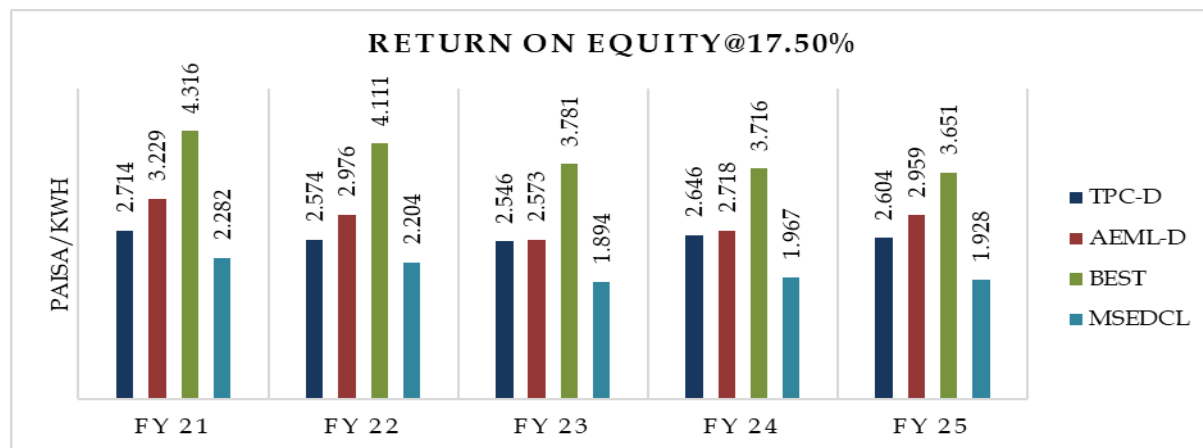
Provided that the Commission at the time of MYT Order proceedings may extend the applicability of the ToD Tariff to the other consumer categories after assessing the growth in the demand.

8.9 Supply Margin

- 8.9.1 The MYT Regulations, 2019 provides the Return on Equity upto 17.50% (Base RoE @15.50% & Additional RoE upto 2.00%). However, it is important to understand that the overall share of the GFA corresponding to Retail Supply Business would range from 5% to 10% of the overall GFA of the Distribution Licensees.

- 8.9.2 The major infrastructure in terms of the Retail Supply Business is Metering and Billing Infrastructure. The Regulation 84.7 of the MYT Regulations, 2019 provides the Distribution Licensee to undertake Opex schemes for system automation, new technology and IT implementation, etc., where such expenses may be allowed over and above normative O & M Expenses. This allows the distribution licensee to cover its majority of its metering and related infrastructure under the Opex schemes.

8.9.3 In this context, the significant growth in the overall GFA of the Retail Supply Business is not expected in the ensuing years. This is relatable where the approved RoE for the Retail Supply Business is significantly marginal in terms of Paisa/kWh which can be seen in the figure below:



8.9.4 Thus, the Commission has proposed to revisit its existing provisions of the Retail Supply Business RoE.

Supply Margin – Concept

8.9.5 The approach for the Supply Margin was introduced in the State of Delhi during 2007 and was continued to be implemented upto the notification of the DERC MYT Regulations, 2011. The additional RoE at 2.00% was provided by the DERC over and above the RoE of the Retail Supply Business, which was termed as the Supply Margin. However, the corresponding amount of Supply Margin was linked with the Sales of the Distribution Licensee for each financial year. Thus, any distribution licensee intending to get the entire approved Supply Margin shall either achieve its estimated approved Sales or work on lowering its distribution losses. In case of the overachievement of the Sales, the additional revenue realised by the Licensee was adjusted with the ARR, as the Supply Margin revenue was allowed upto the ceiling limit of 2.00%. However, in case of underperformance, the revenue loss in terms of Supply Margin shall be borne by the Licensee itself, which acts as the loss of opportunity cost.

8.9.6 Thus, to create the competition in the Retail Supply Business in letter and spirit, in line with the provisions of the Act and the Tariff Policy, 2016. As a first step, the profitability of the Retail Supply Business, which is at present is the Return on Equity upto 17.50% can be termed as the ‘Supply Margin’.

Intent

- To support the competition in the Retail Supply Business.

- To optimise the Power Purchase cost in the licensee area where distribution losses are higher.
- To increase the sales either by increasing consumer base or retaining Open Access consumer in case of adoption Ceiling Tariff.

Implementation Framework

- The Supply Margin shall be approved by the Commission at the time of MYT approval process.
- The Supply Margin shall be **uniform** across all the distribution licensees.
- The average Supply Margin across the four major distribution licensees during FY 2024-25 ~3 to 3.5 Paisa/kWh (*Based on the Graphical Representation above*) without grossing up with Income Tax.
- Thus, the Commission proposes the Common Supply Margin of 5.00 Paisa/kWh across all distribution licensees. (*grossing up with MAT*)
- Out of the total Supply Margin of 5 Paisa/kWh, 2 Paisa/ kWh is proposed to be performance linked based on the following schedule.

Performance Parameter		Reduction in Supply Margin
Collection Efficiency	99% and above	No Reduction
	Below 99% and upto 95%	Reduction of 0.50 Paisa/kWh
	Below 95%	Reduction of 1.00 Paisa/kWh
Assessed Billing	1.5% or below	No Reduction
	Above 1.50% and upto 5.00%	Reduction of 0.50 Paisa/kWh
	Above 5.00%	Reduction of 1.00 Paisa/kWh

- Such Supply Margin is inclusive of the Income Tax component and thus, no Income Tax shall be allowed by the Commission on the Supply Margin recovered by the Distribution Licensee.

8.9.7 Accordingly, the Commission proposes the following new Regulations under Part D – Financial Principles for the Supply Margin under the Draft MERC MYT Regulations, 2024:

“28.8 In case of the Retail Supply Business, the Supply Margin upto 5.00 Paisa/kWh inclusive of Income Tax component shall be allowed for all the Retail Supply Licensees for each financial year over the Control Period based on the following principles:

(a)The Supply Margin of upto 2.00 Paisa/kWh shall be allowed at the time of true-up based as per the following schedule:

(i)If Collection Efficiency is below 99% upto 95%, then the Performance Linked Supply Margin 2.00 Paisa/kWh shall be reduced to 0.50 Paisa/kWh.

(ii) If Collection Efficiency is below 95%, then the Performance Linked Supply Margin 2.00 Paisa/kWh shall be further reduced to 0.50 Paisa/kWh.

(iii) If % of Assessed Bill is above 1.00% upto 1.50%, then the Performance Linked Supply Margin 2.00 Paisa/kWh shall be reduced to 0.50 Paisa/kWh.

(iv) If % of Assessed Bill is above 1.50%, then the Performance Linked Supply Margin 2.00 Paisa/kWh shall be further reduced to 0.50 Paisa/kWh..”

8.10 Ceiling Tariff

Background

8.10.1 In the state of Maharashtra, the parallel licensee scenario is already operational in Mumbai City with a consumer choice to changeover or switchover. However, the Commission at present determines separate tariff for AEML-D and TPC-D for the common area of supply of both the licensees. Therefore, to recover the charges for the Wires Business for use of Wires by the consumer being served by the other licensee is through change over charge /switch over charge for the consumer opting to take supply from another licensee.

8.10.2 Section 62(1)(a) of the EA 2003 proposes the enabling provisions for determination of the Ceiling Tariff by the Commission. However, the methodology for determination of Ceiling Tariff has not been specified in the MERC MYT Regulations, 2019. Thus, with prevailing parallel licensee operation in Mumbai and anticipating similar such parallel license operation in the State post notification of the MoP's Electricity (Amendment) Rules, 2022, dated 8 September 2022 providing the explanation on the minimum area of supply, to promote competition in true spirit, the Commission proposes to lay down procedure to be adopted for Ceiling Tariff in the common area of supply of Parallel Licensees.

