GUJARAT ELECTRICITY REGULATORY COMMISSION

EXPLANATORY MEMORANDUM

ON

DRAFT GUJARAT ELECTRICITY REGULATORY COMMISSION (MULTI YEAR TARIFF) REGULATIONS, 2021

10 August 2020

LIST OF TABLES

LIST OF ABBREVIATIONS

ARR	Aggregate Revenue Requirement
AEC	Auxiliary Energy Consumption
APTEL	Appellate Tribunal for Electricity
BFP	Boiler Feed Pump
CEA	Central Electricity Authority
CFBC	Circulating Fluidised Bed Combustion
CERC	Central Electricity Regulatory Commission
COD	Date of Commercial Operation
CPI	Consumer Price Index (for Industrial Workers)
DPR	Detailed Project Report
DSM	Deviation Settlement Mechanism
ECR	Energy Charge Rate
FBHE	Fluidised Bed Heat Exchanger
FPPPA	Fuel Price & Power Purchase Adjustment
GCV	Gross Calorific Value
GERC	Gujarat Electricity Regulatory Commission
GETCO	Gujarat Energy Transmission Corporation Limited
GSECL	Gujarat State Electricity Corporation Limited
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
IC	Installed Capacity
kcal	kilo calorie
kWh	kilo Watt hour
MCLR	Marginal Cost Lending Rate
MCR	Maximum Continuous Rating
MoP	Ministry of Power
MTOA	Medium Term Open Access
MVA	Mega Volt Ampere
MW	Mega Watt
MYT	Multi-Year Tariff
NAPAF	Normal Annual Plant Availability Factor
NAPLF	Normative Annual Plant Load Factor
NMEJ	Non Metallic Expansion Joint
O&M	Operation & Maintenance
RHT	Re-Heat Temperature
R&M	Repair & Maintenance
RLDC	Regional Load Despatch Centre
RoE	Return on Equity

RPO	Renewable Purchase Obligation
SBI	State Bank of India
SHT	Super-Heat Temperature
SFC	Secondary Fuel Consumption
SLDC	State Load Despatch Centre
TPL-G	Torrent Power Limited – Generation
TPS	Thermal Power Station
WPI	Wholesale Price Index
WRPC	Western Regional Power Committee

1 Introduction

1.1 Background

1.1.1 The Gujarat Electricity Regulatory Commission (hereinafter referred to as 'GERC' or 'the Commission') has been vested with the functions of regulating the tariff of the generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State under Section 86 (1) (a) of the Electricity Act, 2003 ("EA 2003" or "the Act")

1.1.2 The 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 (here after referred to as 'CERC' or 'the Central Commission') for determination of the tariff applicable to Generating Companies and Transmission Licensees, while specifying the Terms and Conditions for determination of tariff. The guidelines specified in the EA 2003 are reproduced below:

> *"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"*

1.1.3 Also, the Ministry of Power (MoP) has notified the National Electricity Policy and the Tariff Policy which provides guidelines for determination of tariff and Annual Revenue

Requirement (ARR). The National Electricity Policy provides certain guidelines as regards performance norms and also stipulates 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".*

1.1.4 The relevant extractions of the guidelines specified under the National Tariff Policy, 2016, are reproduced below:

> *"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…"*

1.1.5 CERC has notified the CERC Tariff Regulations, 2019 for the Tariff Period from April 1, 2019 to March 31, 2024. The Commission in accordance with EA 2003 has been guided by the principles and methodologies specified by the CERC for determination of the tariff applicable to Generating Companies and Transmission Licensees. The Commission has adopted certain principles and methodologies specified in the CERC Tariff Regulations, 2019 with appropriate modifications.

1.1.6 Further, as per the Section 62 of the Act, the Commission has to determine the tariff for the Generating Companies, Distribution Licensees, Transmission licensees, wheeling and retail sale of electricity and the Utilities needs to comply with the procedure laid down by the Commission for determination of the Tariff for computing the revenue. The relevant extract of Section 62 of the Electricity Act is shown below:

> *"Section 62. (Determination of tariff): --- (1) The Appropriate Commission shall determine the tariff in accordance with the provisions of this Act for –*
>
> *(a) supply of electricity by a generating company to a distribution licensee:*
>
> *Provided that the Appropriate Commission may, in case of shortage of supply of electricity, fix the minimum and maximum ceiling of tariff for sale or purchase of electricity in pursuance of an agreement, entered into between a generating*

company and a licensee or between licensees, for a period not exceeding one year to ensure reasonable prices of electricity;

(b) transmission of electricity;

(c) wheeling of electricity;

(d) retail sale of electricity:

Provided that in case of distribution of electricity in the same area by two or more distribution licensees, the Appropriate Commission may, for promoting competition among distribution licensees, fix only maximum ceiling of tariff for 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.

(3) The Appropriate Commission shall not, while determining the tariff under this Act, show undue preference to any consumer of electricity but may differentiate according to the consumer's load factor, power factor, voltage, total consumption of electricity during any specified period or the time at which the supply is required or the geographical position of any area, the nature of supply and the purpose for which the supply is required.

(4) No tariff or part of any tariff may ordinarily be amended, more frequently than once in any financial year, except in respect of any changes expressly permitted under the terms of any fuel surcharge formula as may be specified.

(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.

(6) If any licensee or a generating company recovers a price or charge exceeding the tariff determined under this section, the excess amount shall be recoverable by the person who has paid such price or charge along with interest equivalent to the bank rate without prejudice to any other liability incurred by the licensee."

1.1.7 The existing GERC Multi-Year Tariff (MYT) Regulations, i.e., the GERC MYT Regulations, 2016 were notified on March 28, 2016 for a five-year Control Period commencing from April 1, 2016 to March 31, 2021. Subsequently, the Commission amended these Regulations vide the GERC MYT (First Amendment) Regulations, 2016 dated December 2, 2016 and the GERC MYT (Second Amendment) Regulations, 2018 dated August 18, 2018. As the current MYT Control Period is coming to end on March 31, 2021, the Commission proposes to specify the terms and conditions of tariff for the next Control Period, i.e., the GERC MYT Regulations 2021. The next Control Period is for five years, i.e., from FY 2021-22 to FY 2025-26.

1.1.8 For preparation of the draft GERC MYT Regulations 2021, the Commission has taken into cognizance of the Electricity Act, National Electricity Policy, National Tariff policy

and recommendations of Forum of Regulators (FOR). The Commission has also analyzed the challenges faced in approval of tariff by themselves and also other ERCs (Electricity Regulatory Commissions) and data gaps that were sought frequently during the tariff proceedings. These were considered while preparing the draft GERC MYT Regulations, 2021. Accordingly, the Commission has proposed modifications to certain clauses vis-à-vis the clauses specified in the GERC MYT Regulations, 2016 (as amended from time to time) in order to simplify/clarify/amend certain provisions as considered reasonable. The rationale for the changes proposed in the draft GERC MYT Regulations, 2021 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/provisions where any addition/modification is proposed in the draft GERC MYT Regulations, 2021 have been discussed in this Explanatory Memorandum. This Explanatory memorandum is prepared in the sequential order considering the chronology of the provisions/clauses proposed in the draft GERC MYT Regulations, 2021.

2 Preliminary

This Chapter elaborates the proposed amendments in the Preliminary chapter of the GERC MYT Regulations, 2016 and explain reasons for the amendments.

2.1 Short title, extent, applicability and commencement

The Commission has proposed to continue with the Multi-year Tariff (MYT) framework with Control Period having duration of 5 years. The draft GERC MYT Regulations, 2021 shall be applicable from April 1, 2021 to March 31, 2026.

2.2 Definitions

The Commission has modified few definitions and also added some new definitions for bringing clarity on various provisions/regulations/clauses proposed in the draft GERC MYT Regulations, 2021. These modifications/additions are elaborated as follows:

2.2.1 Accounting Statement

The Companies Act, 2013 came into force with effect from September 21, 2013. Accordingly, the schedule related to Financial Statement of the companies has been modified. Also, the Ministry of Corporate Affairs (MCA) has notified IND AS which mandates the companies to shift from Generally Accepted Accounting Principles (GAAP) to IND AS for preparation of financial statement. The Ministry of Corporate Affairs (MCA) issued a note dated January 2, 2015 outlining phases in which Indian Accounting Standards (IND AS) converged with International Financial Reporting Standards (IFRS) has to be implemented in India, for Companies other than banking, insurance and NBFCs. The adoption and applicability of IND AS in a phased manner beginning from the Accounting period 2016-17 is as follows:

- Mandatory Applicability (1 April 16)
  - Every Company with Net worth of not less than 500 Crores (5 billion)

- Mandatory Applicability from Accounting Period beginning on or after 1 April 2017
  - Every Listed Company.
  - Unlisted Companies with Net worth greater than or equal to Rs. 250 Crore (2.5 billion) but less than Rs. 500 Crore (5 billion)

Earlier, the applicants used to prepare the annual accounting statements as per the GAAP formats which is now shifted to IND AS, as explained above. This shift from GAAP to IND AS has a key fundamental change, i.e., there is significant increase in focus on fair value accounting, where IND AS requires application of fair value principles, which would result in significant differences from financial information being presented under GAAP. Also, under IND AS, the fair value of assets is revalued at fair value periodically, so that the carrying amount of an asset does not differ materially from its fair value on the date of preparation of the balance sheet. Also, Current liabilities and Debt under GAAP has been bifurcated into Short-term and Long-term liabilities under IND AS.

Considering the difference in principles of preparation and reporting of financial statement with the preparation of ARR which follows historical accounting approach, there is a need for reconciliation of ARR formats with the Financial statement prepared under IND AS. Accordingly, the existing Accounting Statement definition needs to be amended to address the issue of implementation of IND AS as well as transition from GAAP to IND AS. In view of the above, the Commission proposes to amend the Accounting Statement definition as shown below:

*(1) "**Accounting Statement** means for each financial year, the following statements, namely:*

(i) balance sheet, prepared in accordance with the form contained in Part I of Schedule III to the Companies Act, 2013 or Part I of Schedule VI to the Companies Act, 1956 as amended from time to time, whichever is applicable;

(ii) profit and loss account, complying with the requirements contained in Part II of Schedule III to the Companies Act, 2013 or Part II of Schedule VI to the Companies Act, 1956, as amended from time to time, whichever is applicable;

(iii) cash flow statement, prepared in accordance with the Accounting Standard on Cash Flow Statement (AS-3) of the Institute of Chartered Accountants of India and as per Section 2(40) of the Companies Act 2013;

(iv) report of the statutory auditors;

(v) reconciliation statement, duly certified by the statutory auditors, showing the accounting statement under Indian Accounting standard (IND AS) and Generally Accounting Accepted Principles (GAAP) for reconciliation between the total expenses, revenue, assets and liabilities, of the entity as per financial statement and Regulatory format;

(vi) cost records prescribed by the Central Government under Section 148 of Companies Act, 2013 or Section 209(1)(d) of the Companies Act, 1956 along with Cost Audit Reports ;

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

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

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

Provided also that once the Commission notifies the Regulations for submission of Regulatory Accounts, the applications for tariff determination and truing up shall be based on the Regulatory Accounts."

2.2.2 Additional Capital Expenditure and additional capitalisation

The Commission has added definitions of additional capital expenditure and additional capitalisation in the draft Regulations for providing greater clarity, as shown below:

*"(3) **"Additional Capital Expenditure"** means the capital expenditure incurred or projected to be incurred, after the date of commercial operation of the project by the Generating Company or Transmission Licensee or SLDC or Distribution licensee, as the case may be, in accordance with the provisions of these Regulations.*

*(4) **"Additional Capitalisation"** means the additional capital expenditure admitted by the Commission after prudence check, in accordance with these regulations ."*

2.2.3 Allocation statement

The actual expenses incurred by the applicant under the regulated business based on audited accounts are allowed by the Commission for recovery through tariff after prudent check. However, where the separate accounts of the applicant are not available, the Commission allows the expenses based on the allocation statement of the applicant. In the draft GERC MYT Regulations, 2021 it has been proposed that the applicant needs to maintain separate accounting statement for the regulated business and for other businesses. Therefore, the following proviso is proposed to be included under the definition of allocation statement:

*"**Provided that 'Allocation' Statement** shall not be construed as a substitute for maintaining separate accounting statement for the regulated business and other businesses of the regulated Utilities ."*

2.2.4 Auditor

The Commission has added the definition of the 'Auditor' in accordance with the proviso related to Companies Act 2013 and also in line with the CERC Tariff Regulations 2019, as shown below:

*"(10) **"Auditor"** means an auditor appointed by an applicant, in accordance with the provisions of sections 224, 233B and 619 of the Companies Act, 1956 (1 of 1956), as amended from time to time or as per Section 139 of Chapter X of the Companies Act, 2013 (18 of 2013) or any other law for the time being in force;"*

2.2.5 Auxiliary Energy Consumption

The Ministry of Environment, Forest and Climate Change has notified Environmental (Protection) Amendment Rules, 2015 dated December 7, 2015 which mandates installation of FGD and other equipment for the thermal power plants which may also have an impact on Auxiliary Energy Consumption of the power plants. Therefore, the following provision is included in the definition of Auxiliary Energy Consumption in accordance with the CERC Tariff Regulations, 2019, as shown below:

"Provided further that auxiliary energy consumption for compliance of revised emission standards, sewage treatment plant and external coal handling plant (jetty and associated infrastructure) shall be considered separately."

2.2.6 Base Rate

In the draft GERC MYT Regulations, 2021, it has been proposed to link the base rate with one-year SBI MCLR. Therefore, the Commission has added the definition of base rate as shown below:

*"(15) **Base Rate** shall mean the one-year Marginal Cost of Funds-based Lending Rate ('MCLR') as declared by the State Bank of India from time to time ;"*

2.2.7 Beneficiary

In GERC MYT Regulations, 2016, 'Beneficiary' for Generating Station has been defined. However, under electricity sector, for every function related to Generation, Transmission and Distribution, there is a user, who is an actual beneficiary. Therefore, for greater clarity and to minimise ambiguity, the definition of beneficiary is amended to include other beneficiaries also, as shown below:

*"(16) **Beneficiary** shall mean:*

a) in relation to a Generating Station, the purchaser of electricity generated at such Station whose Tariff is determined under these Regulations ;
b) in relation to a Transmission Licensee, the Transmission System Users ;
c) in relation to the Distribution Wires Business, the Generating Companies connected to the distribution system and consumers ;
d) in relation to the Retail Supply Business, the consumers ;
e) in relation to the SLDC, the Distribution Licensees and Open Access consumers who utilise the Intra-State Transmission system for transmission of electricity and / or utilise the distribution system of a Licensee in the State for wheeling of electricity and / or avail the services of the SLDC relating to scheduling and real-time grid operations, State energy accounting, operation of pool account, etc."

2.2.8 Change in law

Regulation 2(15) of the GERC MYT Regulations, 2016 provides the definition for the Change in Law. However, the existing definition does not include any provision for the change in taxes and duties. Under Section 107 of EA 2003 and in pursuant to National Tariff Policy 2016, the Ministry of Power vide letter dated August 27, 2018, has issued directions to the CERC for allowing any change in domestic duties, levies, cess and taxes imposed by the Government leading to changes in cost, to be allowed as pass through under Change in Law. Further, there are several Orders of CERC and Judgements of APTEL ruling that change in tax rates are considered under Change in Law. With respect to O&M expenses, the Commission in these draft Regulations has proposed that the same will be allowed based on the inflation factor i.e. Wholesale Price Index (WPI) and Consumer Price Index of Industrial Workers (CPI_{IW}), whereby the Commission is of the view that components of WPI takes care of any price variation due to change in any tax as well. Since, the escalation allowed on the O&M Expenses is based on inflation factor and accordingly, any additional claim of change in taxes and duties would amount to double allowance. Hence, the Commission has proposed to exclude the change in taxes

and duties from the 'Change in law'. Accordingly, the Commission has added the following proviso in the draft Regulations, as under:

" (vi) any change in taxes or duties, or introduction of any taxes or duties levied by the Central or any State Government excluding the change in taxes and duties related to O&M expenses;

Provided that financial implication of change in law in relation to a Power Purchase Agreement (PPA) or Transmission Service Agreement (TSA) shall be in line with the provisions of PPA or TSA."

2.2.9 Charges

The GERC MYT Regulations, 2016 does not define charges. Therefore, for greater clarity, the charges have been defined in the draft Regulations as provided below:

*"(20) **"Charges"** means payments to be collected by the Generating Company or Licensee or SLDC for the services rendered by it;"*

2.2.10 Competitive bidding

The Commission has proposed to include the definition of "Competitive Bidding", in line with the definition specified in the CERC Tariff Regulations, 2019, as reproduced below:

*"(22) **"Competitive Bidding"** means a transparent process for procurement of power, equipment, services and works in which bids are invited by the procurer by open advertisement covering the scope and specifications of the power requirement, equipment, services and works required, and the terms and conditions of the proposed contract as well as the criteria by which bids shall be evaluated, and shall include domestic competitive bidding and international competitive bidding;"*

2.2.11 Control Period

The Control Period refers to fixed period typically ranging from 3 to 5 years during which the principles for determination of Aggregate Revenue Requirement (ARR) and tariff specified in these Regulations shall remain valid. In the GERC MYT Regulations, 2016, the Control Period was defined as five-years.

The EA 2003 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. The CERC has also notified the CERC Tariff Regulations, 2019 on March 7, 2019 for the Control Period of five-years from April 1, 2019 to March 31, 2024. Accordingly, the Commission has proposed to continue with a five-year MYT framework for the next Control Period as well, i.e., the Fourth Control Period. A five-year Control Period would give clarity on the ARR and tariff determination process for a longer tenure, thereby providing a corresponding amount of regulatory certainty to the process. As the next Control Period will be starting from April 1, 2021 to March 31, 2026, the Commission has accordingly amended the existing definition of Control Period as reproduced below:

*"(23) **"Control Period"** means the period of five years from April 1, 2021 to March 31, 2026, for submission of forecast in accordance with Chapter 2 of these Regulations ;"*

2.2.12 Contracted Capacity

The definition of the contracted capacity is proposed to be included in these Regulations for more clarity, which is reproduced as below:

*"(24) "**Contracted Capacity"** means the capacity in MW contracted by a long-term Transmission System User as part of its long-term power procurement plan through a power purchase agreement or arrangement, and shall be equivalent to the deemed Transmission Capacity Right of a Transmission System User;"*

2.2.13 Cut-Off Date

CERC in its Tariff Regulations, 2019 has amended the definition of Cut-off date in order to provide an uniform period to all the projects, i.e., to allow a period of thirty six calendar months (three years) to all projects from the last day of the month in which the project is commissioned. The Commission also feels that such provision is required to be incorporated so as to provide uniformity to all the projects. Hence, the definition of the Cut-off date is proposed to be in line with the CERC Tariff Regulations, 2019, which is reproduced as below:

*" (25) **"Cut-off Date"** means the last day of the calendar month after thirty six months from the date of commercial operation of the project ;"*

2.2.14 De-Commissioning

The Commission has added the definition of "De-Commissioning" in the draft GERC MYT Regulations, 2021 in accordance with the definition specified in the CERC Tariff Regulations, 2019, as under:

*"(30) **"De-Commissioning"** means removal from service of a generating station or a unit thereof or transmission system including communication system or element thereof or of a Distribution system or of any of the infrastructure of SLDC, after it is certified by the Central Electricity Authority or any other competent authority, either on its own or on an application made by the applicant or the beneficiaries or both, that the project cannot be operated due to non-performance of the assets on account of technological obsolescence or uneconomic operation or a combination of these factors."*

2.2.15 Deemed Distribution Licensee, Distribution Licensee and Distribution System User

The definitions of the Deemed Distribution Licensee, Distribution Licensee and Distribution system user has been included in the GERC MYT Regulations, 2021, as reproduced below:

*"(31) "**Deemed Distribution Licensee"** means a person deemed to be a Distribution Licensee under Section 14 of the Act;*

*(34) **"Distribution Licensee"** means a Licensee authorised to operate and maintain a distribution system for supplying electricity to consumers in its area of supply;*

*(35) **"Distribution System User"** means a retail consumers of the Distribution licensee to whom the electricity is supplied by the Distribution licensee through their own distribution infrastructure along with the person who has been allowed open access to the distribution system of a distribution licensee and the consumer or a class of consumers allowed to receive supply from a person other than a distribution licensee."*

2.2.16 Detailed Project Report Scheme

In the draft GERC MYT Regulations, 2021, the Commission has proposed that the capital expenditure will be allowed in accordance with the "Guidelines for In-principle Approval of Capital Expenditure". As per the said guidelines, an applicant is required to submit detailed project report for various schemes. Accordingly, for greater clarity and to minimise ambiguity the definition of the Detailed Project Report Scheme is added in the draft Regulations, as reproduced below:

*"(37) **"Detailed Project Report Scheme"** (or "DPR Scheme") means a capital expenditure Scheme with projected capital cost exceeding the limits specified in the guidelines for in-principle clearance of proposed Investment schemes or any such amount stipulated by the Commission, for which the Generating Company or Transmission Licensee or SLDC or Distribution licensee, as the case may be, is required to obtain prior in-principle approval by submitting a Detailed Project Report (DPR) in accordance with the guidelines;"*

2.2.17 Element, Expansion project and Extended Life

The definitions of 'Element', 'Expansion project' and 'Extended life' were not provided in the GERC MYT Regulations, 2016. The Commission has defined these terms in the draft Regulations in accordance with the CERC Tariff Regulations, 2019, as under:

*"(38) **"Element"** means an asset which has been distinctively defined under the scope of the transmission project in the investment Approval such as transmission lines including line bays and line reactors, substations, bays, compensation device, Interconnecting Transformers, etc.;*

....

*(42) **"Expansion project"** shall include any addition of new capacity to the existing Generating station or augmentation of the Transmission system, as the case may be;*

*(43) **"Extended Life"** means the life of a Generating Station or Unit thereof or of a Transmission system or element thereof or Distribution system or element thereof, beyond the period of Useful Life, as may be approved by the Commission on a case to case basis;"*

2.2.18 Force Majeure Event

As per the Ministry of Finance ("MOF") office memorandum dated February 19, 2020, it is clarified that the disruption of supply chains due to the spread of COVID-19 would

be considered as a Force Majeure event covered by related clause (as a case of natural calamity). And, with respect to procurement contracts of the Government (for goods and services), Force Majeure may be invoked as per the procedure prescribed in the Manual for Procurement of Goods, 2017. In view of the Covid-19 outbreak, the Commission has proposed for consideration of such pandemic events under force majeure and has included the same in the definition.

(45) "Force Majeure Event"*...*

(i) Act of God including lightning, drought, fire and explosion, earthquake, volcanic eruption, landslide, flood, cyclone, typhoon, tornado, geological surprises, ***pandemic*** *or exceptionally adverse weather conditions which are in excess of the statistical measures for the last hundred years; or....."*

Also, the delay in obtaining statutory approval for the project non-attributable to the developer is proposed to be included under force majeure event. Therefore, the following proviso is proposed to be included in the draft Regulations, as under:

"(iv) Delay in obtaining statutory approval for the project except where the delay is attributable to project developer ;"

2.2.19 Fuel Supply Agreement

The Commission in the draft GERC MYT Regulations, 2021, has proposed that the Generating companies shall require to submit the Fuel Utilization Plan. The Fuel Utilization Plan is usually linked to availability of fuel as specified in the Fuel Supply Agreement. Accordingly, the definition of Fuel Supply Agreement is proposed to be included in the draft Regulations for greater clarity, as under:

*"(46) "****Fuel Supply Agreement"*** *means the agreement executed between the Generating Company and the fuel supplier for supply of fuel to the Generating Station for generation and supply of electricity to the beneficiaries;"*

2.2.20 Generating Company

The definition of Generating company was not provided in the GERC MYT Regulations, 2016. The Commission in the draft GERC MYT Regulations, 2021 has added the same for greater clarity, as reproduced below:

"(48) ***"Generating Company"*** *means any company or body corporate or association or body of individuals, whether incorporated or not, or artificial juridical person, which owns or operates or maintains a Generating Station;"*

2.2.21 GCV As Received Basis (ARB)

In the draft GERC MYT Regulations, 2021 the Commission has proposed to compute the Energy Charge Rate (ECR) based on the 'GCV as Received basis' which has been explained in the relevant paragraphs of this explanatory memorandum. Accordingly, the Commission has added definition of 'GCV as received basis (ARB)', as provided below:

*"(53) **"GCV As Received Basis (ARB)"** means the GCV of coal as measured at the unloading point of the thermal generating station through collection, preparation and testing of samples from the loaded wagons, trucks, ropeways, Merry-Go-Round (MGR), belt conveyors and ships in accordance with the IS 436 (Part-1/ Section 1)-1964 and clause 6.2 of IS 1350 (Part-II)-1970:*

Provided that the measurement of coal shall be carried out through sampling by third party to be appointed by the generating companies from the list maintained by Ministry of Coal, Government of India/ Coal India Limited:

Provided further that samples of coal shall be collected either manually or through hydraulic augur or through any other method considered suitable keeping in view the safety of personnel and equipment:

Provided also that the generating companies may adopt any advance technology for collection, preparation and testing of samples for measurement of GCV in a fair and transparent manner;"

2.2.22 **Index $_{ESC}$**

The Commission in the draft GERC MYT Regulations, 2021 has proposed to determine the normative Operation and Maintenance expenses based on the escalation factor linked to the inflation. Accordingly, for greater clarity, the Commission has added the definition of 'Index $_{ESC}$' (escalation factor), as reproduced below:

*"(55) **"Index $_{Esc}$"** means the average Inflation escalation to be considered on the basis weightage specified for the Generating Company, Transmission Licensee, SLDC or distribution licensee with respect to WPI and CPI respectively of the relevant year;"*

2.2.23 **Intra-State Transmission System (or "InSTS")**

In the GERC MYT Regulations, 2016, the 'Intra-State Transmission System' were not defined. The same has been added for greater clarity in the draft Regulations, as reproduced below:

*"(58) **"Intra-State Transmission System" (**or **"InSTS")** means any system for conveyance of electricity by transmission lines within the area of the State of Gujarat, and includes all transmission lines, sub-stations and associated equipment of Transmission Licensees in the State:*

Provided that the definition of point of separation between a transmission system and distribution system and between a Generating station and Transmission system shall be guided by the Regulations notified by the Central Electricity Authority under clause (b) of Section 73 of the Act;

2.2.24 The Commission in the draft GERC MYT Regulation, 2021 has included the definition of the Licensee in line with the provisions of the Electricity Act, 2003 for better clarity purpose:

*(59) **"Licensee"** for the purpose of these Regulations shall mean a Transmission Licensee or Distribution Licensee, as the case may be, duly authorised by the*

Commission under Section 14 or exempted under Section 13 of the Act including deemed licensee;"

2.2.25 **Long Term Power Procurement and Medium Term Power Procurement**

The Commission in the draft GERC MYT Regulations, 2021 has proposed for submission of Power Procurement Plan for the MYT period with details related to Long/Short /Medium term Power Procurement. Accordingly, the 'Long-Term Power Procurement' and 'Medium-Term Power Procurement' are defined in line with the "Guidelines for Determination of Tariff by Bidding Process for Procurement of Power by Distribution Licensees" issued by MoP, as reproduced below:

"(60) ***"Long Term Power Procurement"*** *means Procurement of power under any arrangement or agreement with a term or duration exceeding seven years but not exceeding twenty-five years;*

.....

(62) ***"Medium Term Power Procurement"*** *means Procurement of power under any arrangement or agreement with a term or duration exceeding one year but not exceeding seven years;"*

2.2.26 **Non-Detailed Project Report Scheme**

In the draft GERC MYT Regulations, 2021, it is proposed that the Commission will approve the capital expenditure as per the "Guidelines for in principle approval of capital expenditure". Accordingly, there is necessity of defining the Non-Detailed Project Report Scheme as under:

"(66) ***"Non-DPR Scheme"*** *means a capital expenditure Scheme with projected capital cost within the limits specified in the guidelines for in-principle clearance of proposed Investment schemes or any such amount stipulated by the Commission, for which the Generating Company or Transmission Licensee or SLDC or Distribution licensee, as the case may be, is not required to obtain prior in-principle approval of the Commission;"*

2.2.27 **Non-Pithead Generating Station**

The term 'Non-Pithead Generating Station' was not defined in the GERC MYT Regulations, 2016. The same has been defined in the draft Regulations for greater clarity, as under:

*"(67) "****Non-Pithead generating station"*** *means a Generating station, which is not covered under Pithead Generating station ;"*

2.2.28 **Plant Availability Factor (PAF)**

The term 'Plant Availability Factor (PAF)' was not defined in the GERC MYT Regulations, 2016. For greater clarity, the same has added the definition of PAF, as reproduced below:

*"(72) **"Plant Availability Factor"** or **"(PAF)"** in relation to a Generating station for any period means the average of the daily declared capacities (DCs) for all the days during the period expressed as a percentage of the installed capacity in MW less the normative auxiliary energy consumption;"*

2.2.29 **Plant Load Factor (PLF)**

The Commission observed that CERC has issued Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, 2020 dated 1 April, 2020; wherein it has specified relevant clauses for Auxiliary Energy Consumption (AEC) on account of emission control system of thermal Generating Stations. The Commission has also proposed to adopt the same in the GERC MYT Regulations, 2021. Accordingly, the PLF formula has been proposed to be amended as shown below along with explanation of AUXen:

$$\text{"PLF} = 10000 \times \sum_{i=1}^{N} SGi / \{ N \times IC \times (100 - AUXn - AUXen\ ) \}\ \%$$

……

AUXen = Normative Auxiliary Energy Consumption for emission control system as a percentage of gross energy generation, wherever applicable ."

2.2.30 **Pithead Generating Station**

The Commission has added the definition for 'Pithead Generating Station' in the draft GERC MYT Regulations, 2021, as reproduced below:

*"(74) **"Pithead Generating Station"** means a Generating station having captive transportation system for its exclusive use for transportation of coal from the loading point at the mining end up to the unloading point at the Generating station without using the normal public transportation system;"*

2.2.31 **Project**

The MoEF has notified Environment (Protection) Amendment Rules, 2015 wherein, the norms for thermal Generating Stations has been revised. In accordance with the revised norms, the Commission has proposed to amend the definition of 'Project' in accordance with the CERC Tariff Regulations, 2019 as reproduced below:

*"(75) **"Project"** means:*

(i) in case of thermal Generating station, all components of the thermal Generating station and includes pollution control system, effluent treatment plan, as may be required but does not includes mining if it is a pit head project and dedicated captive coal mine;

(ii) in case of hydro Generating station, all components of the hydro Generating station and includes dam, intake water conductor system, power Generating station, as apportioned to power generation; and

(iii) in case of Transmission, all components and elements of the Transmission system including communication system ;"

2.2.32 **Revised Emission Standards**

In accordance with the Environment (Protection) Amendment Rules, 2015, the Commission has proposed for defining the 'Revised Emission Standards' in the draft Regulations, as under:

*"(79) **"Revised Emission Standards"** in respect of thermal Generating station means the revised norms notified as per Environment (Protection) Amendment Rules, 2015 or any other Rules as may be notified from time to time;"*

2.2.33 **Short Term Power Procurement**

The Commission has proposed for submission of Power Procurement Plan for the MYT period with details related to Long/Short/Medium-Term Power Procurement. Accordingly, the 'Short Term Power Procurement' is defined in line with the "Guidelines for Determination of Tariff by Bidding Process for Procurement of Power by Distribution Licensees" issued by MoP, as under:

*"(84) "**Short Term Power Procurement"** means Procurement of power under any arrangement or agreement with a term or duration less than or equal to one year;"*

2.2.34 **Scheduled Energy**

The Commission has added the definition of 'Scheduled Energy' for greater clarity in the draft GERC MYT Regulations, 2021 in accordance with the CERC Tariff Regulations 2019, as reproduced below:

*"(87) "**Scheduled Energy"** means the quantum of energy scheduled by the concerned Load Despatch Centre to be injected into the grid by a Generating station for a given time period;"*

2.2.35 **Thermal Generating Station**

The Commission has added the definition of 'Thermal Generating Station' in the draft GERC MYT Regulations, 2021 in accordance with the CERC Tariff Regulations, 2019 as reproduced below:

*"(90) **"Thermal Generating Station"** means a Generating Station or a Unit thereof that generates electricity using fossil fuels such as coal, lignite, gas, liquid fuel or combination of these as its primary source of energy;"*

2.2.36 **Transmission System**

The Commission has added the definition of 'Transmission System' in the draft GERC MYT Regulations, 2021 in accordance with the CERC Tariff Regulations, 2019, as reproduced below:

*"(91) **"Transmission System"** means a line or a group of lines with or without associated sub-Station, and includes equipment associated with transmission lines and sub-stations ;"*

2.2.37 **Transmission Capacity Rights and Transmission Licensee**

The Commission has added the definition of 'Transmission Capacity Rights' and 'Transmission Licensee' in the draft GERC MYT Regulations, 2021 for greater clarity, as under:

*"(92) **"Transmission Capacity Rights"** means the right of a Transmission System User to transfer power in MW, under normal circumstances, between such points of injection and drawal as may be set out in the Bulk Power Transmission Agreement;*

*(93) "**Transmission Licensee"** means a Licensee authorised by the Commission to establish or operate transmission lines under Section 14 of the Act;"*

2.2.38 **Wheeling and Wheeling Business**

The Commission has added the definition of 'Wheeling' and 'Wheeling Business' in the draft GERC MYT Regulations, 2021, as reproduced below:

*"(96) **"Wheeling"** means the operation whereby the distribution system and associated facilities of a Transmission Licensee or Distribution Licensee, as the case may be, are used by another person for the conveyance of electricity on payment of charges to be determined under section 62 of the Act;*

*(97) **"Wheeling Business** means the business of operating and maintaining a distribution system for conveyance of electricity in the area of supply of the distribution licensee ;"*

2.3 Deviation from norms

2.3.1 The CERC, in its Tariff Regulations, 2019, has provided a clause permitting Generating Companies and Transmission Licensees to charge lower than approved tariff which is subjected to mutual agreement between the parties and need to be intimated to the Commission.

2.3.2 Accordingly, in the draft GERC MYT Regulations, 2021 the Commission has proposed to allow the Generating Station for sale of power below the tariff determined by the Commission with the condition that the differential amount will not be allowed to be recovered in future. Accordingly, the existing Regulations related to 'Deviation from norms' is proposed to be amended as reproduced below:

"5.1. The tariff determined in these Regulations shall be a ceiling tariff, and the Generating Company and its Beneficiaries may mutually agree to charge a lower tariff .

5.2. The Generating Company may opt to charge a lower tariff for a period not exceeding the validity of these Regulations on agreeing to deviation from

operational parameters, reduction in Operation and Maintenance expenses, reduced Return on Equity and incentive specified in these Regulations.

5.3. The deviation from the ceiling tariff determined by the Commission, shall come into effect from the date agreed to by the Generating Company and the Beneficiaries.

5.4. The Generating Company and the Beneficiaries of a Generating Station shall be required to intimate the Commission for charging lower tariff in accordance with Regulation 5.1 to 5.3 above. The details of the accounts and the tariff actually charged under Regulation 5.1 to 5.3 shall be submitted at the time of true up.

The revenue loss on account of charging lower than approved tariff shall be borne entirely for all times by the Generating Company and the impact of such revenue loss shall not be passed on to the Beneficiaries, in any form."

3 General principles

3.1 Multi Year Tariff Framework

3.1.1 As explained in the above paragraphs, it is proposed to have a Control Period of five years from April 1, 2021 to March 31, 2026. Accordingly, all other things remaining the same as specified in the MYT Regulations 2016, only the modification with respect to the period has been proposed.

3.2 Accounting statement and filing under the MYT

3.2.1 Based on the proposed change of Financial year in the Control Period, the Commission has proposed the similar methodology of filing the tariff petition as specified in the MYT Regulations 2016 and has modified the year of filing the tariff petition in line with the proposed Control Period. Accordingly, the Commission has incorporated the corresponding changes in the MYT framework and filing of MYT Petition, Mid-term review, true-up and determination of ARR.

3.2.2 Also, the Ministry of Corporate Affairs (MCA) had notified IND AS which has been implemented from FY 2017-2018 onwards. Prior to this, the companies used to prepare and report financial statement based on GAAP (Generally Accepted Accounting Principles). However, Ministry of Corporate Affairs (MCA) issued a note dated January 2, 2015, outlining the various phases, in which Indian Accounting Standards (IND AS) converged with IFRS has to be implemented in India, for Companies other than Banking Companies, Insurance Companies and NBFCs. Accordingly, IND AS was made mandatory from FY 2016-17 for all companies with Net Worth of not less than Rs. 500 crores and from FY 2017-18, for all listed companies and unlisted company with Net worth greater than Rs. 250 crores. Since the financial statement of applicants has been reported under IND AS, the financial reporting format differs than the earlier Financial Year accounting statement which were prepared under GAAP. One key fundamental change is the significant increase in focus on fair value accounting where IND AS requires application of fair value principles, which would result in significant differences from financial information being presented under GAAP. Also, under IND AS, the fair value of assets are revalued at fair value periodically, so that the carrying amount of an asset does not differ materially from its fair value at the balance sheet date. Also, Current Liabilities and Debt under GAAP has been bifurcated into Short Term and Long Term Liabilities under IND AS. Considering the different principles of preparation and reporting of financial statement compared to the preparation of ARR which follows historical accounting approach, there is a need for reconciliation of ARR formats with the Financial statement prepared under IND AS. Accordingly, the existing Accounting Statement Regulations needs to be amended to address the issue of implementation of IND AS as well as the transition from Indian GAAP to IND AS. Therefore, the Commission proposes for inclusion of the following proviso under 'Accounting statement and filing under MYT' Regulations.

"Provided that the Generating Company, Transmission Licensee, SLDC and Distribution Licensee shall provide the reconciliation statement, duly certified by

the statutory auditors, showing the accounting statement under Indian Accounting standard (IND AS) and Generally Accounting Accepted Principles (GAAP) as per financial statement and Regulatory format;"

3.3 Controllable and uncontrollable factors

3.3.1 As per the Tariff Policy, 2016, the MYT framework needs to specify be mechanism for sharing of losses/gains on account of the controllable factors and that to be shared between the Utility and the consumer and the losses/gains on account of uncontrollable factors needs to be completely passed on to the consumers. Therefore, it is essential to clearly specify the controllable factors and uncontrollable factors based on which the sharing of losses/gains to be determined for the Utility.

3.4 Mechanism for sharing of gains or losses on account of controllable factors

3.4.1 The National Tariff Policy, 2016 specifies for sharing of benefits of efficiency gains with consumers as shown below:

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

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

3.4.2 As per the National Tariff Policy, 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. Therefore, under the Para "Implementation of Multi Year Tariff (MYT) framework" in National Tariff Policy, it clearly specified that in the first control period the incentives for the utilities may be asymmetric with the percentage of the excess profits being retained by the utility set at higher levels than the percentage of losses to be borne by the utility. Accordingly, during the transition period, Gains of efficient operations with reference to normative parameters was appropriately shared between consumers and licensees with higher share with the Utilities.

3.4.3 However, the current phase of implementation of MYT Regulations, is far ahead of the transition phase and has already achieved the maturity stage and therefore, it is necessary that though the sharing of incentives may be considered on asymmetric basis but with the objective to pass on higher benefits to the consumers.

3.4.4 The Profit Sharing mechanism is intended to share the benefits of better performance of the Utility with the consumers. Also, the National Tariff Policy clearly states that pass through of losses to be allowed only to the extent of uncontrollable factor and therefore, any loss related to controllable factor needs to be retained by the Utility. However, to balance out the interest of the Utilities and the Consumers with also the intention to achieve the objective of National Tariff Policy, the Commission has proposed to amend

the 'Mechanism for sharing of gains or losses on account of controllable factors' Regulations as shown below wherein, higher gains on account of controllable factors are to be passed to consumers as rebate in tariff and in case of losses higher share of losses to be absorbed by the Utilities.

3.4.5 It is submitted that though the mechanism of sharing of gains and losses may be asymmetric, the Commission has already specified controllable factors and the operating norms for Utilities. Therefore, to protect the interest of consumer, the Commission intends to pass on the higher benefit to the consumer, on account of better performance of Utilities for specified Operating norms and controllable factor. Hence it is proposed that half of the gains on account of controllable factors shall be shared with the consumers against the existing approach of one third of the gain to be passed on to the consumers.

3.4.6 Further, it may be noted that FOR Report on MYT Framework recommends that no sharing of losses shall be passed on to the consumer. Also, CERC Tariff Regulations, 2019 has specified that no sharing of losses on account of controllable factors with the consumers is to be undertaken due to the fact that any sharing of losses would imply that the Utilities have not put in adequate efforts to sustain even at the normative performance parameters specified by the Commission contrary to the expected improvement. Therefore, passing on such losses on account would not be appropriate and would discourage improvement in efficiency.

3.4.7 However, Commission has proposed the similar approach as specified in existing GERC MYT Regulations, 2016 for sharing of losses on account of controllable factors. The proposed Regulation is as reproduced below:

> *"24.1 The approved aggregate gain to the Generating Company or Transmission Licensee or SLDC or Distribution Licensee on account of controllable factors shall be dealt with in the following manner:*
>
> *(a) One half of the amount of such gains shall be passed on as a rebate in tariffs over such period as may be stipulated in the Order of the Commission under Regulation 21.6;*
>
> *(b) The balance amount, of such gains, may be utilised at the discretion of the Generating Company or Transmission Licensee or SLDC or Distribution Licensee .*
>
> *24.2 The approved aggregate losses to the Generating Company or Transmission Licensee or SLDC or Distribution Licensee on account of controllable factors shall be dealt with in the following manner:*
>
> *(a) One-third of the amount of such losses may be passed on as an additional charge in tariffs over such period as may be stipulated in the Order of the Commission under Regulation 21.6; and*
>
> *(b) balance amount of such losses shall be absorbed by the Generating Company or Transmission Licensee or SLDC or Distribution Licensee ."*

4 Financial Principles

4.1 Capital Cost:

4.1.1 The capital cost of the project is considered as a base for tariff determination in cost plus tariff regime. The capital cost has a direct correlation with the ARR expenditure such as Interest on Loan, Depreciation and Return on Equity and to a large extent determines the extent of competitiveness of the tariff.

4.1.2 The EA, 2003 and National Tariff Policy lay down the principles of Tariff Determination which mandates balancing of consumer's interest while allowing reasonable returns to the power utilities. As stated earlier, while framing the MYT Regulations, the Commission shall be guided by these principles and also by the principles and methodology adopted by the CERC. Further, during past period there have been various important Judgements from the judicial authority such as APTEL, higher Court, etc., recommendations from Forum of Regulators (FOR) and Central Electricity Authority (CEA) on MYT framework. The Commission will also need to take cognizance of the above Judgements and recommendations while framing the MYT Regulations. Hence, considering the recent developments in power sectors, the Commission feels appropriate to reassess the component of capital cost and accordingly, has included few additional provisions in the draft GERC MYT Regulations, 2021.