Intent

8.10.3 The Commission intends to lay down procedure for the Ceiling Tariff with the following objectives:

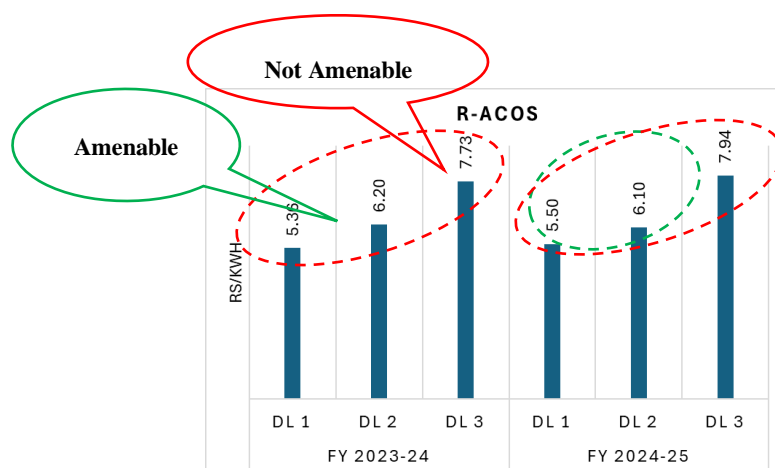
- Encourage competition in the Retail Supply Business.
- Optimisation of the Power Purchase portfolio of the Licensee.
- Enabling the fair consumer choice for the choice of the Retail Supply Licensee.

Implementation Framework

8.10.4 The implementation of the Ceiling Tariff is proposed to be applicable in the specific geographical area of supply, where more than one distribution licensees are operating. This shall be initially applicable for the contestable consumers, whose Average Billing

Rates (ABR) are higher than or equal to the Average Cost of Supply (ACoS) of their respective Retail Supply Licensees, by giving them choice to choose its Electricity Retail Supplier.

8.10.5 The Commission has proposed to adopt the Ceiling Tariff from 1 April 2025 where parallel licensees are operating in the common area of supply, based on the conditions supporting the level playing field amongst the multiple licensees. The illustration of the level playing field is shown in the figure below:



8.10.6 One of the indicators for the adoption of Ceiling Tariff is the marginal difference in the Retail Supply Business ACoS (R-ACoS) of the licensees. Significant Gap in the R-ACoS between the multiple licensees operating in the common area of supply, would tend to increase Cross-subsidy burden, which would defeat the intent of the competition. Thus, Minimal Cross-Subsidy Balancing would encourage more competition amongst the Retail – Supply Licensees. At the same time, if such difference in ACoS (R-ACoS) remains high after operationalisation of parallel licensees in an area for several years, it depicts that competing licensees are not taking adequate efforts to remain competitive and under such circumstances Ceiling Tariff can be introduced even though there is higher difference in ACoS of parallel licensees.

8.10.7 To start with, the term ‘Ceiling Tariff’ shall be determined post ensuring the recovery of the majority of the Annual Fixed Cost commitment in terms of Wires Cost and Fixed Cost of the Retail Supply through Uniform Wheeling Charges and Uniform Demand/Fixed Charges. Post experience of implementation, Demand/Fixed charges can also be considered under ceiling tariff regime.

8.10.8 This addresses the motivation of bringing in the competition in the Retail Supply Business, which shall be entirely based on the determination of Ceiling Energy Charges, which shall be uniform across the consumer categories across all the Distribution Licensee operating in the common area of supply. The thrust to the Retail Supply competition across the Distribution Licensees shall be based on the Power

Purchase portfolio presently being maintained and the strategy to offer the most economical Energy Charges to the respective consumer categories.

Determination of Uniform Wheeling Charges

8.10.9 At the very instant the Commission shall determine the Wheeling Charges and Losses (HT & LT) for the respective licensees operating in the common area of supply as per the existing MYT Process discussed in detail in the above section of Wheeling Charges under the Chapter 7 of this Explanatory Memorandum.

8.10.10 The Commission shall then further determine the Uniform Wheeling Charges for the HT & LT Consumers by pooling the approved Wires ARR and the projected Wheeling Sales (HT & LT level) of all the Distribution Licensees operating the common area of supply. Such Uniform Wheeling Charges will be levied to all the consumers irrespective contestable and non-contestable falling under the common area of supply.

8.10.11 The following steps provide the overall mechanism for billing and collection of Uniform Wheeling Charges:

- (a) Pooling of Wires ARR (in INR Crore) and Sales (in MU) for the respective Distribution Licensee operating in the common area of supply.
- (b) Computing the Uniform Wheeling Charges in INR/kVAh (or kWh) at HT & LT level.
- (c) Levy of such Uniform Wheeling Charges to the respective consumers connected at HT & LT level in the common area of supply.
- (d) Monthly settlement of the Wheeling Charges amongst the Distribution Licensees for the consumers connected on the wires of other Distribution Licensee instead of host Distribution Licensee.
- (e) In case of over-recovery or under-recovery of such Wheeling Charges, the same shall be settled at the time of truing-up for the respective years of the Control Period.

Determination of Uniform Demand Charges

8.10.12 The Commission shall determine the Demand Charges by considering the Annual Fixed Cost of the Retail Supply Business with the Contracted Capacity (in kVA or kW) and number of Connections for the respective financial year of the Control Period.

8.10.13 It is evident that, the overall recovery of the Annual Fixed Cost across all Distribution Licensee through Demand/Fixed Charges is below 20% of the total Annual Fixed Cost, whereas the rest of the Annual Fixed Cost is subsumed within the Energy Charges along with the variable charges of the power purchase of the respective Distribution Licensee. The Commission while determining the Uniform Demand/Fixed Charges shall ensure

the gradual increase in the percentage of Annual Fixed Cost during the Control Period to maximize the recovery of the Annual Fixed Cost through Demand/Fixed Charges going forward.

8.10.14 In case of the one more Distribution Licensee operating in a common area of supply, the Commission shall determine the Uniform Demand/Fixed Charges, which shall be uniform for a specific consumer category across all the Distribution Licensees. Accordingly, the Commission has proposed the following provision for the determination of the Demand/Fixed Charges in the Draft MERC MYT Regulations, 2024:

“111.1 The Commission shall determine the consumer category wise Demand/Fixed Charges for the respective Distribution Retail Supply Licensee based on the Contracted Capacity (in kVA or kW) and number of Connections for the respective financial year of the Control Period:

Provided that such Demand/Fixed Charges shall be gradually increased year-on-year basis to recover Fixed Cost of the Licensee from such Demand/Fixed Charges:

Provided further that the basis for the determination of consumer category wise Demand/Fixed Charges for the respective years of the Control Period, shall be in terms of their actual Billing Demand at HT and LT Level, change in Load Factor, change in number of connections in case of LT level, etc.

Provided further that the Distribution Licensee shall submit the details of the actual Billing Demand, Contracted Capacity, Load Factor and Connected number of Consumers for the respective Consumer categories as part of the MYT Tariff Petition.

111.2 In case more than one Distribution Licensees are operating within the same geographic area, the Commission shall determine consumer category wise uniform Demand / Fixed Charges for all Distribution Licensee in that area: Provided that the determination of such Uniform Demand/Fixed Charges by the Commission, shall be same for a specific consumer category across all the Distribution Licensees in that area.”

Ceiling Tariff

8.10.15 The Commission in exercise to the powers conferred under second proviso of the Section 62 (1) of the Electricity Act, 2003, shall fix the maximum ceiling of tariff for the retail sale of the electricity to promote competition in case of distribution of electricity in the same area by two or more Distribution Licensees.

8.10.16 The Commission shall determine the category wise common Ceiling Tariff, as a first step of introduction of the Ceiling Tariff Regime instead one single ceiling tariff applicable across all the contestable consumer categories.

8.10.17 Thus, to attract real competition, the licensees are required to manage their power purchase portfolio efficiently for offering competitive Energy Charge to its contestable consumers. The more sales more are the chances to avail full Supply Margin and increase its profitability.

8.10.18 The Commission shall also monitor the amenable conditions for introduction of the Ceiling Tariff such as if the difference between the ACoS of the respective Distribution Licensees operating the common area of supply is the range of zero to INR 1.00/kVAh (or kWh). However, the Commission is also of the view that, after operationalisation of the second distribution licensee in that area, the 'Ceiling Tariff' should be introduced within specific timelines even though the proposed amenable conditions are fulfilled or otherwise.

Accordingly the Commission proposes to introduce the Ceiling Tariff within three years from the date of operationalisation of the second distribution licensee or if the difference between Average Cost of Supply for Retail Supply Business of such licensees is less than INR 0.50/kVAh (or kWh) or any other higher number, as decided by the Commission subject to the maximum upto INR 1.00/kVAh (or kWh), whichever is earlier:

8.10.19 The Commission proposes to determine the Ceiling Tariff to recover the Retail Supply ARR considering the revenue gap within the limit of 10%.

8.10.20 In case of consumers with tariffs below ACOS, the Commission shall determine the tariff for such consumers. To maintain the level playing field the Distribution Licensees shall equally share the sales towards such consumers with tariff below ACOS proportionately on monthly basis. In case such balance of sales is not maintained, the Distribution Licensee with lower sales of such low-end consumer shall compensate the Cross-Subsidy to the other Distribution Licensee having higher share of such consumers.

8.10.21 The Ceiling Tariff approved by the Commission shall be the benchmark rate, where the Distribution Licensees may offer lower Ceiling Tariffs inclusive of Z_{FAC} component based on the power purchase portfolio to attract consumers. No prior approval from the Commission for the new power purchase is required. Further, the Distribution Licensees have the liberty to revise their Ceiling Tariffs on quarterly basis in order to factor in the variation in the power purchase rate.

8.10.22 Since, no true-up activity will be performed for the licensees operating under the Ceiling Tariff Regime, thus, the loss of sales and consumers are the entire risks of the licensees.

8.10.23 Accordingly, the Commission proposes to add new Regulation under the Retail Supply of Electricity in the Draft MYT Regulations 2024:

“112.1 The Commission in exercise to the powers conferred under second proviso of the Section 62 (1) of the Electricity Act, 2003, shall fix the maximum ceiling of tariff for the retail sale of the electricity to promote competition in case of distribution of electricity in the same area by two or more Distribution Licensees.

112.2 In case more than one Distribution Licensees are operating within the same geographical area, the Commission shall determine ‘Ceiling Tariff’ in that area of supply within three years from the date of operationalisation of the second distribution licensee or if the difference between Average Cost of Supply for Retail Supply Business of such licensees is less than INR 0.50/kVAh (or kWh) or any other higher number, as decided by the Commission subject to the maximum upto INR 1.00/kVAh (or kWh), whichever is earlier:

Provided that in case, the Commission decided not to introduce ‘Ceiling Tariff’, reasons for the same shall be recorded in the Order.

112.3 ‘Ceiling Tariff’ shall be determined based on following methodology:

- a. Uniform Wheeling Charges shall be determined as per Regulation 96 A*
- b. Uniform Demand/Fixed Charges shall be decided as per Regulation 111.2.*
- c. Consumer category-wise or uniform ceiling rate for Energy Charge shall be decided to ensure that approved Retail Supply Aggregate Revenue Requirement of respective Distribution Licensee shall be recovered without creating revenue gap of more than 10% or any other number decided by the Commission by considering the approved sales forecast for that Distribution Licensee.*
- d. Energy Charge for certain category of consumers which requires to be provided with lower tariff, shall be fixed by the Commission and licensee shall levy same tariff to such consumer category:*

Provided that to maintain level playing field, parallel licensees in that area shall endeavour to maintain proportion of sales of such consumer categories in its total sales for a given month equal to proportion of total sale of such consumer categories in total sales in that area.

Provided further that in case any Distribution Licensee not able to maintain such proportion of sales of such consumer categories then it shall pay for

quantum of such lower proportion 'at the rate of prevalent cross-subsidy for such consumer category (i.e. difference of Average Billing Rate and Average Cost of Supply of licensee with higher proportion of sale of such consumer category)' for such consumer category to other parallel Distribution Licensee who has higher proportion of such sales on monthly basis.

e. Distribution Licensee may offer 'Energy Charge' lower than Ceiling Energy Charge approved by the Commission:

Provided that Distribution licensee may revise such 'Energy Charge' on quarterly basis to factor in variation in power purchase expenses:

Provided further that during 'Ceiling Tariff' situation, Distribution Licensee may undertake new power procurement without seeking prior approval of the Commission.

f. No True-up of Retail Supply Business of Distribution Licensees subjected to 'Ceiling Tariff' shall be undertaken under these Regulations.

Provided further that under 'Ceiling Tariff' circumstances, Distribution Licensee shall incorporate Z_{FAC} in their Energy Charge.

112.4 Based on above principles, the Commission in its Tariff Order granting 'Ceiling Tariff' shall laydown detailed procedure for the implementation of the 'Ceiling Tariff'."

9 Norms and Principles for Determination of Fees and Charges of MSLDC

- 9.1.1 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 powers to MSLDC and functions, including the optimum scheduling and dispatch of electricity within the State, monitoring of grid operations, energy accounting, supervision and control over InSTS, etc.
- 9.1.2 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.
- 9.1.3 The Commission incorporated the relevant clauses with respect to the levy of such fees and charges of SLDC in MERC MYT Regulations, 2019.

9.2 LDC Development Fund

- 9.2.1 Existing MERC MYT Regulations, 2019, specifies provisions for creating and maintaining a separate LDC Development Fund. However, the various aspects relating to the LDC Development Fund are missing in the existing Regulations. For Example, Revenue streams to be considered for creation of / parking in the fund, the avenues for utilisation of this Fund by MSLDC, separate accounting records to be maintained by MSLDC for this Fund, treatment of ARR elements which are funded from this LDCD Fund, treatment of the balance corpus available in the LDCD Fund after meeting the requirements etc. Accordingly, the Commission proposes clauses with respect to the LDC Development Fund in line with the directives given by the Commission in its MTR Order in Case No. 171 of 2017.
- 9.2.2 Accordingly, the Commission in Draft MYT Regulations, 2024 has proposed the Regulation for utilisation of LDC funds:

9.3 Operation and Maintenance Expenses

- 9.3.1 For determination of O&M Expenses for next Control Period, at time of MYT Order, the average of O&M Expenses for the period from FY 2019-20 to FY 2023-24 is required to be escalated at the respective escalation rate for FY 2022-23, FY 2023-24 and FY 2024-25, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2025.
- 9.3.2 The MYT Regulations, 2019 provides for the approval of impact of Wage Revision, if any, at the time of true-up for any Year, based on documentary evidence and justification to be submitted by the Petitioner. However, the Commission in the Draft MYT Regulation, 2024 proposes to include the impact of wage revision during any true-up year, if any, in the O&M expenses while determining the norms for the O&M

expenses for the future year. Since, the O&M norms shall be derived after consideration of the Wage Revision impact, the impact of wage revision shall not be allowed over and above the normative O&M expenses allowed by the Commission.