4.1.3 Regulation 34 of the GERC MYT Regulations, 2016 specifies the provisions related to capital cost of the project, which were largely based on the principles adopted by the CERC. The determination of capital cost was based on the actual cost incurred on the project and the project developer was to approach for final tariff determination after declaration of commercial operation date. The changes in the capital cost by the way of capitalization and foreign exchange rate variation (FERV) were also being accounted for and tariff was being adjusted retrospectively. The existing provisions dealing with FERV provides that any gain or loss on account of foreign exchange rate variation on the loan during construction up to the date of commercial operation of the project was to be included in the capital cost. However, the Hon'ble Supreme Court vide its order dated May 9, 2019 in Civil Appeal No. 684 of 2007 and 13452 of 2015 has provided more clarity on the treatment of Foreign Exchange variation and has stated that the entire FERV should be apportioned only in respect of debt liability. Thus, to add more clarity on FERV, the Commission has modified the existing GERC MYT Regulations 34.1 (a) and also added sub-clause (d). Further, it is to be noted that due to renumbering or addition/deletion of certain provisions etc., the existing GERC MYT Regulations 34 has now been proposed under the draft GERC MYT Regulations, 2021 as Regulation 33. Accordingly, the proposed provisions/clause is as reproduced below:

> *"33.1. Capital Cost for a project shall include :*
> *(a) The expenditure incurred or projected to be incurred, including interest during construction and financing charges up to the date of commercial operation of the project, as admitted by the Commission after prudence check;*
> *.....*

(d) any gains or losses on account of foreign exchange rate variation pertaining to the loan amount availed up to the cut-off date, as admitted by the Commission after prudence check:
Provided that any gains or losses on account of foreign exchange rate variation pertaining to the loan amount availed up to the date of commercial operation shall be adjusted only against the debt component of the capital cost."

4.1.4 Further, there have been instances where Generating Companies or Licensees has filed petitions for approval of additional capital expenditure on account of 'change in law' or 'Force Majeure' events. The matters pertaining to Change in Law and Force Majeure events, have become one of the main critical factors which either increases the capital cost or results in delay of commissioning of projects. These are considered as uncontrollable in nature. Therefore, the Commission proposes to allow time and cost over runs on account of change in law and force majeure condition except where the delay is attributable to the Generating Company or the Transmission Licensee or Distribution Licensee or SLDC, which will provide regulatory certainty. Accordingly, the additional sub-clause as Regulations 33 (e) is proposed in the draft GERC MYT Regulations, 2021 as reproduced below:

"33.1. Capital Cost for a project shall include:

……

(e) Expenditure on account of change in law and force majeure events; and

4.1.5 The Regulation 34.1 (c) of GERC MYT Regulations, 2016, does not cover the de-capitalization. Therefore, it has been amended as shown below which is in accordance with the CERC Tariff Regulations, 2019:

"33.1. Capital Cost for a project shall include:

……

(c) Expenditure on account of additional capitalisation and de-capitalisation determined in accordance with these regulations."

4.1.6 Presently there is no existing provisions on account of capital expenditure incurred or to be incurred for revised environmental norms. As per the new Environment norms notified by Ministry of Environment, Forest and Climate Change, the coal-based thermal power plants (TPPs) would be required to install or upgrade various emission control systems like Flue-Gas desulfurization ("FGD") system, electrostatic precipitators ("ESP") system etc. to meet the revised standards. Also, with the introduction of Perform, Achieve & Trade (PAT) scheme, generators might require to incur capital expenditure to achieve efficiency improvement targets fixed by Bureau of Energy Efficiency (BEE). In addition, National Tariff Policy 2016 has mandated thermal power Generating Station to use sewage treated water so as to reduce raw water consumption and has allowed passthrough of such cost. Therefore, it is likely that Generating Companies would incur additional capital expenditure for complying the revised standards of emission for thermal power

projects, Sewage water treatment as well as for achieving efficiency target under PAT scheme. Hence, for greater clarity and to minimise ambiguity the Commission proposes to include below sub-clause in line with the CERC Tariff Regulations, 2019:

"33.1. Capital Cost for a project shall include:

……

(f) Capital cost incurred or projected to be incurred on account of the Perform, Achieve and Trade (PAT) scheme or sewage treatment plant or to achieve revised Environmental Norms / Statutory Norms of Government of India will be considered by the Commission on case to case basis, subject to prudence check:"

4.1.7 Also, the Commission proposes to include below additional provisos detailing the exclusions from the capital cost of existing and new projects in line with the CERC Tariff Regulations, 2019, viz.,

i. Assets forming part of the project, but not in use;
ii. Decapitalised assets;
iii. Expenses incurred by project developer for getting the project site allocated by the State Government for hydro project;
iv. Proportionate cost of land being used for generating renewable energy;
v. 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.

4.1.8 Further, the assets forming the part of the project is to be considered for Tariff determination only when it is capitalized and put to use. An asset is considered as put to use only it is in regular service for its intended purpose and consumers are getting benefit out of it. Mere capitalization of the assets in the books of accounts shall not be considered for Tariff determination unless such asset is being put to use. It is therefore proposed that the claim of asset being put use to be ascertained with the documentary evidence. Accordingly, the following provisos are proposed to be added:

"33.1. Capital Cost for a project shall include:

……

Provided further that the capital cost of the assets forming part of the Project but not put to use or not in use, shall be excluded from the capital cost of Generation Project and transmission/ distribution / SLDC system:

Provided that any capitalisation done by mere book entries / presentation in the financial statements in order to comply with any statute / rules etc. and not in accordance with the Capital Expenditure approved under these Regulations, shall not be allowed by the Commission.

Provided also that the Generating Company or Transmission Licensee or SLDC or Distribution licensee, as the case may be, shall submit documentary evidence in support of its claim of assets being put to use:

Provided also that the Commission may undertake a verification to check if the assets are put to use as submitted by the Generating Company or Transmission Licensee or SLDC or Distribution licensee, as the case may be, independent of the tariff determination process:"

4.1.9 Further, in case of assets being reutilised or assets which have already been put to use after COD, being utilised in the regulated business at a later date, it is proposed to incorporate clauses at appropriate place in the draft GERC MYT Regulations, 2021 to ensure that only the depreciated capital cost of such assets are considered.

4.1.10 The approval of capital cost and the prudent check of capital expenditure incurred by the utility have been the most critical aspect of tariff determination. As stated earlier, the capital cost has a direct correlation with the fixed charges and therefore, the Commission always endeavors to allow reasonable capital cost after prudence check. As per existing GERC MYT Regulations, 2016 the capital cost is admitted by the Commission based on the actual capital expenditure incurred on the project, subject to prudence check. The Commission is of the view that determining capital cost based on the actual cost incurred as per the balance sheet of the regulated entities doesn't incentivize developers for taking cost cutting measures. Any inefficiencies on account of Utility shall not be allowed to pass through to end consumers. Therefore, in order to bring more efficiency into sector and also considering the fact that cost discovered in competitive biddings are very low; there is a need for specifying the benchmarking of capital cost based on technology. Further, the Tariff Policy 2016 also stipulates that the appropriate Commission should evolve the benchmarks for capital cost. The relevant extract from Tariff Policy, 2016 is reproduced below:

"5.11

....

While allowing the total capital cost of the project, the Appropriate Commission would ensure that these are reasonable and to achieve this objective, requisite benchmarks on capital costs should be evolved by the Regulatory Commissions."

4.1.11 The Commission understand the difficulties in arriving the benchmarks for capital cost due to various factors such as different technologies, project location, land availability, construction period etc. Also, shifting from 'investment approval' to 'benchmarking capital cost' would require enough historical and market data, which is not available at present time. Hence, at present the Commission proposes to continue with existing investment approval approach with certain modifications subjected to prudence check. Although, the Commission intend to develop baseline of capital cost benchmarks and accordingly, it has proposed to include facilitative provisions at appropriate places in the draft Tariff Regulations.

4.1.12 Further, the GERC MYT Regulations allows the Generating Company or the Licensee, to undertake additional capital expenditure in various circumstances including that is outside original scope and after cut-off date. The Generating Companies or Licensee are

required to make capital investment for various purpose such as for capacity growth, replacement of assets, renovation and modernization, power evacuation, system augmentation, network expansion, creation of new infrastructure to meet load growth, to meet statutory requirements, congestion management, improvement in metering, consumer services, collection efficiency, quality and reliability of supply etc. Any such capital investment increases the capital base and hence, the reasonable return which consequently have an impact on Tariff to consumers. Hence, it is very important to access the need for such capital investment to ensure that these are necessary and justified, and do not impose an unnecessary burden on consumers by way of tariff.

4.1.13 However, the beneficiaries and the long-term customers often become aware of such tariff impact only when the Generating Company or the Licensee approaches the Commission for approval of such additional capital expenditure already incurred by them. On the other hand, the Generating Company or the Licensee, which are required to incur such additional capital expenditure face uncertainty w.r.t regulatory approval and hence tariff recovery. Therefore, the Commission intends to propose 'in-principle' mechanism wherein the Generating Companies or the licensee as the case may be, shall require to make an application to the Commission for obtaining prior approval of the Commission for various capital expenditure schemes involving major investments. This will provide regulatory certainty to the Generating Company or the Licensee on one side and provide advance notice to the beneficiaries or long-term customers on the other.

4.1.14 The Generating Company or the Licensee is required to come up with a detailed proposal for in-principle approval along with a Detailed Project Report (DPR) for capital expenditure projects having investments which equals or exceeds the threshold limit specified in the 'Guidelines for In-Principle Clearance of Proposed Investment Schemes' or such other amount as may be issued by the Commission from time-to-time. The DPR should clearly indicate complete scope, justification, cost-benefit analysis, financial package, phasing of expenditure, schedule of completion, reference price level, estimated completion cost, etc. Based on the application made by utilities, the Commission shall accord 'in-principle' approval to the estimates of project capital cost and financing plan and the same shall be the guiding factor for applying prudence check on the actual capital expenditure. However, the tariff shall be determined on the basis of actual audited expenditure for the project found prudent by the Commission.

4.1.15 Further, the capital expenditure projects having value below the assigned value as per guidelines shall fall under non-DPR schemes for which prior in-principle approval would not be required. However, the Commission may evaluate the non-DPR schemes and approve the same in respective tariff proceedings subject to prudence check. The capitalisation under non-DPR schemes would be limited to 20% of DPR capitalisation during the Control Period.

4.1.16 Also, to bring more clarity on prudence check, the Commission has proposed to include certain provisions/clause/sub-clause at appropriate places in the draft GERC MYT Tariff Regulations, 2021 in line with the CERC Tariff Regulations, 2019.

4.1.17 Further, the ceiling limit for initial spares are specified under Regulation 34.9 of the GERC MYT Regulations, 2016. The Commission has proposed to continue the same ceiling limit for initial spares and has proposed a new ceiling limit for static synchronous compensator as 6% in line with the CERC Tariff Regulations, 2019.

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

4.1.19 It may be noted that assets of the Utilities are covered under insurance. Hence, any damage to such assets will result in receipt of insurance proceeds against such assets. The treatment of insurance proceeds received by Utilities may be different as per their practices. As such any insurance proceeds if received are considered to meet the full capital obligation of damaged assets, hence, it is proposed that such insurance proceeds should be used to reduce the capital cost of replaced asset and the remaining income, if any, is to be considered as Non-tariff Income. Accordingly, it is proposed to add following proviso in the draft GERC MYT Regulations, 2021:

> *"33.18*
> *.....*
> *Provided further that the amount of insurance proceeds received, if any, towards damage to any asset requiring its replacement shall be first adjusted towards outstanding actual or normative loan; and the balance amount, if any, shall be utilised to reduce the capital cost of such replaced asset, and any further balance amount shall be considered as Non-Tariff Income."*

4.2 Additional Capitalization

4.2.1 Regulation 35 of the GERC MYT Regulations, 2016 specifies provisions of additional capitalization under following three categories, viz.,

a) capital expenditure within the original scope of work, after the date of commercial operation and up to the cut-off date;
b) capital expenditure in respect of a new Project within the original scope of work after the cut-off date;
c) capital expenditure after the cut-off date.

4.2.2 The Commission observed that CERC in its Tariff Regulations, 2019 has clearly defined the additional capitalisation within the original scope and upto cut-off date, additional capitalisation within original scope and after cut-off date, and additional capitalisation beyond the original scope. CERC has also introduced provision for Additional Capitalisation on account of revision of emission standards. It is proposed to adopt the same approach followed by CERC. Hence, appropriate provisions have been added in the draft GERC MYT Regulations, 2021.

4.2.3 The additional capital expenditure on account of force majeure events were not mentioned in the existing Regulations. The CERC has included the same in its Tariff Regulations, 2019 as the additional capital expenditure may be incurred due to force majeure event which is uncontrollable in nature and is required to be undertaken for smooth operation of the Generating Company, Transmission Licensee, SLDC or Distribution Licensee. Accordingly, the same is proposed to be included in the Regulations by the Commission as an enabling clause to undertake the Additional Capital Expenditure.

4.2.4 CERC has also added provisions with respect to additional capitalization, in case of replacement of asset or equipment is necessary on account of obsolescence of technology. Further, taking cognizance of the Tariff Policy, 2016 which mandates use of treated sewage water by TPPs located within 50 km radius of sewage treatment plant, the CERC has added appropriate provision in its Tariff Regulations. Accordingly, in line with the National Tariff Policy 2016 and approach adopted by the CERC, it is proposed that any existing thermal generating units would be allowed to have a sewage water treatment plant for usage of water and the expenditure against the same will be allowed as additional expenditure after prudence check.

4.2.5 After perusal of the CERC Tariff Regulations, 2019, the Commission has proposed the following provisions for Additional Capitalisation in the draft GERC Tariff Regulations, 2021:

> ***"34. Additional capitalisation***
>
> *34.1 Additional Capitalisation within the original scope and upto the cut-off date :*
>
> *The capital expenditure, actually incurred or projected to be incurred, in respect of new project or an existing project, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*
>
> *(i) Undischarged liabilities recognized to be payable at a future date ;*
>
> *(ii) Works deferred for execution;*
>
> *(iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 33.16 of these regulations;*
>
> *(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;*
>
> *(v) Change in law or compliance of any existing law; and*
>
> *(vi) Force Majeure events:*
>
> *Provided that in case of any replacement of the assets, the additional capitalization shall be worked out after adjusting the gross fixed assets and cumulative depreciation of the assets replaced on account of de-capitalization;*
>
> *Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be*

payable at a future date and the works deferred for execution shall be submitted along with the application for determination of Final tariff after the date of commercial operation of the Generating Unit/Station or Transmission system.

34.2 Additional Capitalisation within the original scope and after the cut-off date:

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

(i) Liabilities to meet award of arbitration or for compliance of direction or of any statutory authority or order or decree of a court of law;

(ii) Change in law or compliance of any existing law;

(iii) Deferred works relating to ash pond or ash handling system in the original scope of work;

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

(v) Force Majeure events;

(vi) Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments; and

(vii) Raising of ash dyke as a part of ash disposal system.

Provided that in case of replacement of assets deployed under the original scope of the existing project after cut-off date, the additional capitalization may be admitted by the Commission, subject to prudence check on the following grounds:

a) The useful life of the assets is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these Regulations;
b) The replacement of the asset or equipment is necessary on account of change in law or Force Majeure conditions;
c) The replacement of such asset or equipment is necessary on account of obsolescence of technology; and
d) The replacement of such asset or equipment has otherwise been allowed by the Commission.

34.3 Additional Capitalisation beyond the original scope of work :

The capital expenditure, in respect of existing Generating station or the Transmission system including communication system, incurred or projected to be incurred on the following counts beyond the original scope of work, may be admitted by the Commission, subject to prudence check:

(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law ;

(ii) Change in law or compliance of any existing law;

(iii) Force majeure events;

(iv) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;

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

(vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;

(vii) Usage of water from sewage treatment plant in thermal generating station;

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

(viii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal/lignite based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;

(ix) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;

(x) In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolesce of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and

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

Provided that any expenditure on acquiring the minor items or the assets including tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, computers, fans, washing machines, heat convectors, mattresses, carpets,

etc., bought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. April 1, 2021

Provided further that if any expenditure has been claimed under Renovation and Modernisation (R&M) or repairs and maintenance under (O&M) expenses, same expenditure cannot be claimed under this Regulation:

Impact of additional capitalization on tariff, as the case may be, shall be considered during Truing Up of each financial year of the Control Period.

34.4 Additional Capitalization on account of Revised Emission Standards :

A Generating Company requiring to incur additional capital expenditure in the existing generating station for compliance of the revised emissions standards, may be admitted by the Commission, subject to prudence check based on the following details to be submitted by the Generating Company:

i. details of proposed technology as specified by the Central Electricity Authority or alternative technology based on appropriate justification ;

ii. scope of work;

iii. phasing of expenditure;

iv. schedule of completion;

v. estimated completion cost including foreign exchange component, if any;

vi. detailed computation of indicative impact on tariff to the beneficiaries; and

vii. any other information considered to be relevant by the Generating Company:

Provided that the Commission may grant approval after due consideration of the reasonableness of the cost estimates, financing plan, schedule of completion, interest during construction, use of efficient technology, cost-benefit analysis, and such other factors, as may be considered relevant by the Commission.

34.5 Impact of additional capitalization on tariff, as the case may be, shall be considered during Truing Up of each financial year of the Control Period.

34.6.In case of de-capitalisation of assets of a Generating Company or Transmission Licensee or SLDC or Distribution licensee, as the case may be, the original cost of such asset as on the date of decapitalisation shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place with corresponding adjustments in cumulative depreciation and cumulative repayment of loan, duly taking into consideration the year in which it was capitalised."

4.3 Debt: Equity ratio

4.3.1 For any Capital investment to be incurred by Generating company, Transmission Licensee, SLDC or Distribution Licensee, it is necessary to have an optimum funding structure so as to balance the consumer's interest while allowing reasonable cost to the

power utilities. Therefore, financing plan of the project plays a predominant role in the determination of tariff.

4.3.2 The existing GERC MYT Regulations, 2016 specify the normative debt: equity ratio of 70:30. Further, if the actual equity deployed is more than 30% of the capital cost, the equity in excess of 30% shall be treated as normative loan whereas if the equity deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.

4.3.3 However, the Commission has always rendered a free hand to the investors to optimise their project investment plan and hence, there is no restriction on equity investment even beyond 30% of the project cost. Its only for the purpose of tariff determination that, the equity deployed exceeding 30% of the project cost, if any, is considered as normative loan, which is allowed to be served at weighted average rate of interest of the actual loan taken for the project. However, if equity deployed is less than 30%, the actual debt-equity ratio will be considered for determination of tariff.

4.3.4 It is proposed to continue with the same debt-equity ratio for tariff determination for Generating Companies and licensees for the fourth MYT Control Period since, this is the standard practice being followed by other SERCs which is also in line with CERC Tariff Regulations, 2019.

4.3.5 The above provision is also consistent with the principles laid down in the Revised Tariff Policy 2016. The 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."*

4.3.6 Further, for greater clarity the Commission propose to define provisions of debt-equity ratio separately for existing and new projects. Accordingly, the enabling provisions has been added in the draft GERC MYT Regulations, 2021. Further, it is to be noted that due to renumbering or addition/deletion of certain provisions/clauses etc., the existing Regulation 33 with respect to debt: equity ratio in the GERC MYT Regulations, 2016 has now been proposed under the draft GERC MYT Regulations, 2021 as Regulation 36.

4.3.7 In case of revaluation of assets been undertaken by any of the entity, there is no additional equity infusion and is mere a book entry. Accordingly, it has been proposed that no increase in equity will be considered in case of revaluation for computation of Return on Equity.

4.3.8 As regards to the utilities as a whole, which has already squared off their normative loans, any additional depreciation allowed post total debt repayment will result in additional cash flow to the utilities. This additional cash flow in the form of non-cash expenditure viz., depreciation is actually the part of equity infused in the business for the creation of the assets. As per the current practice, the return on equity is claimed on perpetual basis for the amount of equity which is already been withdrawn from the business in the form of depreciation on a timely basis. The Commission feels that this tantamount to unnatural justice to the consumers by including Return on equity in ARR for the Equity which has already been claimed in the form of depreciation post debt repayment and also results in dual benefit to the utilities. Therefore, allowing the perpetual RoE on such assets may result in enrichment of the developer through a tariff burden on consumers. Accordingly, the Commission is of the view that any depreciation in excess of repayment of total outstanding normative loans should be treated towards reduction of Equity and the Return on equity would be allowed only on the balance equity which is yet to be recovered at the time of determination of ARR or Truing up of ARR of any financial year of the control period.

4.3.9 Also, as per exiting Regulations, the return on equity is provided on gross fixed assets even if the asset has been fully depreciated. The CERC has come up with enabling clause stating that the in case of Generating Companies or the Licensee as the case may be, which has completed its useful life, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall not be taken into account for tariff computation and will be deemed to paid from accumulated depreciation. The Commission has proposed to adapt the same provisions in the Tariff Regulations.

4.3.10 As regards the treatment of equity invested in foreign currency, the GERC MYT Regulations, 2016 specifies that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment. The purpose is to ensure that the debt-equity ratio remains unaffected by the foreign exchange rate variation and provide regulatory certainty. Hence, the existing approach for considering the equity invested in foreign currency shall be continued.

4.4 Return on Equity

4.4.1 Return on Equity essentially measures the rate of return that a company is receiving on their equity investment. From the investor's point of view, every investment has a required rate of return broadly due to two reasons: the opportunity cost of foregone investments and the risk of business and its impact on the loan servicing. Since, there are multiple investment opportunities, the investors choose the appropriate investment opportunity as per their risk-return profile. Regulated utilities are known for their ability to generate moderate but predictable returns regardless of market conditions.

4.4.2 In the regulated business returns are allowed to the Utilities for the investment made by them on its rate base. The National Tariff Policy and the Act lay downs the principle of tariff determination wherein the Utilities are allowed to recover cost of electricity in a

reasonable manner and at the same time consumers interest is to be safeguarded. The relevant para from the National Tariff Policy, 2016 is reproduced as below:

> *"5.1. a) Return on Investment*
>
> *Balance needs to be maintained between the interests of consumers and the need for investments while laying down rate of return. Return should attract investments at par with, if not in preference to, other sectors so that the electricity sector is able to create adequate capacity. The rate of return should be such that it allows generation of reasonable surplus for growth of the sector.*
>
> *The Central Commission would notify, from time to time, the rate of return on equity for generation and transmission projects keeping in view the assessment of overall risk and the prevalent cost of capital which shall be followed by the SERCs also. The rate of return notified by CERC for transmission may be adopted by the SERCs for distribution with appropriate modification taking into view the risks involved. For uniform approach in this matter, it would be desirable to arrive at a consensus through the Forum of Regulators."*

4.4.3 Accordingly, the Return shall be designed in a way which attracts investment and also takes care of the risk and cost of capital. Therefore, the Return on investment needs to be rate of risk free return plus the premium on the risk for making such investment, as there are alternative investment opportunities and the investor has to choose between these alternative investment opportunities, keeping in view his risk-return profile. To assess the Return on investment, there are basically two approaches for giving return on equity, i.e., Return on capital employed (RoCE) and Return on Equity (RoE).

4.4.4 The Commission in the existing GERC MYT Regulations, 2016 has adopted Return on Equity approach, where the rate base is equal to the equity invested in the business. Most of the State Electricity Regulatory Commissions (SERCs) and Central Electricity Regulatory Commission (CERC) in India have adopted the RoE approach for providing returns, which is a tried and tested approach and is also easy to implement. Also, CERC, in the Explanatory Memorandum to the draft Terms and Conditions of Tariff Regulations for 2014-19 has not preferred RoCE approach due to fluctuating interest rate, shallow debt market and low confidence of investor and is stated as under:

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

4.4.5 Hence, it is proposed that the present approach used by the Commission, i.e., RoE approach, be continued for the next Control Period as it assured returns on equity investment, once the investment is done and the utility is protected against the risk of

fluctuation of interest rates, since interest expenses is allowed as a pass through expenses at actuals.

4.4.6 In order to ensure that it is fair to both the investors and the consumers, the return allowed to shareholders on their equity investment should be commensurate with the returns available from alternate investment opportunities having comparable risk. There are different models available for estimation of cost of equity/RoE viz., Capital Asset Pricing Model (CAPM), Earning Yield Ratio, Dividend Capitalisation Model, Arbitrage Pricing Model, Risk Premium Model, Expected Real Return on Equity etc. Every model has its own merit and demerits. However, the Commission has been largely depending on the CAPM model for arriving at RoE during previous tariff periods as compared to the other models as mentioned above. The reasons for not considering the other models are as follows:

- **Dividend Capitalization Model** – as it is usually considered for companies paying dividend on regular basis which is not predominant in Power utilities of the State.
- **Arbitrage Pricing Model (APM)** - need to predict the linear relationship between the asset's expected return and a number of macroeconomic variables that capture systematic risk. This is considered to be a methodology to identify the deviation in the fair market value and is used by arbitrageurs for investing purpose. The macroeconomic factors that have proven most reliable as price predictors include unexpected changes in inflation, gross national product (GNP), corporate bond spreads and shifts in the yield curve. Other commonly used factors are gross domestic product (GDP), commodities prices, market indices, and exchange rates. A dis-advantage of APM is that the selection and the number of factors to use in the model is ambiguous and not been robust. Also, the same is utilized for the diversified portfolio. Thus, the application of APM in Power utility business valuation exercises is rare as it doesn't have any diversified portfolio, complexity in identifying the equivalent macroeconomic factor resulting in numerous variables related to economy and power sector which differs from functions to functions in the value chain of the power business.

4.4.7 It is observed that Capital Asset Pricing Model (CAPM) is the most popular and widely accepted method for determining the cost of equity. However, it is recognized that this model will not give the exact rate of return on equity, as it is based on the assumption of data which is taken as input. CAPM is purely related to Capital Market whereby in India, very few Power Sector Utilities are listed in the Stock market and based on those parameters, the exact Return on Equity cannot be derived. However, the CAPM gives an approximate rate of return on equity, which can be used to take an informed decision on rate of return on equity.

4.4.8 The CAPM model explains the relationship between the expected return and risk of investing in a security. As per the CAPM model, 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. CAPM can be summarized according to the following formula:

Required (or expected) Return = Risk Free Rate + (Market Return – Risk Free Rate) x Beta.

Whereby,

BETA is a measure of Stock's risk (Volatility of Returns) reflected by measuring the fluctuation of its price changes relative to the overall market i.e. stock sensitivity to market risk

Market Return is the expected market rate of return is usually estimated by measuring the arithmetic average of the historical returns on a market portfolio

Risk Free Rate is the risk-free rate of interest such as interest arising from government bonds which at present consider as 10-Year G-Sec Par Yield as specified by RBI

4.4.9 Though Government securities do not have a default risk, they are still susceptible to reinvestment risk and inflation risk. To eliminate reinvestment risk, zero coupon securities have been considered. However, inflation risk is still not effectively mitigated. Due to the lack of any better measure of risk free rate, the Commission has considered the average of the yield on 10-year government securities yield (Source – RBI Notification).

4.4.10 In order to compute the Market Return, the return expected by the market has been estimated by assuming the past returns provided by the equity market, as it mirrors the expectations of the investors. For determining the market return, the Commission has considered the returns from NIFTY and NIFTY Energy Index. However, it is to be noted that only few Power Companies related to generation, manufacturing of power equipment, coal mining company, private transmission companies, private distribution companies, etc., has been listed in India. Most of the Government Power utilities in generation, transmission and distribution functions are not listed.

4.4.11 Beta is a measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. For computing the Beta for CAPM formula, firstly the levered Beta of NIFTY Energy Index is estimated. The overall NIFTY market has a beta of 1.0.

4.4.12 The overall Return on Equity considering the NIFTY as a whole and NIFTY Energy Index is calculated and outlined as below:

Table 1: RoE as per CAPM method, considering NIFTY as a whole and NIFTY Energy Index

CAPM Method							
FY	**Risk Free**	**Risk premium - Energy**	**Risk premium - NIFTY**	**Beta - Energy**	**BETA - NIFTY**	**CAPM - Energy**	**CAPM - NIFTY**
FY 2015-16	7.73%	1.94%	-8.86%	1.05	1.000	1.65%	-8.86%
FY 2016-17	6.93%	38.27%	18.55%	0.82	1.000	32.63%	18.55%
FY 2017-18	6.97%	13.44%	10.25%	1.000	1.000	13.44%	10.25%
FY 2018-19	7.71%	27.24%	16.45%	1.270	1.000	32.51%	16.45%

CAPM Method							
FY	**Risk Free**	**Risk premium - Energy**	**Risk premium - NIFTY**	**Beta - Energy**	**BETA - NIFTY**	**CAPM - Energy**	**CAPM - NIFTY**
FY 2019-20	6.64%	-30.69%	-25.02%	0.920	1.000	-27.70%	-25.02%
Average						**10.51%**	**2.27%**

4.4.13 As can be analysed from the above table that FY 2019-20 has a negative Return in both the index i.e., NIFTY and NIFTY Energy mainly due to widespread of COVID-19 pandemic resulting in fall in the market. Therefore, FY 2019-20 is an exceptional year to assess the return expected from the market. However, it cannot be ignored as capital market has witnessed such cyclical falls due to pandemic situation or viral outbreak in past such as Fall in 2003 due to Severe Acute Respiratory Syndrome (SARS), Avion Influenza in 2004, Ebola in 2013-2014, ZIKA in 2015-16, etc. Hence such falls are cyclical in nature and is part of the capital market based on investor sentiment and has such upward and downward swing over the years. On an average, barring few exceptions, it is observed that the average market return related to Energy Index is around 10.51% and minimum return is around 13.44%. However, with respect to NIFTY market as a whole which is dependent on the Indian economy as a whole, the average return in last 5 years is 2.27% and minimum return is 10.25%. One of the factor which can be outlined from the above table is that past performance is no guarantee of future and is difficult to be linked with Return on Investment.

4.4.14 Considering the above data, it is observed that there is a huge volatility in the market which is purely dependent on the sentiments of global and domestic front. Also, the abnormality in the market returns may not provide the proper assessment of the Return on Equity to be provided to the Investor and therefore, Commission at present feels that the current approach of Return on Equity of 14% to be continued.

4.4.15 However, considering that this is a fourth MYT Regulations to be implemented for FY 2021-22 to FY 2025-26, whereby the utilities has been acquainted with the MYT Regulations, it is time for switchover from the Cost Plus approach to Performance based approach in relation to Return on Equity in a gradual way. Therefore, the RoE of 14% is proposed to be bifurcated into Base RoE of 13% and Performance Linked RoE to the extent of 1% for Generating Companies, Transmission Licensee and SLDC. The Distribution Licensee business being comparatively riskier, the Commission choose to provide comparatively lower Performance Linked RoE. However, the total RoE for Distribution Licensee is maintained at 14%. Therefore, the proposed base RoE as 13.5% and additional RoE to the extent of 0.5% for the Distribution Licensee.

4.4.16 Also, for Generating Companies, CERC has proposed additional returns on the basis of achievement of ramp rate. CERC has also included a penal provision for reduction in RoE by 1% for new project commissioned without RGMO/FGMO, data telemetry, communication system or protection system based on the report submitted by LDC.

4.4.17 For grid stability and to monitor real time grid operation, system operator requires Transmission System and Generating Station to be equipped/operated with Data telemetry, communication facilities and Restricted Governing Mode of Operation / (RGMO) Free Governor Mode Operation (FGMO). Accordingly, the Commission has also proposed below penal provision in line with the CERC Tariff Regulations, 2019.

> *"37.5. In case of a new project, the rate of Return on Equity shall be reduced by 1.00% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO) or Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system based on the report submitted by the SLDC."*

4.4.18 Further, the modified clause related to additional Return on Equity in line with the CERC Tariff Regulations is provided below:

> *"37.7*
> *(a) an additional rate of Return on Equity of 0.25% shall be allowed for every incremental ramp rate of 0.10% per minute achieved over and above the ramp rate of 1% per minute, subject to ceiling of additional rate of Return on Equity of 1.00%, for the year in which such ramp rate is achieved.*
> *Provided that the additional rate of Return on Equity shall be allowed on pro-rata basis for incremental ramp rate of more than 0.10% per minute."*

4.4.19 For Transmission Licensee, the additional return has been proposed based on improvement in Transmission availability. Earlier the same was linked to incentive but the Commission in the draft GERC MYT Regulations, 2021 has proposed to link improvement in Transmission availability to Additional RoE such that the Transmission licensee will be able to earn additional RoE purely on the basis of performance.

4.4.20 Ministry of Power as well as National Tariff Policy, 2016 stipulates that the State Regulatory Commission will devise a specific trajectory so that 24 hours supply of adequate and uninterrupted power can be ensured to all categories of consumers by FY 2021-22 or earlier depending upon the prevailing situation in the State. To achieve this availability of distribution system in paramount. Accordingly, for Distribution Licensee related to wire business, the additional return has been proposed to be linked to Wire availability, which is to be derived on the basis of the interruption in the power availability. For Distribution Licensee related to Retail Supply business, the additional return has been proposed based on improvement in collection efficiency.

4.4.21 For SLDC business, that has been envisaged to play a vital role in system and market operations, the additional RoE has been proposed to be linked to SCADA availability and website availability.

4.4.22 Also, Return on Equity to be provided for any additional capitalization during the year is proposed to be calculated on the Pro-rata basis, i.e., from the date of the capitalization as it provides the true picture of entitled RoE. However, there may be cases whereby

multiple scheme has been commissioned during the year at different interval and may be difficult to calculate RoE on pro-rata basis. Therefore, in such cases, at the discretion of the Commission, RoE may be provided on an average basis for such additional capitalisation during the year.

4.4.23 Further, in the CERC Tariff Regulations, 2019, RoE in respect of additional capitalization after cut-off date beyond the original scope excluding additional capitalization due to Change in Law is now being allowed at the weighted average rate of interest on actual loan portfolio. The provision related to additional capitalisation after cut-off date is proposed to be adopted since many Generating Stations are undertaking capital expenditure year on year and availing RoE.

4.5 Interest and Finance charges

4.5.1 As per existing provisions of the GERC MYT Regulations, interest rate for computation of interest and finance charges is calculated based on the weighted average interest rate of actual loan portfolio of the utility. The interest rate thus arrived at is applied on the normative outstanding loan to compute the annual interest and finance charges of the utility. Repayment of loan being considered equal to the depreciation. It is proposed to continue with the existing approach as it is the standard practice being followed by other SERCs and also in line with the CERC Tariff Regulations, 2019.

4.5.2 Also, it has been observed that in past few years, the interest rate has been witnessing the downward trend and at present the interest rate for new loan is in the range of MCLR plus certain spread as defined by the Bank based on the financial position of the Utilities. Therefore, it is necessary that a prudent practice may be adopted by the Utilities while availing new loan from financial institution to fund the additional capitalization or for any new project to be implemented and getting commissioned in the proposed Control Period. Though the interest on loan is pass through at an actual interest rate, it is necessary that Utilities undertake proper due diligence to finance such loan so as to lower the burden on the consumers and also the Commission has to undertake prudence check on such loan. Therefore, it has been proposed that the Commission may specify capping of rate of interest for the new loans. However, in case the Utilities is not able to avail loan within the range as provided by the Commission, proper justification is required to be provided at the time of filing of petition and the Commission may allow such higher interest on loan at its discretion and based on the justification provided by Utilities. Also, it is proposed that the Penal interest and overdue interest paid will not be allowed for computation of tariff as the same arises due to financial indiscipline. This will not be accepted by the Commission and such burden shall not be passed on to consumers.

4.5.3 In the existing Regulations, Interest during Construction (IDC) incurred on account of excess drawal of debts is allowed or disallowed, partly or fully, subject to prudence check. It has also been seen that in many cases, there is a time and/or cost over-run, which results in higher Interest during Construction (IDC), and therefore, higher Capital Cost. In case of delay in project execution, excess IDC may be partly/fully disallowed based on APTEL Judgment. Therefore, in line with the Judgement of the APTEL and considering the

events resulting in delay which may or may be controllable by Utilities / applicant, it is proposed that allowance of IDC in the capital cost shall be subject to justification and submission of documentary evidence.

4.5.4 Although the variation in market interest rate is not within the control of the Utility. However, the option of re-finance of loan is always available with the Utility for reducing the interest expenses. The existing provisions also provides that the utility shall make every effort to refinance the loan such that it results in net savings in interest cost. While the costs associated with refinancing shall be borne by the beneficiaries, the savings on interest shall be shared between the beneficiaries and the utilities in the ratio of 2:1. The Tariff Policy, 2016 also stipulates that the utilities should be encouraged and suitably incentivized to restructure their debt for bringing down the tariff. It is further proposed to clarify that such refinancing of loans should be unconditional, beneficial to the entity and should be at the best terms of interest rate available at the market when refinancing is done by the beneficiary.

4.5.5 Further, there might be a probability that, as a result of refinancing, the interest cost may get increased, which though disallowed by the Commission. Such an instance leads to a situation where there is lack of clarity regarding the interest rate to be considered for computation of interest expenses in the Tariff determination. It is hence, proposed to clarify that in such cases, the SBI MCLR shall be considered as the rate of interest.

4.5.6 Also, there might be an instance that due to prepayment penalty or for some other reasons not within the control of the utilities, though there is a decrease in interest rate the savings are negative due to higher refinancing charges. Therefore, it is proposed that in such cases, the refinance cost needs to be allowed to the extent of the NPV to be Zero so as not to deprive the utility for the efforts undertaken to reduce the interest rate. The same is outlined in the following table:

Table 2: Illustrations of refinancing

Particulars	Unit	Option 1	Option 2
Original Interest Rate of Loan	%	12.75%	12.75%
Refinance Interest Rate of Loan	%	11.00%	11.00%
Refinance Cost	Rs. Crs	12.50	8.00
NPV-Saving due to reduction in interest rate	Rs. Crs	10.00	10.00
Is NPV saving higher than refinance cost		No	Yes
If No, Refinance Cost to be allowed	Rs. Crs	10.00	8.00
Gain to be shared with Beneficiaries	Rs. Crs	-	2.00

4.5.7 As regards the finance charges other than refinance charges, it is proposed that actual finance charges incurred for obtaining the actual loans or LC charges to provide Payment Security in line with the notification from MoP or guarantee fee payable to State Government, if any, shall be allowed at time of Truing-up, subject to prudence check by the Commission.

4.6 Depreciation

4.6.1 The existing provisions of the GERC MYT Regulations, 2016 provided computation of depreciation based on the straight-line method. With regards to rate of depreciation, the clause 5.11 (c) of Tariff Policy, 2016 stipulates that the depreciation rates specified by the CERC should be adopted for generation and transmission business, and may be adopted for the distribution business also, after suitable modification to be undertaken by the Forum of Regulators. The rates of depreciation so notified would be applicable for the purpose of tariffs as well as accounting. Accordingly, the Commission has proposed to continue with the existing method and with the rates as specified in GERC MYT Regulations, 2016 only with minor modifications that salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable. However, it will be necessary for the Generating Company or Licensee or SLDC to submit certification from the Statutory Auditor for the capping of depreciation at ninety per cent of the allowable capital cost of the asset in the accounts. Accordingly, the Commission has proposed the following provisos to be included in the draft GERC MYT Regulations, 2021:

> *"Provided that the Generating Company or Transmission Licensee or SLDC or Distribution licensee 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 also that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable*;"

4.6.2 Further, 2nd Proviso to the Clause (c) of clause 5.11, has mandated to specify upper ceiling of the rate of depreciation and an option to the developer to seek lower rate of depreciation. Accordingly, the Commission has proposed the following proviso to be included in the draft GERC MYT Regulations, 2021:

> *"Provided that the rate provided in Annexure I, are the upper ceiling of the rate of depreciation to be provided up to 12th year from the date of COD and the Generating Company or a Transmission Licensee or SLDC or a Distribution Licensee, as the case may be, shall have the option of indicating, while seeking approval for tariff, lower rate of depreciation, subject to the aforesaid ceiling and the same will be considered for computation of normative loan as per Regulations 38."*

4.6.3 The Commission proposes to clarify that the depreciation disallowed due to lower availability shall not be recovered later. Accordingly, the following proviso is proposed to be included in the draft GERC MYT Regulations, 2021:

> *"Provided also that any depreciation disallowed on account of lower availability of the generating station or generating 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."*

4.7 Interest on Working Capital

4.7.1 Regulation 40 of the GERC MYT Regulations, 2016 specifies working capital requirement separately for coal-based or lignite-fired thermal generating station, open-

cycle gas turbine/combined Cycle thermal generating stations and hydro generating station, distribution supply & wire business, SLDC & transmission system.

4.7.2 The Working Capital is determined based on fuel stock, inventory of maintenance spares, one-month operation and maintenance cost and one-month receivables depending on the type of thermal generating station, hydro and transmission projects.

4.7.3 It is proposed to clarify that working capital requirement for the ensuing year at the time of True up, shall be computed considering the revised normative O&M expenses.

4.7.4 Further, the prevailing Regulations provides the cost of fuel towards stock for 30 days for pithead generating stations and 45 days for non pit-head generating stations and the Commission has proposed to continue with the same norms.

4.7.5 Considering that there is no oil-based Generating Stations in the State of Gujarat, appropriate changes has been done for the calculation of interest on working capital in the draft GERC MYT Regulations, 2021.

4.7.6 It is also proposed to clarify that at the time of true-up, the working capital shall be computed based on the actual average fuel stock or normative fuel stock, whichever is lower, so that only appropriate working capital requirement is allowed. Accordingly, the following provisos are proposed to be included in the draft GERC MYT Regulations, 2021:

> *"*
>
> *……*
> *Provided further that for the purpose of Truing-up, the working capital shall be computed based on the scheduled generation or target availability of the generating Station, whichever is lower:*
> *Provided also that for the purpose of Truing up, the working capital shall be computed based on the actual average stock of coal or lignite and limestone or normative stock of coal or lignite and limestone of the generating Station, whichever is lower:*
>
> *……*
> *Provided that for the purpose of Truing-up, the working capital shall be computed based on the scheduled generation or target availability of the generating Station, whichever is lower:*
> *Provided also that for the purpose of Truing up, the working capital shall be computed based on the actual average stock of gas / Naptha / Liquid Fuel, etc or normative stock of said fuel of the generating Station, whichever is lower"*

4.7.7 It is also proposed to clarify that while computing working capital requirement, the receivables for all Businesses shall be considered based on the Charges approved in the Tariff Order. At the time of true-up, the actual revenue shall be considered.

4.7.8 Further, since DPC is not considered as Non-Tariff Income, it should not be allowed as an expense also. Hence, the Commission proposes to clarify that the DPC shall be

deducted from actual interest on working capital, before sharing of the efficiency gain or efficiency loss.

4.7.9 The consequential changes on account of the shift from actual generation to scheduled generation have also been incorporated.

4.8 Tax on Income:

4.8.1 As per Regulation 41 of GERC MYT Regulations, 2016, Income Tax shall be recoverable based on the actual tax paid by the entity.

4.8.2 The existing approach specifies the approval of Income tax payable based on actual income tax paid on permissible return as allowed by the Commission. It may be noted that though the regulatory framework allows the fixed return to Utilities, actual profit may be different or lower than the allowed return. In such case, the approval of income tax based on permissible return would be on higher side and not be prudent. Hence, the Commission has adopted the grossing up of RoE approach followed by the CERC, for allowing Income Tax to the Utilities.

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

4.8.4 Also, the Commission has proposed to allow pre-tax Return on Equity to the utilities considering the effective income tax rate. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the Transmission Licensee or SLDC or distribution licensee, as the case may be. The actual tax paid on income from other businesses including deferred tax liability (i.e. income from other business) shall be excluded for the calculation of effective tax rate.

4.8.5 The Utilities, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2021-26 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the Transmission Licensee as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded, as the case may be on year to year basis.

4.8.6 Further, the actual Income Tax paid by the Utility is reimbursed through ARR and Tariff, however, the Utility should not earn any profit on account of being allowed higher Income Tax through tariff as compared to the Income Tax actually paid. In case of entities engaged in multiple Businesses, there have been instances where the Income Tax allowed for the regulated Business/es is higher than the Income Tax paid by the Company as a whole. This amounts to unjust enrichment. Hence, a proviso is proposed to be included

whereby the Commission shall consider the actual income tax paid in case the income tax computed based on the effective tax rate is higher than the actual income tax paid by the Utility. It is also clarified that that if no Income Tax has been paid by the Company as a whole, then no Income Tax shall be recoverable from the Beneficiary/ies of the regulated business. Accordingly, the Commission proposes to amend the Regulations as shown below:

"41.1. The Income Tax for the Generating Company or Transmission Licensee or SLDC or Distribution licensee for the regulated business shall be allowed on Return on Equity, including Additional Return on Equity through the Tariff charged to the Beneficiary/ies, subject to the conditions stipulated in Regulations 37:

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:

Provided also that the deferred tax liability only before March 31, 2021 shall be allowed by the Commission, whenever they get materialised, after prudence check.

41.2. The rate of Return on Equity, shall be equal to the base Rate of Return on Equity and additional rate of Return on Equity as allowed by the Commission under Regulation 37 of these Regulations, which shall be grossed up with the effective tax rate of respective financial year

Provided that the rate of return on equity shall be grossed up with the effective Tax rate on the basis of actual tax paid on the Book profit, in respect of financial year in line with the provisions of the relevant Finance Acts by the concerned the Generating Company or Transmission Licensee or SLDC or Distribution licensee, as the case may be.

41.3. 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 = Rate of Return on Equity / (1-t),

Where "t" is the effective tax rate calculated on the basis of actual income tax paid on the book profit (Profit Before Tax)

Provided that, in case of the Generating Company or Transmission Licensee or SLDC or Distribution licensee has engaged in any other regulated or unregulated Business or Other Business, the actual tax paid on income from any other regulated or unregulated Business or Other Business shall be excluded in proportion to the income from the said business for the calculation of effective tax rate:

Provided further that effective tax rate shall be estimated for future year based on actual tax paid as per latest available Audited accounts, subject to prudence check.

41.4. In case of the Generating Company or Transmission Licensee or SLDC or Distribution licensee paying Minimum Alternate Tax (MAT), "t" shall be considered as MAT rate including surcharge and cess:

Illustration:-

a) In case of a Generating Company or Licensee or SLDC paying Minimum Alternate Tax (MAT) at rate of 17.472% including surcharge and cess:

Rate of return on equity = 14/(1-0.17472) = 16.964%

b) In case of Generating Company or Licensee or SLDC paying normal corporate tax including surcharge and cess:

i. Net Income of Company before deduction under section 80 of income tax act 1961, as a whole for FY 2021-22 is Rs. 500 Crore;

ii. Income Tax for the year on above is Rs 110 Crore;

iii. Effective Tax Rate for the year 2021-22 = Rs 110 Crore/Rs 500 Crore = 22%;

iv. Rate of return on equity = 14/ (1-0.22) = 17.949%.

c) In case of Generating Company or Licensee or SLDC has incurred loss resulting in no Income tax, the effective tax rate will be zero and only Rate of Return on Equity as approved by the Commission will allowed to be claimed in ARR:

i. Net Loss of Company before deduction under section 80 of income tax act 1961, as a whole for FY 2021-22 is Rs. 150 Crore;

ii. Income Tax for the year on above will be ZERO.

iii. Effective Tax Rate for the year 2021-22 = Rs 0 Crore/ Rs. (150 Crore) = 0%;

iv. Rate of return on equity = 14/ (1-0.00) = 14%.

Provided that if the effective tax rate is lower than the Minimum Alternate Tax or Corporate Tax Rate, than the same will be considered for grossing up the rate of return on equity.

Provided that in case the actual income tax paid including Cess and Surcharge, is lower than the difference between Pre-Tax RoE and Post-Tax RoE (Base Rate of Return on Equity Plus Additional Rate of Return on Equity), then the actual income tax paid will be considered as a pass through.

41.5. Under-recovery or over-recovery of any amount from the beneficiaries or the consumers on account of such tax having been passed on to them shall be adjusted every year on the basis of income-tax assessment under the Income-Tax Act, 1961, as certified by the statutory auditors. The Generating Company, or the Transmission Licensee or SLDC or Distribution Licensee, as the case may be, may include this variation in its truing up Petition:

Provided that tax on any income stream other than the core business shall not be a pass through component in tariff and tax on such other income shall be borne by the Generating Company or Licensee or SLDC as the case may be.

However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the Generating Company or Transmission Licensee or SLDC or Distribution licensee, as the case may be."

Note: For the purpose of above illustration, the rate of return on equity has been assumed as 14%. However, in actual the return on equity for ARR/Tariff/True-up purpose shall be considered based on the rate of return on equity as specified for the Generating Company or Transmission Licensee or SLDC or Distribution licensee, as the case may be, in relevant provisions/clauses of the Regulations.

5 Generation

This Chapter deals with the regulatory provisions related to the determination of tariff for Generating Companies supplying power to the Distribution Licensees from conventional generation projects in the State of Gujarat.

5.1 Background

5.1.1 In the State of Gujarat, the tariff determination process under section 62 of the Electricity Act, 2003 is undertaken for Gujarat State Electricity Company Limited (GSECL) and Torrent Power Limited - Generation Business (TPL-G), who own and operate coal, lignite, gas and hydel based generating assets in the State of Gujarat and supply power to Distribution Licensees on a long-term basis. The Commission have been vested with the functions of regulating the tariff for such plants under section 62 of the Act. Moreover, Distribution Licensee also gets power supply from Central Generating Stations and Private IPPs, which doesn't fall under the purview of the Commission for determination of Tariff.

5.1.2 GSECL owns and operates the following Generating Stations:

a. Coal based thermal generating stations at Ukai, Gandhinagar, Wanakbori and Sikka;
b. Lignite fired thermal station at Bhavnagar, Kutch;
c. Gas fired stations at Utran and Dhuvaran;
d. Major hydel stations at Ukai and Kadana and mini hydel stations at Panam

Bhavnagar Energy Company Ltd. (BECL) Vide the GoG notification dated August 27, 2018 is merged with GSECL. Accordingly, the assets and liabilities are transferred to GSECL. The effective date of transfer is April 1, 2018 as per the notification.

TPL-G has existing coal-based thermal power generation facilities with total installed capacity of 362 MW at Sabarmati, Ahmedabad [TPL-G (APP)] that consist of 3 units viz. D-Station (120 MW), E-Station (121 MW) and F-Station (121 MW).

5.1.3 The brief summary of Generating Stations of GSECL and TPL-G is given in the following Tables:

Table 3: Generating Stations of GSECL

Name of Station	Installed Capacity (MW)	Unit No.	Unit wise installed capacity (MW)	Year of Commissioning
Ukai TPS	1110	3	200	1979
		4	200	1979
		5	210	1985
		6	500	2013

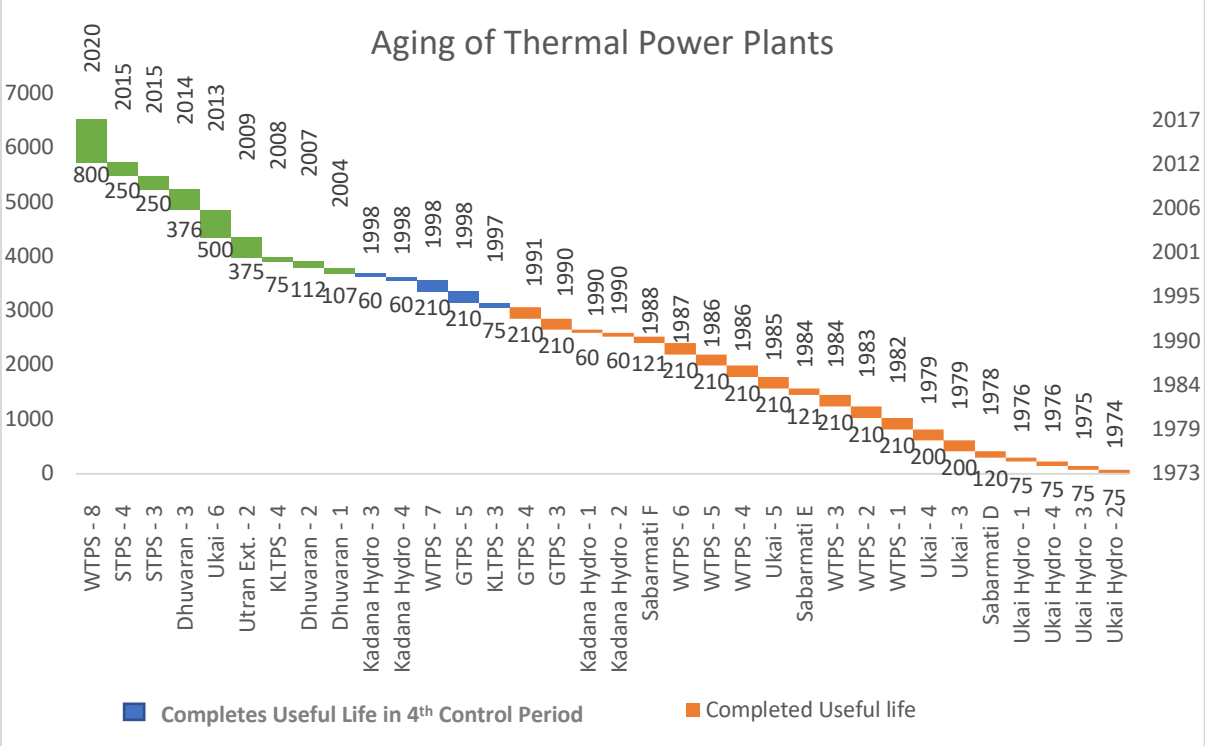
Name of Station	Installed Capacity (MW)	Unit No.	Unit wise installed capacity (MW)	Year of Commissioning
Gandhinagar TPS	630	3	210	1990
		4	210	1991
		5	210	1998
Wanakbori TPS	2270	1	210	1982
		2	210	1983
		3	210	1984
		4	210	1986
		5	210	1986
		6	210	1987
		7	210	1998
		8	800	2020
Sikka TPS	500	3	250	2015
		4	250	2015
Kutch Lignite TPS	150	3	75	1997
		4	75	2009
Dhuvaran CCPP	595.07	7-Gas	106.62	2004
		8-Gas	112.45	2007
		3	376	2014
Utran Extension	375	GT-1	375	2009
Bhavnagar Lignite TPS	500	1	250	2016
		2	250	2017
Ukai Hydro	300	1	75	1974
		2	75	1974
		3	75	1975
		4	75	1976
Ukai LBC	5	1	2.5	1987
		2	2.5	1988
Kadana Hydro	240	1	60	1990
		2	60	1990
		3	60	1998
		4	60	1998
Kadana Panam Canal mini Hydro	2	1	1	1994
		2	1	1994
Total	**6,677.07**			

Table 4: Generating Stations of TPL-G

Name of Station	Installed Capacity (MW)	Unit No.	Unit wise installed capacity (MW)	Year of Commissioning
Sabarmati 'D'	120	1	120	1978/2004* (*Uprating capacity)
Sabarmati 'E'	121	1	121	1984
Sabarmati 'F'	121	1	121	1988
Total	362			

5.1.4 The Commission intends to determine Generation tariffs using a performance-based approach linked to operational parameters.

5.1.5 Further, the aging of the generating stations in the state of Gujarat for which tariff is determined by the Commission is as shown in the below chart. It can be observed that most of the generating stations have already completed their useful life and few will be completing their useful life in the proposed fourth MYT Control Period. Therefore, the Commission while determining the target for operational performance parameters of these plants has duly considered the aging factor for respective stations which has been explained in the corresponding para in the Chapter.



5.1.6 As per the section 61 of Electricity Act, 2003 (EA 2003) and the National Tariff Policy, the State Electricity Regulatory Commission (SERC) requires to be guided by the principles and methodologies specified by the Central Electricity Regulatory

Commission (CERC) for specifying terms and conditions for determination of Tariff. Accordingly, the Commission has adopted the methodology of CERC (wherever required with necessary changes) while specifying the terms and conditions in the draft GERC MYT Regulations, 2021.

5.1.7 The Commission proposes to determine Generation tariffs using a Hybrid approach, i.e., Cost plus and Performance based approach. Accordingly, the Performance of the Utility will be linked to operational parameters and certain component of the cost, which would be used to provide incentives based on actual performance considering the controllable factor and other few cost parameters as specified in the Regulations will be allowed on actual cost basis along with the Return on Equity.

5.2 Applicability

5.2.1 As per the Regulation 46.1 of the GERC MYT Regulations, 2016, it shall be applicable for determining the Tariff for supply of electricity to a distribution licensee from conventional sources and hydro generation stations of capacity more than 25MW. The existing Regulations also empowers the Commission to deviate from the norms or stipulate alternative norms for cases, where it deems appropriate, supported by proper documentation and the reason being recorded.

5.2.2 Further, with respect to Renewable Sources supplying electricity to a Distribution licensee, the determination of tariff shall be in accordance with relevant Regulations/Orders of the Commission.

5.2.3 Also, Regulation 46.2 to the existing GERC MYT Regulations, 2016 clearly highlights the cases where the tariff determination process will be taken:

a. Tariff to be determined pursuant to PPA entered subsequent to the date of the Regulations.
b. Tariff to be determined pursuant to PPA entered prior to the date of the Regulations.
c. Determination of Transfer price of electricity in case of distribution licensee is engaged in the business of generation of electricity.

5.2.4 The Commission in the draft GERC MYT Regulations, 2021 has not specified any changes in this aspect and hence, proposes to continue with the existing provision for next Control Period as well.

5.3 Petition for determination of generation tariff

5.3.1 The Regulations 47 of the GERC MYT Regulations, 2016, specifies that the Tariff in respect of a Generating Station may be determined Stage-wise, Unit-wise or for the whole Generating Station.

5.3.2 The Generating Company to adopt a reasonable basis for allocation of capital cost relating to common facilities across all Stages or Generating Units which shall be duly audited and certified by the statutory auditor.

5.3.3 In case of new Generating Stations, the final tariff can be determined once the Generating Unit or Plant gets commissioned and the audited capital cost is available. However, it is important that as soon as the plants gets COD and is in operating condition, i.e., supplying electricity to its beneficiaries, the commercial settlement must be undertaken in order to meet the working capital and debt service obligation of the plant. Considering the expected time interval for availability of audited capital cost post commissioning of the plant, there is a practice adopted of determining the provisional tariff in advance so as the commercial billing mechanism is initiated post commissioning of the project so as to provide interim cash flow to meet the operational needs. However, it is noticed that, higher the time gap is allowed between determination of provisional tariff and COD of the plant, the resultant variance in the provisional and final tariff is relatively higher, which may either result in under recovery for the Generating Unit / Station or higher burden of tariff on consumers.

5.3.4 Accordingly, CERC, in the CERC Tariff Regulations, 2019 has revised the time period for filing of provisional tariff within 60 days prior to the anticipated date of COD. Such approach will also benefit the beneficiaries and the consumers whereby the deviation between provisional and actual tariff will be on a lower side. However, the Generating Company is free to file the Petition before the deadline of 60 days before anticipated date of COD, so that the provisional tariff is in place when COD happens. Therefore, in accordance with the CERC Tariff Regulations, 2019 the Commission has proposed for reduction of time period for filling of provisional tariff from 180 days to 60 days prior to the anticipated COD in the draft GERC MYT Regulations, 2021.

5.3.5 Also, the Commission is of the view that the details related to completed cost and the audit of such cost of the Generating Units/Stations can be completed within 60 days and accordingly the time period for filing the Petition for final tariff is also proposed to be reduced from 180 days to 60 days from the date of COD.

5.3.6 As per the GERC MYT Regulations, 2016, the recovery of the difference between provisionally approved tariff and final tariff, due to difference in provisionally approved capital cost and actual capital cost is clearly specified. Further, for discouraging the applicants from projecting higher capital expenditure, the interest applicable on the recovery of such difference has been specified at a higher rate in case the actual capital expenditure is lower than the approved projected capital expenditure. However, in case where the actual capital expenditure exceeds the provisionally approved capital expenditure, the interest specified are comparatively lower.

5.3.7 It is specified in the GERC MYT Regulations, 2016 that in case actual capital cost incurred is lesser than the approved capital cost by 5% or more, the Generation Company to refund to the beneficiaries, the excess tariff realized along with interest at 1.20 times

of the Base Rate of State Bank of India plus 350 bps. Further, if actual capital cost incurred is higher by 5% or more, the Generation Company shall be entitled to recover from the beneficiaries, the shortfall in tariff along with interest at 0.80 times of the Base Rate of State Bank of India plus 350 bps.

5.3.8 In the draft GERC MYT Regulations, 2021, it is proposed that the deviation between actual and approved capital expenditure may be continue with 5%, however, the spread on interest rate may be considered as 150bps linked to Base rate as defined paras above, considering the present market conditions.

5.4 Fuel Utilisation Plan

5.4.1 Considering the multiple long-term contracts with different FSA and coal linkages for each Generating Unit/Station, Ministry of Power, through CEA (Fuel management Division) has notified "Methodology for flexibility in utilisation of domestic coal for reducing the cost of power generation" dated June 8, 2016. Wherein, the methodology has been specified for utilisation of domestic coal in a flexible manner by Central/State GENCOs and IPP's for reducing cost of power generation by minimizing the transportation cost and optimum utilisation of coal. In this methodology, there are five case envisaged for allowing flexibility of utilisation of coal under this arrangement, which are as follows:

- Case-1: Use of Coal aggregated with the State in its own State Generating Stations;
- Case-2: Use of Coal aggregated with the one State in Generating Stations of other State's utilities;
- Case-3: Use of Coal aggregated with State in Central Generating Stations and vice versa;
- Case-4: Use of Coal by any State / Central Generating Company in Private Generating Stations (IPPs);
- Case-5: Use of coal assigned to the Central Generating Company in their own plants or any other more efficient plants;

5.4.2 The basic objective of this policy is to have a flexibility in utilisation of coal in an efficient manner so as to optimise the cost. By giving cognizance to the options provided in this methodology, the Commission is of the view that a Generating Company needs to evaluate various scenarios of utilisation of coal in different Generating Stations. It must have an efficient annual coal utilisation plan so as to optimise the cost and lower the burden of tariff on the consumers. The basic objective is that the Generating Company needs to indicate minimum total variable cost of all plants together so as to achieve optimization by not running all plants but running only efficient plants having least variable cost. However, such optimisaiton plan may not be limited to coal and can be considered for any fuel such as coal, gas, naphtha, lignite, etc.

5.4.3 Accordingly, the Generating Companies will be required to have a long-term Station-wise generation plan, and a plan for sourcing the required quantum of different fuels, with a view to optimize utilization of coal and to reduce the variable cost of generation, so as to benefit the consumer. Also, in order to acknowledge the implementation of Case 1 as well as Case 4 under flexible utilization of coal policy, the Commission has proposed for introduction of regulations regarding Fuel utilization plan as reproduced below:

> ***"49. Fuel Utilization Plan***
>
> *49.1. The Generating Company shall prepare and submit Fuel Utilisation Plan for the Control Period commencing on April 1, 2021, along with the Petition for determination of Tariff for the Control Period from April 1, 2021 to March 31, 2026, in accordance with Chapter 2 of these Regulations, to the Commission for approval.*
>
> *49.2. The Fuel Utilisation Plan should ensure that fuel quantum is allocated to different generating Stations/Units in accordance with the merit order of different generation Stations/Units in terms of variable cost:*
>
> *Provided that the fuel allocation should be such that, subject to system and other constraints, the least cost generating Stations/Units are operated at maximum availability and other generating Stations/Units are operated at maximum availability thereafter in the ascending order of variable cost*
>
> *49.3. The Fuel Utilisation Plan shall comprise the following:*
>
> *(a) Forecast of fuel requirement for each unit/station;*
>
> *(b) Details of contracted source, annual contracted quantity, estimated availability from contracted sources and resultant shortage of fuel, if any, for each unit/station;*
>
> *(c) Use of optimum mix of fuel;*
>
> *(d) Alternate arrangement for meeting shortage of fuel along with impact on variable cost of unit/station;*
>
> *(e) Plan for swapping of fuel source for optimising the cost, if any, along with detailed justification and cost savings;*
>
> *(f) Net cost savings in variable cost of each unit, if any, after optimum utilisation of Fuel:*
>
> *Provided that the forecast or estimates for the Control Period from FY 2021-22 to FY 2025-26 shall be prepared for each month over the Control Period:*
>
> *Provided further that Fuel Utilisation Plan shall be prepared based on past data and reasonable assumptions for future.*
>
> *The beneficiary/ies shall file comments/suggestions on such Plan during proceedings of Tariff Petition as per Regulation 26.*

49.4. Annual Fuel Utilisation plan shall be submitted by the Generating Company each year during the tariff proceedings for the review of the Commission along with the justification for any deviation between the approved fuel utilisation plan and actual Fuel utilisation along with the cost impact from FY 2022-23 onwards.

Provided a Generating Company may, as a result of additional information not previously known or available to it at the time of submission of the Fuel Utilisation Plan under Regulation 49.1, apply for modification in the Fuel Utilisation Plan, during filing of the petition in the remaining part of the Control Period.

Provided at the time of review of the Annual Fuel Utilisation Plan, the Commission may, as a result of additional information not previously known or available to the Commission at the time of approval of the Fuel Utilisation Plan under Regulation 49.1, if it deems appropriate, modify the Annual Fuel Utilisation Plan for the remainder of the Control Period, at the time of annual tariff proceedings.''

5.5 Components of tariff

5.5.1 The mechanism of cost recovery needs to be designed to ensure full cost recovery at normative levels for the Generating Company and accordingly, the tariff is required to be determined by the Commission.

5.5.2 As per the Regulation 48 of the GERC MYT Regulations 2016, tariff for sale of electricity from a thermal Generating Station is determined which shall consists of two parts namely Annual Fixed Charges (AFC) and Energy Charges (EC) and for hydro Generating Stations it is Capacity Charge (CC) and Energy Charge (EC).

5.5.3 For thermal Generating Stations Fixed Charges representing fixed cost components and energy charges representing variable component (fuel cost) with incentive and disincentive mechanism.

5.5.4 For hydro Generating Stations, Capacity Charges & Energy Charges each component represents 50% of Annual Fixed Charges (AFC). Recovery of Capacity Charges is linked to availability of plant and recovery of Energy Charges is linked to actual energy generated.

5.5.5 The Commission in the draft GERC MYT Regulations, 2021 has replaced the term Annual Fixed Charges with Annual Capacity Charges to maintain consistency.

5.6 Annual Capacity Charges

5.6.1 As per Regulation 49 of the GERC MYT Regulations 2016, the Annual Capacity Charges shall comprise of the following elements:

a) Depreciation;
b) Interest and Finance Charges on Loan Capital;

c) Interest on Working Capital;
d) Operation and Maintenance Expenses;
e) Return on Equity (ROE);
f) Special allowance in lieu of Renovation & Modernisation, where applicable;
g) SLDC Fees and Charges
minus:
h) Non- Tariff Income;

5.6.2 Further, the proviso to Regulation 49 of the GERC MYT Regulations 2016, specifies that prior period income/expenses shall be allowed based on audited accounts. In this regard for greater understanding, the Commission hereby clarifies that only those prior period income/expenses will be considered/allowed whose corresponding income or expenses has been considered in the previous year of the filing.

5.6.3 As per Regulations 41 of the GERC MYT Regulations, 2016 the income tax shall be recovered as per the actual tax paid. However, the Commission proposes Grossing up approach in this draft GERC MYT Regulations, 2021 and the consideration of Income Tax has been explained in the chapter on Financial principles of this explanatory memorandum. Therefore, the Commission has proposed to include Income Tax under elements of Annual Capacity Charges.

5.6.4 In order to safeguard the interest of a consumer, the penalties/compensations raised due to inefficiency and failure of the Generating Company should not be recovered from the paying consumer. Although, for the proper treatment of paid penalties/compensation during Truing-up of ARR, Generating Company is required to maintain a separate record for such payment of penalties/compensation and same has to be submitted to the Commission along with the truing-up petition.

5.6.5 Accordingly, the Commission in the draft GERC MYT Regulations, 2021 has proposed to include the following proviso under the Annual Capacity Charges for providing clarity regarding recovery of penalties and compensation:

> *"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 shall not be allowed to be recovered through the Aggregate Revenue Requirement whereby the details of penalties and compensation paid or payable, if any, is required to be submitted to the Commission along with the Petition under these Regulations."*

5.7 Renovation & Modernization

5.7.1 Regulations 50 in the GERC MYT Regulations 2016 specifies the proviso for Renovation and Modernization (R&M) Expenses or special allowance for improving the performance and encouraging higher efficiency level of the Station. These provisions were also in line with the CERC Tariff Regulations.

5.7.2 Further, as per the said provision, the Generating Station requires to file an application before the Commission along with the specified documents for approval of R&M expenses. In the draft GERC MYT Regulations, 2021 the Commission has proposed for additional requirement of submitting the details of expected duration of life extension, consent of the beneficiaries or long term customers (if obtained) along with the application to the Commission. These details will be required to assess the actual benefit of incurring such expenditure to the end consumers and to increase the transparency in the approval procedure.

5.7.3 Also, the Generating Company intending to undertake Renovation & Modernisation, has tied up its capacity with the Distribution Licensee. Therefore, the proposed Renovation & Modernisation will affect the quantum of supply as well as cost of procurement of power for the Distribution Licensee and its end consumers. Accordingly, the Commission has proposed that the consent from the Distribution Licensee is required to be obtained for any Renovation & Modernisation proposal.

5.7.4 As regards to the circumstances under which Renovation & Modernisation is required to be allowed and the recovery of such capital expenditure, the Commission is of the view that the Regulations are very clear on these aspects, and hence no modification is proposed on this account. Generating Company needs to assess the benefits of undertaking Renovation & Modernisation expenditure and convince the beneficiary as well as the Commission regarding the benefits of the proposed Renovation & Modernisation.

5.7.5 The Regulation 50.6 of the GERC MYT Regulations, 2016, allows the Special Allowance @ 7.5 lakh/MW/year for the year 2016-17 and thereafter escalated @ 5.72% every year during the Control Period in accordance with the CERC Tariff Regulations, 2014. However, CERC in its Tariff Regulations, 2019 has increased the Special Allowance to 9.5 lakh/MW/year and accordingly the Commission has proposed the same in the draft GERC MYT Regulations, 2021. However, the Commission has proposed that the escalation rate for future period needs to be linked to Index $_{ESC}$ which reflects the corresponding inflation rate for the respective year of the Control Period. The proposed Regulation is as shown below:

> *"52.6. The Special Allowance shall be @ Rs. 9.5 lakh/MW/year for the year 2021-22 and thereafter escalated at the rate equal to INDEX Esc as defined in Regulation 2, every year during the Control Period, unit-wise from the next financial year from the respective date of the completion of useful life with reference to the date of commercial operation of the respective unit of generating station:*
>
> *Provided that in respect of a unit in commercial operation for more than 25 years as on April 1, 2021, this allowance shall be admissible from the year 2021-22:*
>
> *Provided further that the special allowance for the generating station, which, in its discretion, has already availed of a 'special allowance' in accordance with the*

norms specified in Regulation 50.6 of the Gujarat Electricity Regulatory Commission (Multi-Year Tariff) Regulations, 2016, shall be allowed Special Allowance by escalating the special allowance allowed for the year 2020-21 at the rate equal to INDEX Esc as defined in Regulation 2, every year during the Control Period.."

5.7.6 Further, it to clarify that while deriving the inflation rate, i.e., $INDEX_{Esc}$ for computing the special allowance, the appropriate weightages of WPI:CPI as provided in O&M section of this Regulations shall be considered.

5.8 Sale of Infirm Power

5.8.1 As per Regulation 51 of the GERC MYT Regulations 2016, the tariff for sale of infirm power from a Generating Station shall be equivalent to the actual fuel cost and any revenue recovered from sale of infirm power shall be deducted from the capital cost. The existing Regulations does not take into the consideration of ABT/DSM mechanism. However, the CERC Tariff Regulations 2019 specifies relevant provision for sale of infirm power to be paid as per the DSM Regulations as shown below.

"Supply of infirm power shall be accounted as deviation and shall be paid for from the regional deviation settlement fund accounts in accordance with the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related matters) Regulations, 2014:

Provided that any revenue earned by the Generating Company from supply of Infirm Power after accounting for the fuel cost shall be used for reduction in Capital Cost and shall not be treated as revenue."

5.8.2 Further, the CERC has notified the CERC Deviation Settlement Mechanism and related matters Regulations, 2014 and its amendments. The DSM was implemented at Intra-State level effective from February 17, 2014 vide letter no. GERC/Legal/2015/0436 dated March 5, 2015 by the Commission. Further, CERC notified Fourth amendment and Fifth amendment to the CERC DSM Regulations. The injection of the infirm power must be compensated as per the DSM Regulations. Accordingly, the Commission has proposed to amend the existing Regulations in line with aforesaid CERC DSM Regulations as under.

"53.1. The supply of Infirm Power shall be accounted as deviation / Unscheduled Interchange and shall be paid at Charges for Deviation for Infirm Power in accordance with the relevant Regulations notified by the Commission:

Provided that any revenue earned by the Generating Company from supply of Infirm Power after accounting for the fuel cost shall be used for reduction in Capital Cost and shall not be treated as revenue."

5.9 Non-Tariff Income

5.9.1 As per existing provision in the Regulation 52 of the GERC MYT Regulations 2016, certain list of components are to be considered as Non-Tariff Income relating to the Generation Business which has to be approved by the Commission and shall be deducted from the Aggregate Revenue Requirement for determination of annual fixed charge.

5.9.2 However, earning from investment made out of Return on Equity corresponding to the regulated business of Generating Company shall not be included in Non-Tariff Income.

5.9.3 The Commission has proposed to continue with the same with minor modifications in the list of components under Non-Tariff Income as shown below:

"a) Income from rent of land or buildings;
b) Income from sale of scrap;
c) Income from statutory investments;
d) Income from sale of Ash/rejected coal;
e) Interest on advances to suppliers/contractors;
f) Rental from staff quarters;
g) Rental from contractors;
h) Income from hire charges from contactors and others;
i) Deferred Income from grant, subsidy, etc., as per Annual Accounts;
j) Income from advertisements, sale of tender, etc;
k) Excess found on physical verification;
l) Interest on investments, fixed and call deposits and bank balances;
m) Prior period income,
n) Supervisory charges for contractual works;
o) Any Other Non-Tariff Income"

5.9.4 Generation Company shall submit full details of Non-Tariff Income to the Commission while submitting its application for determination of Aggregate Revenue Return.

5.10 Norms of operation for Thermal Generating Station

5.10.1 There are various norms specified in the GERC MYT Regulations, 2016, for operation of thermal Generating Station. Each norms of operation have its impact in determination of tariff. The norms and their impact on the tariff are summarized below:

Table 5: Operational norms and their impact on tariff

Sr. No.	Norms of Operations	Impact on Tariff
a.	Plant Availability Factor (PAF)	For recovery of Capacity Charges
b.	Gross Station Heat Rate (SHR)	Sharing of gains and losses on account of controllable factors
c.	Secondary Fuel oil Consumption (SFOC)	
d.	Auxiliary Energy Consumption (AEC)	
e.	Transit and Handling Losses	

5.10.2 The CERC in its Tariff Regulations, 2019, has specified similar norms for each performance parameter for new as well as existing Generating Stations; except for few old Generating Stations of NTPC, NLC, DVC and NEEPCO where a relaxed norms have been specified based on past performance.

5.10.3 The Commission has proposed to adopt a similar approach for specifying the common norms for the Performance parameters, which would be applicable to new as well as existing Generating Stations. Although, relaxed norms have been specified for few Generating Stations based on actual performance of these stations over past period.

5.10.4 While proposing the norms for next Control Period, the Commission has analysed the past performance of existing Generating Stations. The Commission has sought the relevant data of the performance parameters from the respective Utilities. In case where the Commission observed ambiguity in data submitted, the Commission has considered the respective values as per the Truing up Orders of respective years. The approach adopted for determination of the norms for the performance parameters has been detailed in the corresponding paras below:

Normative Annual Plant Availability Factor (NAPAF)

5.10.5 Normative Annual Plant Availability Factor (NAPAF) of a Generating Station demonstrate the percentage of time the station is available to provide electricity to grid/beneficiaries. As per the present approach, the recovery of Annual Fixed Charges is based on cumulative availability during the year. The target NAPAF for full recovery of Annual Fixed Charges as per Regulation 53.1 of the GERC MYT Regulations, 2016 is 85% for all thermal Generating Station except for some existing older Stations of GSECL.

5.10.6 Further, the proviso to the Regulation 53.1 (a) of the GERC MYT Regulations, 2016 provides relaxation for full AFC recovery at 83% NAPAF due to coal shortage in accordance with the New Coal Distribution Policy (NCDP) and which was also in line with the CERC Tariff Regulations, 2014.

5.10.7 It is to be noted that the above relaxation was given on account of shortage of coal, as per relevant provision of NCDP 2013, dated July 26, 2013 wherein the Ministry of Coal, Government of India has reduced the Annual Contracted Quantity (ACQ) from erstwhile 100% committed under NCDP 2007 to 65%, 65%, 67% and 75% respectively for the remaining four years of the 12th plan, i.e., for the years 2013-14 to 2016-17 under NCDP 2013. As the New Coal Distribution Policy was applicable only till 12th Plan, i.e., till FY 2016-17 and considering the present coal availability positions, the CERC Tariff Regulations, 2019 has removed the relaxation on account of coal shortage. Accordingly, in line with the CERC, the Commission in the draft GERC MYT Regulations, 2021 has proposed the removal of this provision.

5.10.8 Further, the relaxed norms of PAF were specified for the Generation Stations such as Ukai TPS (Unit 1- 5), Gandhinagar TPS (Unit 3- 4), Wanakbori TPS (Unit 1-6), Sikka TPS, Kutch Lignite (Unit 1-3) and Kutch Lignite (Unit 4). The relaxation was given considering the vintage effect and technology of plant. It was also specified that the Commission may revise the norms for Availability for the above-mentioned Generating Stations in case of Renovation & Modernisation undertaken by the Generating Station.

5.10.9 The Commission has analysed the actual performance parameters of various Generating Stations including those where relaxed norms have been specified over the past period, i.e., from FY 2015-16 to FY 2018-19 against the normative target availability. The following Table provides the comparison of actual availability vis-a-vis normative availability for Generating Stations of GSECL and TPL-G:

Table 6: Actual & Normative Plant Availability Factor (%) for Thermal Power Generating station

Generating stations	NAPAF	Actual Availability					Average of actual PAF	
		FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	2 Years	5 Years
Ukai (Unit 3-5)[$]	80.00%	79.41%	77.49%	49.72%	89.62%	82.76%	86.19%	75.80%
Gandhinagar (Unit 3-4)[$]	84.00%	83.30%	78.46%	85.80%	93.32%	87.62%	90.47%	85.70%
Wanakbori (Unit 1-6)	85.00%	87.17%	90.93%	89.38%	86.86%	89.28%	88.07%	88.72%
KLTPS (Unit 3)	75.00%	64.57%	70.94%	81.47%	65.52%	46.05%	55.78%	65.71%
KLTPS (Unit 4)	80.00%	55.60%	44.81%	67.74%	49.12%	44.49%	46.80%	52.35%
Dhuvaran CCPP - 2	85.00%	98.03%	93.53%	82.79%	83.26%	76.27%	79.77%	86.78%
Ukai Extn. (Unit - 6)*	85.00%	69.67%	83.92%	86.88%	75.14%	76.72%	75.93%	78.47%
Gandhinagar (Unit -5)*	85.00%	97.00%	90.89%	97.27%	92.42%	89.88%	91.15%	93.49%
Wanakbori (Unit -7)*	85.00%	101.15%	93.72%	78.80%	100.0%	90.05%	95.03%	92.74%
Sikka Extn. (Unit 3-4)*	85.00%		36.01%	76.27%	84.45%	90.28%	87.36%	71.75%
Dhuvaran CCPP - 1*	85.00%	92.37%	92.93%	72.34%	73.71%	35.82%	54.76%	73.43%
Dhuvaran - CCPP 3*	85.00%	0.00%	0.00%	0.00%	83.28%	95.79%	89.53%	-
Utran Extension*	85.00%	99.68%	79.37%	98.46%	90.11%	96.02%	93.06%	92.73%
Sabarmati 'D'	85.00%	79.04%	95.56%	92.78%	93.25%	94.14%	93.70%	90.95%
Sabarmati 'E'	85.00%	96.11%	94.15%	94.46%	96.88%	90.66%	93.77%	94.45%

Generating stations	NAPAF	Actual Availability					Average of actual PAF	
		FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	2 Years	5 Years
Sabarmati 'F'	85.00%	95.15%	95.30%	95.75%	89.51%	94.62%	92.07%	94.07%

Note:
** PPA based stations*
$ For Ukai (3-5) and Gandhinagar (3-4), the vales for the period form FY 2014-15 to FY 2016-17 are inclusive of those Units that were decommissioned in later stage.

5.10.10 From the above Table following observations were made:

a) Ukai TPS (3-5): The Units 1&2 of Ukai Station have been successfully de-commissioned during the past period. Further, the Units 3 to 5 of Ukai Station have also outlived its useful life and have been in operation for around 35 to 40 years. However, it was observed that the Ukai TPS (3-5) Station has achieved actual average availability of 75.80% over the past five years from FY 2014-15 to FY 2018-19. From the past Tariff Order, it was observed that the actual availability of station was low mainly during the year of FY 2016-17; wherein there was an outage for 3 months due to canal repairing work by irrigation department. Also, due to major Repair & Maintenance work related to turbine retrofitting of Unit 4 and Electrostatic precipitator (ESP) refurbishment for Units 4&5, the actual availability of Station was impacted during aforesaid period. Although, during FY 2017-18 and FY 2018-19 the Stations achieved availability of 89.65% and 82.69%, respectively, which is significantly higher than the normative availability of 80.00% approved by the Commission for full recovery of fixed charges in the previous Control Period. Further, after the decommissioning of Unit 1 & 2, it is observed that the Units 3 to 5 were able to achieve higher availability. Based on the performance, it is proposed that the normative availability for Ukai (3-5) is to be increased to 82.00% for the next Control Period for full recovery of fixed charges, as the plant has consistently achieved availability of more than 82% during FY 2017-18 and FY 2018-19 .

b) Gandhinagar TPS (3-4): The Units 1 & 2 have been successfully de-commissioned with effect from September, 2016. The actual availability of Gandhinagar (1-4) Station has been 83.30%, 78.46%, 85.80%, 93.32% and 87.62% for FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19, respectively. The Station has achieved average actual availability of 85.70% over the past five years, i.e., from FY 2014-15 to FY 2018-19. From the last three-year trend, it was observed that the Gandhinagar (3-4) Station has been consistently able to achieve availability of more than 85%. Hence, in view of above it is proposed that the relaxation provided for Gandhinagar (3-4) may be removed. Accordingly, for full recovery of fixed charges, the availability of Gandhinagar (3-4) has been specified as 85% (i.e., the normative availability of 85%) for the next Control Period for full recovery of fixed charges.

c) Wanakbori TPS (Unit 1-6): The actual availability achieved by Wanakbori (1-6) Station during FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 was 87.17%, 90.93%, 89.38%, 86.86% and 89.28%, respectively. The average availability of Station was 85.70% over the past five years which is above the normative availability of 85%. Hence, it is proposed to continue with the normative availability for Wanakbori (1-6) TPS as 85% for full recovery of fixed costs.

d) Sikka TPS (Units 1-2): Sikka TPS has been successfully de-commissioned and hence, it has been omitted from the Regulations.

e) KLTPS (Unit-3): The Units 1 & 2 have been successfully de-commissioned with effect from January, 2020. Further, the Unit 3 was commissioned on March 31, 1997 and has completed around 23 years of its useful life. The unit wise availability of KLTPS was not available, however, based on the past year performance, it was observed that actual availability of aforesaid Station remained consistently lower than the normative availability of 75%, except in FY 2016-17. From the past Tariff Orders, it was observed that the reasons for such lower availability as specified by GSECL was on account of Turbine vibrations, problems in Air Pre-Heater (APH), Boiler tube leakage (BTL), and also due to non-availability of coal mills due to poor lignite quality. The Commission is of the view that such consistence under-performance shall not be allowed for any Generating Stations . Further, considering that as older Units, i.e., Unit 1 &2 have now been de-commissioned which might have affected the operational parameters of overall plant and hence, it is expected that post decommissioning of Unit 1 & 2, the performance of standalone Unit 3 will be better than past performance of the Plant as a whole. Hence, no further relaxation is proposed to be given to KLTPS (3) in target availability for full recovery of fixed charges and therefore, the normative availability as specified in the GERC MYT Regulations, 2016 is proposed to be continued.

f) KLTPS (Unit-4): The actual availability of KLTPS (Unit-4) remained consistently lower than the normative availability of 80%, specified by the Commission in the GERC MYT Regulations, 2016. From the past Tariff Orders, it was observed that during FY 2014-15 the availability was lower due APH and FBHE problem, in FY 2015-16 blockage in Air Pre-Heater (APH) and in FY 2016-17 BTL issue and leakage in FBHE and NMEJ impacted the availability of Station. Further, in FY 2017-18 Seal Pot problem, Cyclone repairing and NMEJ replacement and in FY 2018-19 forced outage and partial outage due to boiler tube leakage, Seal Pot to combustor expansion joint leakage etc. caused the lower availability of Station. It was also observed that the actual availability of KLTPS (Unit-4) remained lower than the norms specified in Regulations during previous Control Period. It is to be noted that KLTPS 4 was commissioned on October 22, 2008 and has completed around 12 years of operation only. The Commission is of the view that such consistence under-performance will not acceptable for any Generating Stations especially when there are no prudent reasons for the non-performance and the stations are not old as well. Therefore, it is suggested that no further relaxation be given to this Generating

Stations in target availability for full recovery of fixed charges and the existing norms is proposed to be continued.

g) Dhuvaran CCPP 2: The actual average availability achieved by Dhuvaran CCPP 2 over the past five year is 86.78%. The actual availability of plant was lower than the normative during FY 2016-17 to FY 2018-19. It was observed that in FY 2016-17 there was a planned outage and in FY 2017-18 shutdown of CI, MI, HGPI caused lower availability. In FY 2018-19 forced outages due to Gas Turbine Start up problem (SFC) and vacuum related problem caused lower availability. The Commission has proposed to retain the target availability for the Dhuvaran CCPP-2 station at 85% for next Control Period.

h) Sabarmati (D, E and F): The actual availability of these stations was higher than the NAPAF from FY 2015-16 to FY 2018-19. Hence, it is proposed that the target availability may be retained at 85%.

i) PPA governed stations: Ukai Extn. (Unit - 6), Gandhinagar (Unit -5), Wanakbori (Unit - 7), Sikka Extn. (Unit 3-4), Dhuvaran CCPP – 1, Dhuvaran - CCPP 3, Utran Extension, BLTPS and Wanakbori (Unit-8) are PPA governed stations wherein, the target availability shall be governed based on the terms of the respective PPAs.

5.10.11 In view of above, the Commission has proposed to continue with the existing norms which specifies that target availability for full recovery of Annual Fixed Charges for the next Control Period to be 85% for all Thermal Generating Stations including new Generating Stations and stations that have been commissioned during the present Control Period except those covered in the following table:

Table 7: Normative Annual Plant Availability Factor

Station	Target Availability (%)
Ukai TPS (Unit 3- 5)	82
Kutch Lignite (Unit 3)	75
Kutch Lignite (Unit 4)	80

Gross Station Heat Rate

5.10.12 The Gross Station Heat Rate (GSHR) of plant is inversely proportional to the efficiency of plant, i.e., if the heat rate is lower, the efficiency is higher. The SHR is a crucial parameter as it has substantial impact on tariff of generating unit. The SHR of plant depends upon various factor such as technology of generating unit, age, unit size, percentage of loading, past generating performance, past maintenance practices, condition of plant, etc.