Human Resources Development expenses:

- 9.3.3 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 MSLDC. In MTR Order 233 of 2022, MYT Order 291 of 2019 and Orders prior to that, the Commission approved Human Resources Development (HRD) expenses under the head of A&G expenses.
- 9.3.4 Human resources are the key asset in a knowledge-oriented organization like the MSLDC. It is imperative to prioritize the capacity building of human resources to establish MSLDC as a sustainable institution capable of navigating the ever-changing regulatory landscape and technological advancements in the sector. Continuous training and skill upgrading for MSLDC personnel are essential to ensure optimal performance and efficiency in power system operation. According to the national training policy, a minimum of 5% of employee expenses should be dedicated to HRD. Therefore, it is crucial to allocate sufficient funds for MSLDC's HRD initiatives. Presently, HRD expenses are categorized under Admin & General expenses. A more effective approach would be to incorporate HRD into HR expenses, enabling better monitoring of compliance with National Training Policy norms. The 'Capacity Building of Indian Load Despatchers' (CABIL) report, endorsed by the Forum of Regulators in 2018, recommends classifying HRD expenses under employee expenses rather than A&G expenses, with a target of allocating at least 5% of total employee expenses to HRD in alignment with the National Training Policy.
- 9.3.5 Accordingly, the Commission has specified the provision for determination of O&M expenses for MSLDC in the Draft MYT Regulations 2024.

9.4 Performance Linked Incentives

- 9.4.1 The SLDC contributes significantly in reliable, secure, economic and sustainable operation of the interconnected grid formed by assets owned by diverse utilities. The evidence-based inputs from SLDC to policymakers, regulators and planners are critical for strategic decision-making at the highest level. The success of reform initiatives in the power sector largely depends on the efficiency of SLDC's internal processes. Thus, the services of the SLDC are mostly intangible, and the economic value of the interventions of SLDC in the system is widely shared among the stakeholders at large. The SLDC is expected to be non-discriminatory, fair, transparent and profit-neutral entities. To ensure the altruistic, ethical and frugal character of SLDC, it is desirable that the performance of the SLDC be de-coupled from commercial profits of any kind.

9.4.2 In view of the above, it is proposed that the performance of the SLDC could be evaluated in four dimensions-

- Stakeholder satisfaction
- Financial prudence
- Internal processes
- Learning & growth

9.4.3 The MYT Regulation 2019 specifies the norms for the additional RoE over and above the base RoE for Generation, Transmission and Distribution utilities. However, the norms for the additional RoE for MSLDC were not specified in the MERC MYT Regulations, 2019.

9.4.4 The Commission, in the MYT Order in case No. 291 of 2019 on 30th March 2020, directed MSLDC to approach the Commission with the proposal to fix the performance norms or Key Performance Indicators (KPIs) based on which MSLDC will be entitled to claim the additional RoE. Further, in its MYT Order in case No. 233 of 2022 on 31st March 2023, the Commission had directed MSLDC to resubmit a detailed proposal including a similar framework operational in other parts of the country, including recommendations of the Forum of Regulators. In response to that, MSLDC, in December 2023, submitted a list of KRAs and KPIs to claim the additional RoE.

9.4.5 Considering the recommendations of the CABIL report and the proposal of the MSLDC, the Commission has proposed the KPIs under each category. The Commission proposes the provision for the incentives linked with achievement of KPI targets in line with the CERC (fees and charges for the RLDC and other related matters) Regulations 2019. The Performance linked incentives have been proposed as 3% of ARR for an aggregate performance level of above 90%. The incentive shall be increased by 1% on a pro-rata basis for every 5% increase in performance level above 90% with a maximum limit of 5% of total ARR.

9.4.6 MSLDC shall submit the detailed calculations of all KPIs in MS Excel worksheet while filing the petition for approval of the Performance Linked Incentive.

9.4.7 The proofs mentioned in the respective KPI details shall also be submitted while filing the petition for truing-up of the Performance Linked Incentive.

9.4.8 An undertaking by the head of the MSLDC shall be submitted along with the Petition stating that the targets claimed to be achieved and performance computed for all KPIs have been checked and are true to the best of his/ her knowledge.

Accordingly, the Commission has proposed performance linked incentive in the Draft MYT Regulations 2024 for MSLDC.

10 Norms and Principles for Determination of Fees and Charges of STU

10.1 Applicability

10.1.1 The Regulations contained in this Part shall apply in determining the Fees and Charges to be levied by the State Transmission Utility (STU) after April 1, 2025.

10.2 Introduction

10.2.1 At present MSLDC and STU are operated by MSETCL, the biggest transmission utility in the state. The MSLDC even though being operated by MSETCL, the Commission is approving separate fees and charges for MSLDC since FY 2006-07 and MSLDC is submitting separate petition for its fees and charges since then.

10.2.2 STU is being operated by MSETCL however the functions of STU are different from MSETCL.

10.2.3 MSETCL is transmission licensee and duties of transmission utility as per Section 40 of Electricity Act 2003 are as follows:

It shall be the duty of a transmission licensee -

(a) to build, maintain and operate an efficient, co-ordinated and economical inter-State transmission system or intra-State transmission system, as the case may be;

(b) to comply with the directions of the Regional Load Despatch Centre and the State Load Despatch Centre as the case may be;

(c) 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 in the manner as may be specified by the Appropriate Commission:

Provided also that the manner of payment and utilisation of the surcharge shall be specified by the Appropriate 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.

10.2.4 While STU has the functions that are different from a transmission licensees. The functions of STU as per Section 39 of Electricity Act 2003 are as follows:

Section 39. (State Transmission Utility and functions):

(1) The State Government may notify the Board or a Government company as the State Transmission Utility:

Provided that the State Transmission Utility shall not engage in the business of trading in electricity:

Provided further that the State Government may transfer, and vest any property, interest in property, rights and liabilities connected with, and personnel involved in transmission of electricity, of such State Transmission Utility, to a company or companies to be incorporated under the Companies Act, 1956 to function as transmission licensee through a transfer scheme to be effected in the manner specified under Part XIII and such company or companies shall be deemed to be transmission licensees under this Act.

(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[***][eliminated] 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.

10.2.5 From above it is clear that functions of STU are quite different from a transmission utility. STU has to carry out functions related to all Distribution Licensees including deemed distribution licenses, all transmission utilities and all generating stations including Renewable generators. While the functions of transmission utility are limited in its area of operation.

10.2.6 At central level Power Grid Corporation India Limited (PGCIL) is Transmission Utility for all over India, which was operating Central Transmission Utility (CTU). However, CTU functions are separated as Central Transmission Utility India Limited (CTUIL) from PGCIL for carrying out functions assigned to Central Transmission Utility.

10.2.7 Considering the developments at the Central Level for separation of CTU from PGCIL, the Commission is of the view that, similar functional and administrative segregation shall be required in the state to function STU independently to handle the upcoming challenges like Resource Adequacy Planning, long term transmission planning considering large scale RE capacity addition, General Network Access (GNA), increasing private Transmission Licensees under TBCB etc. The Commission believes that the unbiased and independent operation of STU would require financial autonomy similar to MSLDC. The Commission is of the view that, though MSLDC is under administrative control of MSETCL over a period it has achieved functional segregation and financial autonomy which has paved for administrative segregation similar to CTU

in the coming days. Similarly, the STU need to be prepared for taking steps towards financial autonomy in this Control Period. Accordingly, the Commission is proposing the separate Chapter for STU Fees and Charges in the Draft MERC MYT Regulations, 2024.