5.10.13 Regulations 53.3 of the GERC MYT Regulations 2016 specifies the Station Heat Rate (SHR) norm for Existing as well as new Generating units or stations achieving COD after the effectiveness of the Regulations. The SHR of existing thermal Generating Stations of GSECL's and TPL-G's were based on the past data submitted by them.

However, for new Generating Units/Stations to be commissioned after the date of effectiveness of the GERC MYT Regulations 2016, the SHR norm were proposed in accordance with the norms specified by the CERC in its Tariff Regulations 2014, for various technologies and Unit sizes as well as considering the technological advances and improvement, with manufacturers' committing design heat rates. In the case of PPA governed stations, the SHR is approved based on the terms of the respective PPAs.

5.10.14 The normative SHR for existing generating station provided in the GERC MYT Regulations, 2016 is shown below:

"53.3 Gross Station Heat Rate – For existing Generating Stations:

a) Thermal Generating Stations of Gujarat State Electricity Generation Company Limited (GSECL):

Table 3: Gross Station Heat Rate for GSECL Stations for the Control Period (in kcal/kWh)

Stations	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
Ukai TPS (Unit 1 - 5)	2750	2750	2750	2750	2750
Gandhinagar TPS (Unit 1 - 4)	2679	2679	2679	2679	2679
Wanakbori TPS (Unit 1 – 6)	2625	2625	2625	2625	2625
Sikka TPS	3008	3008	3008	3008	3008
Kutch Lignite TPS (Unit 1-3)	3231	3231	3231	3231	3231
Kutch Lignite TPS (Unit 4)	3000	3000	3000	3000	3000
Dhuvaran CCPP - 2	1950	1950	1950	1950	1950
Ukai – 6	2385	2385	2385	2385	2385
Dhuvaran CCPP-3	1850	1850	1850	1850	1850
Sikka 3 & 4	2398	2398	2398	2398	2398

Provided that the Commission may revise the norms for the Gross Station Heat Rate for the above mentioned Generating Stations in case of Renovation & Modernisation undertaken by the Generating Station;

b) Thermal Generating Units of Torrent Power Limited -Generation Business (TPL-G):

Table 4: Gross Station Heat Rate for TPL-G Stations for the Control Period (in kcal/kWh)

Stations	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
Sabarmati 'C'	3136	3136	3136	3136	3136
Sabarmati 'D'	2450	2450	2450	2450	2450
Sabarmati 'E' & 'F'	2455	2455	2455	2455	2455

Provided that the Commission may revise the norms for the heat rate for the above mentioned Generating Stations in case of Renovation & Modernisation undertaken by the Generating Station;"

5.10.15 However, later during the MYT Order, the Commission revised the norms for some of the Generating Stations such as Ukai (3-5) and Gandhinagar (3-4). The aforesaid revision was mainly on account of data submitted by GSECL in the MYT Petition. In the MYT Petition, GSECL had projected lower SHR as compared to normative SHR specified in the GERC (MYT) Regulations, 2016 in view of R&M activities planned. Accordingly, the Commission had considered the norms of SHR for Ukai TPS as submitted by GSECL. For Gandhinagar (1-4) Station, as Unit 1 & 2 were decommissioned in FY 2016-17, the remaining machines were observed to be comparable to Wanakbori Station. Hence, the Commission in its MYT Order held that the SHR of both GTPS and Wanakbori should be same post FY 2016-17. Accordingly, the Commission approved SHR of Gandhinagar (1-4) as 2625 kcal/kWh post FY 2016-17.

5.10.16 With regard to the Generating Stations of TPL, the Commission in the MYT Order has approved SHR for the whole Control Period based on the submissions made by TPL and in accordance with the MYT Regulations, 2016 for various generating station of TPL except for Sabarmati "C". In case of said station, the Commission directed TPL to explore the possibility of decommissioning of Sabarmati "C" Stations form FY 2018-19 and accordingly do not approve the SHR from FY 2018-19 onwards for "C" station. Accordingly, the normative SHR specified by the Commission in the MYT Order are reproduced in the Table below:

Table 5.9: Approved Station Heat Rates for the control period FY 2016-17 to FY 2020-21

(Kcal/kWh)

Sl. No.	Power station	2016-17	2017-18	2018-19	2019-20	2020-21
1	Ukai (1-5)	2750	2715	2715	2675	2625
2	Gandhinagar (1-4)	2650	2625	2625	2625	2625
3	Wanakbori 1-6 TPS	2625	2625	2625	2625	2600
4	Sikka TPS	3008	3003	-	-	-
5	KLTPS 1-3	3231	3231	3231	3231	3231
6	KLTPS 4	3000	3000	3000	3000	3000
7	Dhuvaran CCPP 2	1950	1950	1950	1950	1950
8	Ukai Hydro	-	-	-	-	-

Sl. No.	*Power station*	*2016-17*	*2017-18*	*2018-19*	*2019-20*	*2020-21*
9	*Kadana Hydro*	*-*	*-*	*-*	*-*	*-*
10	*Ukai Extn. 6**	*2385*	*2385*	*2385*	*2385*	*2385*
11	*Gandhinagar 5**	*2460*	*2460*	*2460*	*2460*	*2460*
12	*Wanakbori 7 TPS**	*2460*	*2460*	*2460*	*2460*	*2460*
13	*Dhuvaran CCPP 1**	*1950*	*1950*	*1950*	*1950*	*1950*
14	*Dhuvaran CCPP 3**	*1850*	*1850*	*1850*	*1850*	*1850*
15	*Utran (Gas)**	*2150*	*0*	*0*	*0*	*0*
16	*Utran Extension**	*1850*	*1850*	*1850*	*1850*	*1850*
17	*Sikka Extn. (3-4)**	*2398*	*2398*	*2398*	*2398*	*2398*
18	*Wanakbori 8 TPS**	*-*	*-*	*2248*	*2248*	*2248*
19	*Dhuvaran STPS**	*-*	*-*	*-*	*-*	*2248*

Table 5.10: Approved Station Heat Rate for TPL-G (APP) for the control period FY 2016-17 to FY 2020-21

(Kcal/kWh)

Sl. No.	*Station*	*2016-17*	*2017-18*	*2018-19*	*2019-20*	*2020-21*
1	*C Station*	*3,136*	*3,136*	*-*	*-*	*-*
2	*D Station*	*2,450*	*2,450*	*2,450*	*2,450*	*2,450*
3	*E Station*	*2,455*	*2,455*	*2,455*	*2,455*	*2,455*
4	*F Station*	*2,455*	*2,455*	*2,455*	*2,455*	*2,455*

5.10.17 The Commission has been following the consistent practice of formulating norms based on actual data of the past period, which is also in line with the practice followed by the CERC. The Commission also notes that Tariff Policy, 2016 suggest that the norms should be efficient, relatable to past performance, capable of achievement and progressively reflecting increased efficiencies. The relevant extract from Tariff Policy, 2016 is reproduced below:

> *"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.

The Central Commission would, in consultation with the Central Electricity Authority, notify operating norms from time to time for generation and transmission. The SERC would adopt these norms. In cases where operations have been much below the norms for many previous years, the SERCs may fix relaxed norms suitably and draw a transition path over the time for achieving the norms notified by the Central Commission, or phase them out in accordance with the norms specified by the Authority in this regard.

……"

5.10.18 In view of above, the Commission has analysed the actual performance of various Generating Stations over the past year and after considering the factor affecting the Heat Rate as such vintage, size, past generating history, past maintenance practices, condition of plant, etc., has proposed the SHR norms for the next Control Period.

5.10.19 The Table below provides the summary of actual SHR data from FY 2014-15 to FY 2018-19 with respect to GSECL and TPL-G's Generating Stations:

Table 8: Actual Station Heat Rate of Existing Stations/Units (kcal/kWh)

Generating Station	Normative SHR	Actual					Average	
		FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	2 Years	5 Years
Ukai (Unit 3-5)[$]	2625^	2759	2738	2754	2589	2529	2559	2674
Gandhinagar (Unit 3-4)[$]	2625^	2653	2577	2576	2532	2537	2535	2575
Wanakbori (Unit 1-6)	2625	2681	2693	2661	2580	2539	2560	2631
KLTPS (Unit 3)	3231	2968	3085	3214	3231	3320	3276	3164
KLTPS (Unit 4)	3000	2893	2909	3035	2968	3015	2992	2964
Dhuvaran CCPP - 2	1950	2045	1957	2004	2056	2143	2100	2041
Ukai Extn. (Unit - 6)*	2385	2543	2507	2441	2368	2323	2346	2436
Gandhinagar (Unit -5)*	2460	2575	2522	2497	2503	2504	2504	2520
Wanakbori (Unit -7)*	2460	2457	2518	2489	2450	2454	2452	2474
Sikka Extn. (Unit 3-4)*	2398	N.A.	3238	2746	2507	2552	2530	2761
Dhuvaran CCPP - 1*	1950	2133	2084	2132	2122	2091	2107	2112
Dhuvaran - CCPP 3*	1850	N.A.	N.A.	N.A.	3643	1849	2746	-

Generating Station	Normative SHR	Actual					Average	
		FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	2 Years	5 Years
Utran Extension*	1850	1908	1726	1834	1848	1771	1810	1817
Sabarmati 'D'	2450	2450	2483	2455	2435	2430	2433	2451
Sabarmati 'E'	2455	2450	2480	2475	2438	2431	2435	2455
Sabarmati 'F'	2455	2447	2474	2464	2445	2407	2426	2447

**PPA Based Stations*

^revised as per MTR Order

$ For Ukai (3-5) and Gandhinagar (3-4), the values for the period form FY 2014-15 to FY 2016-17 are inclusive of those Units that were decommissioned in later stage.

5.10.20 It is observed that some of the stations have achieved better SHR than the normative SHR approved by the Commission for the third Control Period, while in case of some other Generating Stations; the actual SHR has been higher than the same approved by the Commission. Further, there are some Generating Stations, whose actual SHR has been very close to the normative SHR stipulated by the Commission.

5.10.21 The paras below provide a brief summary of Unit/Station wise actual SHR achieved by the Generating Stations of GSECL:

a. Ukai (Unit 3-5): The actual SHR of Ukai (1-5) was 2759 kcal/kWh for FY 2014-15, 2738 kcal/kWh for FY 2015-16 and 2754 kcal/kWh for FY 2016-17. At the end of FY 2016-17, i.e., on April 1, 2017, the Units 1 & 2 were successfully decommissioned. Further, GSECL has performed R&M for Ukai Unit-4 during FY 2016-17. This has resulted in an improvement in actual SHR post FY 2017-17. Accordingly, the actual SHR of Ukai (3-5) was observed 2589 kcal/kWh and 2529 kcal/kWh for FY 2017-18 and FY 2018-19. The actual SHR is significantly lower than the normative SHR specified for respective year in the MYT Order. Thus, in view of above, considering the R&M activity planned, it is suggested that the normative SHR for Ukai (3-5) for the next Control Period may be specified as 2559 kcal/kWh, which is the average SHR achieved during past two years, i.e., FY 2017-18 to FY 2018-19.

b. Gandhinagar (Unit 3-4): The actual SHR achieved by Gandhinagar (1-4) was 2653 kcal/kWh, 2577 kcal/kWh and 2576 kcal/kWh during FY 2014-15, FY 2015-16 FY 2016-17 respectively, which is observed lower as compared to normative SHR of 2782 kcal/kWh, 2782 kcal/kWh and 2650 kcal/kWh during FY 2014-15, FY 2015-16 FY 2016-17 respectively. Subsequently, during FY 2016-17, the Unit 1 & 2 were decommissioned and as mentioned earlier the remaining machines were observed to be comparable to Wanakbori Station. Hence, the Commission in its MYT Tariff Order revised the normative SHR for Gandhinagar (Unit 3-4) as 2625 kcal/kWh from FY 2017-18 onwards. Further, as compared to this, the actual SHR of Gandhinagar (Unit 3-4) during the FY 2017-18 and FY 2018-19 is 2532 kcal/kWh and 2537 kcal/kWh respectively, which is also lower than the normative SHR of 2625 kcal/kWh. Thus,

considering the past performance of the Stations, it suggested that the normative SHR for Gandhinagar (Unit 3-4) for the next Control Period may be specified as 2535 kcal/kWh, which is the average SHR achieved during past two years i.e., form FY 2017-18 to FY 2018-19.

c. Wanakbori (Unit 1-6): The SHR achieved by Wanakbori (Unit 1-6) in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 2681 kcal/kWh, 2693 kcal/kWh, 2661 kcal/kWh, 2580 kcal/kWh and 2539 kcal/kWh, respectively as compared to same normative SHR of 2625 kcal/kWh applicable for above specified years. It was observed that the actual SHR was marginally higher than the specified norms up to FY 2016-17. However, post FY 2016-17, an improvement in SHR is observed, which is mainly attributed to the R&M activities carried out during FY 2017-18. GSECL vide its letter dated 25th February, 2019 has submitted to revise the SHR of Wanakbori Unit No. 3 due to improvement in SHR of this unit on completion of R&M activities carried out during the FY 2017-18. Accordingly, based on GSECL submission, the Commission has revised the normative SHR from 2625 kcal/kWh to 2575 kcal/kWh for Wanakbori TPS (1-6) for determination of Tariff for FY 2019-20. Subsequently, the Commission also observed improvement in SHR during FY 2018-19 also. In view of above and considering some improvement in the SHR for the next Control Period, it is suggested that the normative SHR of Wanakbori (Unit 1-6) may be specified as 2560 kcal/kWh, which is the average SHR achieved during past two years i.e., form FY 2017-18 to FY 2018-19.

d. KLTPS (Unit-3): The actual SHR achieved by KLTPS (Units 1-3) was 2968 kcal/kWh and 3085 kcal/kWh during FY 2014-15 and FY 2015-16, respectively, which as compared to normative SHR of 3300 kcal/kWh. Subsequently, during third Control Period the Commission has revised the SHR for KLTPS (Units 1-3) from 3300 kcal/kWh to 3231 kcal/kWh, which was the actual achieved by the station in FY 2013-14. As against this normative SHR of 3231 kcal/kWh applicable for third Control Period, the actual SHR achieved by KLTPS (Units 1-3) was 3214 kcal/kWh, 3231 kcal/kWh and 3320 kcal/kWh during FY 2016-17, FY 2017-18 and FY 2018-19, respectively. Further, it is to be noted that the Unit 1 & 2 of KLTPS were decommissioned on January 1, 2020. These Units were older than the Unit-3. Hence, an improvement in SHR is expected for Unit 3 for next Control Period. However, at present the Unit-wise latest actual data of SHR for KLTPS is not available. Hence, at present the Commission has proposed to continue with the existing normative SHR of 3231 kcal/kWh for the next MYT Control Period. However, based on the actual performance of Unit 3, the Commission may revise the norms at later stage.

e. KLTPS (Unit-4): The actual SHR achieved by KLTPS (Unit-4) in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 2893 kcal/kWh, 2909 kcal/kWh, 3035 kcal/kWh, 2968 kcal/kWh and 3015 respectively, as against the approved normative SHR of 3000 kcal/kWh. The average SHR achieved by KLTPS Unit-4 during past five years is 2964 kcal/kWh which is observed marginally lower than the normative SHR of 3000 kcal/kWh. In view of above, it is proposed to specify normative SHR for KLTPS Unit-4 as 2964 kcal/kWh for the next Control Period.

f. Dhuvaran CCPP-2: The actual SHR achieved by Dhuvaran CCPP-2 are 2045 kcal/kWh, 1957 kcal/kWh, 2004 kcal/kWh, 2056 kcal/kWh and 2143 kcal/kWh, respectively, in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19, as against the approved normative SHR of 1950 kcal/kWh applicable for all above mentioned years. It is observed that the Dhuvaran CCPP-2 has consistently failed to achieve the normative SHR in the past few years mainly due partial operation on account of backing down, frequent start-stop and also due to other problems related to condenser etc. Further, the Dhuvaran (Gas-2) station was commissioned in the year 2007, and therefore, is comparatively new. Therefore, efficient operation can be expected from the station in the next Control Period. In view of the same, the Commission has not proposed any relaxation for the said Unit, hence, it is suggested that for the next Control Period, the normative SHR for the Dhuvaran CCPP-2 TPS can be specified as 1950 kcal/kWh. Further, the Commission has proposed an enabling clause wherein the Generating Station may be compensated for degradation in SHR due to backing down and start-stop operation on case to case basis, subjected to prudence check.

g. PPA governed stations: Ukai Extn. (Unit- 6), Gandhinagar (Unit -5), Wanakbori (Unit -7), Wanakbori (Unit-8), Sikka Extn. (Unit 3-4), Dhuvaran CCPP – –, Dhuvaran - CCPP 3, Utran Extension and BLTPS are PPA governed stations wherein, the normative SHR of aforesaid Units will be governed by the terms and conditions as specified in the respective PPAs.

5.10.22 The paras below provide the station wise analysis of actual SHR of TPL's Generating Stations:

a. Sabarmati-D: The actual SHR achieved by Sabarmati-D are 2450 kcal/kWh, 2483 kcal/kWh, 2455 kcal/kWh, 2435 kcal/kWh and 2430 kcal/kWh in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 respectively, against the approved normative SHR of 2450 kcal/kWh applicable for all of the above mentioned years. The average of actual SHR achieved by the said Stations over the past five year is 2451 kcal/kg which is almost same as compared to existing normative SHR. Thus, in view of above, it is proposed to continue with the existing norms of 2450 kcal/kWh for the next Control Period as well.

b. Sabarmati-E: The actual SHR achieved by Sabarmati-E are 2450 kcal/kWh, 2480 kcal/kWh, 2475 kcal/kWh, 2438 kcal/kWh and 2431 kcal/kWh in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19, respectively, against the approved normative SHR of 2455 kcal/kWh applicable for all of the above mentioned years. The average of actual SHR achieved by the said Stations over the past five year is 2455 kcal/kg which is same as compared to existing normative SHR. Thus, in view of above, it is proposed to continue with the existing norms of 2455 kcal/kWh for the next Control Period as well.

c. Sabarmati-F: The actual SHR achieved by Sabarmati-E in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 2447 kcal/kWh, 2474 kcal/kWh,

2464 kcal/kWh, 2445 kcal/kWh and 2407 kcal/kWh, respectively, against the approved normative SHR of 2455 kcal/kWh applicable for all of the above mentioned years. The average of actual SHR achieved by the said Stations over the past five year is 2447 kcal/kg which is marginally lower than the existing normative SHR. Thus, it is proposed that the norms for SHR for Sabarmati F can be specified as 2447 kcal/kWh for the next Control Period.

5.10.23 The proposed norms for SHR for GSECL's and TPL-G Generating Stations are as under:

Table 9: Station Heat Rate norms for GSECL's and TPL Generating Stations (kcal/kWh)

Stations	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Ukai TPS (Unit 3 - 5)	2559	2559	2559	2559	2559
Gandhinagar TPS (Unit 3 - 4)	2535	2535	2535	2535	2535
Wanakbori TPS (Unit 1 – 6)	2560	2560	2560	2560	2560
Kutch Lignite TPS (Unit 3)	3231	3231	3231	3231	3231
Kutch Lignite TPS (Unit 4)	2964	2964	2964	2964	2964
Dhuvaran CCPP - 2	1950	1950	1950	1950	1950
Ukai (Unit – 6) *	2385	2385	2385	2385	2385
Dhuvaran CCPP-3	1850	1850	1850	1850	1850
Sikka (Unit 3 - 4)	2398	2398	2398	2398	2398
Gandhinagar (Unit – 5)*	2460	2460	2460	2460	2460
Wanakbori (Unit – 7)*	2460	2460	2460	2460	2460
Wanakbori (Unit -8)*	2248	2248	2248	2248	2248
BLTPS	2623	2623	2623	2623	2623
Dhuvaran CCPP-1*	1950	1950	1950	1950	1950
Sabarmati 'D'	2450	2450	2450	2450	2450
Sabarmati 'E'	2455	2455	2455	2455	2455
Sabarmati 'F'	2447	2447	2447	2447	2447

**PPA Based Stations*

5.10.24 Further, it is to be noted that the Commission in the draft GERC MYT Regulations, 2021 has also proposed an enabling clause, whereby the Generating Company may be compensated for degradation in SHR on account of backing down on case to case basis, subjected to prudence check by the Commission.

5.10.25 Further, for new Generating Stations, the GERC MYT Regulations, 2016 provides for computation of Gross Station Heat Rate as 1.045 times of the Design Heat Rate of Station/unit. However, CERC Tariff Regulations, 2019 has revised the norms based on the recommendation of CEA to reflect the current operational efficiencies of the stations by increasing the margin above Design Heat rate to 5.00% from the current level of 4.50%. It is proposed to adopt the approach followed by CERC. Hence, Gross

SHR for new Generating Stations shall be 1.05 times of Design Heat rate of Station/unit. Accordingly, for new Generating Units/Stations to be commissioned after the date of applicability of the GERC MYT Regulations, 2021, the Station Heat Rate norm is proposed to be in accordance with the norms specified as per CERC Tariff Regulations 2019, as under:

"i) For Coal-based and lignite-fired Thermal Generating Stations:

=1.05 X Design Heat Rate (kCal/kWh)

Where the Design Heat Rate of a generating unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR (Maximum Continuous Rating), zero percent make up, design coal and design cooling water temperature/back pressure.

Provided that the design heat rate shall not exceed the following maximum design unit heat rates depending upon the pressure and temperature ratings of the units

Pressure Rating (Kg/cm2)	***150***	***170***	***170***
SHT/RHT (^{0}C)	*535/535*	*537/537*	*537/565*
Type of BFP	*Electrical Driven*	*Turbine Driven*	*Turbine Driven*
Max Turbine Heat Rate (kCal/kWh)	*1955*	*1950*	*1935*
Min. Boiler Efficiency			
Sub-Bituminous Indian Coal	*0.86*	*0.86*	*0.86*
Bituminous Imported Coal	*0.89*	*0.89*	*0.89*
Max. Design Heat Rate (kCal/kWh)			
Sub-Bituminous Indian Coal	*2273*	*2267*	*2250*
Bituminous Imported Coal	*2197*	*2191*	*2174*

Pressure Rating (Kg/cm2)	***247***	***247***	***270***	***270***
SHT/RHT (^{0}C)	*537/565*	*565/593*	*593/593*	*600/ 600*
Type of BFP	*Turbine Driven*	*Turbine Driven*	*Turbine Driven*	*Turbine Driven*
Max Turbine Heat Rate (kCal/kWh)	*1900*	*1850*	*1810*	*1800*
Min. Boiler Efficiency				
Sub-Bituminous Indian Coal	*0.86*	*0.86*	*0.865*	*0.865*

Pressure Rating (Kg/cm2)	***247***	***247***	***270***	***270***
Bituminous Imported Coal	*0.89*	*0.89*	*0.895*	*0.895*
Max. Design Heat Rate (kCal/kWh)				
Sub-Bituminous Indian Coal	*2222*	*2151*	*2105*	*2081*
Bituminous Imported Coal	*2135*	*2078*	*2034*	*2022*

Secondary Fuel Oil Consumption

5.10.26 In the GERC MYT Regulations, 2016, the Commission has provided the normative secondary fuel oil consumption (SFOC) for coal-based Generating Stations as 0.50 ml/kWh, lignite-based Generating Stations other than having CFBC technology as 2.00 ml/kWh and for lignite-based Generating Stations having CFBC technology as 1.00ml/kWh. Further, the Commission has specified the normative SFOC for the existing GSECL and TPL-G Generating Stations as shown below:

"b) SFC norm for following GSECL stations, shall be as under:

Table 5: SFC for GSECL generating stations under Regulation 53.5 (b) for the Control Period

Generating Stations	***FY 2016-17 (ml/kWh)***	***FY 2017-18 (ml/kWh)***	***FY 2018-19 (ml/kWh)***	***FY 2019-20 (ml/kWh)***	***FY 2020-21 (ml/kWh)***
UkaiTPS (Unit 1-5)	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
GandhinagarTPS (Unit 1-4)	*1.50*	*1.50*	*1.50*	*1.50*	*1.50*
Wanakbori (Unit 1-6)	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
SikkaTPS	*3.00*	*3.00*	*3.00*	*3.00*	*3.00*
Kutch Lignite TPS (Unit 1- 4)	*3.00*	*3.00*	*3.00*	*3.00*	*3.00*
Ukai 6	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*

c) SFC norm for following TPL-G station, shall be as under:

Table 6: SFC for the Control Period for TPL-G Stations

Generating Stations	***FY 2016-17 (ml/kWh)***	***FY 2017-18 (ml/kWh)***	***FY 2018-19 (ml/kWh)***	***FY 2019-20 (ml/kWh)***	***FY 2020-21 (ml/kWh)***
Sabarmati C	*2.00*	*2.00*	*2.00*	*2.00*	*2.00*
Sabarmati 'D', 'E', and 'F'	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*

5.10.27 Further, in the MYT Order the Commission has approved the normative SFOC for GSECL and TPL-G Generating Stations as shown in the Tables below:

Table 5.11: Approved secondary fuel oil consumption for the control period FY 2016-17 to FY 2020-21

(ml/kWh)

Sr. No.	*Power station*	*2016-17*	*2017-18*	*2018-19*	*2019-20*	*2020-21*
1	*Ukai (1-5)*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
2	*Gandhinagar (1-4)*	*1.25*	*1.00*	*1.00*	*1.00*	*1.00*
3	*Wanakbori 1-6 TPS*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
4	*Sikka TPS*	*3.00*	*3.00*	*0.00*	*0.00*	*0.00*
5	*KLTPS 1-3*	*3.00*	*3.00*	*3.00*	*3.00*	*3.00*
6	*KLTPS 4*	*3.00*	*3.00*	*3.00*	*3.00*	*3.00*
7	*Dhuvaran CCPP 2*	-	-	-	-	-
8	*Ukai Hydro*	-	-	-	-	-
9	*Kadana Hydro*	-	-	-	-	-
10	*Ukai Extn. 6**	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
11	*Gandhinagar 5**	*3.50*	*3.50*	*3.50*	*3.50*	*3.50*
12	*Wanakbori 7 TPS**	*3.50*	*3.50*	*3.50*	*3.50*	*3.50*
13	*Dhuvaran CCPP 1**	-	-	-	-	-
14	*Dhuvaran CCPP 3**	-	-	-	-	-
15	*Utran (Gas)**	-	-	-	-	-
16	*Utran Extension**	-	-	-	-	-
17	*Sikka Extn. (3-4)**	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
18	*Wanakbori 8 TPS**	-	-	*0.50*	*0.50*	*0.50*
19	*Dhuvaran STPS**	-	-	-	-	*0.50*

** PPA governed stations*

Table 5.12: Approved secondary fuel oil consumption for TPL-G (APP) for the control period FY 2016-17 to FY 2020-21

(%)

Sl. No.	*Station*	*2016-17*	*2017-18*	*2018-19*	*2019-20*	*2020-21*
1	*C Station*	*2.00*	*2.00*	-	-	-
2	*D Station*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
3	*E Station*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
4	*F Station*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*

5.10.28 The Table below shows the comparison of actual secondary fuel oil consumption vis-à-vis normative secondary fuel oil consumption for existing Generating Station of GSECL and TPL-G.

Table 10: Comparison of Normative and Actual Secondary Oil Consumption (ml/kWh)

Generating Stations	Normative	Actual SFOC					Average SFOC	
		FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	2 Years	5 Years
Ukai(Unit 3-5)$	1.00	1.49	0.81	1.79	1.32	1.01	1.17	1.28
Gandhinagar(Unit 3-4)$	1.00	1.09	1.40	2.94	0.97	0.84	0.91	1.45
Wanakbori (Unit 1-6)	1.00	0.99	0.99	2.13	1.10	0.87	0.99	1.22
KLTPS(Unit 3)	3.00	2.86	4.47	5.88	8.45	14.02	11.24	7.14
KLTPS(Unit 4)	3.00	2.29	2.14	1.78	4.35	1.63	2.99	2.44
Ukai Extn. (Unit - 6)*	1.00	1.62	0.79	0.32	0.31	0.26	0.28	0.66
Gandhinagar (Unit - 5)*	3.50	0.10	0.18	0.29	0.37	0.46	0.42	0.28
Wanakbori (Unit -7)*	3.50	0.39	0.59	1.42	0.32	0.17	0.25	0.58
Sikka Extn. (Unit 3-4)*	1.00	NA	9.56	2.75	1.27	1.13	1.20	3.68
Sabarmati 'D'	1.00	0.72	0.32	0.56	0.54	0.31	0.43	0.49
Sabarmati 'E'	1.00	0.44	0.39	0.31	0.18	0.15	0.17	0.29
Sabarmati 'E'	1.00	0.39	0.24	0.25	0.37	0.19	0.28	0.29

**PPA Based Stations.*

$ For Ukai (3-5) and Gandhinagar (3-4), the values for the period form FY 2014-15 to 16-17 are inclusive of those Units that were decommissioned in later stage.

5.10.29 The paras below provide a brief summary of Unit/Station wise actual SFOC achieved by the Generating Stations of GSECL:

a. Ukai (Unit 3-5): The actual SFOC of Ukai (1-5) was 1.49 ml/kWh, 0.81 ml/kWh and 1.79 ml/kWh in the FY 2014-15, FY 2015-16 and FY 2016-17, respectively, as compared to normative SFOC of 2.00 ml/kWh. Considering the performance of Ukai (1-5) over the past three years, i.e., from FY 2011-12 to FY 2013-14, the Commission in the GERC MYT Regulations, 2016 has revised the SFOC norms from 2.00 ml/kWh to 1.00 ml/kWh. Further, after the decommissioning of Unit 1&2 on April 1, 2017, the SFOC of Ukai (3-5) during FY 2017-18 and FY 2018-19 was 1.32 ml/kWh and 1.01 ml/kWh, respectively. The average SFOC of past two years, i.e., from FY 2017-18 to FY 2018-19 was around 1.17 ml/kWh which is marginally higher than the existing norms of 1.00 ml/kWh. The SFOC are higher generally due to partial operation on account of backing down and frequent start stop operations. The Commission has already proposed an enabling clause to provide compensation on case to case basis, to address the impact of partial operation on SFOC. In view of above, it is proposed to continue with the existing norms of SFOC for the next Control Period.

b. Gandhinagar (Unit 3-4): The actual SFOC of Gandhinagar (1-4) was 1.09 ml/kWh, 1.40 ml/kWh and 2.94 ml/kWh for the FY 2014-15, FY 2015-16 FY 2016-17 respectively, as compared to normative SFOC of 1.50 ml/kWh. Further, as mentioned above that during FY 2016-17, the Unit 1 & 2 of Gandhinagar were decommissioned.

Accordingly, the Commission has revised the SFOC norms for Gandhinagar (3-4) as 1.00 ml/kWh considering the GTPS (3-4) machines comparable to Wanakbori station. As against this, the actual SFOC during FY 2017-18 and FY 2018-19 was 0.97 ml/kWh and 0.84 ml/kWh respectively, which is observed marginally lower. As the SFOC of Gandhinagar (Unit 3-4) is within the range of the normative SFOC as specified in the MYT Order, the Commission proposes to continue with the existing normative SFOC of 1.00 ml/kWh for the next Control Period.

c. Wanakbori (Unit 1-6): The actual SFOC by Wanakbori (Unit 1-6) in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 0.99 ml/kWh, 0.99 ml/kWh, 2.13 ml/kWh, 1.10 ml/kWh and 0.87 ml/kWh, respectively, as compared to normative SFOC of 1.00 ml/kWh applicable for all of the above specified years. The average of actual SFOC over the past five years was observed as 1.22 ml/kWh which is marginally higher than the existing norms. In view of above, the Commission is of the opinion that the current norm of SFOC of 1.00 ml/kWh for the station is already lower than the norm specified by CERC. Thus, it is suggested that the existing norms of 1.00 ml/kWh may be retained for next Control Period.

d. KLTPS (Unit-3): The actual SFOC by KLTPS (Unit-4) in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 2.86 ml/kWh, 4.47 ml/kWh, 5.88 ml/kWh, 8.45 ml/kWh and 14.02 ml/kWh, respectively, as compared to normative SFOC of 3.00ml/kWh applicable for all of the above mentioned years. The higher SFOC for KLTPS is mainly due to forced outages and other issues like non availability of coal mills due to poor lignite quality. However, as already mentioned that the Commission in the draft Regulations has proposed an enabling clause to deal with the partial operation on plant, hence, Commission does not find any merit in giving further relaxation to the station. Also, the Unit 1 & 2 of KLTPS has been decommissioned. Thus, in view of above, it is suggested to continue with the existing norms of 3.00ml/kWh for the next Control Period.

e. KLTPS (Unit-4): The actual SFOC by KLTPS (Unit-4) in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 2.29 ml/kWh, 2.14 ml/kWh, 1.78 ml/kWh, 4.35 ml/kWh and 1.63 ml/kWh, respectively as compared to normative SFOC of 3.00 ml/kWh applicable for all of the above mentioned years. The station has shown improving trend over the past years. The average of past five years SFOC of KLTPS Unit-4 was 2.44 ml/kWh which is lower than the existing norms. Thus, it is proposed that the normative SFOC of KLTPS Unit-4 may be specified as 2.50 ml/kWh for the next Control Period.

f. PPA governed stations: Ukai –Extn. (Unit - 6), Gandhinagar (Unit -5), Wanakbori (Unit -7), Wanakbori (Unit-8), Sikka Extn. (Unit 3-4), BLTPS are PPA governed stations wherein, the Commission has approved the SFOC based on the terms of the respective PPAs. For the next Control Period, the normative SFOC for PPA based stations shall be governed by respective terms of PPA.

5.10.30 The paras below provide the station wise analysis of actual SFOC of TPL's Generating Stations :

a. Sabarmati-D: The actual SFOC of Sabarmati-D in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 0.72 ml/kWh, 0.32 ml/kWh, 0.56 ml/kWh, 0.54 ml/kWh and 0.31 ml/kWh, respectively as compared to normative SFOC of 1.00 ml/kWh applicable for all of the above mentioned years. It is observed that the average of actual SFOC achieved over the past five year is 0.49 ml/kWh which is much lower than the existing normative SFOC of 1.00 ml/kWh. The reason for such lower SFOC may be attributed to efficient operation and maintenance undertaken by the station. Based on the actual performance of the plant, the Commission has proposed to revise the normative SFOC to 0.5 ml/kWh which is equivalent to the average of normative SFOC achieved over the past five years.

b. Sabarmati-E: The actual SFOC of Sabarmati-E in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 0.44 ml/kWh, 0.39 ml/kWh, 0.31 ml/kWh, 0.18 ml/kWh and 0.15 ml/kWh, respectively, as compared to normative SFOC of 1.00 ml/kWh applicable for all of the above mentioned years. It is observed that the average of actual SFOC achieved over past five year is 0.29 ml/kWh which is significantly lower than the existing normative SFOC of 1.00 ml/kWh. Considering the past performance of the plant, the Commission has proposed to revise the normative SFOC to 0.5 ml /kWh for the next Control Period.

c. Sabarmati-F: The actual SFOC of Sabarmati-F in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 0.39 ml/kWh, 0.24 ml/kWh, 0.25 ml/kWh, 0.37 ml/kWh and 0.19 ml/kWh, respectively, as compared to normative SFOC of 1.00 ml/kWh applicable for all of the above mentioned years. It is observed that the average of actual SFOC achieved over the past five year is 0.29 ml/kWh which is much lower than the existing normative SFOC of 1.00 ml/kWh. Based on the actual performance of the plant, the Commission has proposed to revise the normative SFOC to 0.5 ml /kWh for the next Control Period.

5.10.31 Based on above, the proposed norms for SFOC for next Control Period is as reproduced below:

Table 11: Proposed Normative Secondary Oil Consumption (ml/kWh) for 4th MYT Control Period

Generating Stations	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Ukai(Unit 3-5)	1.00	1.00	1.00	1.00	1.00
Gandhinagar(Unit 3-4)	1.00	1.00	1.00	1.00	1.00
Wanakbori (Unit 1-6)	1.00	1.00	1.00	1.00	1.00
KLTPS(Unit 3)	3.00	3.00	3.00	3.00	3.00
KLTPS(Unit 4)	2.50	2.50	2.50	2.50	2.50
Ukai Extn. (Unit - 6)*	1.00	1.00	1.00	1.00	1.00

Generating Stations	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Gandhinagar (Unit -5)*	3.50	3.50	3.50	3.50	3.50
Wanakbori (Unit -7)*	3.50	3.50	3.50	3.50	3.50
Sikka Extn. (Unit 3-4)*	1.00	1.00	1.00	1.00	1.00
Sabarmati 'D'	0.50	0.50	0.50	0.50	0.50
Sabarmati 'E'	0.50	0.50	0.50	0.50	0.50
Sabarmati 'F'	0.50	0.50	0.50	0.50	0.50
Wanakbori 8	0.50	0.50	0.50	0.50	0.50
BLTPS	1.00	1.00	1.00	1.00	1.00

5.10.32 For new Generating Station, the Secondary Fuel Oil Consumption norm is proposed in accordance with the norms specified in CERC Tariff Regulations, 2019 as under:

(a) Secondary fuel oil consumption (SFC) for all thermal generating Units/Stations, except those covered under clause (b) and clause (c) shall be as under:

(i) Coal-based generating stations: 0.50 ml/kWh;

(ii) Lignite-Fired generating stations: 1.00 ml/kWh

Limestone Consumption

5.10.33 As specified in the Regulation 53.6 of GERC MYT 2016, Limestone consumption for Lignite based stations using CFBC Technology: 0.05 kg/ kWh. CERC in its Tariff Regulations, 2019 has also specified the same. Therefore, the Commission proposes to continue with the same for the fourth MYT Control Period in accordance with the CERC Tariff Regulations, 2019.

Auxiliary Energy Consumption

5.10.34 The Auxiliary Energy Consumption (AEC) is the energy consumed by various auxiliaries of Generating Station such as equipment used for operating plant and machinery, including switchyard of the Generating Station and the transformer losses within the Generating Station, fans, motors etc. The Commission in the GERC MYT Regulations, 2016 has specified separate auxiliary energy consumption norms for new and existing coal/lignite based Generating Stations, whereas for gas turbine/combined cycle Generating Stations, common norms of auxiliary energy consumption were specified.

Auxiliary Energy Consumption for existing Generating Stations:

5.10.35 The Table below shows the comparison of actual AEC vis-à-vis normative AEC for existing Generating Station of GSECL and TPL-G:

Table 12: Comparison of Normative vis-à-vis Actual Auxiliary Energy Consumption (%)

Generating Stations	Present Normative	Actual Auxiliary Consumption					Average	
		FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	2 Years	5 Years
Ukai(3-5)$	9.00%	9.37%	9.36%	9.74%	9.68%	9.57%	9.62%	9.54%
GTPS(3-4)$	9.00%	10.74%	11.32%	12.38%	10.60%	10.56%	10.58%	11.12%
WTPS(1-6)	9.00%	9.16%	9.75%	9.79%	9.07%	9.19%	9.13%	9.39%
KLTPS (3)	12.00%	12.75%	11.57%	12.26%	13.09%	13.77%	13.43%	12.69%
KLTPS (4)	12.00%	21.26%	21.39%	20.12%	21.80%	22.74%	22.27%	21.46%
Dhuvaran (2)	3.00%	10.41%	4.89%	6.90%	5.33%	6.85%	6.09%	6.88%
Ukai (6)*	6.00%	7.90%	6.61%	5.86%	5.94%	6.04%	5.99%	6.47%
GTPS(5)*	9.50%	9.98%	9.91%	9.83%	9.82%	9.64%	9.73%	9.83%
WTPS(7)*	9.50%	9.35%	9.74%	9.59%	9.07%	9.17%	9.12%	9.38%
Sikka Extn.(3-4)*	9.00%	-	13.25%	9.96%	9.65%	9.50%	9.57%	10.59%
Dhuvaran (1)*	4.00%	23.00%	10.36%	10.80%	7.26%	7.35%	7.31%	11.75%
Dhuvaran (3)*	3.00%	-	-	-	14.84%	16.95%	15.89%	-
Utran Extension*	3.00%	6.89%	2.70%	7.45%	5.98%	4.20%	5.09%	5.44%
Sabarmati 'D'	9.50%	8.84%	9.30%	8.77%	9.05%	8.63%	8.84%	8.92%
Sabarmati 'E'	9.50%	8.25%	8.92%	8.28%	8.40%	8.16%	8.28%	8.40%
Sabarmati 'F'	9.50%	8.76%	9.27%	8.83%	8.92%	8.62%	8.77%	8.88%

**PPA Based Stations.*

$ For Ukai (3-5) and Gandhinagar (3-4), the values for the period form FY 2014-15 to 16-17 are inclusive of those Units that were decommissioned in later stage .

5.10.36 From the Table above, with regard to GSECL's Generating Stations, it was observed that the actual auxiliary consumption achieved by all coal/lignite/gas based thermal generating stations not governed by the PPAs plants is higher than normative value specified by the Commission. The reason for such a higher auxiliary consumption as stated by Utility, is mainly on account of partial operation of stations due to backing downs. Further to address such issue on account of backing down, the Commission in the draft GERC MYT Regulations, 2021 has proposed an enabling clause wherein it has proposed that the compensation may be provided to Generation Stations due to backing down on case to case basis, subjected to prudence check. Thus, it is proposed that no relaxation should be given to any generating stations for reasons attributed to partial operation due to backing down or reserve shut down.

5.10.37 The Commission has analysed the station wise AEC based on the historical performance of the stations. The paras below provide the summary of analysis of AEC of GSECL's Generating Stations:

a. Ukai (Unit 3-5): The actual AEC of Ukai (Unit 1-5) in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 9.37 %, 9.36 %, 9.74 %, 9.68 % and 9.57 % respectively, as compared to normative AEC of 9.00% applicable for all of the above mentioned years. It is observed that normative AEC achieved by the Ukai station over the past years remained marginally higher than the normative AEC

approved mainly due to baking down of the Units. The Commission has proposed to continue with existing the normative AEC of 9.00% for next Control Period.

b. Gandhinagar (Unit 3-4): The actual AEC of Gandhinagar (Unit 1-4) in the FY 2014-15 and FY 2015-16 are 10.74 % and 11.32 % respectively, as compared to normative AEC of 10.00%. Further, as stated above, post decommissioning of Unit 1 & 2 of Gandhinagar Stations in FY 2016-17, the Commission in the MYT Order has revised the normative AEC from 2017-18 to FY 2020-21 as 9.00%, that is same as approved for Wanakbori stations. As against this, the actual AEC for FY 2017-18 and FY 2018-19 is 10.60% and 10.56%, respectively. With the view to impose better efficiency, the current norm of 9.00% auxiliary energy consumption may be continued for the Gandhinagar (3-4) TPS for the next Control Period.

c. Wanakbori (Unit 1-6): The actual auxiliary energy consumption (AEC) of Wanakbori (Unit 1-6) in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 9.16%, 9.75%, 9.79 %, 9.07% and 9.19%, respectively, as compared to normative AEC of 9.00% as approved for all of the above mentioned years. It is observed that the AEC of Wanabori (Unit 1-6) were marginally higher than the norms. Hence, for next Control Period it is suggested that the existing norms of 9.00% may be retained for next Control Period.

d. KLTPS (Unit-3): The actual AEC of KLTPS (Unit 1-3) in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 12.75%, 11.57%, 12.26 %, 13.09 % and 13.77 %, respectively, as compared to normative AEC of 12.00%. It is observed that the actual AEC achieved by KLTPS (1-3) remained higher during the third Control Period mainly due to partial operation and Unit constraints (mill outages) and APC during RSD. Further, the Unit 1 & 2 of KLTPS is now decommissioned. In view of the above, it is proposed that no further relaxation should be given to Unit 3 of KLTPS, as the current norm of 12.00% is already on the higher side. Accordingly, the existing norm is proposed to continue.

e. KLTPS (Unit-4): The actual AEC achieved by KLTPS (Unit-4) in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 21.26%, 21.39%, 20.12 %, 21.80 % and 22.74 %, respectively, which is significantly higher than the normative AEC of 12.00%. The reason for such a higher AEC is mainly due to partial operation and APC during RSD. The existing norms of AEC for KLTPS Unit 4 is already higher and the same may not be relaxed further. Thus, it is suggested that the normative auxiliary energy consumption of 12% for the KLTPS-4 specified in the GERC MYT Regulations, 2016 may be continued in the next Control Period

f. Dhuvaran CCPP-2: The actual auxiliary energy consumption (AEC) of Dhuvaran CCPP-2 in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 10.41 %, 4.89 %, 6.90 %, 5.33 % and 6.85 %, respectively, as compared to normative SHR of 3.00%. It is observed that the actual AEC achieved during FY 2014-15 to FY 2018-19 is consistently higher than the normative AEC approved by the Commission which is 3.00%, this is mainly due to backing down. As the Commission

has proposed to provide compensation on AEC for backing down in these draft Regulations, the Commission has proposed the normative AEC for the next control period as 3.00% which is same as the existing normative AEC.

g. PPA governed stations: U–ai Extn. (Unit - 6), Gandhinagar (Unit -5), Wanakbori (Unit -7), Wanakbori (Unit -8), Sikka Extn. (Unit 3-4), Dhuvaran (1 & 3) and BLTPS are PPA governed stations wherein, the Commission has approved the AEC based on the terms of the respective PPAs. The normative parameters of above Units for next Control Period shall be governed by the respective terms of PPA.

5.10.38 Regarding TPL-G's Generating Stations, it was observed that the all Generating Stations of TPL-G are able to achieve norms with marginal deviations. The actual performance of stations has improved over the past period. During last four years, the actual AEC of only Sabarmati-D and Sabarmati-F station was above normative mainly during FY 2015-16. However, in last three year all station of TPL-G has able to achieve AEC within norms. The five-years average of AEC of Sabarmati -D, Sabarmati -E and Sabarmati -F are 8.92%, 8.40% and 8.88%, respectively, which also within the norms. Therefore, considering the consistent improvement trend, the Commission has proposed AEC for stations 'D' & 'F' of TPL-G may marginally be improved to 9.00% and for station 'E' as 8.50% for next Control Period.

Table 13: Auxiliary Energy Consumption (%) for coal/lignite/gas based Generating Stations of GSECL and TPL-G for the Control Period

Generating Station	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Ukai(3-5)	9.00	9.00	9.00	9.00	9.00
Gandhinagar(3-4)	9.00	9.00	9.00	9.00	9.00
Wanakbori(1-6)	9.00	9.00	9.00	9.00	9.00
KLTPS (3)	12.00	12.00	12.00	12.00	12.00
KLTPS (4)	12.00	12.00	12.00	12.00	12.00
Dhuvaran (2)	3.00	3.00	3.00	3.00	3.00
Ukai (6)*	6.00	6.00	6.00	6.00	6.00
Gandhinagar(5)*	9.50	9.50	9.50	9.50	9.50
Wanakbori(7)*	9.50	9.50	9.50	9.50	9.50
Sikka Extn.(3-4)*	9.00	9.00	9.00	9.00	9.00
Dhuvaran (1)*	4.00	4.00	4.00	4.00	4.00
Dhuvaran (3)*	3.00	3.00	3.00	3.00	3.00
Utran Extension*	3.00	3.00	3.00	3.00	3.00
Sabarmati 'D'	9.00	9.00	9.00	9.00	9.00
Sabarmati 'E'	8.50	8.50	8.50	8.50	8.50
Sabarmati 'F'	9.00	9.00	9.00	9.00	9.00

**PPA Based Station*

5.10.39 For new generating Unit/Stations to be commissioned after the date of effectiveness of the GERC MYT Regulations, 2021, the auxiliary consumption norm is proposed to

be in line with the norms specified in CERC Tariff Regulations, 2019 for various technologies and Unit sizes as under.

Table 14: Auxiliary Energy Consumption for new coal-based stations

Sr No.	***Auxiliary Energy Consumption***	***With Natural Draft cooling tower or without cooling tower***
(i)	*200 MW series*	*8.50%*
(ii)	*250/330/350/500 MW & above*	
	Steam driven boiler feed pumps	*5.75%*
	Electrically driven boiler feed pumps	*8.00%*

Provided further that for the thermal generating stations with induced draft cooling towers, the norms shall be further increased by 0.50%, as compared to the above norms.

5.10.40 As regards the Auxiliary Consumption for Flue Gas Desulphurisation (FGD), the Commission observed that on April 1, 2020 CERC has issued Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, 2020; wherein it has provided AEC on account of emission control system of thermal Generating Stations as under:

"Auxiliary Energy Consumption (AUXe) on account of emission control system of thermal generating stations

Table 15: Auxiliary Energy Consumption (AUXe) on account of emission control system of thermal Generating Stations

Name of Technology	**AUXen (as % of gross generation)**
1) For reduction of emission of sulphur dioxide:	
a) Wet Limestone based FGD system (without Gas to Gas heater)	1.0%
b) Lime Spray Dryer or Semi dry FGD System	1.0%
Dry Sorbent Injection System (using Sodium bicarbonate)	NIL
For CFBC Power plant (furnace injection)	NIL
Sea Water based FGD system (without Gas to Gas heater)	0.7%
(2) For reduction of emission of oxide of nitrogen :	
a) Selective Non-Catalytic Reduction system	NIL
b) Selective Catalytic Reduction system	0.2%

Provided that where the technology is installed with Gas to Gas heater, auxiliary energy consumption specified as above shall be increased by 0.3% of gross generation."

*"**Norms for consumption of reagent:***

1) The normative consumption of specific reagent for various technologies for reduction of emission of sulphur dioxide shall be as below:

***a. For Wet Limestone based Flue Gas De-sulphurisation (FGD) system:** The specific limestone consumption (g/kWh) shall be worked out by following formula:*

$$[\ 0.85 \times K \times SHR \times S]/[CVPF \times LP\ ]$$

Where,
S = Sulphur content in percentage,
LP = Limestone Purity in percentage,
SHR= Gross station heat rate, in kCal per kWh;
CVPF= (a) Weighted Average Gross calorific value of coal as received, in kcal per kg for coal based stations less actual stacking losses in calorific value of coal on account of variation during storage at generating station;
Provided that the actual stacking losses shall be subjected to the maximum stacking loss of 85 kcal/kg for pithead stations and 120 kcal/kg for non-pithead stations.
(b) Weighted Average Gross calorific value of primary fuel as received, in kcal per kg, per litre or per standard cubic meter, as applicable for lignite based stations.
(c) In case of blending of fuel from different sources, the weighted average Gross calorific value of primary fuel shall be arrived in proportion to blending ratio.
Provided that value of K shall be equivalent to (35.2 x Design SO2 Removal Efficiency/96%) for units to comply with SO2 emission norm of 100/200 mg/Nm3 or (26.8xDesign SO2 Removal Efficiency/73%) for units to comply with SO2 emission norm of 600 mg/Nm3;

Provided further that the limestone purity shall not be less than 85%.

***b. For Lime Spray Dryer or Semi-dry Flue Gas Desulphurisation (FGD) system:** The specific lime consumption shall be worked out based on minimum purity of lime (PL) as at 90% or more by applying formula [0.90x6 /PL(%)] gm/kWh;*

***c. For Dry Sorbent Injection System (using sodium bicarbonate):** The specific consumption of sodium bicarbonate shall be 12 gm per kWh at 100% purity.*

d. For CFBC Technology (furnace injection) based generating station: *The specific limestone consumption for CFBC based generating station (furnace injection) at 85% purity limestone (kg/kWh) shall be computed with the following formula:*

[62.9 x S x SHR /CVPF] x [0.85/ LP]

Where
S= Sulphur content in percentage,
LP = Limestone Purity in percentage,
SHR= Gross station heat rate, in kCal per kWh,
CVPF = (a) Weighted Average Gross calorific value of coal as received, in kcal per kg for coal based stations less actual stacking losses in calorific value of coal on account of variation during storage at generating station;

Provided that the actual stacking losses shall be subjected to the maximum stacking loss of 85 kcal/kg for pithead stations and 120 kcal/kg for non-pithead stations;

(b) Weighted Average Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic meter, as applicable for lignite based stations;

e. For Sea Water based Flue Gas Desulphurisation (FGD) system: *The reagent used is sea water, therefore there is no requirement for any normative formulae for consumption of reagent.*

2) The normative consumption of specific reagent for various technologies for reduction of emission of oxide of nitrogen shall be as below:

a) ***For Selective Non-Catalytic Reduction (SNCR) System:*** *The specific urea Consumption of SNCR system shall be 1.2 gm per kWh at 100% purity of urea.*

b) ***For Selective Catalytic Reduction (SCR) System:*** *The specific ammonia consumption of SCR system shall be 0.6 gm per kWh at 100% purity of ammonia."*

5.10.41 For new Gas Turbine /Combined Cycle Generating Stations, it is proposed to consider the norm for Auxiliary Consumption in line with CERC Tariff Regulations, 2019, as under:

"Gas Turbine/Combined Cycle generating stations:

(i) Combined cycle: 2.75% .

(ii) Open cycle: 1.0%."

Transit and Handling Loss

5.10.42 Transit and Handling losses refer to the percentage loss in quantity of coal or lignite during transportation. The losses occur due to weight reduction on account of moisture evaporation, improper stacking of coal, theft, leakages, pilferages etc. and the losses are higher in non-pit head Generating Stations as compared to that in pit head stations. Accordingly, Regulation 53.8 of the GERC MYT 2016, allows transit and handling loss for a Pit head Generating Stations is 0.20% and for non-pit head Generating Station is 0.80%.

5.10.43 The following Table shows the past performance of the Thermal Generating Stations of GSECL in the context of transit and handling losses:

Table 16: Comparison of Actual and Normative Transit and Handling Loss

Generating Stations	Present Normative	Actual					Average	
		FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	2 Years	5 Years
Ukai(3-5)$	0.80%	0.80%	1.08%	0.45%	0.80%	0.36%	0.58%	0.70%
Gandhinagar(3-4)$	0.80%	0.80%	0.14%	0.49%	0.80%	0.32%	0.56%	0.51%
Wanakbori(1-6)	0.80%	0.80%	0.15%	0.09%	0.80%	0.41%	0.61%	0.45%
KLTPS(3)	0.20%	0.20%	0.20%	0.20%	0.20%	0.18%	0.19%	0.20%
KLTPS(4)	0.20%	0.20%	0.20%	0.20%	0.20%	0.18%	0.19%	0.20%
Ukai Extn(6)*	0.80%	0.80%	0.24%	0.45%	0.80%	0.36%	0.58%	0.53%
Gandhinagar(5)*	0.80%	0.80%	0.14%	0.49%	0.80%	0.32%	0.56%	0.51%
Wanakbori(7)*	0.80%	0.80%	0.04%	0.09%	0.80%	0.41%	0.61%	0.43%
Sikka Extn.(3-4)*	0.80%	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Sabarmati 'D','E' & 'F'	0.80%	1.60%	1.55%	0.20%	0.77%	0.92%	0.85%	1.01%

**PPA Based Stations.*

$ For Ukai (3-5) and Gandhinagar (3-4), the vales for the period FY 2014-17 has been shown including the plants that were operational during that period.

5.10.44 From the Table above it was observed that actual Transit and Handling losses for all Generating Stations of GSECL not governed by the PPAs and TPL-G are closer to the norms specified in the Regulations.

5.10.45 The Commission has proposed to continue with the existing norms for Transit and handling losses in line with the approach adopted by the CERC Tariff Regulations, 2019.

5.10.46 With respect to imported coal, the CERC Tariff Regulations, 2019 has specified normative transit and handling losses of 0.20% for imported coal. Since, there may be some loss of coal in transportation and handling, it is proposed that the normative transit and handling losses of 0.20% may be specified for imported coal, for the next Control Period as in the CERC Tariff Regulations, 2019. Further, it may also be specified that the transit loss shall not be applicable if coal is procured on delivery basis.

5.10.47 The Commission has proposed no changes in the said conditions in the draft GERC MYT Regulations, 2021.

5.11 Operation and maintenance expenses for thermal Generating Stations

5.11.1 As per the existing provision under the GERC MYT Regulations, 2016, O&M expenses norms have been specified in terms of Rs. Lakh per MW for new Generating Stations. Whereas for existing Generating Stations, the O&M expenses was specified to be arrived based on an escalation rate of 5.72% over the past approved O&M expenses.

5.11.2 Further, the CERC in its Tariff Regulations, 2019 has specified the common norm for all the existing and new plants except for few very old plants. 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. The Commission is also of the same view, that O&M norms should be same across Generating Stations based on their Unit size or Technology etc., in line with the CERC approach. However, based on the past data and analysis, it was observed that specifying the norm of O&M expenses may benefit some Generating Station to a very large extent and significantly impact recovery of O&M expenses of other Generating Station. As most of the existing Generating Stations are old Stations and 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 rather than norms for existing Generating Stations/units to derive O&M expenses. In case of new Generating Station, the Commission has specified the norms based on CERC approach.

O&M expenses for Existing Generating Stations:

5.11.3 O&M expenses comprises of R&M expenses, Employee expenses and A&G expenses, which constitute as a significant part of the ARR. As mentioned earlier, the present approach of determining O&M expenses is based on the fixed escalation rate of 5.72% only. Such fixed escalation does not capture the real inflation over the year. It also fails to recognise the increase in assets base over the year. Thus, it's essential to address the issue of escalation of O&M expenses due to increased scale of operations and real inflation, which is beyond the control of the Generating Stations.

5.11.4 It has been observed that the CERC and many prominent SERCs have been using Wholesale Price Index (WPI) and Consumer Price Index (CPI) indexation approach for determining escalation rate for O&M expenses. The Commission in the draft GERC MYT Regulations, 2021 has proposed to adopt the escalation mechanism linked with WPI and CPI index, as it is the transparent way to ascertain the percentage increase in O&M expenses and also takes care of the inflation over the year.

5.11.5 Accordingly, the Commission in the draft GERC Regulations, 2021 has proposed that the O&M expenses comprising of Employee, A&G and R&M expenses; shall be derived on the basis of an inflation factor, which in turn is to be derived based on WPI

and CPI index. Further, for arriving at inflation factor, the values for WPI of existing series{Base Year: 2011-12=100}, is to be considered as per the Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India and CPI-IW (Industrial Worker) {Base Year: 2001=100} as per the Labour Bureau, Government of India. The Commission has proposed that based on the monthly WPI and CPI data as per above sources, yearly inflation factor is to be derived which shall be considered for computation of inflation factor on the basis of respective weightages assigned to WPI and CPI. Further, the Commission has proposed to consider the average data of past three years such that any abnormal variation get factored in averaging.

5.11.6 With respect to the R&M expenses, it has been observed that the R&M expenses generally increases with the vintage of plant. Further, R&M activities are usually undertaken for the maintenance of the Fixed Assets, therefore, the Commission proposes to link R&M expenses with the variation in assets base. Accordingly, in addition to the inflation factor to be derived as mentioned above, it is also proposed to have linkage between R&M expenses and Opening Gross Fixed Asset by a constant factor 'K' to have true reflection of R&M expenses. The value of 'K' will be determined by the Commission in the MYT Order which shall be based on ratio of past period average of actual R&M expenses and Opening Gross Fixed Asset. However, the Generating Company may propose the K factor in their MYT Tariff Petition.

5.11.7 With regards to the determination of the weightages to be assigned to WPI and CPI index for calculation of inflation factor, it has been observed that generally the employee related expenses is linked to CPI for Industrial Workers. Whereas, non-employee related expenses, i.e., A&G and R&M; overall WPI is a better indicator. Accordingly, the Commission has analysed the actual O&M expenses incurred by Generating Stations over the past years from FY 2015-16 to FY 2018-19 and has worked out the ratios, viz., employee expenses to the total O&M expenses and A&G and R&M expenses to the total O&M expenses. The average ratio of employee expenses to the total O&M expenses across the aforesaid period has been considered as CPI weightage and the average ratio of A&G and R&M expenses to the total O&M expenses has been considered as a weightage of WPI. The Table below shows the employee expenses as a percentage of total actual O&M expenses for coal based Generating Stations of GSECL and TPL:

Table 17: Employee expenses as percentage of O&M expenses for coal-based Generating Stations

Stations	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	Average
Ukai 1-5	69.70%	64.11%	72.59%	62.63%	66.76%
Ukai 6*	52.53%	44.15%	33.44%	33.35%	40.87%
Gandhinagar 1-4	78.06%	75.58%	77.11%	80.85%	77.90%
Gandhinagar 5*	78.32%	77.92%	77.53%	60.95%	73.68%
Wanakbori 1-6	65.37%	63.52%	70.51%	62.46%	65.47%
Wanakbori 7*	63.05%	49.34%	65.40%	55.27%	58.27%
Sikka 3-4*	82.50%	65.06%	65.46%	58.86%	67.97%
GSECL Avg.					**64.42%**
TPL-G		46.12%	45.61%	46.55%	46.10%
TPL-G Avg.					**46.10%**

**PPA Based Stations*

5.11.8 From the above Table it can be observed that the average of employee expenses as a percentage of O&M expenses for GSECL's existing coal based Generating Station ranges from 40.87% to 77.90%. For determination of the weightage of the CPI, the Commission has considered the percentage of average actual employee expenses as percentage of the total O&M expenses of the GSECL's generations stations for the period FY 2015-16 to FY 2018-19 which is worked out as 64.42%. Therefore, absolute 65% considered for weightage of CPI. Accordingly, the balance, i.e., 35% (1-0.65) has been assigned to WPI. Hence, it is proposed to consider the weightage to CPI:WPI as 65:35 for GSECL's coal-based Generating Stations. Similarly, for TPL's Generating Stations, CPL:WPI has been proposed as 50:50.

5.11.9 For lignite-based Generating Stations, the Commission has worked out the ratio of employee expenses as a percentage of total actual O&M expenses as shown in the Table below:

Table 18: Employee expenses as percentage of O&M expenses for lignite-based Generating Stations

Stations	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	Average
KLTPS 1-3	52.51%	60.63%	57.85%	46.48%	54.37%
KLTPS 4	42.91%	48.96%	48.40%	43.48%	45.94%
GSECL					**50.15%**

5.11.10 Based on above, the CPI:WPI weightage for lignite-based Generating Station has been determined at 50:50.

5.11.11 Similarly, the Commission has analysed the historical O&M expenses of gas-based Generating Stations to assess the CPI:WPI weightage, as shown in the below Table:

Table 19: Employee expenses as percentage of O&M expenses for gas-based Generating Stations

Stations	2015-16	2016-17	2017-18	2018-19	Average
Dhuvaran CCPP 1*	55.16%	56.83%	53.02%	54.18%	54.80%
Dhuvaran CCPP 2	55.24%	56.83%	52.96%	54.18%	54.80%
Dhuvaran CCPP 3*	69.79%	28.56%	35.66%	36.38%	42.60%
Utran Extension*	44.83%	40.41%	54.50%	55.86%	48.90%
GSECL					**50.28%**

**PPA Based Stations*

5.11.12 Based on above, the CPI:WPI weightage for gas-based Generating Station has been determined at 50:50.

5.11.13 Accordingly, the Commission has proposed the following weightage for calculation of Escalation index which is based on WPI and CPI:

- For Coal based Generating Stations of GSECL, the WE_{CPI}:WE_{WPI} is to be considered as 65:35;
- For Coal based Generating Stations of TPL, the WE_{CPI}:WE_{WPI} is to be considered as 50:50
- For Lignite and Gas based generating stations WE_{CPI}:WE_{WPI} is to be considered as 50:50.

5.11.14 The paras below provide the proposed methodology to calculate O&M expenses:

a) Calculate the average the actual audited Operation and Maintenance expenses (excluding water charges, Provisions and abnormal expenses etc.) for the past three Years ending March 31, 2020. The average of all three components of O&M expenses; viz., Employee expenses, R&M expenses and A&G expenses is to be calculated individually.

b) The average of such O&M expenses as computed above shall be considered as O&M expenses for the Year ended March 31, 2019 and shall be escalated at the respective escalation rate for FY 2019-20 and FY 2020-21, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2021.

c) The escalation rate for FY 2019-20 shall be computed by considering (WE_{WPI}) weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years, .i.e., (FY 2016-17 to FY 2018-19) as per the Office of Economic Advisor, Ministry of Commerce and Industry, of Government of India and (WE_{CPI}) weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years .i.e., (FY 2016-17 to FY 2018-19) as per the Labour Bureau, Government of India. Similarly, the escalation rate for FY 2020-21 is to be arrived.

d) The O&M expenses for first the year and subsequent years of the Control Period shall be determined based on the formula specified in the draft Regulations, as reproduced below:

(i) R&Mn = K * GFA * (1+Index Escn)
(ii) EMPn+ A&Gn= (EMPn-$_1$ + A&Gn-$_1$) * (1+Index Escn)

e) However, for the first year of the Control Period, EMP n-$_1$ and A&G n-$_1$ shall mean Employee and A&G expenses of base year as derived in step (b) above. Thereafter, from second year of the Control Period, EMP n-$_1$ and A&G n-$_1$ shall mean Employee and A&G expenses of the immediately preceding year.

f) For the purpose of estimation of O&M expenses for the MYT Control Period, the same inflation factor as determined for FY 2020-21 shall be used for all years of the Control Period. However, at the time of truing-up of any particular year of the Control Period, the Commission shall calculate revised normative O&M expenses on the basis of actual inflation factor, which is to be derived based on the actual values/yearly inflation of WPI and CPI of the respective past three financial years (including the year of Truing-up).

5.11.15 The Commission also proposes to include the relevant clauses towards Wage Revision. These expenses shall be allowed on actual basis based on documentary evidence and justification of Generating Company subject to the prudence check at the time of truing up. The Commission shall not allow any wage revision on the basis of provisioning and shall only allow actual expenses at the time of Truing-up.

5.11.16 Therefore, the Commission proposes the following proviso in relation to determination of O&M expenses for existing thermal station:

"56. Operation and Maintenance expenses for thermal Generating Stations

56.1 Existing Generating Stations that achieved CoD before April 1, 2021:

(a) The Operation and Maintenance expenses excluding water charges and including insurance shall be derived on the basis of the average of the actual audited Operation and Maintenance expenses for the past three Years ending March 31, 2020, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission:

Provided that the average of such Operation and Maintenance expenses shall be considered as Operation and Maintenance expenses for the Year ended March 31, 2019, and shall be escalated at the respective escalation rate for FY 2019-20 and FY 2020-21, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2021;

Provided further that the escalation rate for FY 2019-20 and FY 2020-21 shall be computed by considering (WE_{WPI}) weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years as per the Office of Economic Advisor, Ministry of Commerce and Industry, Government of India and (WE_{CPI}) weightage to the average yearly

inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years as per the Labour Bureau, Government of India.

The Operation and Maintenance expenses for nth year of the Control Period shall be determined based on the formula shown below:
O&Mn = (R&Mn + EMPn + A&Gn)
Where,
R&Mn –Repair and Maintenance Costs of Generating Station / Generating unit for the nth year;
EMPn –Employee Cost of Generating Station / Generating unit for the nth year;
A&Gn –Administrative and General Costs of Generating Station / Generating unit for the nth year;
It should be ensured that all such expenses capitalized should not form a part of the O&M expenses being specified here. The above components shall be computed in the manner as specified below:
*(i) R&Mn = K * GFA * (1+Index Escn)*
*(ii) EMPn+ A&Gn= (EMPn-1 + A&Gn-1) * (1+Index Escn)*

Where,
'K' is a constant (expressed in %) governing the relationship between R&M costs and Gross Fixed Assets (GFA) for the nth year. The value of 'K' will be specified by the Commission in the MYT Order but Generating Company may propose the same in their MYT Petition.

'GFA' is the Opening balance of the gross fixed assets of the nth year.
EMP n-1 - Employee Cost of Generating Station / Generating unit for the immediately preceding year;
A&G n-1- A&G of Generating Station / Generating unit for the immediately preceding year;
Provided that for first year of control period EMP n-1 and A&G n-1 shall mean Employee and A&G expenses of base year as derived in Regulation 56.1 (a) above;
Index Esc means the average Inflation escalation to be considered on the basis of weightage of WPI and CPI respectively of the relevant year and to be computed as below:

*Index Escn = WE_{CPI}*CPIn + WE_{WPI}*WPIn*
Whereby,
WE_{CPI}: Weightage of CPI Index and;
WE_{WPI}: Weightage of WPI Index;
'WPIn' (expressed in %) means the average yearly inflation of Wholesale Price Index (all commodities) over the years for the nth year;
'CPIn' (expressed in %) means the average yearly inflation of Consumer Price Index (Industrial workers) over the years for the nth year.

Note: Source for CPI and WPI calculation as under:

Wholesale Price Index numbers as per Office of Economic Advisor, Ministry of Commerce & Industry, Government of India {Base Year: 2011-12 Series};
Consumer Price Index for Industrial Workers (all India) as per Labour Bureau, Government of India {Base Year: 2001=100}.

Provided that for the purpose of determination of Operation and Maintenance Expenses for the whole Control Period, WPIn is to be computed based on the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years at the time of filing of Petition, as per the Office of Economic Advisor, Ministry of Commerce and Industry, Government of India and CPIn is to be computed based on the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past three financial years, at the time of filing of Petition, as per the Labour Bureau, Government of India and such escalation factor so derived to be applied to Operation and Maintenance expenses of each preceding year.

Provided further that, in the Truing-up of the O&M expenses for any particular year of the Control Period, WPIn is to be considered based on the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years (including the year of Truing-up) and CPIn is to be considered based on the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years (including the year of Truing-up), for the purpose of determination of Operation and Maintenance Expenses for that year.

Provided further that in case an existing generating station has been in operation for less than three (3) years as on the date of effectiveness of these Regulations, the O&M expenses shall be allowed based on the average of the actual audited expenses available or as per the norms as specified for new generating station, whichever is lower, as the case may be, subject to prudence check.

Note:

(a) For Coal based Generating Stations of GSECL, WE_{CPI}:WE_{WPI} is to be considered as 65:35.
(b) For Coal based Generating Stations of TPL, WE_{CPI}:WE_{WPI} is to be considered as 50:50.
(c) For Lignite and Gas based Generating Stations WE_{CPI}:WE_{WPI} is to be considered as 50:50.
(d) O&M expenses shall be allowed on normative basis and shall be trued-up only to the account of variation in Wholesale Price Index and Consumer Price Index.
(e) The impact of Wage Revision, if any, may be considered at the time of true-up for any Year, based on documentary evidence and justification to be submitted by the Petitioner. Provisioning of wage revision expenses shall not be considered as actual expenses at the time of true-up, and only expenses as actually incurred shall be considered.
(f) Any variation in actual and normative O&M cost excluding any abnormal expenses or wage revision shall be subject to the sharing of efficiency gains or losses as per framework specified in this Regulations.
(g) 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:
Provided that 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.

(h) For the purpose of estimation, the same Index Escn value as derived for FY 2020-21 shall be used for all years of the Control Period. However, at the time of true-up of any particular year the Commission will consider the actual values of the WPI and CPI over past three years including True-up year.".

O&M expenses for New Generating Stations:

5.11.17 As stated above, the existing GERC MYT Regulations, 2016 allow the O&M expenses for new Generating Stations based on per MW norms, in line with the approach adopted by the CERC in its Tariff Regulations , 2014.

5.11.18 The Commission has proposed to continue with the same approach of specifying the norms for new Generating Stations in the draft GERC MYT Regulations, 2021. Further, it is suggested that for the new Generating Stations achieving COD after the applicability of the new GERC MYT Regulations, and the existing Generating Stations which have been in operation for less than three (3) years as on March 31, 2021, the normative O&M expenses for FY 2021-22 to FY 2025-26 would be determined based on the average of the actual audited expenses available or as per the norms as specified for new generating station, whichever is lower, as the case may be, subject to prudence check.

O&M norms for new coal-based Generating Stations:

5.11.19 It may be noted that the CERC in its Tariff Regulations, 2019 has specified O&M expenses norm per MW basis, for new coal-based generation station for five categories: (i) 200/210/250 MW sets (iii) 300/330/350 MW sets (iii) 500 MW sets (iv) 600 MW and above sets and (v) 800 MW and above sets. However, the existing GERC MYT Regulations, 2016 does not provide category wise norms. Thus, for greater clarity and to minimise ambiguity, the Commission has proposed to specify category wise norms (for three category) for the next Control Period in line with the approach adopted by the CERC.

5.11.20 The Commission has considered the following approach for determination of norms for new Coal based Generating station:

i. For computation of norms for various categories, the actual O&M expenses for existing generating stations have been considered. The category-wise generating stations considered are as under:

a) 200/210/250 MW sets - Ukai (3-5), Gandhinagar (3-4), Gandhinagar 5, Wanakbori 1-6, Wanakbori 7 and Sikka TPS (3-4).
b) 500 MW sets- Ukai 6
c) 800 MW sets – as per CERC

ii. The actual O&M expenses as submitted by Utility vide its formats, have been considered for FY 2016-17 to FY 2018-19 for analysis purposes. The O&M expenses per MW has been computed based on the installed capacity of Generating Stations. In case when any Generating Unit has been de-commissioned, the Commission has appropriately factored installed capacity for calculating O&M expenses per MW.

iii. The three-year average of actual O&M expenses norms achieved on per MW basis for these categories has been computed and considered as norms for FY 2017-18.

iv. Average of actual O&M expenses norm per MW basis as computed above for FY 2017-18, have been escalated at the inflation factor of 2.90% for FY 2018-19, 3.79% for FY 2019-20 and 4.52% for FY 2020-21.

v. Further, the norms for the next Control Period, i.e., for FY 2021-22 onwards have been derived by escalating the O&M expenses norms of FY 2020-21 at escalation rate of 4.52% for each ensuing year of the Control Period.

(The Computation for escalation factor is provided in paras below)

5.11.21 The paras below provide the summary of O&M expenses norms computation for new Generating Stations:

A. For 200/210/250 MW sets:

5.11.22 The Table below provides the summary of O&M expenses in Rs. Lakh per MW of various existing GSECL Stations of 200/210/250 MW Series:

Table 20: Actual O&M Expenses per MW for 200/210/250 MW Series coal based Generating Stations of GSECL from FY 2016-17 to FY 2018-19

Stations	FY 2016-17	FY 2017-18	FY 2018-19
Ukai (3-5)	21.25	33.35	33.42
Gandhinagar (3-4)	12.82	22.91	32.20
Gandhinagar - 5*	21.71	28.49	15.79
Wanakbori 1-6	14.24	17.57	18.70
Wanakbori 7 *	8.20	8.16	9.22
Sikka TPS (3-4)*	3.07	21.33	23.10
Average O&M - GSECL	**13.55**	**21.97**	**22.07**

**PPA Based Stations*

5.11.23 As explained above, the average of actual O&M expenses of coal based Generating Stations of GSECL for FY 2016-17 to FY 2018-19 has been considered as the O&M expenses for FY 2017-18. The normative O&M expenses for FY 2018-19 have been derived by escalating the computed O&M expenses for FY 2017-18 with an escalation factor of 2.90% which is the average inflation rate of the preceding 3 years (i.e. FY 2015-16 to FY 2017-18). Normative O&M expenses have been derived for FY 2019-

20 by applying the escalation rate of 3.79% which is the average inflation rate of the preceding 3 years (i.e. FY 2016-17 to FY 2018-19), on the computed O&M expenses norms of FY 2018-19. Similarly, for FY 2020-21 normative O&M expenses have been derived by applying the escalation rate of 4.52% which is the average inflation rate of the preceding 3 years (i.e., FY 2017-18 to FY 2019-20), on the computed O&M expenses norms of FY 2019-20.

5.11.24 The norms for next Control Period, i.e., from FY 2020-21 to FY 2025-26, have been arrived by escalating the O&M expenses norms of FY 2019-20 year-on-year by an escalation factor of 4.52% (i.e. average inflation rate for FY 2017-18 to FY 2019-20).

5.11.25 The Table below shows the proposed norms of O&M for new coal-based Generating Stations:

Table 21: O&M Expenses per MW for new coal-based Generating Stations of 200/210/250 MW Series

Particular	Derived for			
	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
O&M Expenses per MW for 200/210/250 MW Series	19.20	19.75	20.50	21.43
Proposed Normative O&M Expenses for 4th MYT Control Period				
FY 2021-22	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**
22.39	23.41	24.46	25.57	26.72

B. For 500 MW sets:

5.11.26 Based on the same approach as explained for 200/210/250 MW sets above; the Commission has worked out the norms for O&M expenses for 500 MW sets.

5.11.27 The Table below provides details of O&M expenses in Rs. Lakh per MW of 500 MW set (GSECL's Ukai-6):

Table 22: Actual O&M Expenses per MW for 500 MW Series coal based Generating Station of GSECL

Stations	FY 2016-17	FY 2017-18	FY 2018-19
Ukai 6 (PPA Based)	5.65	10.60	9.54

5.11.28 The proposed norms of O&M for new coal-based Generating Stations for 500 MW series is shown in Table below:

Table 23: O&M Expenses per MW for new coal-based Generating Stations of 500 MW

Particular	Derived for			
	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
O&M Expenses per MW for 500 MW Series	8.60	8.84	9.18	9.59
Proposed Normative O&M Expenses for the 4th MYT Control Period				

Particular	Derived for			
	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
10.03	10.48	10.95	11.45	11.97

C. For 800 MW and above sets:

5.11.29 For 800 MW and above series, there is one Unit of Wanakbori, i.e., Wanakbori (Unit-8) which is expected to be commissioned on October 13, 2020. As, there is no actual data available for the same, the O&M expenses for 800 MW series specified for FY 2021-22 in CERC Tariff Regulations 2019 has been considered as base and has been escalated by the average inflation rate 4.52% derived on the basis of past 3 years available data (i.e., from FY 2017-18 to FY 2019-20) considering CPI:WPI ratio as 65:35. The O&M expenses per MW for 800 MW and above series derived for next Control Period, is as shown in the below table:

Table 24: O&M Expenses per MW for new coal-based Generating Stations of 800 MW and above series.

Year	O&M Expenses per MW for 800 MW and above Series
FY 2021-22	19.54
FY 2022-23	20.42
FY 2023-24	21.35
FY 2024-25	22.31
FY 2025-26	23.32

5.11.30 CERC in its CERC 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. In view of this, it is proposed to consider same multiplying factor as specified by CERC.

O&M norms for new Lignite-based Generating Stations:

5.11.31 For lignite-based Generating Station, the Commission has adopted the similar approach as adopted for new coal based Generating Stations. The actual O&M expenses for existing lignite-based Generating Stations, i.e., KLTPS 1-3 & KLTPS 4 have been considered.

5.11.32 The O&M expenses in Rs. Lakh per MW of have been computed based on installed capacity of aforesaid Stations as shown in Table below:

Table 25: Actual O&M Expenses per MW for lignite based Generating Stations of GSECL and NLC

Stations	FY 2016-17	FY 2017-18	FY 2018-19
KLTPS 3	4.09	5.27	6.15
KLTPS 4	1.60	2.01	2.06
Average O&M – GSECL	**2.85**	**3.64**	**4.11**
NLC TPS 1*	34.74	37.52	38.76
NLC-125 MW Sets*	25.40	27.47	28.38

**Source: Explanatory Memorandum – Draft Terms and Conditions for Tariff Determination 2019-24*

5.11.33 From the above Table, it can.be seen that average O&M expenses per MW based on the actual data from KLTPS stations are ranging from 2.85 lakhs per MW to 4.11 lakhs per MW. Further, the Commission has compared the O&M expenses per MW of KLTPS 1-3 and KLTPS 4 with the Central Generating Stations of Neyveli Lignite Limited and it is observed that the O&M expenses of KLTPS Stations are very low. Therefore, the Commission is of view that as KLPTS Stations are very old and considering the O&M expenses of such stations as base for determination of new Generating Stations might not provide reliable norms. Therefore, the Commission has proposed to O&M expenses norms for new lignite-based Generating Stations on the basis of the norms specified by CERC in its Tariff Regulations, 2019.

5.11.34 The O&M expenses for lignite-based Generating Stations specified for FY 2021-22 by CERC in its Tariff Regulations 2019 has been considered as base and has been escalated by the average inflation rate 4.16% derived on the basis of past 3 years available data (i.e., from FY 2017-18 to FY 2019-20) considering CPI:WPI ratio as 50:50. Accordingly, the O&M expenses per MW for lignite-based Generating Station has been arrived for next Control Period, as shown in the below table:

Table 26: O&M Expenses per MW for new lignite-based Generating Stations

Year	O&M Expense norms
FY 2021-22	33.37
FY 2022-23	34.76
FY 2023-24	36.20
FY 2024-25	37.71
FY 2025-26	39.28

O&M norms for new Gas-Based Generating Stations:

5.11.35 The norms for new Gas-based Generating Stations has been determined based on the same methodology as adopted for deriving the norms for new Coal-based and Lignite-based Generating Stations. The actual O&M expenses for existing gas-based Generating Stations, i.e., Dhuvaran CCPP 1 to 3 and Utran Extension have been considered.

5.11.36 The O&M expenses in Rs. Lakh per MW of have been computed based on installed capacity and as per data submitted by Utility for aforesaid Stations, as shown in Table below:

Table 27: Actual O&M Expenses per MW for Gas-based Generating Stations of GSECL

Stations	FY 2016-17	FY 2017-18	FY 2018-19
Dhuvaran CCPP 1*	24.77	34.35	32.92
Dhuvaran CCPP 2	23.48	34.31	31.21
Dhuvaran CCPP 3*	0.84	0.89	0.60
Utran Ext.*	11.35	12.28	11.00
Average O&M- GSECL	**15.11**	**20.46**	**18.93**

**PPA Based Stations*

5.11.37 The average of actual O&M expenses of Gas-based Generating Stations of GSECL for the FY 2016-17 to FY 2018-19 has been considered as the O&M expenses for the year FY 2017-18. The normative O&M expenses for FY 2018-19 have been derived by escalating the computed O&M expenses for FY 2017-18 with an escalation factor of 2.31% which is the average inflation rate of the preceding 3 years (i.e. FY 2015-16 to FY 2017-18). Normative O&M expenses have been derived for FY 2019-20 by applying the escalation rate of 3.60% which is the average inflation rate of the preceding 3 years (i.e. FY 2016-17 to FY 2018-19), on the computed O&M expenses norms of FY 2018-19. Similarly, FY 2020-21 normative O&M expenses have been derived by applying the escalation rate of 4.16% which is the average inflation rate of the preceding 3 years (i.e., FY 2017-18 to FY 2019-20), on the computed O&M expenses norms for FY 2019-20.

5.11.38 The norms for next Control Period, i.e., from FY 2021-22 to FY 2025-26, have been arrived by escalating the O&M expenses norms of FY 2020-21 year-on-year by an escalation factor of 4.16% (i.e. average inflation rate for FY 2017-18 to FY 2019-20). The Table below shows the proposed norms of O&M for new Gas-based Generating Stations:

Table 28: O&M Expenses per MW for new Gas-based Generating Stations

Particular	Derived for			
	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
O&M Expenses per MW for new Gas-based Station	18.17	18.59	19.26	20.06
Proposed Normative O&M Expenses for 4th MYT Control Period				
FY 2021-22	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**
20.89	21.76	22.66	23.61	24.59

5.11.39 The categorization of O&M expenses for new Gas-based Generating Stations is proposed in accordance with the category being followed in CERC Tariff Regulations, 2019 for specifying the norm for Gas Turbine/Combined Cycle Generating Stations

5.11.40 However, at the time of framing this draft GERC MYT Regulations, 2021, there are no Small Gas Turbine Stations or Advanced 'F' class machines based Generating Stations available in the State of Gujarat leading to absence of the O&M expenses

data of such plants. Therefore, the O&M expenses for Small Gas Turbine power Generating Stations and Advance 'F' Class Machines specified for FY 2021-22 by CERC in CERC Tariff Regulations 2019 has been considered as base and has been escalated by the average inflation rate of the past 3 years (FY 2017-18 to FY 2019-20) considering CPI:WPI ratio as 50:50. The O&M expenses per MW for gas based generating station is as shown in the below table

Table 29: O&M Expenses per MW for Gas based generating stations

Year	Gas Turbine/Combined Cycle generating stations other than small gas turbine power generating stations	Small gas turbine power generating stations	Advance 'F' Class Machines
FY 2021-22	20.89	38.80	28.23
FY 2022-23	21.76	40.20	29.25
FY 2023-24	22.66	41.64	30.30
FY 2024-25	23.61	43.14	31.39
FY 2025-26	24.59	44.70	32.52

Escalation Factor:

5.11.41 The paras below provide the detailed computation of escalation factor as considered above for deriving the norms of new Generating Stations.

5.11.42 The Table below shows the yearly inflation of WPI and CPI over the past years as well as inflation factor for coal-based, lignite-based and gas-based Generating Stations:

Table 30: Computation of Escalation factor

Financial Year	CPI	YoY %	WPI	YoY %	CPI:WPI = 65:35	CPI:WPI = 50:50
2013-14	236		113			
2014-15	251	6.29%	114	1.24%	4.52%	3.77%
2015-16	265	5.65%	110	(3.69)%	2.38%	0.98%
2016-17	276	4.12%	112	1.73%	3.28%	2.93%
2017-18	284	3.08%	115	2.96%	3.04%	3.02%
2018-19	300	5.45%	120	4.26%	5.03%	4.86%
2019-20	323	7.53%	122	1.67%	5.48%	4.60%
Escalation Factor for FY 2018-19 (Avg FY 2015-16 to FY 2017-18):						
Average of Past 3 years		**4.28%**		**0.33%**	**2.90%**	**2.31%**
Escalation Factor for FY 2019-20 (Avg FY 2016-17 to FY 2018-19):						

Financial Year	CPI	YoY %	WPI	YoY %	CPI:WPI = 65:35	CPI:WPI = 50:50
Average of Past 3 years		**4.22%**		**2.98%**	**3.79%**	**3.60%**
Escalation Factor for FY 2020-21 (Avg FY 2017-18 to FY 2019-20):						
Average of Past 3 years		**5.35%**		**2.96%**	**4.52%**	**4.16%**

5.11.43 For determination of inflation factor in case new Coal-based Generating Stations, the CPI:WPI weightage has been considered as 65:35 and for new Lignite-based and Gas-based Generating Stations, the CPI:WPI weightage has been considered as 50:50.

5.12 Norms of operation for Hydro Generating Stations

5.12.1 Regulation 56 of the GERC MYT Regulations, 2016 specifies Normative Annual Plant Availability Factor (NAPAF) and Auxiliary Energy Consumption (AEC) including Transformer Losses for Hydro Power Plants.

5.12.2 The actual PAF of the hydro generating stations is shown below:

Table 31: Plant availability factor for hydro Generating Stations

Generating stations	Actual					Average of actual PAF		Existing NAPAF
	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	2 Years	5 Years	
Ukai Hydro	79.48%	82.88%	94.80%	96.55%	96.64%	**94%**	**90%**	80%
Kadana Hydro	85.34%	90.99%	94.05%	92.29%	91.79%	**90%**	**91%**	80%

5.12.3 The Hydro generating station of GSECL has shown capability of achieving higher PAF than the NAPAF of 80%, except for Ukai hydro in FY 2014-15 which is marginally lower. As the plants are old, it is suggested that the target availability for the Hydro generating stations may be retained at 80%.