10.2.8 The Chapter for STU Fees and Charges covers the Capex Investment Plan, determination of Operation and Maintenance expenses and methodology for determination of Annual Fixed Charges and recovery of STU charges from the Transmission Users. The Draft MERC MYT Regulations, 2024 also specifies the Fees to be charged by the STU to the transmission users and billing and payment of charges levied by STU. The Draft Regulations also proposes the incentive to the STU based on the Key Performance Indicators (KPI) similar to the SLDC.

11 Norms and Principles for determination of determination of Revenue Requirement and Tariff for Energy Storage Systems (ESS)

Ministry of Power, Government of India has notified the guidelines and various measures for Development of Energy Storage Systems (ESS). Similarly, the Forum of Regulators (FOR) has also published the Draft Report for Legal and Regulatory Framework for Development of ESS. The provisions of these Guidelines, Notifications, Reports are as summarised below:

11.1 The Electricity (Amendment) Rules, 2022

11.1.1 The Electricity (Amendment) Rules, 2022 provide that the Energy Storage Systems shall be considered as a part of the power system, as defined under clause (50) of section 2 of the Act. Further as per these Rules, ESS can be used independently or in conjunction with generation, transmission, and distribution infrastructure and would be accorded status based on its application area i.e., generation, transmission and distribution.

11.1.2 ESS owners or developers are permitted to lease or sell storage space to utility companies or Load Despatch Centres, as well as to use the storage space themselves to buy and store electricity for future sale.

11.1.3 **The independent energy storage system is a delicensed activity at par with a generating company in accordance with the provisions of section 7 of the Act.** However, if an ESS owner or developer wishes to operate independently, they must register with CEA along with their capacity and location details and meet the safety requirements set by the CEA. Standalone ESS shall be provided connectivity under the Electricity (Transmission) System Planning, Development, and Recovery of Inter-State Transmission Charges) Rules, 2021.

11.2 Energy Storage Obligation

11.2.1 A long-term trajectory for Energy Storage Obligations (ESO) has also been notified by the Ministry of Power on 22 July 2022 to ensure that sufficient storage capacity is available with obligated entities.

11.2.2 The trajectory specifies a minimum percentage of electricity consumption within a Distribution licensee's area that shall be procured from renewable energy through ESS. As per the trajectory specified vide MOP dated 22 July 2022, the ESO of obligated entities shall be gradually increased from 1% in FY 2023-24 to 4% by FY 2029-30, with an annual increase of 0.5%.

11.2.3 The renewable energy purchased from an ESS shall also qualify for Renewable Purchase Obligation (RPO) compliance.

11.2.4 In order to align the MERC (Renewable Purchase Obligation, its Compliance and Implementation of Renewable Energy Certificate Framework) Regulations, 2019 with the MoP Order on ‘Renewable Purchase Obligation (RPO) and Energy Storage Obligation Trajectory till 2029-30’ issued on 22nd July 2022 and Corrigendum issued on 19th September 2022, the Commission has amended the MERC (RPO and REC) Regulations on 5 August 2023.

11.3 Waiver of Inter State Transmission System Charges

11.3.1 Given the importance of facilitating RE integration in the grid and in pursuance of National Tariff Policy 2016, waiver of transmission charges for using Inter-State Transmission System has been provided to Energy Storage Systems, including BESS and PSPs, vide Ministry of Power notification dated 23 November 2021, as amended from time to time.

11.4 Guidelines for Procurement and Utilization of Battery Energy Storage Systems

11.4.1 Ministry of Power vide resolution dated 10 March 2022 has issued detailed guidelines for procurement and utilization of BESS as part of generation, transmission, or distribution assets, or along with ancillary services.

11.4.2 These guidelines, inter alia, provide standardization and uniformity in procurement of BESS and a risk-sharing framework between various stakeholders, involved in the energy storage and storage capacity procurement, thereby encouraging competition and enhanced bankability of these Projects.

11.4.3 Based on these Guidelines, Solar Energy Corporation of India (SECI) has carried out bidding of 500 MW/1,000 MWh BESS project which has been awarded at a cost of INR 10.835 Lakh/MW/month.

11.5 Guidelines for the development of Pumped Storage Projects

11.5.1 Recognizing the need for expeditious and cost-effective development of Pumped Storage Projects (PSPs) to enhance energy security of the country, **Ministry of Power, Government of India has come out with measures in the form of “Guidelines to promote the development of Pumped Storage Projects” on 10 April 2023.**

11.5.2 The guidelines would enable the development of PSP which are clean, sustainable, mature, and domestically available, with the proactive support of State Governments.

11.6 Introduction of High Price Day Ahead Market

11.6.1 Ministry of Power vide note dated 11 October 2022 has come up with a detailed framework for the High Price Day Ahead Market segment (HP-DAM) in the existing Integrated DAM (I-DAM), wherein sellers with high cost of generation would be allowed to participate. HP DAM has been launched on 9th March 2023.

11.6.2 BESS have been included in the list of eligible generators that are allowed to participate in the HP DAM segment of the Energy Exchange.

11.7 **Budgetary support for enabling infrastructure for Pumped Storage Projects**

11.7.1 Pumped Storage Projects are often taken up in remote areas which have infrastructure deficits. The infrastructure created for these projects enables further development of the area as the same is available for reuse for other purposes. Given the same, **the Central Government is providing budgetary support for construction of roads and bridges by Hydro Power Project developers, including PSPs up to INR 1.5 crore/MW for projects up to 200 MW and up to INR 1 crore/MW for projects above 200 MW.**

11.8 **Renewable Energy Must Run Rules**

11.8.1 The Electricity (Promotion of Generation of Electricity from Must-Run Power Plant) Rules, 2021 were notified on 22nd October 2021. These Rules provides that a wind, solar, wind-solar hybrid or hydro power plant (in case of excess water leading to spillage) or a power plant from any other sources, as may be notified by the Appropriate Government, which has entered into an agreement to sell the electricity to any person, shall be treated as a must-run power plant. A must-run power plant shall not be subjected to curtailment or regulation of generation or supply of electricity on account of merit order dispatch or any other commercial consideration except in the event of any technical constraint in the electricity grid or for reasons of security of the electricity grid. In the event of a curtailment of supply from a must-run power plant, compensation shall be payable by the procurer to the must-run power plant at the rates specified in the agreement for purchase or supply of electricity. **These Rules will stimulate the requirement of ESS in the system to avoid curtailment of RE and subsequent penalty as provided in the Rules.**

11.9 **Ancillary services from ESS under CERC (Ancillary Services) Regulations, 2022**

11.9.1 The CERC (Ancillary Services) Regulations, 2022 were notified on 31st January 2022 to provide mechanisms for procurement, through the administered as well as market-based mechanisms, deployment, and payment of Ancillary Services at the regional and national level to maintain grid frequency within allowable band and for relieving transmission congestion to support reliable and stable operation of the grid.

The Regulations provide for eligibility of ESS to provide Secondary Reserve Ancillary Service (SRAS) and Tertiary Reserve Ancillary Service (TRAS), under certain conditions.

11.9.2 This will create an additional revenue stream for ESS service providers and will nudge investments in the Energy Storage.

11.10 Inclusion of ESS in Technical Standards for Connectivity to the Grid

11.10.1 Central Electricity Authority has notified CEA (Technical Standards for Connectivity to the Grid) Regulations, 2007 and its latest (Amendment) Regulations, 2019 on 6th February 2019 which provide the **requirements to be complied by ESS to get connectivity to the Grid at voltage level 33 kV and above.**

This will enable faster and smoother integration of ESS with the Grid.

11.11 Bidding guidelines for Round the Clock (RTC) RE Supply

11.11.1 Guidelines for Tariff Based Competitive Bidding Process for Procurement of Round-The Clock Power from Grid Connected RE Projects, complemented with Power from many other source or storage were notified in November 2020.