5.12.4 The Commission has sought the actual Auxiliary consumption of the Hydro generating Utilities from the GESCL. However, the data provided by the GSECL seems to be unreliable therefore, the Commission has relied on the details available in the truing up Orders of the corresponding financial years. Accordingly, the actual Auxiliary Energy Consumption (AEC) of the hydro generating stations is shown below

Table 32: Auxiliary energy consumption (%) for hydro Generating Stations

Generating stations	Actual Auxiliary Consumption					Average		Existing Normative
	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	2 Years	5 Years	
Ukai Hydro	0.48	0.58	0.89	1.04	1.19	1.12	0.84	0.6
Kadana Hydro	4.92	3.84	0.95	0.87	0.76	0.82	2.27	1.0

5.12.5 The Hydro generating station of GSECL has achieved lower AEC than the normative AEC. As the plants are old, it is suggested that to continue with the existing normative AEC.

a. Ukai Hydro: The actual auxiliary energy consumption (AEC) of Ukai Hydro in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 0.48 %, 0.58 %, 0.89 %, 1.04 % and 1.19 % respectively. It is observed that the average actual AEC achieved in FY 2017-18 to FY 2018-19 marginally higher than the normative AEC approved by the Commission and the average actual AEC in FY 2014-15 to FY 2018-19 is 0.84% which is marginally lower than the existing normative AEC. However, there is no justification for the higher auxiliary consumption for Ukai hydro station. As, the actual AEC is hovering around about the normative AEC of 0.6% as approved by the Commission, the Commission has proposed to retain the normative AEC of 0.6% for the next MYT Control Period.

b. Kadana Hydro: The actual auxiliary energy consumption (AEC) of Kadana Hydro in the FY 2014-15, FY 2015-16, FY 2016-17, FY 2017-18 and FY 2018-19 are 4.92 %, 3.84 %, 0.95 %, 0.87 % and 0.76 % respectively. It is observed that the average actual AEC achieved in FY 2017-18 to FY 2018-19 marginally lower than the normative AEC approved by the Commission and the average actual AEC in FY 2014-15 to FY 2018-19 is 2.27% which is marginally higher than the existing normative AEC. However, there is no justification for the higher/lower auxiliary consumption for Kadana hydro station. As, the actual AEC is hovering around about the normative AEC of 1.0% as approved by the Commission, the Commission has proposed to retain the normative AEC of 1.0% for the next MYT Control Period.

Table 33: Auxiliary energy consumption (%) for hydro Generating Stations proposed for 4th MYT Control Period

Generating stations	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
Ukai Hydro	0.6	0.6	0.6	0.6	0.6
Kadana Hydro	1.0	1.0	1.0	1.0	1.0

5.12.6 With respect to normative Annual Plant Availability Factor (NAPAF) and Auxiliary Consumption, the Commission does not propose any changes and hence the existing Regulation is proposed to continue.

5.13 Operation and Maintenance Expenses for Hydro Generating Stations

5.13.1 As per the existing provision under the GERC MYT Regulations, 2016, O&M expenses norms have been specified for new Generating Stations in terms of percentage of the project cost for the first year and a fixed escalation rate of 5.72% has been provided for the future years. However, for existing generating stations, the O&M expenses was specified to be arrived based on an escalation rate of 5.72% over the past approved O&M expenses

5.13.2 Further, CERC in its Tariff Regulations, 2019 has specified the station wise normative O&M expenses for the existing Hydro Generating Stations. However, for new Hydro Generating Stations, the norms have been specified in terms of percentage of the project cost and escalation rate has been specified based on the installed capacities. Considering that the existing Hydro Generating Stations are very old, the Commission in the GERC MYT Regulations, 2016 has specified the principles to derive O&M expenses because of difficulties in specifying the norms. The Commission in the next Control Period also as proposed to continue with the existing approach for specifying principle to derive O&M expenses rather than norms for the hydro Generating Stations/units.

Table 34: Actual O&M Expenses per MW for Hydro Generating Stations of GSECL from FY 2015-16 to FY 2018-19

Stations	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19
Ukai Hydro	4.53	4.44	4.19	3.48
Kadana Hydro	7.42	7.73	12.81	9.60

O&M expenses for Existing Generating Stations:

5.13.3 O&M expenses comprises of R&M expenses, Employee expenses and A&G expenses, which constitute as a significant part of the ARR. For deriving the O&M expenses of Hydro Generating Stations for next Control Period, the same approach has been adopted as proposed for thermal Generating Stations, which has been explained in detail in above paras of this Explanatory Memorandum. Accordingly, for Hydro Generating Stations also, the Commission has proposed to adopt the WPI:CPI indexation mechanism. Similarly, for R&M expenses, it is also proposed to have relationship between R&M expenses and Gross Fixed Asset by a constant factor 'K' to have true reflection of R&M expenses. The value of 'K' will be determined by the Commission in the MYT Order which shall be based on ratio of past period average of actual R&M expenses and Opening Gross Fixed Asset. However, the Generating Company may propose the K factor in their MYT Tariff Petition.

5.13.4 With regards to the determine the weightages to be assigned to WPI and CPI index for calculation of inflation factor, the Commission has analysed the actual O&M expenses incurred by Hydro Generating Stations over the past years from FY 2015-16 to FY 2018-19 and has worked out the ratios viz. employee expenses to the total O&M expenses and A&G and R&M expenses to the total O&M expenses. The average ratio of employee expenses to the total O&M expenses across the aforesaid period has been considered as CPI weightage and the average ratio of A&G and R&M expenses to the total O&M expenses has been considered as a weightage of WPI.

5.13.5 The Table below shows the employee expenses as a percentage of total actual O&M expenses for hydro Generating Stations of GSECL:

Table 35: Employee expenses as percentage of O&M expenses for hydro Generating Stations of GSECL

Stations	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	Average
Ukai Hydro	45.08%	80.11%	60.15%	80.44%	66.44%
Kadana Hydro	70.55%	77.44%	66.99%	52.85%	66.96%
GSECL					**66.70%**

5.13.6 From the above Table it can be observed that the employee expenses as a percentage of O&M expenses for GSECL's existing hydro Generating Station ranges from 45.08% to 80.44%. For determination of the weightage of the CPI, the Commission has considered the percentage of average actual employee expenses as percentage of the total O&M expenses of the GSECL's Generations Stations for the period FY 2015-16 to FY 2018-19, which is worked out as 66.70% (absolute 70% considered) as shown in the above Table. Accordingly, the remaining part, i.e., 30% (1-0.70) has been assigned to WPI. Hence, it is proposed to consider the CPI:WPI as 70:30 for hydro Generating Stations.

5.13.7 The paras below provide the methodology to calculate O&M expenses:

a) Calculate the average the actual audited Operation and Maintenance expenses (excluding water charges, Provisions and abnormal expenses etc.) for the past three Years ending March 31, 2020. The average of all three components of O&M expenses; viz., Employee expenses, R&M expenses and A&G expenses is to be calculated individually.

b) The average of such O&M expenses as computed above shall be considered as O&M expenses for the Year ended March 31, 2019 and shall be escalated at the respective escalation rate for FY 2019-20 and FY 2020-21, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2021.

c) The escalation rate for FY 2019-20 shall be computed by considering (WE_{WPI}) weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years, .i.e., (FY 2016-17 to FY 2018-19) as per the Office of Economic Advisor, Ministry of Commerce and Industry, of Government of India and (WE_{CPI}) weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years .i.e., (FY 2016-17 to FY 2018-19) as per the Labour Bureau, Government of India. Similarly, the escalation rate for FY 2020-21 is to be arrived.

d) The O&M expenses for first year and subsequent years of the Control Period shall be determined based on the formula specified in the draft Regulations, as reproduced below:

(i) R&Mn = K * GFA * (1+Index Escn)
(ii) EMPn+ A&Gn= ($EMPn_{-1}$ + $A\&Gn_{-1}$) * (1+Index Escn)

e) However, for the first year of the Control Period, EMP n_{-1} and A&G n_{-1} shall be mean Employee and A&G expenses of base year as derived in step (b) above. Thereafter, from second year of the Control Period, EMP n_{-1} and A&G n_{-1} shall mean Employee and A&G expenses of the immediately preceding year.

f) For the purpose of estimation of O&M expenses for the MYT Control Period, the same inflation factor as determined for FY 2020-21 shall be used for all years of the Control Period. However, at the time of truing-up of any particular year of the Control Period, the Commission shall calculate revised normative O&M expenses on the basis of actual inflation factor, which is to be derived based on the actual values/yearly inflation of WPI and CPI of the respective past three financial years (including the year of Truing-up).

5.13.8 The Commission also proposes to include the relevant clauses towards Wage Revision. These expenses shall be allowed on actual basis based on documentary evidence and justification of Generating Company subjected to prudence check at the time of truing up. The Commission shall not allow any wage revision on the basis of provisioning and shall only allow actual expenses at the time of Truing-up.

5.13.9 Therefore, the Commission has proposed the following proviso in relation to determination of O&M expenses for existing thermal station:

"59. Operation and Maintenance Expenses for Hydro Generating Stations

59.1 For Existing Stations:

(a) The Operation and Maintenance expenses shall be derived on the basis of the average of the actual audited Operation and Maintenance expenses for the past three Years ending March 31, 2020, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission:

Provided that the average of such Operation and Maintenance expenses shall be considered as Operation and Maintenance expenses for the Year ended March 31, 2019, and shall be escalated at the respective escalation rate for FY 2019-20 and FY 2020-21, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2021;

Provided further that the escalation rate for FY 2019-20 and FY 2020-21 shall be computed by considering (WE_{WPI}) weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years as per the Office of Economic Advisor, Ministry of Commerce and Industry, Government of India and (WE_{CPI}) weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years as per the Labour Bureau, Government of India.

(b) The Operation and Maintenance expenses for nth year of the Control Period shall be determined based on the formula shown below:
O&Mn = (R&Mn + EMPn + A&Gn)
Where,

R&Mn –Repair and Maintenance Costs of Generating Station / Generating unit for the nth year;
EMPn –Employee Cost of Generating Station / Generating unit for the nth year;
A&Gn –Administrative and General Costs of Generating Station / Generating unit for the nth year;

It should be ensured that all such expenses capitalized should not form a part of the O&M expenses being specified here. The above components shall be computed in the manner as specified below:
*(i) R&Mn = K * GFA * (1+Index Escn)*
*(ii) EMPn+ A&Gn= (EMPn-1 + A&Gn-1) * (1+Index Escn)*

Where,
'K' is a constant (expressed in %) governing the relationship between R&M costs and Gross Fixed Assets (GFA) for the nth year. The value of 'K' will be specified by the Commission in the MYT Order but Generating Company may propose the same in their MYT Petition.
'GFA' is the Opening balance of the gross fixed assets of the nth year.
EMP n-1 - Employee Cost of Generating Station / Generating unit for the immediately preceding year;
A&G n-1- A&G of Generating Station / Generating unit for the immediately preceding year;

Provided that for first year of control period EMP n-1 and A&G n-1 shall mean Employee and A&G expenses of base year as derived in Regulation 59.1 (a) above;

Index Esc means the average Inflation escalation to be considered on the basis of weightage of WPI and CPI respectively of the relevant year and to be computed as below:

*Index Escn = WE_{CPI}*CPIn + WE_{WPI}*WPIn*
Whereby,
WE_{CPI} : Weightage of CPI Index and;
WE_{WPI}: Weightage of WPI Index;
'WPIn' (expressed in %) means the average yearly inflation of Wholesale Price Index (all commodities) over the years for the nth year;
'CPIn' (expressed in %) means the average yearly inflation of Consumer Price Index (Industrial workers) over the years for the nth year.

Note: Source for CPI and WPI calculation as under:
Wholesale Price Index numbers as per Office of Economic Advisor, Ministry of Commerce & Industry, Government of India {Base Year: 2011-12 Series};
Consumer Price Index for Industrial Workers (all India) as per Labour Bureau, Government of India {Base Year: 2001=100}

Provided that for the purpose of determination of Operation and Maintenance Expenses for the whole Control Period, WPIn is to be computed based on the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years at the time of filing of Petition, as per the Office of Economic Advisor, Ministry of Commerce & Industry,

Government of India and CPIn is to be computed based on the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past three financial years, at the time of filing of Petition, as per the Labour Bureau, Government of India and such escalation factor so derived to be applied to Operation and Maintenance expenses of each preceding year.

Provided further that, in the Truing-up of the O&M expenses for any particular year of the Control Period, WPIn is to be considered based on the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years (including the year of Truing-up) and CPIn is to be considered based on the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years (including the year of Truing-up), for the purpose of determination of Operation and Maintenance Expenses for that year.

Note:

(a) For Hydro based generating stations WE_{CPI}:WE_{WPI} is to be considered as 70:30.

(b) O&M expenses shall be allowed on normative basis and shall be trued-up only to the account of variation in Wholesale Price Index and Consumer Price Index.

(c) The impact of Wage Revision, if any, may be considered at the time of true-up for any year, based on documentary evidence and justification to be submitted by the Petitioner. Provisioning of wage revision expenses shall not be considered as actual expenses at the time of true-up, and only expenses as actually incurred shall be considered.

(d) Any variation in actual and normative O&M cost excluding any abnormal expenses or wage revision shall be subject to the sharing of efficiency gains or losses as per framework specified in this Regulations.

(e) For the purpose of estimation, the same Index Escn value as derived for FY 2020-21 shall be used for all years of the Control Period. However, at the time of true-up of any particular year the Commission will consider the actual values of the WPI and CPI over past three years including True-up year.

58.2 For New Stations:

a) O&M expenses for the first year of operation will be 2% of the original project cost on pro rata basis from the date of CoD (excluding cost of rehabilitation and resettlement works).

b) The O&M expenses for each subsequent year will be determined by escalating the base expenses determined above, at the escalation rate equal to 'Index Esc' specified in Regulation 59.1."

5.14 Computation and Payment of Annual Capacity Charges for Thermal Generating Stations

5.14.1 The GERC MYT Regulations, 2016 provides computation methodology for payment of monthly capacity charges based on the PAF.

5.14.2 The Commission did not propose any changes in the existing capacity charges payment computation in the draft GERC MYT Regulations, 2021.

5.15 Computation and payment of Annual Energy Charges for Thermal Generating Stations

5.15.1 As regards rate of Energy Charges, the existing GERC MYT Regulations, 2016 specifies the formula for coal-based & lignite-fired and Gas & Liquid fuel based Generating Stations as reproduced below:

(a) For coal based and lignite fired stations

$$ECR = \{(GHR - SFC \times CVSF) \times LPPF / CVPF + SFC \times LPSFi + LC \times LPL\} \times 100 / (100 - AUX)$$

(b) For gas and liquid fuel based stations

$$ECR = GHR \times LPPF \times 100 / \{CVPF \times (100 - AUX)\}$$

5.15.2 For the next Control Period, it is proposed to continue with the existing formula, however, some modifications in relation to calculation of Gross Calorific Value (GCV) has been proposed, which has been discussed in paras below.

5.15.3 As per the formula, Energy charge is inversely proportional to GCV. A lower GCV would thus lead to higher tariff. Energy Charge constituting about 60-70% of the total cost of generation tariff has major impact on cost to end consumers. Therefore, GCV being used for the computation of energy input becomes extremely important as any increase/reduction in GCV decreases/increases the admissible coal consumption affecting the cost of power. In order to balance the interest of both the Generating Companies as well as the distribution companies (and ultimately the end consumers), the measurement of GCV of coal used needs to be as accurate as the true representative of the coal consumption is required.

5.15.4 As per the existing GERC MYT Regulations 2016, the "GCV As fired" basis is considered for the Energy Charge Rate (ECR) computation. However, it is to be noted that CERC in its Tariff Regulations, 2014 has shifted to "GCV As received" basis from "GCV As fired" basis as per the advice of Central Electricity Authority (CEA), for the purpose of computation of energy charges. Further, CERC in its Tariff Regulations, 2019 has continued with the measurement of GCV on 'as received basis' and has also specified that aforementioned measurement is required to be implemented in all coal

based thermal Generating Stations effectively. The Commission in line with the CERC approach has proposed to shift from existing "GCV As fired" basis to "GCV As received" basis for energy charge computation.

5.15.5 Further, Central Electricity Authority has recommended for allowing a margin for loss of GCV between "GCV As received" basis at Generation Station (wagon top) to "GCV As Fired" basis. The recommended GCV loss figures in case of pit head Generating Stations is 85-100 Kcal/kg and in case of non-pit head generating stations of 105-120 kcal/kg. Accordingly, the CERC in its Tariff Regulations, 2019 has specified stacking loss of 85 kcal/kg on account of variation during storage at generating station for calculation of energy charge. However, as per the GERC MYT Regulations, 2016, GCV is considered as fired basis thus the losses in GCV of coal due to inefficient handling of Coal is allowed to pass on to the beneficiaries. In order to promote efficient handling of Coal, the Commission in line with CERC and also as per recommendation of CEA, has proposed consider "GCV as revised basis" approach and proposed to allow maximum stacking loss of 85 kcal/kg for pit head Generating Stations and maximum stacking loss of 120 kcal/kg for non-pit head Generating Stations.

5.15.6 Also, in line with CERC approach, a third-party sampling is to be adopted by the Generating Companies at the loading end of mine and unloading end of the generating station in order to have more transparency in the measurement of GCV

5.15.7 Accordingly, the "GCV As Received basis", post adjustment of stacking loss, is proposed to be considered for computation of Energy Charges.

5.15.8 The proposed computation of ECR as shown below:

" *60.5. Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae :*

(a) For coal based and lignite fired stations

$$ECR = \{(GHR - SFC \times CVSF) \times LPPF / CVPF + SFC \times LPSFi + LC \times LPL\} \times 100 / (100 - AUX)$$

(b) For gas and liquid fuel based stations

$$ECR = GHR \times LPPF \times 100 / \{CVPF \times (100 - AUX)\}$$

Where,

AUX = Normative auxiliary energy consumption in percentage.

CVPF= (a) Weighted Average Gross calorific value of coal as received, in kcal per kg for coal based stations less actual stacking losses in calorific value of coal on account of variation during storage at generating station;
Provided that the actual stacking losses shall subject to the maximum stacking loss of 85 kcal/kg for pithead stations and 120 kcal/kg for non-pithead stations.

(b) Weighted Average Gross calorific value of primary fuel as received, in kcal per kg, per litre or per standard cubic meter, as applicable for lignite, gas and liquid fuel based stations.

(c) In case of blending of fuel from different sources, the weighted average Gross calorific value of primary fuel shall be arrived in proportion to blending ratio.

CVSF= Calorific value of secondary fuel, in kcal per ml.
ECR = Energy charge rate, in Rupees per kWh sent out.
GHR = Gross station heat rate, in kcal per kWh.
LC = Normative limestone consumption in kg per kWh.
LPL = Weighted average landed price of limestone in Rupees per kg.
LPPF =Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month. (In case of blending of fuel from different sources, the weighted average landed price of primary fuel shall be arrived in proportion to blending ratio)
SFC = Normative Specific fuel oil consumption, in ml per kWh.
LPSFi=Weighted Average Landed Price of Secondary Fuel in Rs./ml during the month:

Provided that energy charge rate for a gas/liquid fuel based station shall be adjusted for open cycle operation based on certification of Member Secretary of respective Regional Power Committee for the open cycle operation during the month."

5.15.9 Further, the Commission has proposed to include the following provisions for providing clarification on consideration of fuel price in accordance with the CERC Tariff Regulations, 2019.

"Provided that procurement of fuel at a price other than Government notified prices may be considered, if it is based on competitive bidding through transparent process."

5.15.10 Also, as proposed earlier that GCV of coal is required to be certified by the third party agency, to ensure the accounting of proper quality of coal, any cost related to such certification process will be required to be borne by the beneficiaries and hence, such cost will be allowed as a pass through under O&M cost. The Commission has proposed to include the following provisions for providing clarification on third party sampling for determination of GCV of coal in accordance with the CERC Tariff Regulations, 2019.

"Provided also that in case of coal-fired or lignite based thermal generating station, the Gross Calorific Value shall be measured by third party sampling and the expenses towards the third party sampling facility shall be reimbursed by the beneficiaries."

5.15.11 The GERC MYT Regulations, 2016 does not specify any conditions regarding the consideration of demurrage charges. The Generating plants use wagons of Indian

Railways to transport coal from the coal mines (in case of domestic coal) or from the ports (in case of imported coal) to the plants. Once these loaded railway wagons have reached the power plant, they need to be unloaded and released within a stipulated time frame. If there is any delay beyond the stipulated time, the power plant has to pay a penalty cost, known as demurrage cost to the Railway. The unloading of the coal needs to be carried out by the generating company with proper planning so as to avoid any delay. As these charges are levied on the Generating company due to its inefficiency in handling of the fuel, the beneficiary must not be burdened with such charges. Therefore, the Commission in the draft GERC MYT Regulations, 2021 proposed for disallowance of the demurrage charges and the following provision is proposed to be include in the Regulations.

"Provided that, no demurrage charge of railway rakes shall generally be allowed. However, for any demurrage charge cause of which is not attributable to generating company may be allowed subject to prudence check by the Commission. Generating company has to ensure that, it has taken sufficient measures to avoid the occurrence of any demurrage."

5.16 Deviation Charges

5.16.1 Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2014 (hereinafter referred to as 'CERC DSM Regulations') was introduced and made effective from February 17, 2014 and was amended three times. Accordingly, the Deviation Settlement Mechanism was implemented at Intra-State level effective from February 17, 2014 vide Letter No. GERC/Legal/2015/0436 dated March 5, 2015 by the Commission.

5.16.2 Further, the CERC has notified the Fourth amendment for the Deviation Settlement Mechanism (DSM) Regulations. The Commission vide its Order No. 1776 of 2019 dated December 27, 2019 has adopted these Regulations to larger extent.

5.16.3 As per the said amendment in DSM Regulations, an additional deviation charges have been implemented with regards to:

a. Conditions for Deviation Volume Limit and consequences of exceeding such Deviation Volume Limit by way of levy of Additional Deviation Charges as specified under Regulation;
b. Due to deviation by generating company or distribution licensee in a particular grid frequency as specified in the Regulations;
c. In the event of sustained deviation from schedule in one direction (positive or negative) by any regional entity (buyer or seller),

5.16.4 Accordingly, the Commission has proposed to modify the MYT Regulations in relation to Deviation Charges in line with the aforesaid CERC DSM Regulations whereby no UI charges including Additional UI Charges, related to any deviation in schedule payable or earned by Generating company will be allowed to be pass through to the beneficiaries and need to be borne by the Generating Company. However,

Demand being a dynamic in nature and being very volatile, it is proposed that such normal deviation charges paid or earned by the Distribution licensee will be allowed as a passthrough, however additional charges will not be allowed to be pass on to the consumers.

"65. Deviation Charges

65.1 All variations between actual net injection and scheduled net injection for generating plant, and all variations between actual net drawl and schedule net drawl for beneficiaries shall be treated as their respective deviations and will be dealt with as per the intra-State ABT Regulations/Orders notified/issued by the Commission including all its amendment from time to time.

65.2. Variations between actual net injection and scheduled net injection for the generating stations, and variations between actual net drawal and scheduled net drawal for the Beneficiary/ies shall be treated as their respective Unscheduled Interchange (deviations), and charges for such Unscheduled Interchange (deviations) shall be governed in accordance with the Intra-State ABT Mechanism Order/Regulations issued by the Gujarat Electricity Regulatory Commission including all its amendment from time to time:

Provided that any Unscheduled Interchange (deviations) Charges and any penalty or incentive, paid or earned by the Generating Company/ies in accordance with such Order/Regulations as issued by Commission shall not be recoverable/adjusted from the Beneficiary/ies through Tariff:

Provided further that basic Unscheduled Interchange (deviations) Charges paid or earned by the Distribution Licensees in accordance with such Intra-State ABT Mechanism Order/Regulations issued by the Commission including all its amendment from time to time shall be recoverable/adjusted from the Beneficiary/ies through Tariff:

Provided also that any Additional Charges applicable due to deviation in excess of the volume limit specified or sign violation to the Distribution Licensees in accordance with such Intra-State ABT Mechanism Order issued by the Commission including all its amendment from time to time, shall not be recoverable from the Beneficiary/ies through Tariff."

5.17 Compensation in relation to operation on account of backing down

5.17.1 The GERC MYT Regulations, 2016 does not provides any compensation of backing down of thermal Generating Stations. The CERC has notified the Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 dated April 6, 2016 wherein, compensation mechanism has been provided for the inter-state thermal generating stations for compensation of the losses which incurs due to backing down and reserve shut down.

5.17.2 There has been significant capacity addition of Renewable Energy in the Country as well in the State of Gujarat. In view of the infirm nature of such generation and must run status of such renewable sources, it is essential that there is enough flexibility in

generation to avoid demand supply mismatch and ensure grid stability. The hydro and gas based generation is natural fit for managing such a scenario. However, in view of the limited capacity of gas and hydro generation, it is essential that existing Thermal/Lignite based Generating Stations have enough flexibility so that SLDC can issue appropriate instructions for backing down. However, the Commission is also wary of the fact that frequent backing down, part load operation may impact performance parameters of the Generating Station. Therefore, the Commission feels that it is also necessary to ensure adequate compensation to be provided to Generating Station against the Degradation of Heat Rate, Aux Consumption and Secondary Fuel Oil Consumption, due to part load operation and multiple start/stop of units.

5.17.3 However, being a naïve arrangement, it is also necessary to undertake a proper technical and commercial study to elaborate on the methodology for calculation of such compensation and to verify such claims, so as to avoid any undue advantage to the Generating Company at the cost of burden on the consumers. Therefore, the Commission though keen to implement the compensation mechanism for the Generating utility for any degradation in operational parameters due to part load operation and multiple start/stop of units, the same may be undertaken at the time of true-up of Generating Station, on case to case basis, based on the data provided in the Petition along with the justification.

"66. Compensation in relation to operation on account of backing down

66.1. In case a Generating Station or Unit is instructed for backing down as per direction given by SLDC on account of grid security or due to the lower schedule given by the Beneficiaries, the impact of the same on any of the operational parameters such as Gross Station Heat Rate, Auxiliary consumption and Secondary Fuel Oil Consumption, may be considered by the Commission on case to case basis at time of truing up, subject to prudence check.

6 Intra-state Transmission

6.1.1 This section discusses the explanation for the changes to be undertaken in the MYT Regulations with respect to determination of transmission tariff by the Commission.

6.2 Background

6.2.1 As per Clause 2.3 of the National Tariff Policy 2016, the principles and methodologies adopted for determination of tariff for use of the Intra-State transmission system is guided by the Central Commission in the CERC (Terms and Conditions of Tariff) Regulations, 2019 wherever required.

6.2.2 In the State of Gujarat, State Transmission utility 'Gujarat Energy Transmission Corporation Ltd.' (GETCO) is responsible for undertaking all activities related to transmission of electricity and providing a robust & reliable Intra-state transmission network. The State transmission network consist of over 63,371 Ckt kms of Transmission Lines that operate at voltage levels of 400 kV, 220 kV, 132 KV and 66 kV.

6.2.3 Also, as per provisions of Section 39(2) of EA 2003, GETCO, as STU, is responsible to undertake all activities related to transmission planning, co-ordination and ensuring development of an efficient, coordinated and economical system of intra-State transmission for smooth flow of electricity from generating stations to the load centers within the State.

6.3 Applicability

6.3.1 Regulation 64 of the GERC MYT Regulations, 2016 specifies that it shall be applicable for the determination of Tariff for access and use of the intra-State transmission system in the State of Gujarat. The Commission proposes to continue with the same applicability for the next Control Period.

6.3.2 Further, the Commission may deviate from the norms or stipulate alternative norms for cases, where it deems appropriate, supported by proper documentation and the reason being recorded.

6.3.3 Also, as per clause 5.3 of the National Tariff Policy 2016, the intra-state transmission projects shall be developed by State Government through competitive bidding process only. Accordingly, the following clause is proposed to be added in accordance with CERC Tariff Regulations 2019:

> *"Provided this Regulations will not be applicable for any new transmission system set up by a Transmission Licensee under section 63 of the Electricity Act 2003."*

6.4 Components of Tariff

6.4.1 Annual transmission charges for each financial year of the Control Period as per the existing Regulation 65 of the GERC MYT Regulations, 2016 specifies that it shall

provide for the recovery of the Aggregate Revenue Requirement (ARR) considering the component of tariff for the respective financial year of the Control Period, as reduced by the amount of Non-Tariff Income, income from Other Business and short-term transmission charges of the previous year, as approved by the Commission

6.4.2 The Commission does not propose any changes in these components of tariff for transmission.

6.5 Capital Investment Plan

6.5.1 Transmission business is usually related to providing infrastructure for transmission of electricity. The GERC MYT Regulations allows the transmission licensee, to undertake additional capital expenditure in various circumstances including that is outside original scope and after cut-off date. Any additional capital expenditure would necessarily result in upward revision of tariff. Considering the drastic increment in the Renewable capacity addition in the recent years and the upcoming generation capacity additions especially from the renewable energy sources, it is likely that Transmission Licensee would incur substantial capital investment to provide necessary infrastructure for strengthening and augmentation of transmission network, meeting the requirement of load growth, quality of supply, reliability, metering, congestion management, etc. Therefore, it is necessary to evaluate the need of development of such infrastructure and the investment to be undertaken for the same with prudence check. Hence, the Commission, has proposed a capital investment plan to be submitted by Transmission Licensee at the time of MYT Petition so as to assess the need and impact of the same on the tariff. The basic purpose is to verify the prudence of capital investments made by the Utilities for creation of new infrastructure and the advantage of the same to the transmission system and to the consumers.

6.5.2 As mentioned in the chapter above, the Commission has also proposed the "Guidelines for approval of Capital Investment", according to which an approval from the Commission shall be required prior to undertaking any such CAPEX scheme. However, the Commission is inclined to evaluate schemes which are highly capital intensive and therefore, in the said guidelines it is clarified that only major investment plan needs to be considered for prior approval. Accordingly, the capital investment for a particular schemes having capital cost more than the threshold limit as specified in the guidelines will require a prior approval of the Commission. If the scheme cost is below the threshold limit specified in the guidelines, the same will be considered as Non-DPR scheme for which the treatment shall be provided as specified in the Regulations.

6.5.3 Also, with regard to capital investment plan, the transmission companies to provide details or additional information 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 transmission charges. The Commission has also proposed certain additional proviso for clarification for submission procedure of Capital investment plan.

6.5.4 Based on above, the Commission has proposed to include the following provisions in the draft GERC MYT Regulations, 2021:

"69.1. The Transmission Licensee shall submit a detailed capital investment plan, financing plan and physical targets for each year of the Control Period for strengthening and augmentation of intra-state transmission network, meeting the requirement of load growth, improvement in quality of supply, reliability, metering, congestion management, integration of renewable energy sources, etc., to the Commission for approval, as a part of the Multi-Year Aggregate Revenue Requirement for the entire Control Period:
Provided that the Capital Investment Plan shall be submitted for each year of the Control Period` as specified in Chapter 2 of these Regulations:

69.2. The Capital Investment Plan shall be a least cost plan for undertaking investments and shall cover all capital expenditure projects of a value as specified in Guidelines for in-principle clearance of proposed investment schemes as provided in Annexure III of this Regulations or such other amount as may be stipulated by the Commission from time to time, and shall be in such form as may be stipulated.

69.3. The Capital Investment Plan shall be accompanied by such information, particulars and documents as may be required including but not limited to the information such as number of bays, name, configuration and location of grid substations, substation capacity (MVA), transmission line length (ckt-km) showing the need for the proposed investments, alternatives considered, cost/benefit analysis and other aspects that may have a bearing on the transmission charges.

69.4. The Transmission Licensee shall submit, along with the Petition for determination of Aggregate Revenue Requirement on each year of the control period, 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.

69.5. The Capital Investment Plan of the Transmission Licensee shall be consistent with the transmission system plan for the intra-State transmission system."

6.6 Norms for operation

6.6.1 The Regulation 67 of the GERC MYT Regulations, 2016 specifies the normative availability for recovery of full transmission charges as well as payment of incentives for the Transmission Licensee. As per the Regulation, the Target Availability for recovery of full transmission charges for AC System was fixed at 98%, whereas for HVDC bi-pole links and HVDC back-to-back stations at 95%. Similarly, the Target Availability for incentive computation for AC System was fixed at 98.5%, and for HVDC bi-pole links and HVDC back-to-back Stations at 96%.

6.6.2 The Commission has analysed the actual transmission availability achieved by GETCO over the period from FY 2015-16 to FY 2018-19 as shown below:

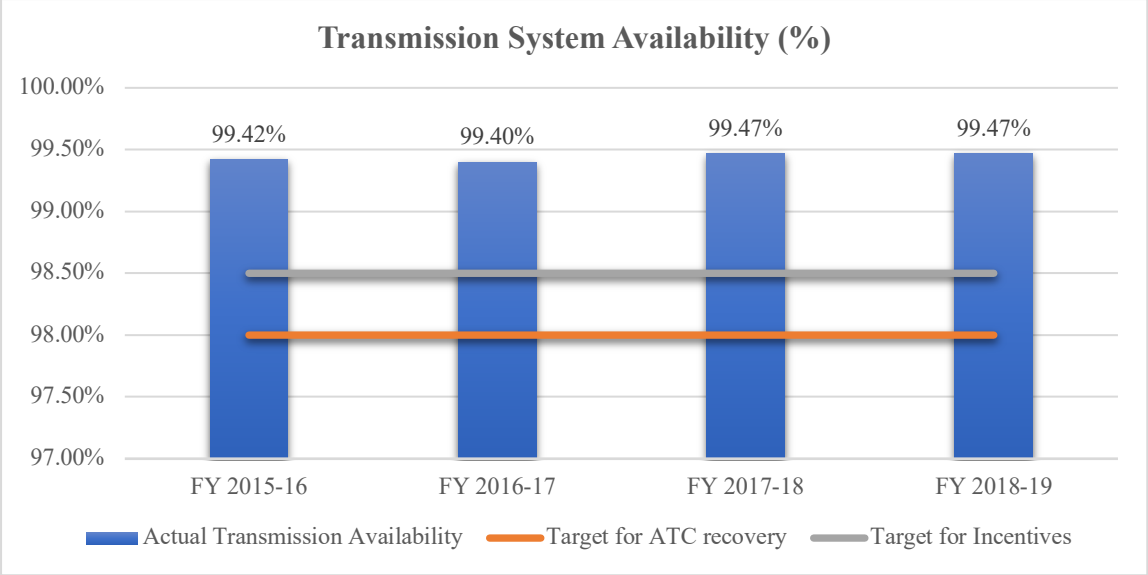


Table 36: Availability of GETCO Transmission System

Particulars	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	Average
Availability of Transmission Line as certified by SLDC	99.42%	99.40%	99.47%	99.47%	99.44%

6.6.3 It is observed that, the average transmission system availability maintained by GETCO during FY 2015-16 to FY 2018-19 is more than target availability specified in the Regulations for recovery of full Annual Transmission Charges. Therefore, the Commission has proposed to continue with the same target availability for full recovery of annual transmission charges.

6.6.4 However, in the draft GERC MYT Regulations, 2021, the Commission has proposed to allow additional return on equity to the Transmission companies based on the Transmission availability in place of incentives based on transmission availability. Therefore, in the draft GERC MYT Regulations, 2021, the Commission has proposed to replace incentives with additional return on equity as shown below:

"70. Norms for operation

Target availability for the transmission system shall be as under:

(i) For full recovery of annual transmission charges:

(a) AC system :98 per cent;

(b) HVDC bi-pole links and HVDC back-to-back stations :95 per cent;

(ii) For Additional Rate of Return on Equity consideration :

(a) AC system :98.5 per cent;

(b) HVDC bi-pole links and HVDC back-to-back stations :96 per cent;

Note 1: Recovery of annual transmission charges below the level of target availability shall be on pro rata basis. At zero availability, no transmission charges shall be payable.

Note 2: The actual availability shall be calculated in accordance with the procedure provided in Annexure II to these Regulations and shall be certified by the Gujarat State Load Despatch Centre as per the format specified in Appendix I of the Annexure II of these Regulations.

Provided that for new HVDC stations, Target Availability shall be considered as 95% for first three years of operations for the purpose of calculations of additional Return on Equity:

Provided also that the computation of additional rate of Return on Equity shall be undertaken as per Regulation 37.

Provided also that for AC system, two trippings per year shall be allowed, and after two trippings in a year, additional 12 hours outage shall be considered in addition to the actual outage:

Provided also that in case of outage of a transmission element affecting evacuation of power from a generating station, outage hour shall be multiplied by a factor of 2."

6.7 Calculation of Aggregate Revenue Requirement

6.7.1 As per the existing Regulations 68 of the GERC MYT 2016, following component will be included for estimation of Aggregate Revenue Requirement of a Transmission Licensee for corresponding year of the Control Period:

"(a) Depreciation;
(b) Interest and Finance Charges on Loan Capital;
(c) Interest on working capital and deposits from Transmission System Users;
(d) Operation and maintenance expenses;
(e) Contribution to contingency reserves, if any;
(f) Return on Equity (ROE);
(g) Income Tax;
minus:
(h) Non-Tariff Income;
(i) Revenue from short-term transmission charges projected on the basis of latest audited figures; and
(j) Income from Other Business, to the extent specified in these Regulations."

6.7.2 As per Regulations 41 of the GERC MYT Regulations, 2016 the income tax shall be recovered as per the actual tax paid. However, the Commission has proposed for Grossing up approach in this draft GERC MYT Regulations, 2021. The consideration of Income Tax has been explained in the Financial principles chapter of this explanatory memorandum. Therefore, the Commission has proposed to include Income Tax under elements of ARR.

6.7.3 The Commission proposes for a proviso to be incorporated whereby any amount recovered by Transmission Licensee for conveying electricity to other States, through the Point of Connection (PoC) transmission charges in accordance with the Regulations and Orders of the Central Electricity Regulatory Commission, shall not be recovered from the Annual Transmission Charges determined under these Regulations and if recovered than to be deducted from ARR.

6.7.4 Since prior period income is included in Non-Tariff Income in Regulation 52.2 of the GERC MYT Regulations, 2016 and also the proviso to Regulation 68.1 of the GERC MYT Regulations, 2016 highlights that a prior period income / expenses to be allowed during truing up subjected to prudence check on case to case basis. This results in duplication, hence, the same is proposed to be excluded from Non-Tariff Income.

6.7.5 All penalties and compensation payable by the Licensee for failure to meet any Performance Standards or for damages should not be allowed to be recovered through the Aggregate Revenue Requirement. The Commission feels that in order to safeguard the interest of a consumer, such penalties/compensations raised due to inefficiency and failure of the licensee should not be recovered from the paying consumer. Moreover, for the proper treatment of paid penalties/compensation during Truing-up of ARR, licensee should maintain a separate record for such payment of penalties/compensation and same has to be submitted to the Commission along with the truing-up petition.

6.7.6 In view of the above, the Commission proposes to include the following provisions in the draft Regulations:

> *"Provided also that the components of the Aggregate Revenue Requirement corresponding to the transmission lines owned by Gujarat Energy Transmission Corporation Limited (GETCO) and conveying electricity to other States, being recovered through the Point of Connection (PoC) transmission charges in accordance with the Regulations and Orders of the Central Electricity Regulatory Commission, shall not be recovered from the Annual Transmission Charges determined under these Regulations:*
>
> *Provided also that in case any such components have already been recovered through the intra-State transmission tariff, then such excess recovery shall be deducted from the Aggregate Revenue Requirement of GETCO for the future years, along with associated holding cost, as applicable:*
>
> *Provided also 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 shall not be allowed to be recovered through the Aggregate Revenue Requirement whereby the details of penalties and*

compensation paid or payable, if any, is required to be submitted to the Commission along with the Petition under these Regulations:"

6.8 Operation and Maintenance expenses for Transmission Licensee

6.8.1 The Regulation 68.2 of the GERC MYT Regulations, 2016 specifies the O&M expenses norms for existing as well as new Transmission Licensee. While the O&M expenses norms for existing Transmission Licensee were linked to Transmission line length (ckt-km) and sub-station related assets (number of bays), for new Transmission Licensee the norms were specified to be on case to case basis.

6.8.2 The said Regulation form the GERC, MYT Regulations, 2016 is reproduced below:

"68.2.1 Existing Transmission Licensee:

Gujarat Energy Transmission Company Ltd. (GETCO)

Table 14: O&M Expense norms in Rs. Lakh/Bay and Rs. Lakh/ckt-km

Particulars	***FY 2016-17***	***FY 2017-18***	***FY 2018-19***	***FY 2019-20***	***FY 2020-21***
O&M Expenses/Bay	*7.60*	*8.04*	*8.50*	*8.98*	*9.50*
O&M Expenses/ckt-km	*0.64*	*0.68*	*0.72*	*0.76*	*0.81*

68.2.2 For New Transmission Licensee: For the New Transmission Licensees, the year-wise O&M norms shall be determined on case to case basis: Provided that the same shall not be applicable to those new projects, which are awarded on a competitive bidding basis."

6.8.3 While specifying the O&M expenses norms for third Control Period in the GERC MYT Regulations, 2016, the Commission has considered the norms specified for FY 2015-16 under the GERC MYT Regulations, 2011 as a base year. Further, escalation rate of 5.72% (as specified in CERC Tariff Regulations, 2009), has been applied to determine the norms for FY 2016-17 and subsequent years.

6.8.4 Based on the O&M expenses norms specified in the Regulations, the O&M expenses for the Transmission Licensee was allowed by multiplying the specified O&M expenses norms in per bay and per ckt. km basis with actual number of bays and ckt. km of line length during the respective year. The approach adopted for specifying the O&M expenses norms under the GERC MYT Regulations 2016 were in line with the approach adopted by CERC in its Tariff Regulations, 2014; wherein for every ckt km addition of transmission line and number of bays in the transmission system, the transmission licensee were entitled for incremental O&M expenses in accordance with the specified norms. The basic premise for adopting such norms linked to transmission system is to enable recovery of O&M expenses in proportion to increase in the asset base of the transmission licensee.

6.8.5 Further, the CERC in its Tariff Regulations, 2019 has specified the norms for O&M expenses for Transmission Licensees handling inter-State transmission of power, wherein voltage-wise norms as well as separate norms for line assets and substation assets have been specified, as reproduced below:

"35 ...
(3) Transmission system:
(a) The following normative operation and maintenance expenses shall be admissible for the transmission system:

Particulars	***2019-20***	***2020-21***	***2021-22***	***2022-23***	***2023-24***
Norms for sub-station Bays (Rs Lakh per bay)					
765 kV	*45.01*	*46.6*	*48.23*	*49.93*	*51.68*
400 kV	*32.15*	*33.28*	*34.45*	*35.66*	*36.91*
220 kV	*22.51*	*23.3*	*24.12*	*24.96*	*25.84*
132 kV and below	*16.08*	*16.64*	*17.23*	*17.83*	*18.46*
Norms for Transformers (Rs Lakh per MVA)					
765 kV	*0.491*	*0.508*	*0.526*	*0.545*	*0.564*
400 kV	*0.358*	*0.371*	*0.384*	*0.398*	*0.411*
220 kV	*0.245*	*0.254*	*0.263*	*0.272*	*0.282*
132 kV and below	*0.245*	*0.254*	*0.263*	*0.272*	*0.282*
Norms for AC and HVDC lines (Rs Lakh per km)					
Single Circuit (Bundled Conductor with six or more sub-conductors)	*0.881*	*0.912*	*0.944*	*0.977*	*1.011*
Single Circuit (Bundled conductor with four sub-conductors)	*0.755*	*0.781*	*0.809*	*0.837*	*0.867*
Single Circuit (Twin & Triple Conductor)	*0.503*	*0.521*	*0.539*	*0.558*	*0.578*
Single Circuit (Single Conductor)	*0.252*	*0.26*	*0.27*	*0.279*	*0.289*
Double Circuit (Bundled conductor with four or more sub-conductors)	*1.322*	*1.368*	*1.416*	*1.466*	*1.517*
Double Circuit (Twin & Triple Conductor)	*0.881*	*0.912*	*0.944*	*0.977*	*1.011*
Double Circuit (Single Conductor)	*0.377*	*0.391*	*0.404*	*0.419*	*0.433*
Multi Circuit (Bundled Conductor with four or more sub-conductor)	*2.319*	*2.401*	*2.485*	*2.572*	*2.662*
Multi Circuit (Twin & Triple Conductor)	*1.544*	*1.598*	*1.654*	*1.713*	*1.773*
Norms for HVDC stations					
HVDC Back-to-Back stations (Rs Lakh per 500 MW) (Except Gazuwaka BTB)	*834*	*864*	*894*	*925*	*958*
Gazuwaka HVDC Back-to-Back station (Rs. Lakh per 500 MW)	*1,666*	*1,725*	*1,785*	*1,848*	*1,913*
500 kV Rihand-Dadri HVDC bipole scheme (Rs Lakh) (1500 MW)	*2,252*	*2,331*	*2,413*	*2,498*	*2,586*
±500 kV Talcher- Kolar HVDC bipole scheme (Rs Lakh) (2000 MW)	*2,468*	*2,555*	*2,645*	*2,738*	*2,834*

Particulars	*2019-20*	*2020-21*	*2021-22*	*2022-23*	*2023-24*
±500 kV Bhiwadi-Balia HVDC bipole scheme (Rs Lakh) (2500 MW)	*1,696*	*1,756*	*1,817*	*1,881*	*1,947*
±800 kV, Bishwanath-Agra HVDC bipole scheme (Rs Lakh) (3000 MW)	*2,563*	*2,653*	*2,746*	*2,842*	*2,942*

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;

....”