11.11.2 As per these Guidelines, the firm power from storage can be utilized to balance renewable energy and provide round the clock (RTC) power to the buyers/DISCOMs, thereby facilitating the State Load Despatch Centres (SLDCs) in ensuring grid stability and security within their control jurisdiction.

11.11.3 The procurement of RTC power will create demand for establishment of ESS in the country and help in faster energy transition.

11.11.4 The aforementioned policy measures have encouraged the planning and establishment of ESS in the country. Maharashtra energy mix is also set to undergo a transition from fossil fuel sources to non-fossil fuel-based sources dominated by RE in the future keeping energy security in view. However, the incorporation of a significant amount of variable and intermittent RE into the energy mix presents a challenge for maintaining grid stability and uninterrupted power supply. The challenge with RE sources arises due to their varying nature with time, climate, season or geographic location. The variability associated with the RE sources leads to issues as grid balancing creating a need for flexibility.

11.11.5 In this context, ESS can be used for storing energy available from RE sources to be used at other times of the day. Storage of energy will help in bringing down the variability of generation in RE sources, improving grid stability, enabling energy/ peak shifting, providing ancillary support services and enabling larger renewable energy integration. Storage Systems will also benefit consumers by bringing down peak deficits, peak tariffs, reduction of carbon emissions, deferral of transmission and distribution capex, and energy arbitrage.

- 11.11.6 For energy transition, shifting from fossil fuel-based capacity to Renewable Energy capacity- it is necessary that the RE becomes dispatchable, and available 24x7. This is possible only with Energy Storage System.
- 11.11.7 Keeping in view the various developments in Power Sector, the Commission is of the view that, it would be appropriate to provide an enabling Regulatory framework for ensuring an enabling ecosystem for ESS. Accordingly, the Commission has proposed the following regulatory framework in draft MERC MYT Tariff Regulations 2024.
- 11.11.8 The Proposed Regulations in the draft MERC MYT Tariff Regulations, 2024, allow Generation Company, Transmission Licensees and Distribution Licensees to have captive arrangements of ESS as per MERC (Approval of Capital Investment Schemes) Regulations, 2022, under Section 62 of the Act. Further, the Commission also proposes separate frameworks for fixation of tariff under Section 62 of the Electricity Act 2003, for standalone ESS including: a) for a BESS; b) for Hydro Pump Storage System (PSP).
- 11.11.9 The Commission would like to clarify that, though the Regulatory framework for determination of Tariff for ESS is being proposed in the Draft MYT Regulations, 2024, the Utilities take all efforts and measures to develop/procure ESS through competitive bidding guidelines under Section 63 of the Act and approach the Commission for adoption of Tariff for ESS discovered through the Competitive Bidding Process.
- 11.11.10 The Commission shall be guided by the terms and conditions contained in this Part in determining the Tariff for ESS, in the following cases:
- a. where the existing Generating company or Transmission Licensee engaged in the business of Energy Storage of Electricity;
 - b. where the ESSD engaged in the business of Energy Storage of Electricity and has contractual arrangements with existing Generating Company or Transmission Licensee or Distribution Licensee or MSLDC for providing Energy Storage Services to such Utility;
 - c. where the Distribution Licensee is engaged in the business of Energy Storage of electricity, in determining the conversion price at which off-peak electricity is converted into peak electricity by the Energy Storage business of the Distribution Licensee to its Retail Supply business.
 - d. where such Tariff is pursuant to a power purchase agreement or arrangement entered into subsequent to the date of coming into effect of these Regulations; or
 - e. where such Tariff is pursuant to a power purchase agreement or arrangement entered into prior to the date of coming into effect of these Regulations, and the Commission has approved such agreement or arrangement, and the agreement or

arrangement envisages that the Tariff shall be based on the Tariff Regulations prevailing at that time;

11.11.11 An ESSD shall file a Petition for determination of Tariff in accordance with the provisions of Part B of draft MYT Tariff Regulations 2024.

11.11.12 The Tariff for ESS shall comprise of two parts, namely, Capacity Charge and Incentive for Cycle Efficiency above Design Cycle Efficiency of ESS.

11.12 The Annual Fixed Charges shall comprise the following components:

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

Less:

- f. Non-Tariff Income:

11.13 Determination of Tariff of Standalone ESS including: a) for an BESS; b) for Hydro Pump Storage System (PSP)

Capital Cost

11.13.1 The proposed Regulations provides the principles and procedure for determination of capital cost of the ESS. The capital cost of the ESS will form the basis for determination of annual fixed charges. The principles for determination of capital cost of ESS are in line with the practice being followed in determination of capital cost of a generating station.

Additional Capital Expenditure

11.13.2 The Additional Capital Expenditure for ESS in proposed Regulations will form the basis for determination of annual fixed charges. The principles for determination of additional capital expenditure of ESS are in line with the practice being followed in determination of additional capital expenditure of a generating station and will be as per MERC (Approval of Capital Investment Schemes) Regulations, 2022.

Capital Structure

11.13.3 The proposed new Regulations provides for treatment of debt-equity ratio as 70:30 for an ESS. The recommended approach for the debt-equity ratio is in line with the practice being followed in determination of tariff of a generating station.

Operating Parameters for ESS

a) For a BESS

After analysing various competitive bidding documents of SECI and NTPC, the Commission has considered the following measurable operating performance parameters:

- a. Round-trip Efficiency of BESS shall be minimum 75% for each monthly operating period.

$$\text{Monthly Round Trip Efficiency of BESS} = \frac{\text{Monthly Energy Discharged}}{\text{Monthly Energy consumed for Charging}} \times 100$$

- b. The Normative annual availability of the BESS shall be 95%

Annual Availability of BESS = Mean of the system availabilities of all time blocks during the year in which Beneficiary has scheduled power for charging/discharging the BESS.

$$\text{Availability in a time block} = \frac{\text{Actual Injection or Drawal MUi (A)}}{\text{Scheduled Injection or Drawal MUi (B)}} \times 100$$

Where,

- i. i refers to the ith time-block (15 minutes) in the year where $MU_i(B) \neq 0$.
 - ii. $MU_i(A)$ = Agreed Despatch Schedule between Licensee or Beneficiary and BESSD which shall be finally sent to MSLDC for Charging/Discharging in the ith time block, in MUs
 - iii. $MU_i(B)$ = Despatch Schedule provided by Distribution Licensee or Beneficiary to BESSD for Charging/Discharging in the ith time block, in MUs.
- c) Normative Depth of Discharge for BESS shall be 90%
- d) Battery pack performance degradation shall be considered as 1% per year.
- e) Average Ramp Rate for BESS shall be 75% of rated capacity/minute

b) For a PSH

- a. The Monthly Cycle Efficiency of PSH shall be minimum 75% with respect to metering point is already there in MERC MYT Tariff Regulation 2019, which is retained in the draft MERC MYT Tariff Regulation 2024. The formula for the same is introduced as under:

$$\text{Monthly/Annual Cycle Efficiency of PSH} = \frac{\text{Annual Energy Generated}}{\text{Annual Energy consumed for Pumping}} \times 100$$

- b. The Normative annual availability of the PSH project shall be 90% is already there in MERC MYT Tariff Regulation 2019, which is retained in the draft MERC MYT Tariff Regulation 2024. Planned maintenance shutdown, if any has to be informed in 1 month advance. The formula for the same is introduced as under:

PSH Annual Availability = Mean of the system availabilities of all time blocks during the year in which Beneficiary has scheduled power for Pumping/ Generation by PSH.

$$\text{Availability in a time block} = \frac{\text{Actual Injection or Drawal MUI (A) by PSH}}{\text{Scheduled Injection or Drawal MUI (B) by PSH}} \times 100$$

Where,

- i. i refers to the ith time-block (15 minutes) in the year where $MU_i(B) \neq 0$.
- ii. $MU_i(A)$ = Agreed Despatch Schedule between Licensee and PSH which shall be finally sent to MSLDC for Generation/Pumping in the ith time block, in MUs
- iii. $MU_i(B)$ = Despatch Schedule provided by Distribution Licensee to PSH for Generation/Pumping in the ith time block, in MUs.