6.8.6 It is noted that CERC has introduced the norm for transformers in terms of Rs. Lakh per MVA from FY 2019-20 onwards by allocating the existing substation related expenses, which was earlier accounted within the Norms for Sub-station bays.

6.8.7 Also, the normative O&M expenses allowed by CERC for PGCIL are much higher than that specified by SERCs, which may be on account of the fact that the PGCIL network comprises largely of 400 kV and 220 kV transmission system, whereas the voltages at State level are primarily 66 kV and 220 kV with a smaller share of 132 kV and 400 kV lines. Further, the CERC norms have been specified after taking into account the prudently incurred O&M expenses incurred by PGCIL. As long as similar treatment of specifying the O&M norms based on the prudently incurred O&M expenses is followed, the State Transmission Utilities will not be at any disadvantage and will be able to recover the prudently incurred O&M expenses incurred by them.

6.8.8 In view of the above, for the next Control Period, the O&M norms for the transmission business are proposed to be specified, based on past trends to derive O&M expenses per bay and per ckt km. The total allowable operation and maintenance expenses for the transmission system is to be calculated by multiplying the number of bays and km of line length with the applicable norms for O&M expenses on per bay and per km basis, respectively. GETCO's operations are mainly at the voltage levels of 66 kV and 220 kV, though GETCO also has 400 kV and 132 kV transmission systems. However, the break-up of O&M expenses incurred across different voltages is not available; hence, it is not proposed to specify voltage-level O&M norms.

6.8.9 Accordingly, the Commission proposes to continue with the existing approach of deriving the O&M expenses norms for the Transmission Licensees in the State of Gujarat, i.e., based on line length in circuit kms and number of bays with certain modifications as explained in paras below.

Analysis of Actual O&M Expenses vis-à-vis Normative

6.8.10 O&M expenses for Transmission system can broadly be categorized under O&M activities associated with Transmission Lines and Sub-station related assets. The O&M activity for Transmission Lines includes routine inspection of overhead and underground transmission lines, patrolling, intrusive inspections of transmission poles, line maintenance, insulator washing, road and right-of-way maintenance, transmission

vegetation management, any additional inspections/expenses due to unforeseen situations etc. The O&M activities for Sub-station includes inspection and maintenance of substation equipment such as circuit breakers, transformers, capacitors, feeders, relays, and other equipment etc. The above specified expenses related with O&M activities are commonly accounted under Employee expenses, Repair & Maintenance (R&M) expenses and Administrative & General (A&G) expenses.

6.8.11 Also, with increase in transmission capacity and corresponding increase in asset base, the manpower resources and repairs and maintenance activities need to be augmented adequately to cater to the enhanced maintenance requirement (preventive and break-down) of the asset base. There is a direct co-relation between O&M expenses and number of bays and transmission line length (ckt-km) put into service.

6.8.12 The Commission has analysed the actual O&M expenditure for the period of FY 2015-16 to FY 2018-19 as per respective Tariff Order of the year, as shown in Table below:

Table 37: Actual O&M expenses as submitted by GETCO

Particulars	Unit	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19
Employee Expenses	Rs. Crore	693.73	801.21	942.82	992.26
Repair & Maintenance Expenses	Rs. Crore	236.71	248.66	296.16	328.68
Administrative & General Expenses	Rs. Crore	87.53	94.52	99.25	128.7
Operation & Maintenance Expenses	Rs. Crore	**1,017.97**	**1,144.39**	**1,338.22**	**1,449.64**

6.8.13 Further, as per the provisions of the GERC MYT Regulations, 2016, the Commission has approved the normative O&M expenses for intra-State Transmission Licensee (GETCO) based on the O&M expenses norms and sharing of efficiency gains or losses has been allowed with respect to the actual O&M expenses. The actual and normative O&M expenses for Transmission Licensee (GETCO) have been compared from FY 2015-16 to FY 2018-19 in the following Table:

Table 38: Normative vs Actual O&M expenses

Particulars	Unit	FY 2015-16		FY 2016-17	
		Actual	Normative	Actual	Normative
O&M Expenses	Rs. Crore	**1,017.97**	**1,143.37**	**1,144.39**	**1,282.93**
Particulars	**Unit**	**FY 2017-18**		**FY 2018-19**	
		Actual	**Normative**	**Actual**	**Normative**
O&M Expenses	Rs. Crore	**1,338.22**	**1,428.38**	**1,449.64**	**1,571.15**

6.8.14 As can be seen from the above Table that the actual O&M expenses of GETCO has been lower than the normative O&M expenses derived based on O&M norms, over the past period. This has resulted into un-necessary burden on consumers, thus, there is a need to revise the existing O&M norms based on actual expenditure of the Licensee over the past period.

Formulation of proposed O&M Expenses norms:

6.8.15 As stated above, the O&M norms for third Control Period under the GERC MYT Regulations, 2016 were specified by escalating the norms of FY 2015-16 (as specified in the GERC MYT Regulations, 2011) by a fixed escalation rate of 5.72% per annum. However, as against this normative O&M expenses, the actual O&M expenses of the Licensee were remained consistently lower. Thus, for deriving the O&M norms for next Control Period, the Commission proposes to consider the actual O&M expenses over the past period such that it reflects the actual expenses incurred by the Licensee.

6.8.16 With regard to escalation, the Commission proposes to adopt the CPI:WPI indexation mechanism as adopted for other Licensees, viz, Distribution Licensee, SLDC and Generating Company in this Regulations.

6.8.17 Further, the Commission notes that for Transmission Licensee, once the O&M norms (per bay and per ckt km) gets determined based on the fixed escalation factor, it generally remained fixed over the Control Period years. However, for other Licensee or Generating Stations, the Commission in this Regulations has proposed to determine the revised normative by considering the actual inflation (CPI:WPI figures) at the time of truing-up of any particular year. Therefore, in order to have consistent approach across various Utilities, the Commission has adopted the same approach for Transmission Licensee also, whereby the O&M norms for Transmission Licensee shall be revised for the true-up year considering the actual inflation rate. Accordingly, the Commission has specified the methodology to determine the O&M norms in the draft GERC MYT Regulations, 2021. Based on this methodology, the O&M norms per bay and per ckt km will be determined in the MYT Order for the whole Control Period. Further, during true-up of any particular year, the O&M norms shall be revised for that particular year only based on the real inflation.

6.8.18 Based on above the proposed Regulation for determination of O&M expenses norms for Transmission Licensee is as under:

"71.2 Operation and Maintenance expenses:

71.2.1. The Operation and Maintenance expenses for Transmission Licensees shall be allowed based on the norms for Operation and Maintenance expenses derived for circuit kilometer of transmission lines and number of Bays as per methodology specified in clauses below:

71.2.2 Existing Transmission Licensee:

a) The norms for Operation and Maintenance expenses for existing Transmission Licensees shall be derived on the basis of the average of the actual audited Operation and Maintenance expenses for the past three Years ending March 31, 2020, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission.

Provided that the average of such Operation and Maintenance expenses shall be allocated to bays and transmission line length (ckt-km) in the ratio of 70:30.

Provided further that the average Operation and Maintenance expenses allocated to bays and transmission line length (ckt-km) as computed above, shall be divided by average number of bays and transmission line length in ckt-km derived on the basis of past three Years ending March 31, 2020, to arrive at Operation and Maintenance expenses per bays and Operation and Maintenance expenses per ckt-km.

Provided that such Operation and Maintenance expenses per bays and per ckt-km shall be considered as norms for Operation and Maintenance expenses for the Year ended March 31, 2019, and shall be escalated at the respective escalation rate for FY 2019-20 and FY 2020-21, to arrive at the norms for Operation and Maintenance expenses per bays and per ckt-km for the base year ending March 31, 2021.

Provided further that the escalation rate for FY 2019-20 and FY 2020-21 shall be computed by considering (WE_{WPI}) weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years as per the Office of Economic Advisor, Ministry of Commerce and Industry, Government of India and (WE_{CPI}) weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years as per the Labour Bureau, Government of India.

b) The norms for Operation and Maintenance expenses per bays and per ckt-km for nth year of the Control Period shall be determined based on the formula shown below:

*i. O&M per bayn = (O&M per bayn-1) * (1+Index Escn)*
*ii. O&M per ckt-kmn = (O&M per ckt-kmn-1) * (1+Index Escn)*

Where,
O&M per bayn-1 – Norms for Operation and Maintenance expenses per bay for Transmission Licensee for the immediately preceding year;
O&M per ckt-kmn-1 – Norms for Operation and Maintenance expenses per ckt-km for Transmission Licensee for the immediately preceding year;

Provided that for first year of control period O&M per bayn-1 and O&M per ckt-kmn-1 shall mean norms for Operation and Maintenance expenses per bays and per ckt-km of base year as derived in Regulation 71.2.2 (a) above;
Index Esc means the average Inflation escalation to be considered on the basis of weightage of WPI and CPI respectively of the relevant year and to be computed as below:

*Index Escn = WE_{CPI}*CPIn + WE_{WPI}*WPIn*
Whereby,
WE_{CPI} : Weightage of CPI Index and;
WE_{WPI}: Weightage of WPI Index;
'WPIn' (expressed in %) means the average yearly inflation of Wholesale Price Index (all commodities) over the years for the nth year;
'CPIn' (expressed in %) means the average yearly inflation of Consumer Price Index (Industrial workers) over the years for the nth year.

Note: Source for CPI and WPI calculation as under:
Wholesale Price Index numbers as per Office of Economic Advisor, Ministry of Commerce & Industry, Government of India {Base Year: 2011-12 Series};
Consumer Price Index for Industrial Workers (all India) as per Labour Bureau, Government of India {Base Year: 2001=100}

Provided that for the purpose of determination of norms for Operation and Maintenance Expenses per bays and per ckt-km for the whole Control Period, WPIn is to be computed based on the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years at the time of filing of Petition, as per the Office of Economic Advisor, Ministry of Commerce & Industry, Government of India and CPIn is to be computed based on the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past three financial years, at the time of filing of Petition, as per the Labour Bureau, Government of India and such escalation factor so derived to be applied to Operation and Maintenance expenses of each preceding year.

Provided further that, in the Truing-up of the O&M expenses norms per bays and per ckt-km for any particular year of the Control Period, WPIn is to be considered based on the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years (including the year of Truing-up) and CPIn is to be considered based on the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years (including the year of Truing-up), for the purpose of determination of norms for Operation and Maintenance Expenses per bays and per ckt-km for that year.

Note:

(a) For Transmission Licensee WE_{CPI}:WE_{WPI} is to be considered as 70:30.
(b) O&M expenses shall be allowed on normative basis and shall be trued-up only to the account of variation in Wholesale Price Index and Consumer Price Index.
(c) The number of Bays considered for computing O&M expenses norms shall exclude the unutilised Bays.
(d) The O&M expenses for the GIS bays shall be allowed by multiplying 0.7 to the O&M expenses norms for bays of the respective year of control period as worked out in Regulation 71.2.2 above.
(e) The impact of Wage Revision, if any, may be considered at the time of true-up for any Year, based on documentary evidence and justification to be submitted by the Petitioner. Provisioning of wage revision expenses shall not be considered as actual expenses at the time of true-up, and only expenses as actually incurred shall be considered.
(f) For the purpose of estimation, the same Index Escn value as derived for FY 2020-21 shall be used for all years of the Control Period. However, at the time of true-up of any particular year the Commission will consider the actual values of the WPI and CPI over past three years including True-up year.
(g) Any variation in actual and normative O&M cost excluding any abnormal expenses or wage revision shall be subject to the sharing of efficiency gains or losses as per framework specified in this Regulations.

(h) Transmission Licensee shall submit a certificate from the Chief Electrical Inspector for the number of bays and circuit kilometers of transmission line added during the year at the time of truing up"

6.8.19 The following paras provided an illustration for step by step computation of O&M norms for Transmission Licensee:

Step 1: Determination of O&M expenses norms for Base Year

i. Calculate the average of the actual audited Operation and Maintenance expenses for the past three Years (excluding abnormal Operation and Maintenance expenses and provisions if any) as shown in Table below:

Table 39: Actual O&M expenses of GETCO

Sr. No.	Particulars	Units	FY 2016-17	FY 2017-18	FY 2018-19	Average* (FY 2017-18)
			Actual	Actual	Actual	
			GETCO	GETCO	GETCO	GETCO
1	Employee Expenses	Rs. Crore	801.21	942.82	992.26	912.10
2	Repair & Maintenance Expenses	Rs. Crore	248.66	296.16	328.68	291.17
3	Administrative & General Expenses	Rs. Crore	94.52	99.25	128.7	107.49
4	**Net Operation & Maintenance Expenses**	Rs. Crore	**1,144.39**	**1,338.22**	**1,449.64**	**1,310.75**

**Average of past three year, i.e., from FY 2016-17 to FY 2018-19 has been considered as derived O&M expenses of FY 2017-18*

Note: As per draft Regulations actual O&M expenses for the past three Years ending March 31, 2020 has proposed to be considered, However, at present the audited number of FY 2019-20 is not available. Therefore, for the purpose of illustration the Commission has considered past three years as FY 2016-17 to FY 2018-19.

ii. Calculate the average allocation ratio based on the approved normative O&M expenses derived for bays and transmission lines, with the existing asset base for transmission lines and bays corresponding to respective past three Years as shown in Table below:

Table 40: Allocation ratio for O&M expenses

Particulars	Units	FY 2016-17	FY 2017-18	FY 2018-19	Average
Substations (Bays)					
Opening Number of Bays	Number	11,811	12,565	13,221	12,532
Addition during year	Number	754	656	495	635
Reduction during year	Number	-	-	-	-
Closing Number of Bays	Number	12,565	13,221	13,716	13,167
Average Number of Bays	Number	12,188	12,893	13,469	12,850

Particulars	Units	FY 2016-17	FY 2017-18	FY 2018-19	Average
O&M expenses norm per Bay	*INR Lakhs*	7.60	8.04	8.50	8.05
Total normative O&M Expenses Substations (A)	INR Crores	926.29	1,036.60	1,144.82	1,035.90
Transmission Lines (Ckt km)					
Opening Ckt km	Ckt km	54,605	56,845	58,385	56,612
Addition during year	Ckt km	2,240	1,540	1,653	1,811
Reduction during year	Ckt km	-	-	-	-
Closing Ckt km	Ckt km	56,845	58,385	60,038	58,423
Average Ckt km	Ckt km	55,725	57,615	59,212	57,518
O&M expenses norm per Ckt km	*INR Lakhs*	0.64	0.68	0.72	0.68
Total normative O&M Expenses Transmission Lines (B)	INR Crores	357	392	426	391.58
Total O&M Expenses (as per norms)	**INR Crores**	**1,282.93**	**1,428.38**	**1,571.15**	**1,427.49**
Allocation Ratio for TL*					
Bays	%	72.20%	72.57%	72.87%	**72.57%**
Transmission Lines	%	27.80%	27.43%	27.13%	**27.43%**

**As per above, the average allocation ratio works out to be 72.57% and 27.43% for Bays and Transmission Line respectively. However, to minimise ambiguity round figures have been considered as 70:30.*

iii. Allocate the average O&M expenses as computed in step (i) above, to bays and transmission line length (ckt-km) as per the average allocation ratio computed in step (ii) above and divide the allocated expenses by average number of bays and transmission line length in ckt-km derived on the basis of past three Years, as shown in Table below:

Table 41: Allocated O&M expenses for sub-stations bays and transmission lines

Particulars	Unit	Basis	FY 2017-18 (derived expenses)
Average O&M expenses	Rs.Crore	a	1,310.75
Allocation Ratio for Bays	%	b	70%
Allocation Ratio for Lines	%	c	30%
O&M expenses for Bays	Rs.Crore	d=a*b	917.53
O&M expenses for Lines	Rs.Crore	e=a*c	393.23
Average Number of Bays	Number	f	12,850
Average Ckt km	Ckt km	g	57,518
O&M expenses norms for Bays	**Rs.Lakh/bay**	**h=d/f*100**	**7.14**
O&M expenses norms for Lines	**Rs.Lakh/ckt-km**	**i=e/g*100**	**0.68**

iv. Escalate the above O&M norms derived for FY 2017-18 up to FY 2020-21 to arrive at the O&M expenses norms for base year. The computation of escalation factor is explained below:

Determination of Escalation Rate

v. It has been observed that the CERC and many prominent SERCs have been using Wholesale Price Index (WPI) and Consumer Price Index (CPI) indexation approach for determining escalation rate for O&M expenses. The Commission in the draft GERC MYT Regulations, 2021 has proposed to adopt the escalation mechanism linked with WPI and CPI index, as it is the transparent way to ascertain the percentage increase in O&M expenses and also take cares of the real inflation over the year.

vi. Accordingly, the Commission in the draft GERC Regulations, 2021 has specified that the O&M expenses of transmission licensee; shall be derived on the basis of an inflation factor, which in turn is to be derived based on WPI and CPI index. Further, for arriving at inflation factor, the values for WPI of existing series {Base Year: 2011-12=100}, is to be considered as per the Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India and CPI-IW (Industrial Worker) {Base Year: 2001=100} as per the Labour Bureau, Government of India. The Commission has specified that based on the monthly WPI and CPI data as per above sources, yearly inflation factor is to be derived which shall be considered for computation of inflation factor on the basis of respective weightages assigned to WPI and CPI.

vii. For determination of weightages to be assigned to WPI and CPI, same approach has been adopted as adopted for other Licensee as already explained in paras above. The Table below shows the ratio of employee expenses to the total O&M expenses for GETCO:

Table 42: Employee expenses as percentage of O&M expenses for GETCO

Licensee	FY 2016-17	FY 2017-18	FY 2018-19	Average
GETCO	70.01%	70.45%	68.45%	69.64%

viii. Thus, from above the weightage of CPI works out at 70% (absolute figure considered). Accordingly, the CPI:WPI weightage for GETCO is 70:30.

ix. Considering the CPI:WPI weightage of 70:30, the inflation factor is to be calculated to subsequent years. The Table below shows the computation of Escalation rate for FY 2018-19 and FY 2019-20:

Table 43: Escalation rate for FY 2018-19,FY 2019-20 and FY 2020-21

Financial Year	CPI	YoY %	WPI	YoY %	CPI:WPI (70:30)
2013-14	236		113		
2014-15	251	6.29%	114	1.24%	4.77%
2015-16	265	5.65%	110	(3.69)%	2.85%

Financial Year	CPI	YoY %	WPI	YoY %	CPI:WPI (70:30)
2016-17	276	4.12%	112	1.73%	3.40%
2017-18	284	3.08%	115	2.96%	3.04%
2018-19	300	5.45%	120	4.26%	5.09%
2019-20	323	7.53%	122	1.67%	5.77%
Escalation rate for FY 2018-19 (Avg FY 2015-16 to FY 2017-18):					
Average of Past 3 years		**4.28%**		**0.33%**	**3.10%**
Escalation rate for FY 2019-20 (Avg FY 2016-17 to FY 2018-19):					
Average of Past 3 years		**4.22%**		**2.98%**	**3.85%**
Escalation rate for FY 2020-21 (Avg FY 2017-18 to FY 2019-20):					
Average of Past 3 years		**5.35%**		**2.96%**	**4.64%**

x. From the Table above, the Escalation rate/inflation factor for FY 2018-19 is 3.10%, for FY 2019-20 is 3.85% and for FY 2020-21 is 4.64%. Further, the escalation rate of 4.64% is to be considered for deriving the O&M expenses norms for the whole Control Period. (It may be noted that CERC in its Tariff Regulations, 2019 has considered the escalation rate of 3.51% for deriving O&M norms for Transmission system for the next Control Period.)

xi. Based on above Escalation rate, escalate the O&M norms derived for FY 2017-18 in step (iii) to arrive at O&M norms for base year, i.e., FY 2020-21, as shown in Table below:

Table 44: O&M expenses for sub-stations bays and transmission lines

Particular	Units	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21 (Base Year)
O&M expenses norms for Bays	Rs.Lakh/ bay	7.14	7.36	7.64	8.00
O&M expenses norms for Lines	Rs.Lakh/ ckt-km	0.68	0.70	0.73	0.77

Step 2: Determination of O&M expenses norms for Control Period

i. Calculate the norms for Operation and Maintenance expenses per bays and per ckt-km for n^{th} year of the Control Period based on the formula shown below:

a) $\text{O\&M per bay}_n = (\text{O\&M per bay}_{n-1}) * (1+\text{Index Esc}_n)$

b) $\text{O\&M per ckt-km}_n = (\text{O\&M per ckt-km}_{n-1}) * (1+\text{Index Esc}_n)$

Where,

O&M per bay_{n-1} – Norms for Operation and Maintenance expenses per bay for Transmission Licensee for the immediately preceding year;
O&M per ckt-km_{n-1} – Norms for Operation and Maintenance expenses per ckt-km for Transmission Licensee for the immediately preceding year;

ii. The Escalation rate for estimation of norms of O&M expenses for next Control Period shall be same as derived for FY 2020-21. However, at the time of true-up of any particular year the Commission shall calculate the Escalation rate based on the actual values of the WPI and CPI over past three years including True-up year.

iii. The Table below shows the summary of O&M norms for next Control Period:

Table 45: Derived O&M expenses for sub-stations bays and transmission lines

Particular	Units	(Base Year)	Derived for Control Period				
		FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26
O&M expenses norms for Bays	Rs.Lakh/ bay	8.00	8.37	8.76	9.16	9.59	10.03
O&M expenses norms for Lines	Rs.Lakh/ ckt-km	0.77	0.80	0.84	0.88	0.92	0.96

Note: It is to be noted that the above O&M norms computed for GETCO for next Control Period is only for illustration purpose. It should not be construed as O&M norms. The Commission in the MYT Order shall determine the O&M norms based on prudence check and actual escalation factor of the respective years.

6.8.20 Further, with regards to Gas Insulated Sub-stations (GIS), it is noted that they are costlier than the conventional Air Insulated Sub-stations (AIS) but require lower maintenance and have lower failure rates. Accordingly, in CERC Tariff Regulations, 2019, it is specified that GIS shall be entitled to 70% of O&M expenses allowable for AIS. Accordingly, the Commission has also proposed to consider the multiplying factor of 0.7 in accordance with the CERC Tariff Regulations 2019. Accordingly, the proposed provision has been added at appropriate place in the draft GERC MYT Regulations, 2021.

6.8.21 The Commission also proposes to include the relevant clauses towards Wage Revision. These expenses shall be allowed on actual basis based on documentary evidence and justification of Transmission Licensee subject to the prudence check at the time of truing up. The Commission shall not allow any wage revision on the basis of provisioning and shall only allow actual expenses at the time of Truing-up.

6.9 Contribution to contingency reserve:

6.9.1 The Regulation 68.3.2 of the GERC MYT Regulations, 2016 provides for the contribution to contingency reserves for a Transmission Licensee wherein, the Regulations provides that the amount may be invested in securities authorised under

the Indian Trusts Act, 1882 or any other security. However, the Indian Trusts Act, 1882 has been amended on April 21, 2017 wherein, the Central Government added the following investments under consideration.

"(f) the infrastructure related debt instruments listed or proposed to be listed in case of fresh issue:-

(i) debt securities issued by a body corporate engaged mainly in the business of development or operation and maintenance of infrastructure, or development, construction or finance of low cost housing;

(ii) securities issued by an infrastructure debt fund operating as a nonbanking financial company and regulated by the Reserve Bank of India; or

(iii) units issued by an infrastructure Debt Fund operating as a Mutual Fund and regulated by the Securities and Exchange Board of India;

(g) shares of body corporates listed on any recognised stock exchange which has a market capitalisation of not less than five thousand crore rupees as on the date of investment;

(h) units of mutual funds regulated by the Securities and Exchange Board of India, which have minimum sixty-five per cent of their investment in shares of body corporates listed on a recognised stock exchanges;".

6.9.2 As per the above provisions, it has opened many avenues for investment for contingency reserves which also includes the market linked products such as Mutual funds. Further, as per the existing provisions, no diminution in the value of contingency reserve shall be allowed to be adjusted as a part of tariff. However, there may be instances which results in diminution value of the investment or result in lower return on the investment (for example: during COVID-19 outbreak, several mutual funds value has faced diminution). The fund generated from the consumer cannot be exposed to a risk and this issue has to be accordingly addressed.

6.9.3 It is to be noted that the basic objective of creation contingency reserves and investing the same in safe securities is to ensure that such amount is readily available to meet certain emergency requirements, without any tariff impact on the consumer. It is for this reason that the Regulations specify that the amount of Contingency Reserve shall be invested in specified securities, and also specify the manner and heads on which the Contingency Reserve may be utilised. However, investing such funds in the market linked products is a highly risky proposition which may deprive consumers for any safeguard protection against any unwarranted event.

6.9.4 Accordingly, in the draft GERC MYT Regulations, 2021, the Commission has proposed for restricting the investments regarding the contingency reserves to the risk

free interest bearing securities preferably government securities and to exclude the market linked products.

6.10 Non-Tariff Income

6.10.1 As per existing provision in the Regulation 59 of the GERC MYT Regulations 2016, certain list of components were provided which were to be considered as Non-Tariff Income relating to the Transmission Business and to be deducted from the Aggregate Revenue Requirement for determination of Annual Fixed Charge.

6.10.2 Further, earning from investment made out of Return on Equity corresponding to the regulated business of Transmission Company shall not be included in Non-Tariff Income and Transmission Company shall submit in full details of this Non-Tariff Income to the Commission while submitting its application for determination of Aggregate Revenue Return.

6.10.3 The Commission proposes to continue with the same with minor modifications in the list of components under Non-Tariff Income as shown below:

"(a) Income from rent on land or buildings;
(b) Income from sale of scrap;
(c) Income from statutory investments;
(d) Income from interest on contingency reserve investment;
(e) Interest on advances to suppliers/contractors;
(f) Rental from staff quarters;
(g) Rental from contractors;
(h) Income from hire charges from contactors and others;
(i) Income from advertisements, sale of tender etc.;
(j) Miscellaneous receipts like parallel operation charges;
(k) Deferred Income from grant, subsidy, etc., as per Annual Accounts;
(l) Excess found on physical verification;
(m) Interest on investments, fixed and call deposits and bank balances;
(n) Prior period income;
(o) Supervisory charges for contractual works;
(p) Any other Non-Tariff Income::

6.11 Transmission losses

6.11.1 The Regulation 75 of the GERC MYT Regulations, 2016 provides for the Transmission losses. The Commission has proposed to include the following provisions under these Regulations in accordance with the CERC Tariff Regulations, 2019, for providing better clarity regarding consideration of transmission losses.

"Provided that the quantum of energy consumed by the auxiliary equipment of a transmission sub-station and the station transformer losses within the sub-station shall not be accounted for under the Transmission Losses:

Provided further that the energy consumed for supply of power by the transmission sub-station to the associated offices of the Licensee, its housing colony and other facilities, and for construction works at the sub-station, shall not be considered as energy consumed by the auxiliary equipment of a transmission sub-station."

7 SLDC

7.1 Background

7.1.1 State Load Despatch Centre is established in State of Gujarat as per the Order of Energy & Petrochemical Department, Government of Gujarat, Order No. GHU-04-32GEB-1104-2946-K of 29th May 2004. The SLDC is the apex body to ensure integrated operation of the power system in the State of Gujarat. It is the strategic functional unit of GETCO, for discharging various functions specified under Section 32 of the Electricity Act, 2003. In accordance with Section 32 of Electricity Act, 2003, the State Load Despatch Centre (SLDC) has to carry out various function including the optimum scheduling and despatch of electricity within the State, monitoring of grid operations, energy accounting, supervision and control over InSTS, etc.

7.1.2 Section 31 (1) of the Electricity Act, 2003, requires the State Government to establish a separate State Load Despatch Centre (SLDC). Section 31 (2) of the Electricity Act provides that the SLDC shall be operated by a Government Company/Authority/Corporation constituted under any State Act and until such Company/Authority/Corporation is notified by the State Government, the State Transmission Utility (STU) would operate the SLDC. Accordingly, in the State of Gujarat, the STU, viz., GETCO, has so far been operating the SLDC. Section 32 (3) of the Electricity Act,2003 specifies that SLDC 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.

7.1.3 According to Section 32 (3) of the Act which specifies that SLDC 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.

7.1.4 The Commission incorporated the relevant clauses with respect to levy of such fees and charges of SLDC in the GERC MYT Regulations, 2016.

7.2 Applicability

7.2.1 Regulation 77 of the GERC MYT Regulations, 2016 specifies that it shall apply to determination of fees and charges to be levied by the SLDC.

7.2.2 The Commission does not propose any changes in the applicability of the draft GERC MYT Regulations, 2021 for SLDC.

7.3 Capital Investment Plan

7.3.1 Regulation 78 of the GERC MYT Regulation, 2016 specifies that SLDC shall submit a detailed capital investment plan, financing plan and physical targets for each year of the Control Period. SLDC has been envisaged to play a vital role in system and market operations for which the guidelines/reports have been specified by various Committees/Authorities. Some of the reports that has been issued by prominent

authorities include Pradhan committee Report, Capacity Building of Indian Load Despatch Centres (CABIL) report. Based on above, it is specified that SLDC can proposed the detailed capital investment plan based on operational requirements and recommendations specified in the reports/guidelines issued by various Committees constituted for strengthening and ring fencing of SLDC, to the Commission for approval, as a part of the Multi-Year Aggregate Revenue Requirement for the entire Control Period.

7.3.2 Accordingly, the Commission proposes to be added the following provision in the draft GERC MYT Regulations, 2021:

"81.1. The SLDC shall submit a detailed capital investment plan, financing plan and physical targets for each year to the Commission for approval, as a part of the Multi-Year Aggregate Revenue Requirement for the entire Control Period based on the operational requirements prescribed by the Commission and recommendations of various Committees constituted for looking into matters related to strengthening of the State Load Despatch Centres by the Ministry of Power, Government of India or any such other statutory authorities, to the Commission for approval, as a part of the Aggregate Revenue Requirement for the entire Control Period."

7.3.3 As regards the Capital Investment Plan, it is proposed to adopt the similar approach as in case of Generation Company or Licensees. The Capital Investment Plan shall be submitted by SLDC as part of its Multi Year Tariff Petition. Such detailed Capital Investment Plan shall also include Financing Plan, physical targets for each year based on operational requirements and recommendations of various Committees constituted for strengthening and ring fencing of SLDC. The plan should also contain detailed information on investments, fees/charges, cost-benefit analysis, etc., that will show a growth trajectory over the Control Period. The Commission shall review the Capital Investment Plan along with the Multi-year ARR for the entire Control Period.

7.3.4 With respect to 'in-principle' approval, as the quantum of capital expenditure with regard to SLDC business is low as compared to other business, i.e., Generation, Transmission and Distribution, lower threshold limit has been proposed for 'in-principle' approval. In view of the above, the following Regulations are proposed to be amended as below:

"81.2. The SLDC shall submit the Capital Investment Plan as specified in Chapter 2 of these Regulations.

81.3. The Capital Investment Plan shall be a least cost plan for undertaking investments and shall cover all capital expenditure projects of a value as specified in Guidelines for in-principle clearance of proposed investment schemes as provided in Annexure III of this Regulations or such other amount as may be stipulated by the Commission from time to time, and shall be in such form as may be stipulated.

81.4. 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 SLDC Fees and Charges.

81.5. The Commission shall consider the Capital Investment Plan along with the Aggregate Revenue Requirement for the entire Control Period submitted by the SLDC taking into consideration the prudence of the proposed expenditure and estimated impact on SLDC Fees and Charges.

81.6. The SLDC shall submit, along with the Petition for determination of Aggregate Revenue Requirement on each year of the control period, 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."

7.4 Levy and Collection of Charges from Generating Companies, Licensees and MTOA beneficiaries

7.4.1 For estimation of the charges to be recovered from Generating Companies, Licensees and MTOA beneficiaries for corresponding year of the Control Period, the following components have been specified as per existing provision of the GERC MYT 2016, Regulation 79, as under:

"(a) Operation & Maintenance expenses

(b) *Depreciation*

(c) *Interest and finance charges*

(d) *Interest on working capital*

(e) *Return on Equity*

minus

(f) *Non-Tariff Income*

Provided that Depreciation, Interest and Finance Charges, Interest on working capital and Return on Equity for the SLDC shall be allowed in accordance with the provisions specified in Chapter 3 of the draft 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, subject to prudence check."

7.4.2 It is proposed to include the following components for determination of the charges to be recovered from Generating Companies, Licensees and MTOA beneficiaries, as under:

"(c) Regional Load Despatch Centre (RLDC) Fees and Western Region Power Committee (WRPC) Charges;
(h) Income Tax"

7.4.3 The SLDC shall recover the above mentioned fees & charges as approved by the Commission from time to time.

7.4.4 It is also proposed that the revenue from Income from Open Access Charges shall be considered for adjustment in determination of SLDC charges.

7.4.5 In view of the above, the following Regulations are proposed:

"82.3. The Charges to be recovered from Generating Companies, Licensees and MTOA beneficiaries shall be determined taking into account the following expenses :

(a) Operation & Maintenance expenses
(b) Depreciation
(c) Regional Load Despatch Centre (RLDC) Fees and Western Region Power Committee (WRPC) Charges;
(d) ULDC and SCADA upgradation Charges
(e) Interest and finance charges
(f) Interest on working capital
(g) Return on Equity
(h) Income Tax
minus
(i) Non-Tariff Income
(j) Income from Open Access charges:"

7.4.6 The Commission has also proposed a provision that SLDC should maintain separate details of all penalties and compensation payable by the SLDC to any party for failure to meet its obligations or for damages, and these should not be allowed to be recovered through ARR and SLDC shall submit the same to the Commission along with the Petition to be submitted under these Regulation. This will also enable the Commission to be wary of the any lapse on part of SLDC in meeting its obligations

7.4.7 In view of the above, the following provisions are proposed to be added:

"Provided also that all penalties and compensation payable by the SLDC to any party for failure to meet its obligations or for damages, as a consequence of the orders of the Commission shall not be allowed to be recovered whereby the details of penalties and compensation paid or payable, if any, is required to be submitted to the Commission along with the Petition under these Regulations."

7.5 Operation and Maintenance expenses

7.5.1 The Regulation 79.4 of the MYT Regulations, 2016 specifies the principle for computation of O&M expenses for SLDC. As per the said Regulation, the O&M expenses including insurance was derived on the basis of the average of the actual

O&M expenses for the three (3) years ending March 31, 2015. The average of such O&M expenses including insurance was considered as O&M expenses for the financial year ended March 31, 2014 and escalated year on year at the escalation factor of 5.72% to arrive at O&M expenses for subsequent years up to FY 2020-21.

7.5.2 O&M expenses comprises of R&M expenses, Employee expenses and A&G expenses and constitute a significant part of the Aggregate Revenue Requirement of the SLDC. As explained in earlier section of this memorandum that the Commission has proposed to adopt WPI:CPI indexation approach to determine the O&M expenses for the next Control Period. The Commission is of the view that WPI:CPI indexation mechanism is the transparent way to ascertain the percentage increase in O&M expenses and also take cares of the real inflation over the year. Further, the same approach has been adopted by many prominent SERCs and CERC also.

7.5.3 Accordingly, the Commission in the draft GERC Regulations, 2021 has specified that the O&M expenses comprising of Employee, A&G and R&M expenses shall be derived on the basis of an inflation factor, which in turn is to be derived based on WPI and CPI index. Further, for arriving at inflation factor, the values for WPI of existing series {Base Year: 2011-12=100}, is to be considered as per the Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India and CPI-IW (Industrial Worker) {Base Year: 2001=100}as per the Labour Bureau, Government of India. The Commission has specified that based on the monthly WPI and CPI data as per above sources, yearly inflation factor is to be derived which shall be considered for computation of inflation factor on the basis of respective weightages assigned to WPI and CPI.

7.5.4 With regards to the determination of the weightages to be assigned to WPI and CPI index for calculation of inflation factor, the same approach has been adopted as adopted for other Licensee or Generating Company. The Commission has analysed the actual O&M expenses incurred by SLDC over the past year from FY 2015-16 to FY 2018-19 and has worked out the ratios viz. employee expenses to the total O&M expenses and A&G and R&M expenses to the total O&M expenses. The average ratio of employee expenses to the total O&M expenses across the aforesaid period has been considered as CPI weightage and the average ratio of A&G and R&M expenses to the total O&M expenses has been considered as a weightage of WPI.

7.5.5 The Table below shows the employee expenses as a percentage of total actual O&M expenses for SLDC as per data submitted by SLDC:

Table 46: Employee expenses as percentage of O&M expenses for SLDC

Particulars	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	Average
Employee Expenses as % of Total O&M expenses	62.36%	63.34%	59.91%	69.12%	63.68%

7.5.6 From the above Table it can be observed that the average of employee expenses as a percentage of O&M expenses for SLDC ranges from 59.91% to 69.12%. For determination of the weightage of the CPI, the Commission has considered the percentage of average actual employee expenses as percentage of the total O&M expenses SLDC for the period FY 2015-16 to FY 2018-19, which is worked out as 63.68% (absolute 65% considered) as shown in the above Table. Accordingly, the balance 35% has been assigned to WPI. Hence, it is proposed to consider the weightage to CPI:WPI as 65:35 for SLDC.

7.5.7 Further R&M expenses is linked to variation in assets. Accordingly, in addition to the inflation factor to be derived as mentioned above, it is also proposed to have relationship between R&M expenses and Opening Gross Fixed Asset by a constant factor 'K' to have true reflection of R&M expenses. The value of 'K' will be determined by the Commission in the MYT Order which shall be based on ratio of past period average of actual R&M expenses and Opening Gross Fixed Asset. However, the SLDC may propose the K factor in its MYT Tariff Petition.

7.5.8 The paras below provide the methodology to calculate O&M expenses:

a) Calculate the average the actual audited Operation and Maintenance expenses (excluding, Provisions and abnormal expenses etc.) for the past three Years ending March 31, 2020. The average of all three components of O&M expenses; viz., Employee expenses, R&M expenses and A&G expenses is to be calculated individually.

b) The average of such O&M expenses as computed above shall be considered as O&M expenses for the Year ended March 31, 2019 and shall be escalated at the respective escalation rate for FY 2019-20 and FY 2020-21, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2021.

c) The escalation rate for FY 2019-20 shall be computed by considering (WE_{WPI}) weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years, .i.e., (FY 2016-17 to FY 2018-19) as per the Office of Economic Advisor, Ministry of Commerce and Industry, of Government of India and (WE_{CPI}) weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years .i.e., (FY 2016-17 to FY 2018-19) as per the Labour Bureau, Government of India. Similarly, the escalation rate for FY 2020-21 is to be arrived.

d) The O&M expenses for first year and subsequent years of the Control Period shall be determined based on the formula specified in the draft Regulations, as reproduced below:

(i) $R\&M_n = K * GFA * (1+Index\ Escn)$
(ii) $EMP_n + A\&G_n = (EMP_{n-1} + A\&G_{n-1}) * (1+Index\ Escn)$

e) However, for the first year of the Control Period, EMP n_{-1} and A&G n_{-1} shall be mean Employee and A&G expenses of base year as derived in step (b) above. Thereafter,

from second year of the Control Period, EMP n_{-1} and A&G n_{-1} shall mean Employee and A&G expenses of the immediately preceding year.

f) For the purpose of estimation of O&M expenses for the MYT Control Period, the same inflation factor as determined for FY 2020-21 shall be used for all years of the Control Period. However, at the time of truing-up of any particular year of the Control Period, the Commission shall calculate revised normative O&M expenses on the basis of actual inflation factor, which is to be derived based on the actual values/yearly inflation of WPI and CPI of the respective past three financial years (including the year of Truing-up).

7.5.9 The Commission also proposes to include the relevant clauses towards treatment of Wage Revision. These expenses shall be allowed on actual basis based on documentary evidence and justification of SLDC subjected to prudence check at the time of truing up. The Commission shall not allow any wage revision on the basis of provisioning and shall only allow actual expenses at the time of Truing-up.

7.5.10 Based on above, the proposed provisions for determination of O&M expenses for SLDC are as given below:

"82.4 Operation and Maintenance expenses

(a) The Operation and Maintenance expenses shall be derived on the basis of the average of the actual audited Operation and Maintenance expenses for the past three Years ending March 31, 2020, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission:

Provided that the average of such Operation and Maintenance expenses shall be considered as Operation and Maintenance expenses for the Year ended March 31, 2019, and shall be escalated at the respective escalation rate for FY 2019-20 and FY 2020-21, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2021;

Provided further that the escalation rate for FY 2019-20 and FY 2020-21 shall be computed by considering (WE_{WPI}) weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years as per the Office of Economic Advisor, Ministry of Commerce and Industry, Government of India and (WE_{CPI}) weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years as per the Labour Bureau, Government of India.

(b) The Operation and Maintenance expenses for nth year of the Control Period shall be determined based on the formula shown below:
$O\&M_n = (R\&M_n + EMP_n + A\&G_n)$

Where,
$R\&M_n$ *–Repair and Maintenance Costs of SLDC for the* n^{th} *year;*
EMP_n *–Employee Cost of SLDC for the nth year;*
$A\&G_n$ *–Administrative and General Costs of SLDC for the nth year;*

It should be ensured that all such expenses capitalized should not form a part of the O&M expenses being specified here. The above components shall be computed in the manner as specified below:

(i) $R\&M_n = K * GFA * (1+Index\ Esc_n)$
(ii) $EMP_n + A\&Gn = (EMP_{n-1} + A\&G_{n-1}) * (1+Index\ Esc_n)$
Where,

'K' is a constant (expressed in %) governing the relationship between R&M costs and Gross Fixed Assets (GFA) for the nth year. The value of 'K' will be specified by the Commission in the MYT Order but SLDC may propose the same in their MYT Petition.
'GFA' is the Opening balance of the gross fixed assets of the nth year.
EMP_{n-1} - Employee Cost of SLDC for the immediately preceding year;
$A\&G_{n-1}$- A&G of SLDC for the immediately preceding year;

Provided that for first year of control period EMP_{n-1} and $A\&G_{n-1}$ shall mean Employee and A&G expenses of base year as derived in Regulation 82.4 (a) above;
Index Esc means the average Inflation escalation to be considered on the basis of weightage of WPI and CPI respectively of the relevant year and to be computed as below:

$Index\ Esc_n = WE_{CPI} * CPIn + WE_{WPI} * WPIn$
Whereby,
WE_{CPI} : Weightage of CPI Index and;
WE_{WPI}: Weightage of WPI Index;
'WPIn' (expressed in %) means the average yearly inflation of Wholesale Price Index (all commodities) over the years for the nth year.
'CPIn' (expressed in %) means the average yearly inflation of Consumer Price Index (Industrial workers) over the years for the nth year.