Interest on Loan (IoL)

11.13.4 The recommended approach for the interest on loan is in line with the practice being followed in determination of tariff of a generating station.

Return on Equity (RoE)

11.13.5 The recommended approach for the RoE is in line with the practice being followed in determination of tariff of a generating station.

11.13.6 As regards Rate of Return on Equity, it has been noted that CERC in its draft MYT Tariff Regulation 2024, has proposed Rate of Return on Equity of 17% for storage-based hydro generating stations, including PSPs. The Commission for ensuring an enabling ecosystem for ESS proposes the base rate of Return on Equity as 18% and additional incentive/penalty of maximum 1% on Return on Equity has been considered based on Ramp rate performance as under:

“For BESS...

137.7...

- a. *Base Return on equity shall be computed in rupee terms on the equity base arrived under Regulation 137.4 at the rate of Eighteen Percentage (18%).*
- b. *In addition 0.2% of rate of Return on Equity shall be allowed as performance linked ROE for every 5% of additional Ramp Rate above Average Ramp rate of*

75% of rated capacity/minute subject to maximum performance linked ROE upto 1%.

- c. In case of reduction in Ramp Rate below the Average Ramp rate of 75% of rated capacity/minute for reduction in Return on Equity of 0.2% for every 5% of reduction in Ramp Rate subject to maximum reduction in Return of Equity upto 1%.*
- d. The base rate of return on equity as per Clause (a) shall be grossed up with the MAT rate computed in the manner specified under Regulation 33.2.*

...

For PSH...

138.7...

- a. Base Return on equity shall be computed in rupee terms on the equity base arrived under Regulation 138.4 at the rate of Eighteen Percentage (18%).*
 - i. In addition, 0.2% of rate of Return on Equity shall be allowed as performance linked ROE for every 5% of additional Ramp Rate above Average Ramp rate of 75% of rated capacity/minute subject to maximum limit of performance linked ROE upto 1%.*
 - ii. In case of reduction in Ramp Rate below the Average Ramp rate of 75% of rated capacity/minute for reduction in Return on Equity of 0.2% for every 5% of reduction in Ramp Rate subject to maximum reduction in Return of Equity upto 1%.*
- b. The base rate of return on equity as per Clause (a) shall be grossed up with the MAT rate computed in the manner specified under Regulation 33.2.”*

Depreciation

11.13.7 The proposed Regulations provides the framework of depreciation for ESS. The methodology proposed is to work out the depreciation based on the practice being followed in determination of tariff of a generating station. The depreciation is proposed to be calculated by applying straight line method similar to that in case of a generating station. The remaining depreciable value as on 31st March of the year closing after a period of 15 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

11.13.8 Useful life of Battery Pack has been considered as 12 Years whereas balance of system's useful life shall be 25 years. Useful life of PSH shall be 40 years from the date of COD.

11.13.9 The land involved in ESS is of varying nature viz. freehold, freehold with a condition to return and leasehold. The freehold land which is required to be returned after decommissioning of plant and leasehold land will be considered for depreciation. Salvage value of the asset is considered as 10% as per Companies Act, 2013 with exceptions in case of IT related software and in case of agreement, if any, with the State Government. Depreciation rate in respect of BESS and PSH shall be arrived at annually by applying depreciation rates or on the basis of expected useful life as specified in Annexure I of the draft MERC MYT Tariff Regulations 2024. The relevant clause of draft MYT Tariff Regulations 2024 is as under:

“137.6 Depreciation

- a. Depreciation in respect of BESS shall be computed from the date of commercial operation by applying Straight Line Method.*

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 15 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

Provided that, Useful life of Battery Pack shall be 12 Years whereas balance of system's useful life shall be 25 years.

- b. The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission:*

Provided that,

- i. freehold land or assets purchased from grant shall not be considered as depreciable assets and their cost shall be excluded from the capital cost while computing depreciable value of the assets;*
- ii. where the allotment of freehold land is conditional and is required to be returned, the cost of such land shall be part of value base for the purpose of depreciation, subject to prudence check by the Commission; and*
- iii. lease hold land shall be amortized over the lease period or remaining life of the BESS, whichever is lower.*
- c. In case of existing assets, the balance depreciable value as on April 1, 2025, shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to March 31, 2025, from the gross depreciable value of the assets:*
- d. The salvage value of an asset shall be considered as 10% of the capital cost of the asset:*
- i. zero for IT equipment and software;*

- ii. *zero or as agreed by the BESS Developer with the State Government for land; and*

Provided also that any depreciation disallowed on account of lower availability of the BESS or transmission system, as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.

- e. *Depreciation in respect of BESS shall be arrived at annually by applying depreciation rates or on the basis of expected useful life as specified in Annexure II*

...

138.6 Depreciation

- a. *Depreciation shall be computed from the date of commercial operation by applying Straight Line Method.*

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 15 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

Provided that, Useful life of PSH shall be 40 years from the date of COD.

- b. *The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission:*

Provided that,

- i. *freehold land or assets purchased from grant shall not be considered as depreciable assets and their cost shall be excluded from the capital cost while computing depreciable value of the assets;*
- ii. *where the allotment of freehold land is conditional and is required to be returned, the cost of such land shall be part of value base for the purpose of depreciation, subject to prudence check by the Commission; and*
- iii. *lease hold land shall be amortized over the lease period or remaining life of the PSH, whichever is lower.*
- c. *In case of existing assets, the balance depreciable value as on April 1, 2025, shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to March 31, 2025, from the gross depreciable value of the assets:*
- d. *The salvage value of an asset shall be considered as 10% of the capital cost of the asset:*

Provided that the salvage value shall be:

- i. zero for IT equipment and software;*
- ii. zero or as agreed by the PSH Developer with the State Government for land;*
and

Provided also that any depreciation disallowed on account of lower availability of the PSH station or unit or transmission system, as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.

- e. Depreciation in respect of PSH shall be arrived at annually by applying depreciation rates or on the basis of expected useful life as specified in Annexure II:*

Interest on Working Capital (IoWC)

11.13.10 The recommended approach for the interest on working capital is in line with the practice being followed in determination of tariff of a hydro generating station.

Operation and Maintenance expenses (O&M expenses)

11.13.11 The recommended approach for the O&M expenses for ESS is in line with the practice being followed in determination of tariff of a hydro generating station. The O&M expenses is proposed as 1% of the average capital expenditure up to the end of the year for BESS and 2% of the average capital expenditure up to the end of the year for PSH. The rate of escalation and procedure for Truing up has been considered in line with Hydro Generating Stations. The relevant clause of draft MYT Tariff Regulations 2024 is as under:

"137.10 O&M Expenses for BESS

- a. The Normative Operation and Maintenance expenses in respect of BESS shall be allowed One Percentage (1%) of the capital expenditure as on its date of commercial operation.*

Provided that, the Operation and Maintenance expenses for each subsequent year and in the Truing-up of the respective years of the Control Period shall be determined in the same manner as specified in Regulation 47.1 (c)

Provided also that, the Normative O&M expenses shall be Trued up at the end of the Control Period and Treatment to the variation in the normative and actual O&M expenses shall be as per Regulation 10.

...

138.10 Operation and Maintenance (O&M) Expenses for PSH Plant

- a. *The Normative Operation and Maintenance expenses in respect of PSH Plant shall be allowed Two Percentage (2%) of the admitted capital expenditure as on its date of commercial operation.*

*Provided that, the Operation and Maintenance expenses for each subsequent year and in the Truing-up of the respective years of the Control Period shall be determined in the same manner as specified in Regulation **Error! Reference source not found.** (0*

Provided also that, the Normative O&M expenses shall be Trued up at the end of the Control Period and Treatment to the variation in the normative and actual O&M expenses shall be as per Regulation 10. ”

Computation and Payment of Capacity Charge

11.13.12 The Commission has ensured that the ESS developer shall recover its full capacity charges for the control period based on the schedule Availability. The Commission has also considered the flat incentive of 20 Paise per Unit for Cycle Efficiency above Normative Cycle Efficiency of 75% for ESS. The relevant clause of draft MYT Tariff Regulations 2024 is as under:

“137.11.

- a. *The fixed cost of BESS achieving COD after April 1, 2025 shall be computed on annual basis, based on norms specified under these Regulations, and recovered on monthly basis as Capacity Charge.*
- b. *The Capacity Charge shall be payable by the Beneficiaries in proportion to their respective allocation in the saleable capacity of the BESS:*

$$\text{Monthly BESS Availability} = \frac{\sum \text{Actual Injection or Drawal MWh (i)(A)}}{\sum \text{Scheduled Injection or Drawal MWh (i)(B)}} \times 100$$

Where,

- a) *(i) refers to the i^{th} time-block (15 minutes) in the month where $\text{MWh (i) (B)} \neq 0$.*
- b) *MWh (i)(A) = Agreed Despatch Schedule between Licensee or Beneficiary and BESS which shall be finally sent to MSLDC for Charging/Discharging in the i^{th} time block, in MUs*
- c) *MWh (i)(B) = Despatch Schedule provided by Distribution Licensee or Beneficiary to BESS for Charging/Discharging in the i^{th} time block, in MUs.*
- d) *Annual Availability of BESS = Mean of the system availabilities of all time blocks during the year in which Beneficiary has scheduled power for charging/discharging the BESS.*

e) *The Normative annual availability of the BESS shall be 95%.*

.....

Incentive for Cycle Efficiency Above Normative Cycle Efficiency

a. *Incentive for Cycle Efficiency above Normative Cycle Efficiency shall be payable by every Beneficiary for the total energy scheduled to be supplied to the Beneficiary in excess of the 75% of the energy consumed, at a flat rate equal to the 20 paise per kWh on ex bus basis.*

Provided that in case the energy generated in a month is less than the 75% of the energy consumed for the month, then the Incentive payable by the Beneficiaries shall be zero.

b. *In case of BESS, the quantum of electricity required for charging the batteries shall be arranged by the Beneficiary/ies duly taking into account the transmission losses and distribution losses up to the bus bar of the BESS system, and in return, Beneficiaries shall be entitled to energy during peak hours equivalent to 75% of the energy utilized in charging the Batteries and the BESS shall be under obligation to supply such quantum of electricity during peak hours:*

...

138.11.

a. *The fixed cost of PSH achieving COD after April 1, 2025, shall be computed on annual basis, based on norms specified under these Regulations, and recovered on monthly basis as Capacity Charge.*

b. *The Capacity Charge shall be payable by the Beneficiaries in proportion to their respective allocation of in the saleable capacity of the PSH:*

The Capacity Charge payable to PSH for a calendar month shall be:

Monthly Availability factor for PSH shall be determined as per following formula:

$$\text{Monthly PSH Availability} = \frac{\sum \text{Actual Injection or Drawal MWh (i)(A)}}{\sum \text{Scheduled Injection or Drawal MWh (i)(B)}} \times 100$$

Where,

f) *(i) refers to the ith time-block (15 minutes) in the month where MWh (i) (B) ≠ 0.*

g) *MWh (i)(A)= Agreed Despatch Schedule between Licensee or Beneficiary and PSH which shall be finally sent to MSLDC for Pumping/Generating in the ith time block, in MUs*

- h) $MWh(i)(B) = \text{Despatch Schedule provided by Distribution Licensee or Beneficiary to PSH for Pumping/Generating in the } i^{\text{th}} \text{ time block, in MUs.}$
- i) *Annual Availability of PSH = Mean of the system availabilities of all time blocks during the year in which Beneficiary has scheduled power for Pumping/Generating the PSH.*
- j) *The Normative annual availability of the PSH shall be 90%.*

.....

137.12 Incentive for Cycle Efficiency Above Normative Cycle Efficiency:

(a) Incentive for Cycle Efficiency above Normative Cycle Efficiency shall be payable by every Beneficiary for the total energy scheduled to be supplied to the Beneficiary in excess of the 75% of the energy consumed, at a flat rate equal to the 20 paise per kWh on ex bus basis.

Provided that in case the energy generated in a month is less than the 75% of the energy consumed for the month, then the Incentive payable by the Beneficiaries shall be zero.

(b) In case of PSH Plant, 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 as requested by the Beneficiaries and the PSH Plant shall be under obligation to supply such quantum of electricity.

12 Grant of Subsidies by State Government

12.1 Manner of grant of subsidy by State Government

12.1.1 The Section 65 of the Electricity Act, 2003 in India pertains to the "Duty to furnish information, return, etc." As per Section 65, the licensees, generating companies, and any other person connected with the business of generation, transmission, distribution, or trading of electricity are required to provide information, returns, and statistics to the appropriate State or Central Electricity Regulatory Commission, as needed provision helps in maintaining transparency, monitoring the electricity sector, and making informed regulatory decisions. The MOP recently notified Electricity (Second Amendment) Rules, 2023, which has also included provisions pertaining to 'Subsidy accounting and payment', casting certain responsibilities on the State Commission. The FOR (2023) in its model regulations for Multi Year Distribution Tariff 2023, aligned its subsidy clauses with MoP rules. Accordingly, the existing Subsidy Mechanism Regulations needs to be amended to address the issue of data transparency for availing the subsidies. Therefore, the Commission proposes the following proviso under 'Subsidy Mechanism' Regulations.

"142. Manner of grant of subsidy by State Government

142.1 If the State Government requires the grant of any subsidy to any consumer or class of consumers in the Tariff determined by the Commission, the State Government shall pay in advance the amount to compensate the Distribution Licensee/person affected by the grant of subsidy in the manner specified in this Regulation, with prior intimation to the Commission.

142.2 The amount of subsidy agreed to by the State Government shall be provided in the form of grant by the State Government.

142.3 The subsidy shall be passed on to eligible consumers through credit in their electricity bills only in proportion to the extent to which the total requirement of the Distribution Licensee is paid by the State Government:

Provided that in case of shortfall in actual release of subsidy, either because of errors in estimation or for any other reason, such shortfall, shall be shown clearly in the consumers' bills and shall be distributed proportionately between the concerned eligible consumers until such time as it is reduced or eliminated.

142.4 The Distribution Licensee shall clearly indicate the following details in the consumers' bills:

- a) the Tariff determined by the Commission;*
- b) the amount of State Government subsidy and the rate and period thereof;*

c) *the net amount payable.*

142.5 The Distribution Licensee shall submit to the Commission on quarterly report consisting of details w.r.t demands of subsidy raised by Distribution Licensee to the State Government during the relevant quarter based on the accounts of the energy consumed by the subsidised category and consumer category wise per unit subsidy declared by the State Government, the actual payment of subsidy in accordance with section 65 of the Act and the gap in subsidy due and paid as well as other relevant details, as may be specified by the Commission and / or Ministry of Power vide its Rules framed under the provisions of the Electricity Act 2003. The report on subsidy status shall be hosted on the distribution licensee's website.”