Note: Source for CPI and WPI calculation as under:
Wholesale Price Index numbers as per Office of Economic Advisor, Ministry of Commerce & Industry, Government of India {Base Year: 2011-12 Series};
Consumer Price Index for Industrial Workers (all India) as per Labour Bureau, Government of India {Base Year: 2001=100}

Provided that for the purpose of determination of Operation and Maintenance Expenses for the whole Control Period, WPIn is to be computed based on the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years at the time of filing of Petition, as per the Office of Economic Advisor, Ministry of Commerce & Industry, Government of India and CPIn is to be computed based on the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past three financial years, at the time of filing of Petition, as per the Labour Bureau, Government of India and such escalation factor so derived to be applied to Operation and Maintenance expenses of each preceding year.

Provided further that, in the Truing-up of the O&M expenses for any particular year of the Control Period, WPIn is to be considered based on the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years (including the year of Truing-up) and CPIn is to be considered

based on the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years (including the year of Truing-up), for the purpose of determination of Operation and Maintenance Expenses for that year.

Note:

a) *For SLDC WE_{CPI}:WE_{WPI} is to be considered as 65:35.*
b) *O&M expenses shall be allowed on normative basis and shall be trued-up only to the account of variation in Wholesale Price Index and Consumer Price Index.*
c) *The impact of Wage Revision, if any, may be considered at the time of true-up for any Year, based on documentary evidence and justification to be submitted by the Petitioner. Provisioning of wage revision expenses shall not be considered as actual expenses at the time of true-up, and only expenses as actually incurred shall be considered.*
d) *Any variation in actual and normative O&M cost excluding any abnormal expenses or wage revision shall be subject to the sharing of efficiency gains or losses as per framework specified in this Regulations.*
e) *For the purpose of estimation, the same Index Esc_n value as derived for FY 2020-21 shall be used for all years of the Control Period. However, at the time of true-up of any particular year the Commission will consider the actual values of the WPI and CPI over past three years including True-up year."*

7.6 RLDC Fees and WRPC Charges

7.6.1 As RLDC Fees and WRPC Charges are paid by the SLDC in accordance with the CERC (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2019 or any other Regulations notified by the Central Commission. Hence, such charges are allowed to be recovered through its ARR. In addition to the above, the charges payable to WRPC are also proposed to be allowed to be recovered by the State Load Despatch Centre through the fees and charges.

7.6.2 Accordingly, the following Regulations have been proposed in the draft GERC MYT Regulations, 2021:

*"**84. RLDC Fees and WRPC Charges***

84.1. The RLDC Fees and Charges payable by the SLDC in accordance with the relevant Orders issued by the Central Electricity Regulatory Commission from time to time shall be allowed to be recovered by the SLDC through the Fees and Charges as approved by the Commission.

84.2. The SLDC shall have to produce documentary proof towards payment of such Charges at the time of Truing up:

Provided that any variation between the approved RLDC Fees and Charges and WRPC Charges and that actually paid by the SLDC shall be considered during the

true-up as per audited accounts, subject to prudence check and any other factor considered appropriate by the Commission."

7.7 ULDC and SCADA upgradation charges

7.7.1 The Power Grid Corporation of India Ltd. (POWERGRID) conceptualized a Unified Load Despatch and Communication (ULDC) Scheme for strengthening the load despatch infrastructure and augmenting communication system for efficient discharge of load despatch functions. The scheme covered investment in RLDCs at the Central level and SLDCs at the State level.

7.7.2 CERC issued an Order in this regard for approval of charges for ULDC Scheme in the Western Region for the period from February 1, 2006. Accordingly, the Central portion charges shall be shared by beneficiaries/constituents in the Western Region in the ratio of Central Generating capacity allocation, including the allocation from unallocated capacity from the Central Generating stations. Inter-regional export/import of power, whether bilateral or multilateral, would not affect the sharing of ULDC charges. Further, the State portion charges shall be shared by the States in proportion to respective capital cost as on March 31, 2006. Percentage sharing of GETCO is also decided as 17.36% as per the agreement executed with POWERGRID. The Commission has also approved the actual ULDC and SCADA Charges in its previous Tariff Orders. Therefore, the Commission has proposed to include these charges in the draft GERC MYT Regulations, 2021 as shown below"

*"**85. ULDC and SCADA upgradation Charges***

85.1. ULDC charges as payable by the SLDC in accordance with the relevant Orders for ULDC scheme in the Western Region issued by the CERC / WRLDC / WRPC from time to time shall be allowed to be recovered by the SLDC through the Fees and Charges as approved by the Commission.

85.2. Any expenditure incurred for the SCADA upgradation charges relate to Hardware or Software shall be allowed to be recovered by SLDC through the Fees and Charges as approved by the Commission.

85.3. The SLDC shall have to produce documentary proof towards payment of such Charges at the time of Truing up."

7.7.3 Regulation 81 of the existing GERC MYT Regulations, 2016 specifies provisions for determination of SLDC fee and charges. As per the said Regulations, upon the Commission being satisfied that all the information and clarification sought for by it have been produced and that sufficient opportunity has been afforded to all the parties concerned, the Commission shall pass appropriate orders on the estimated expenses and determine the Fees and Charges recoverable from the Generating Companies, the Licensees and MTOA beneficiaries.

7.7.4 The Commission propose to continue with the existing provisions.

7.8 LDC Development Fund

7.8.1 It may be noted that CERC (Fees and Charges of Regional Load Despatch Centre and Other related matters) Regulations, 2009 introduced creation and maintenance of a separate fund called 'LDC Development Fund'. These provisions have also been retained in the CERC (Fees and Charges of Regional Load Despatch Centre and Other related matters) Regulations, 2019. The objective of such creation of LDC fund is to have own internal accrual for carrying out capital works.

7.8.2 Creation of LDC Development Fund has been also recommended by Forum of Regulators' CABIL (Capacity Building of Indian Load Despatch Centres) report.

7.8.3 In some of the states viz. Odisha & Uttarakhand, SERCs have allowed the SLDCs to create & maintain SLDC Development Fund out of the registration fee & other income for funding capital expenses, as margin money for raising loan, funding R&D projects, other contingent expenses under approval of the Commission. Few other states like Maharashtra & West Bengal have provisions for maintaining such reserve fund.

7.8.4 It is important to take into account the submission of SLDC for creating and analysing the benefits or use of such LDC Fund. It is proposed to include enabling provision for creation of such LDC fund, if the Commission finds it appropriate.

7.8.5 In view of the above, the Regulations have been proposed to be amended as shown below:

> *"**89. LDC Development Fund***
>
> *89.1. The Commission may permit SLDC to create and maintain a separate development fund for such purposes and from such sources of income, as the Commission may consider appropriate, on a Petition filed by SLDC.*
>
> *89.2. The SLDC shall be entitled to utilise the money available in the LDCD Fund for creation of new assets, meeting stipulated equity portion in asset creation, margin money for raising loan from the financial institutions and funding of R&D projects.*
>
> *89.3. The LDCD Fund shall not be utilized for revenue expenditure except to meet the short fall, if any, in the annual charges allowed by the Commission or to meet the contingency expenses which were not foreseen at the time of making the application for fees and charges and are considered necessary for the efficient power system operation. However, such drawls from the said fund shall be recouped from the expenditure allowed by the Commission under the respective heads at the time of truing up.*
>
> *89.4. Any asset created by the SLDC out of the money deposited into the LDCD Fund shall not be entitled for return on equity, interest on loan and depreciation on same principles as in case of grant. SLDC shall submit details of such assets in the CAPEX plan.*

89.5.For any excess corpus available in the LDCD Fund after utilisation for the purpose of undertaking capital expenditure shall be invested by SLDC in appropriate interest bearing instruments only preferably government securities and shall not be a market linked products, with the intent to ensure optimum utilisation of the un-utilised funds.

Provided that the income earned through these investments will be passed on to the Beneficiaries as part of the Non-Tariff Income.

Provided that in case the excess corpus is not invested utilised by SLDC in appropriate interest bearing instruments, then the normative interest income, computed at the weighted average Bank Rate, as applicable for the year, shall be included under the Non-Tariff income of the SLDC.

89.6. SLDC shall submit the amount accumulated in LDC development fund along with the breakup of sources from where the fund is received. The Commission shall review the LDC development fund every year and issue directions to SLDC for effective utilization of the funds, if required."

8 Distribution

8.1 Background

8.1.1 In pursuance to the Gujarat Electricity Industry (Reorganization and Regulation) Act 2003, the Government of Gujarat has directed to transfer the Distribution business of the erstwhile Gujarat Electricity Board (GEB) to four Distribution Companies (DISCOMs), based on geographical location of the circles. Accordingly, the four distribution companies (DGVCL, MGVCL, PGVCL and UGVCL) were incorporated on September 15, 2003 keeping GUVNL as a holding company.

8.1.2 In addition to above said state DISCOMs, following are Distribution Licensees which are present in the state of Gujarat:

(a) Torrent Power Ltd. – Ahmedabad Distribution (TPL-D(A))

(b) Torrent Power Ltd.- Surat Distribution (TPL-D(S))

(c) Torrent Power Ltd.- Dahej Distribution (TPL-D(D))

(d) MPSEZ Utilities Private Ltd. (MUPL)

(e) GIFT PCL

(f) Deendayal Port Trust (DPT)

(g) Aspen Infrastructures Ltd. (AIL)

8.1.3 The Distribution Licensees in the State of Gujarat receive electricity at the Transmission - Distribution (T< >D) interface points through the Intra-State Transmission System. From the T< >D interface, the electricity is distributed to the individual consumers' premises using the distribution network. The business of owning and operating the distribution network is called as the Distribution Wires Business (Wires Business), as distinct from the Retail Supply Business, which has a contract with the consumer for supply of electricity and enters into long term and short-term power purchase contracts for the required quantum of electricity.

8.1.4 Section 62 of the Electricity Act, 2003 requires the Commission to determine the tariff for Wheeling and Retail supply of electricity.

8.1.5 Regulation 85 of the GERC MYT Regulation, 2016 specifies the regulation applicable during third Control Period for the determination of tariff for the usage of distribution wire system.

8.1.6 Regulation 93 of the GERC MYT Regulation, 2016 specifies the regulation applicable during third Control Period for the determination of tariff for retail supply of electricity by a Distribution Licensee to its consumers.

8.1.7 Below sections discuss the principles and methodology adopted by the Commission for determining the distribution tariff for the fourth Control Period, i.e., FY 2021-22 to FY

2025-26. Further, they also highlight the new provisions and Regulations proposed in the draft GERC MYT Regulation, 2021.

8.2 Applicability

8.2.1 Regulation 85 & 93 of the GERC MYT Regulations, 2016 specifies the applicability that it shall apply to the determination of tariff for wire and retail supply business, respectively.

8.2.2 The Commission does not propose any changes in the applicability of the MYT Regulations for distribution wire and retail supply business.

8.3 Component of ARR for Distribution Wire Business

8.3.1 Regulation 86.1 of the GERC MYT Regulations, 2016 specifies the component of ARR of the Distribution Wire Business for the respective years of the Control Period. Further, it specified that depreciation, interest and finance charges on loan capital, interest on Working Capital, return on equity and Income tax considered for the Distribution Wires Business shall be allowed in accordance with the provisions specified in financial principles.

8.3.2 In the draft MYT Regulation, 2021 for the fourth Control Period, it is proposed to continue with the existing ARR Component with minor modification as under:

> " *91.1 The Wheeling Charges for Distribution Wires Business of the Distribution Licensee shall provide for the recovery of the Aggregate Revenue Requirement for the respective years of the control period, as approved by the Commission, which shall comprise of the following:*
> *(a) Depreciation;*
> *(b) Interest and Finance Charges on Loan Capital;*
> *(c) Interest on working capital and deposits from Distribution System Users;*
> *(d) Operation and maintenance expenses;*
> *(e) Contribution to contingency reserves, if any;*
> *(f) Return on Equity;*
> *(g) Income Tax;*
> *minus:*
> *(h) Non-Tariff Income; and*
> *(i) Income from Other Business, to the extent specified in these Regulations:*
> *(j) Income from Wheeling Charges payable by Distribution System Users other than the retail consumers getting electricity supply from the same Distribution Licensee."*

8.3.3 Wheeling Charges usually refers to a tariff recovered from the regulated consumers of DISCOMs as well as a charge for open access consumers for usage of the distribution system and associated facilities of a Distribution Licensee, as the case may be, for the conveyance of electricity. Since the Wheeling charges are already been inbuilt in the tariff mechanism determined by the Commission for retail Consumers, the same is included in the Revenue from retail supply of power. However, over and above that,

Distribution Licensee also recovers charges for usage of their distribution network from the open access consumers which is purely related to the Wire business and needs to be reduced from ARR of Wire Business. Hence, the Commission has proposed to modify the said provision whereby the provision which was earlier included in the Retail supply business is now incorporated in the component of tariff for Distribution Wire business.

8.3.4 Further, the proviso to Regulation 86.1 of the GERC MYT Regulations 2016, specifies that prior period income/expenses shall be allowed based on audited accounts. In this regard for greater understanding, the Commission hereby clarifies that only those prior period income/expenses will be considered/allowed whose corresponding income or expenses has been considered in the previous year of the filing. Accordingly, below provision has been added in the draft Regulations:

> *"Provided further that prior period income/expenses shall be allowed by the Commission at the time of truing up based on audited accounts, if the income/expenses in that prior period have been allowed on actual basis, on a case to case basis, subject to prudence check."*

8.3.5 It's to be noted that the Sections 57 and 58 of the Electricity Act, 2003 specified the standards of performance of a Distribution Licensee. Under the above specified Sections of Act, it was specified that the licensees are liable for the payment of compensation to the affected person for failing to meet the specified standards. These compensation/penalties may be determined by the appropriate Commission for a licensee.

8.3.6 Also, Section 161 of the Electricity Act, 2003 provides for notice of accidents and inquiries, wherein if any accident occurs in connection with the distribution, supply or use of electricity in or in connection with, any part of the electric lines or electrical plant of any person and the accident results or is likely to have resulted in loss of human or animal life or in any injury to a human being or an animal, such person shall give notice of the occurrence and of any such loss or injury actually caused by the accident, in such form and within such time as may be prescribed, to the Electrical Inspector or such other person as aforesaid and to such other authorities as the Appropriate Government may by general or special order, direct. However, no provision was made for payment of any compensation to any person affected. Apart from above, Distribution Licensee may also be liable to penalties/compensations due to orders of the Commission.

8.3.7 In order to safeguard the interest of a consumer, such penalties/compensations raised due to inefficiency and failure of the licensee should not be recovered from the paying consumer. Moreover, for the proper treatment of paid penalties/compensation during Truing-up of ARR, Licensee should maintain a separate record for such payment of penalties/compensation and same has to be submitted to the Commission along with the truing-up petition.

8.3.8 Considering all the above aspects following proviso are proposed to add in the draft GERC MYT Regulations, 2021:

"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 shall not be allowed to be recovered through the Aggregate Revenue Requirement: whereby the details of penalties and compensation paid or payable, if any, is required to be submitted to the Commission along with the Petition under these Regulations:"

8.3.9 With regard to the determination of wheeling charges, it is proposed to add some proviso for the clarity in philosophy of determination of wheeling charges, needed as under:

"Provided further that the Wheeling Charges shall be determined separately for LT voltage, HT voltage, and EHT voltage, as applicable:

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 of these Regulations, the Commission may determine the ceiling Wheeling Charges that may be charged by such Deemed Distribution Licensee till such time as considered appropriate by the Commission."

8.4 O&M norms for Distribution Wire business

8.4.1 The Regulation 86.2 of the MYT Regulations, 2016 specifies the principle for computation O&M expenses for Distribution Wire business. As per the said Regulation, the O&M expenses was to be derived on the basis of the average of the actual O&M expenses for the three (3) years ending March 31, 2015. The average of such O&M expenses including insurance was considered as O&M expenses for the financial year ended March 31, 2014 and escalated year on year at the escalation factor of 5.72% to arrive at O&M expenses for subsequent years up to FY 2020-21.

8.4.2 Subsequent to determination of normative O&M expenses in the MYT Order, the Commission has allowed actual O&M expenses incurred by Distribution Licensee after prudence check and sharing of efficiency gains or losses has also been allowed. The Table below shows the summary of normative O&M expenses as approved in the MYT Order vis-à-vis actual O&M expenses computation as incurred by Distribution Licensee over the past period:

Table 47: Summary of normative O&M expenses as approved in the MYT Order vis-à-vis actual O&M expenses as incurred by Distribution Licensee over the past period (Rs. Crore)

Distribution Licensee	FY 2016-17		FY 2017-18		FY 2018-19	
	MYT Approved	Actual	MYT Approved	Actual	MYT Approved	Actual
Distribution Wire Business						
PGVCL	339.80	536.86	359.24	612.43	379.79	576.76
DGVCL	163.99	258.91	173.37	295.63	183.29	302.19
MGVCL	243.67	295.88	257.61	351.23	272.35	333.93
UGVCL	276.25	319.05	292.05	385.93	308.76	388.52

Distribution Licensee	FY 2016-17		FY 2017-18		FY 2018-19	
	MYT Approved	Actual	MYT Approved	Actual	MYT Approved	Actual
TPL - Ahmedabad	181.96	198.66	192.37	207.11	203.37	210.31
TPL - Surat	74.63	77.70	78.9	80.31	83.41	87.57
TPL - Dahej	3.69	4.88	3.9	4.93	4.12	5.50
Aspen Infra.	0.19	0.22	0.20	0.19	0.21	0.20
MUPL	5.53	4.34	5.85	4.32	6.18	5.09
Distribution Supply Business						
PGVCL	167.37	309.58	176.94	342.42	187.06	322.17
DGVCL	90.23	158.92	95.39	181.75	100.85	184.25
MGVCL	139.10	181.63	147.06	213.11	155.47	210.13
UGVCL	142.84	189.35	151.01	237.38	159.65	227.50
TPL - Ahmedabad	92.60	99.11	97.9	101.06	103.50	102.48
TPL - Surat	38.20	42.32	40.39	42.57	42.70	46.14
TPL - Dahej	2.91	2.81	3.08	2.44	3.26	2.66
Aspen Infra.	0.17	0.20	0.18	0.17	0.19	0.18
MUPL	3.53	3.14	3.73	3.04	3.94	3.73

8.4.3 From the above Table, it is observed that actual O&M expenses are higher than normative O&M expenses for almost all Distribution Licensee.

8.4.4 Further, the Commission over the past Control Period has been specifying the principles for computation of O&M expenses. However, as stated in earlier section of this memorandum that, one of the objectives of the MYT framework is to move from the methodology of specifying the principles to specifying norms for performance parameters and controllable factors. Specifying norms is always preferable to specifying principles, wherever feasible, in order to minimise ambiguities and give greater regulatory certainty to all the stakeholders. The Commission has analysed the actual O&M expenses of the Distribution Licensee over the past period to access if any common norms can be introduced for next the Control Period.

8.4.5 For analysis of the past performance, the Commission has computed O&M Expenses per unit of sales, O&M Expenses per lakhs of consumers and O&M Expenses as a % of GFA for Distribution Licensees in State as shown in the following Tables:

Table 48: O&M expenses per unit energy sale of Distribution Licensee (Paise./kWh)

Distribution Licensees	Distribution Wire Business			Distribution Supply Business		
	FY 2016-17	FY 2017-18	FY 2018-19	FY 2016-17	FY 2017-18	FY 2018-19
PGVCL	23.67	23.84	20.16	13.65	13.33	11.26
DGVCL	15.89	16.93	15.84	9.76	10.41	9.66
MGVCL	35.52	37.84	33.38	21.80	22.96	21.00
UGVCL	38.30	41.58	38.84	22.73	25.58	22.74

Distribution Licensees	Distribution Wire Business			Distribution Supply Business		
	FY 2016-17	FY 2017-18	FY 2018-19	FY 2016-17	FY 2017-18	FY 2018-19
TPL - Ahmedabad	29.09	27.76	26.84	14.51	13.55	13.08
TPL - Surat	24.20	24.33	26.73	13.18	12.90	14.08
TPL - Dahej	20.16	15.81	12.91	11.61	7.83	6.24
Aspen Infra.	19.69	18.13	21.69	17.59	15.97	19.09
MUPL	0.63	0.58	0.65	15.78	10.70	12.43

8.4.6 The Table below shows the O&M Expenses per lakhs of consumers for Distribution Licensees:

Table 49: O&M expenses per lakhs consumer of Distribution Licensee (Rs. Crore/lakhs consumer)

Distribution Licensees	Distribution Wire Business			Distribution Supply Business		
	FY 2016-17	FY 2017-18	FY 2018-19	FY 2016-17	FY 2017-18	FY 2018-19
PGVCL	10.98	12.09	10.90	6.33	6.76	6.09
DGVCL	8.63	9.50	9.33	5.30	5.84	5.69
MGVCL	9.93	11.44	10.53	6.09	6.94	6.62
UGVCL	10.70	12.57	12.25	6.35	7.73	7.17
TPL - Ahmedabad	10.87	11.05	10.95	5.43	5.39	5.34
TPL - Surat	12.97	13.23	14.29	7.06	7.01	7.53
TPL-Dahej*	51.37	49.29	53.94	29.57	24.41	26.06
MUPL*	69.92	64.48	73.70	50.56	45.37	53.99

**For TPL-Dahej and MUPL the values are shown in Rs. Crore/1000 consumer.*

8.4.7 The Table below shows the O&M Expenses as a % of GFA of consumers for Distribution Licensees:

Table 50: O&M expenses as a percentage of opening GFA of Distribution Licensee

Distribution Licensees	Distribution Wire Business			Distribution Supply Business		
	FY 2016-17	FY 2017-18	FY 2018-19	FY 2016-17	FY 2017-18	FY 2018-19
PGVCL	4.54%	4.64%	3.88%	2.62%	2.60%	2.17%
DGVCL	5.70%	5.85%	5.42%	3.50%	3.60%	3.31%
MGVCL	7.07%	7.61%	6.66%	4.34%	4.62%	4.19%
UGVCL	7.62%	8.36%	7.74%	4.52%	5.14%	4.53%
TPL - Ahmedabad	4.95%	4.47%	3.94%	2.47%	2.18%	1.92%
TPL - Surat	5.23%	5.07%	5.31%	2.85%	2.69%	2.80%
TPL - Dahej	3.60%	3.47%	3.39%	2.08%	1.72%	1.64%
Aspen Infra.	2.11%	1.82%	1.94%	1.88%	1.60%	1.70%
MUPL	4.97%	4.84%	5.53%	3.60%	3.41%	4.05%

8.4.8 From the above, it is observed that, there is no pattern in O&M expenses of above Licensee. Even though the Licensees are operating the same Distribution Business, there is large disparities in O&M Expenses incurred in the past years. The reasons for such a variation in O&M expenses can be attributed to the diversity in consumer mix, consumption mix, HT:LT ratio, network characteristics (underground vs. overhead network, concentrated city distribution vs. wide-spread area distribution network, etc.), technological advancement, spread of licence area etc. Hence, specifying same norm of O&M expenses for all the Distribution Licensees may benefit some Distribution Licensees to a very large extent and significantly impact recovery of O&M expenses of other Distribution Licensees. Therefore, it may not be appropriate to specify the same norm for all Distribution Licensees. Accordingly, the Commission has proposed to continue with specifying the principles for O&M expenses rather than norms.

8.4.9 Further, as mentioned in earlier section of this memorandum that fixed escalation does not capture the real inflation over the year. It also fails to recognise the increase in assets base over the year. Hence, to address the aforesaid issue the Commission has proposed to adopt the WPI:CPI indexation mechanism as explained in earlier section of this memorandum.

8.4.10 As per the said mechanism, the O&M expenses comprising of Employee, A&G and R&M expenses; shall be derived on the basis of an inflation factor, which in turn is to be derived based on WPI and CPI index. Further, for arriving at inflation factor, the values for WPI of existing series {Base Year: 2011-12=100}, is to be considered as per the Office of the Economic Advisor, Ministry of Commerce and Industry, Government of India and CPI-IW (Industrial Worker) {Base Year: 2001=100} as per the Labour Bureau, Government of India. The Commission has specified that based on the monthly WPI and CPI data as per above sources, yearly inflation factor is to be derived which shall be considered for computation of inflation factor on the basis of respective weightages assigned to WPI and CPI. Further, the Commission has proposed to consider the average data of past three years such that any abnormal variation get factored in averaging.

8.4.11 With regard to determination of the weightages to be assigned to WPI and CPI index for calculation of inflation factor, the Commission has adopted the similar approach as adopted for other Licensees and Generating Company. The Commission has analysed the actual O&M expenses incurred by Distribution Licensee over the past years from FY 2015-16 to FY 2018-19 and has worked out the ratios viz. employee expenses to the total O&M expenses and A&G and R&M expenses to the total O&M expenses. The average ratio of employee expenses to the total O&M expenses across the aforesaid period has been considered as CPI weightage and the average ratio of A&G and R&M expenses to the total O&M expenses has been considered as a weightage of WPI.

8.4.12 The Table below shows the employee expenses as a percentage of total actual O&M expenses for Distribution Licensee as per data submitted by Utilities:

Table 51: Employee expenses as a percentage of total actual O&M expenses for Distribution Licensee

Distribution Licensees	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	Average
UGCVL	71.80%	76.95%	77.67%	73.48%	74.97%
PGCVL	54.31%	68.43%	71.57%	66.81%	65.28%
MGVCL	71.94%	75.72%	78.94%	79.70%	76.58%
DGVCL	68.22%	70.73%	77.33%	76.00%	73.07%
Average of State Distribution Company					**72.47%**
TPL - Ahmedabad	39.45%	39.88%	38.45%	39.51%	39.32%
TPL - Surat	47.18%	45.83%	45.07%	46.46%	46.14%
TPL - Dahej	14.83%	17.04%	2.71%	19.36%	13.49%
MUPL	29.75%	31.46%	27.35%	33.55%	30.53%
Average of Private Distribution Company/SEZ					**32.37%**

8.4.13 From the above Table it can be observed that the average of employee expenses as a percentage of O&M expenses for State Distribution Licensee ranges from 65.28% to 76.58%. The average of actual employee expenses as percentage of the total O&M expenses of Distribution Licensee for the period FY 2015-16 to FY 2018-19, works out as 72.47% as shown in the above Table. Further, it was observed that for majority of State Distribution Licensee, the average of employee expenses as a percentage of O&M expenses is above 73.00%. Therefore, for determination of the weightage for the CPI, the Commission has considered an absolute value as 75.00%. Accordingly, the remaining part, i.e., 25.00% (1-0.75) has been assigned to WPI. Hence, it is proposed to consider the CPI:WPI as 75:25 for State Distribution Licensee.

8.4.14 With respect to Private Distribution Company and SEZ, it was observed that the average of employee expenses as a percentage of O&M expenses ranges from 13.49% to 46.14%. The average for the period FY 2015-16 to FY 2018-19, works out as 32.37% as shown in the above Table. Amongst the Private Distribution Company and SEZ, TPL-L Dahej and MUPL are still under developing stage. Hence, for determination of the weightage for the CPI for private Distribution Company and SEZ, the Commission has relied on data associated with more matured Distribution Company, i.e., TPL-Ahmedabad and TPL-Surat. The average of employee expenses as a percentage of O&M expenses for aforesaid Distribution Company for the period FY 2015-16 to FY 2018-19, works out as 42.73%. Accordingly, the weightage of CPI for Private Distribution Company and SEZ is proposed to be considered as 45.00%. The remaining part, i.e., 55.00% (1-0.45) is then assigned to WPI. Hence, it is proposed to consider the CPI:WPI as 45:55 for State Distribution Licensee.

8.4.15 Further, during the previous Tariff petitions, it was noted that the Distribution Licensee has raised concerned over existing O&M approach. The Licensee had argued that existing approach of fixed escalation does not address the issue of escalation in O&M expenses due to increased scale of distribution operation. The relevant extract from the Tariff Order in Case No. 1760 of 2018 is reproduced below:

"The increase in O&M expenses is on two counts (i) inflationary increase and (ii) increase in the scale of distribution network operation due to increase in network length, load handling capacity and number of consumers being served, etc. as compared to base years. The escalation factor of 5.72% per annum takes care of only the change in O&M expenses on account of inflationary increase. However, it is not addressing the issue of escalation in O&M expenses due to increased scale of distribution operations which is beyond the control of the distribution licensee."

8.4.16 With regards to above, the Commission is of the view that with the increase in the scale of distribution network operation due to increase in network length, load handling capacity and number of consumers being served, etc. the assets base of the Utility increase. Hence, the R&M activity may get increased. Therefore, to address the issue raised by the Distribution Licensee, the Commission has proposed to link R&M expenses with the variation in assets base. Accordingly, in addition to the inflation factor to be derived as mentioned above, it is also proposed to have relationship between R&M expenses and Gross Fixed Asset by a constant factor 'K' to have true reflection of R&M expenses. The value of 'K' will be determined by the Commission in the MYT Order which shall be based on ratio of past period average of actual R&M expenses and Opening Gross Fixed Asset. However, the Distribution Licensee may propose the K factor in their MYT Tariff Petition.

8.4.17 The paras below provide the steps to calculate O&M expenses:

a) Calculate the average the actual audited Operation and Maintenance expenses (excluding Provisions and abnormal expenses etc.) for the past three Years ending March 31, 2020. The average of all three components of O&M expenses; viz., Employee expenses, R&M expenses and A&G expenses is to be calculated individually.

b) The average of such O&M expenses as computed above shall be considered as O&M expenses for the Year ended March 31, 2019 and shall be escalated at the respective escalation rate for FY 2019-20 and FY 2020-21, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2021.

c) The escalation rate for FY 2019-20 shall be computed by considering (WE_{WPI}) weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years, .i.e., (FY 2016-17 to FY 2018-19) as per the Office of Economic Advisor, Ministry of Commerce and Industry, of Government of India and (WE_{CPI}) weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years .i.e., (FY 2016-17 to FY 2018-19) as per the Labour Bureau, Government of India. Similarly, the escalation rate for FY 2020-21 is to be arrived.

d) The O&M expenses for first year and subsequent years of the Control Period shall be determined based on the formula specified in the draft Regulations, as reproduced below:

(i) R&Mn = K * GFA * (1+Index Escn)
(ii) EMPn+ A&Gn= (EMPn-$_1$ + A&Gn-$_1$) * (1+Index Escn)

e) However, for the first year of the Control Period, EMP n-$_1$ and A&G n-$_1$ shall be mean Employee and A&G expenses of base year as derived in step (b) above. Thereafter, from second year of the Control Period, EMP n-$_1$ and A&G n-$_1$ shall mean Employee and A&G expenses of the immediately preceding year.

f) For the purpose of estimation of O&M expenses for the MYT Control Period, the same inflation factor as determined for FY 2020-21 shall be used for all years of the Control Period. However, at the time of truing-up of any particular year of the Control Period, the Commission shall calculate revised normative O&M expenses on the basis of actual inflation factor, which is to be derived based on the actual values/yearly inflation of WPI and CPI of the respective past three financial years (including the year of Truing-up).

8.4.18 The Commission also proposes to include the relevant clauses towards Wage Revision. These expenses shall be allowed on actual basis based on documentary evidence and justification of Distribution Licensee subjected to the prudence check at the time of truing up. The Commission shall not allow any wage revision on the basis of provisioning and shall only allow actual expenses at the time of Truing-up.

8.4.19 Based on above, the provisions proposed for determination of O&M expenses for the fourth Control Period are as given below:

"91.2 Operation and Maintenance expenses:

(a) The Operation and Maintenance shall be derived on the basis of the average of the actual audited Operation and Maintenance expenses for the past three Years ending March 31, 2020, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission:

Provided that the average of such Operation and Maintenance expenses shall be considered as Operation and Maintenance expenses for the Year ended March 31, 2019, and shall be escalated at the respective escalation rate for FY 2019-20 and FY 2020-21, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2021;

Provided further that the escalation rate for FY 2019-20 and FY 2020-21 shall be computed by considering the (WE_{WPI}) weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years as per the Office of Economic Advisor, Ministry of Commerce and Industry, Government of India and the (WE_{CPI}) weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years as per the Labour Bureau, Government of India.

(b) The Operation and Maintenance expenses for n^{th} year of the Control Period shall be determined based on the formula shown below:
$O\&M_n = (R\&M_n + EMP_n + A\&G_n)$

Where,
$R\&M_n$ –Repair and Maintenance Costs of Distribution Wire Business for the nth year;
EMP_n –Employee Cost of Distribution Wire Business for the n^{th} year;
$A\&G_n$ –Administrative and General Costs of Distribution Wire Business for the n^{th} year;
It should be ensured that all such expenses capitalized should not form a part of the O&M expenses being specified here. The above components shall be computed in the manner as specified below:

(i) $R\&M_n = K * GFA * (1+Index\ Esc_n)$
(ii) $EMP_n + A\&G_n = (EMP_{n-1} + A\&G_{n-1}) * (1+Index\ Esc_n)$

Where,
'K' is a constant (expressed in %) governing the relationship between R&M costs and Gross Fixed Assets (GFA) for the nth year. The value of 'K' will be specified by the Commission in the MYT Order but Distribution Wire Business may propose the same in their MYT Petition.
'GFA' is the Opening balance of the gross fixed assets of the nth year.
EMP_{n-1} - Employee Cost of Distribution Wire Business for the immediately preceding year;
$A\&G_{n-1}$- A&G of Distribution Wire Business for the immediately preceding year;

Provided that for first year of control period EMP_{n-1} and $A\&G_{n-1}$ shall mean Employee and A&G expenses of base year as derived in Regulation 91.2 (a) above;
Index $_{Esc}$ means the average Inflation escalation to be considered on the basis of weightage of WPI and CPI respectively of the relevant year and to be computed as below:

$Index\ Escn = WE_{CPI} * CPIn + WE_{WPI} * WPIn$
Whereby,
WE_{CPI} : Weightage of CPI Index and;
WE_{WPI}: Weightage of WPI Index;
'WPIn' (expressed in %) means the average yearly inflation of Wholesale Price Index (all commodities) over the years for the n^{th} year.
'CPIn' (expressed in %) means the average yearly inflation of Consumer Price Index (Industrial workers) over the years for the n^{th} year.

Note: Source for CPI and WPI calculation as under:
Wholesale Price Index numbers as per Office of Economic Advisor, Ministry of Commerce & Industry, Government of India {Base Year: 2011-12 Series};
Consumer Price Index for Industrial Workers (all India) as per Labour Bureau, Government of India {Base Year: 2001=100}

Provided that for the purpose of determination of Operation and Maintenance Expenses for the whole Control Period, WPIn is to be computed based on the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years at the time of filing of Petition, as per the Office of Economic Advisor, Ministry of Commerce & Industry, Government of India and CPIn is to be computed based on the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of

the past three financial years, at the time of filing of Petition, as per the Labour Bureau, Government of India and such escalation factor so derived to be applied to Operation and Maintenance expenses of each preceding year.
Provided further that, in the Truing-up of the O&M expenses for any particular year of the Control Period, WPIn is to be considered based on the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years (including the year of Truing-up) and CPIn is to be considered based on the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years (including the year of Truing-up), for the purpose of determination of Operation and Maintenance Expenses for that year.

Note:-

(a) For State Distribution Wire Business WE_{CPI}:WE_{WPI} is to be considered as 75:25.

(b) For Private Distribution Wire Business WE_{CPI}:WE_{WPI} is to be considered as 45:55.

(c) O&M expenses shall be allowed on normative basis and shall be trued-up only to the account of variation in Wholesale Price Index and Consumer Price Index.

(d) The impact of Wage Revision, if any, may be considered at the time of true-up for any Year, based on documentary evidence and justification to be submitted by the Petitioner. Provisioning of wage revision expenses shall not be considered as actual expenses at the time of true-up, and only expenses as actually incurred shall be considered.

(e) Any variation in actual and normative O&M cost excluding any abnormal expenses or wage revision shall be subject to the sharing of efficiency gains or losses as per framework specified in this Regulations.

(f) In the case of a Deemed Distribution Licensee whose tariff is yet to be determined by the Commission till the coming into force of these Regulations, the Commission may determine the Operation and Maintenance expenses on a case to case basis.

(g) For the purpose of estimation, the same Index Esc_n value as derived for FY 2020-21 shall be used for all years of the Control Period. However, at the time of true-up of any particular year the Commission will consider the actual values of the WPI and CPI over past three years including True-up year"

8.5 Separation of Accounts for Wire related and Retail Supply related business.

8.5.1 Section 62 of the EA 2003 requires the SERC to determine the tariff for Wheeling and Retail supply of electricity. Section 42 of the EA, 2003 specified that, SERC has to introduce non-discriminatory open access of the distribution system in phase manner and determine the charges for wheeling. Also, under section 9 of the EA 2003, captive consumers are required to pay wheeling charges for availing open access and are exempted from payment of cross-subsidy surcharge and additional surcharge.

8.5.2 In sequence to determination of appropriate wheeling charges for the open access transaction in Gujarat, the Commission has proposed to emphasis on separation of accounting of wire and supply related cost in the GERC MYT Regulations, 2007. It

also stipulated that the Distribution Licensees should submit separate accounts as well as ARR for Wheeling Business and Retail Supply Business.

8.5.3 In case the separate accounts are not available, it is necessary to have an allocation matrix for apportioning the ARR of the distribution business between the Wires business and Supply business. Accordingly, GERC has adopted the allocation matrix during second Control Period (i.e. in the GERC MYT Regulations, 2011) for allocating ARR component between wire and supply business for state-owned DISCOMs. During the third Control Period minor modification in allocation matrix was adopted.

8.5.4 It is proposed to continue with the same allocation matrix for the fourth Control Period as shown in Table below:

Table 52: Allocation matrix for segregation of expenses between Distribution Wires Business and Retail Supply Business

Particulars	Wires Business (%)	Retail Supply Business (%)
Power Purchase Expenses	0%	100%
Intra-State Transmission Charges	0%	100%
Employee Expenses	60%	40%
Administration & General Expenses	50%	50%
Repair & Maintenance Expenses	90%	10%
Depreciation	90%	10%
Interest on Long-term Loan Capital	90%	10%
Interest on Working Capital and on consumer security deposits	10%	90%
Bad Debts Written off	0%	100%
Income Tax	90%	10%
Contribution to contingency reserves, if any	100%	0%
Return on Equity	90%	10%
Non-Tariff Income	10%	90%

8.5.5 However, it has been noticed that certain sub-component of the main head expenditure can be purely linked to Wire or Supply Business and it will not be justifiable to segregate such head in a particular ratio. Accordingly, further clarification regarding sharing of any subcomponent expenditure as per its applicability is provided by way of following proposed proviso:

> *"Provided that any sub-component of the above heads, if is directly attributable to Wire or Supply business, then the same needs to be allocated based on the nature of such Cost / Income."*

8.6 Capital investment Plan

8.6.1 Distribution Wire business is usually a business related to providing infrastructure for conveyance of electricity and to meet the demand of the end consumers. The GERC MYT Regulations, 2016 allows the Distribution Licensee, to undertake additional capital expenditure in various circumstances including that is outside original scope and after cut-off date. Any additional capital expenditure would necessarily result in upward revision of tariff.

8.6.2 With the increase in consumer base, demand and technological advancement etc., it is likely that Distribution Licensee would incur substantial capital investment for creation of new infrastructure for strengthening and augmentation of distribution network, meeting the requirement of load growth, reduction in distribution losses, improvement in quality of supply, reliability, metering, reduction in congestion, etc. Such investments are capital intensive in nature and hence, it is necessary to evaluate the need for these investments. Hence, the Commission, has proposed that a capital investment plan needs to be submitted by Distribution Licensee at the time of MYT Petition so as to assess the need and impact of the same on the tariff. In addition to above, certain procedures and check have also been proposed by way of submission to ensure that capital investment schemes being proposed are necessary and justified, and do not impose an unnecessary burden on consumers by way of tariff.

8.6.3 As mentioned in the chapter above, the Commission has also proposed the "Guidelines for approval of Capital Investment", according to which an approval from the Commission shall be required prior to undertake any such CAPEX scheme. Although, the Commission is inclined to evaluate only those schemes which are highly capital incentive and therefore, the said guidelines clarifies that only major investment plan needs to be considered for prior approval. Accordingly, the capital investment for a particular scheme having investment more than the threshold limit as specified in the guidelines will require a prior approval of the Commission. If the scheme value is below the threshold limit specified in the guidelines, the same will be considered as Non-DPR scheme for which the treatment shall be provided as specified in the Regulations.

8.6.4 Also, with regard to Capital investment plan, the distribution companies need to provide details or additional information 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 wheeling charges. The Commission has also proposed certain additional proviso for clarification for submission procedure of Capital investment plan.

8.6.5 In accordance with the above, the Commission has proposed to include the following provision in the draft GERC MYT Regulations, 2021:

> **"93. Capital Investment Plan**
>
> *93.1. The Distribution Licensee shall submit detailed capital investment plan, financing plan and physical targets for each year of the Control Period for strengthening and augmentation of distribution network, meeting the*

requirement of load growth, reduction in distribution losses, improvement in quality of supply, reliability, metering, reduction in congestion, etc., to the Commission for approval, as a part of the Multi-Year Aggregate Revenue Requirement for the entire Control Period.

93.2. The Distribution Licensee shall be required to ensure optimum investments to enhance efficiency, productivity and meet performance standards prescribed by the Commission.

93.3. Capital Investment in network expansion in Distribution shall be based on Load Flow studies and in accordance with the requirements of the State Grid Code.

93.4. The Distribution licensee shall submit the Capital Investment Plan as specified in Chapter 2 of these Regulations.

93.5. The Capital Investment Plan shall be a least cost plan for undertaking investments and shall cover all capital expenditure projects of a value as specified in Guidelines for in-principle clearance of proposed investment schemes as provided in Annexure III of this Regulations or such other amount as may be stipulated by the Commission from time to time, and shall be in such form as may be stipulated.

93.6. 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 wheeling charges of the Distribution Wire Business.

93.7. The Commission shall consider the Capital Investment Plan along with the Aggregate Revenue Requirement for the entire Control Period submitted by the Distribution Wire Business taking into consideration the prudence of the proposed expenditure and estimated impact on the wheeling charges of the Distribution Wire Business.

93.8. Capital investment plan shall incorporate list of schemes in order of priority so as to enable the Commission to approve the schemes in that order and in case lesser amount of capital expenditure is to be approved then the schemes of lower priority could be disapproved.

93.9. The Distribution Wire Business shall submit, along with the Petition for determination of Aggregate Revenue Requirement on each year of the control period, details showing the progress of capital expenditure projects, together with such other information, particulars or documents as the Commission may require to assess such progress."

8.7 Non – Tariff Income for Distribution Wire Business:

8.7.1 It was proposed to continue with the existing Regulation with minor modification in the Regulation as below:

"94.3 The indicative list of various heads to be considered for Non-Tariff Income shall be as under:

(a) Income from rent of land or buildings or other assets;
(b) Income from sale of scrap;
(c) Income from statutory investments;
(d) Income from interest on contingency reserve investment;
(e) Interest on advances to suppliers/contractors;
(f) Rental from staff quarters;
(g) Rental from contractors;
(h) Income from hire charges from contactors and others;
(i) Income from advertisements, sale of tender, etc.;
(j) Miscellaneous receipts;
(k) Interest on advances to suppliers;
(l) Excess found on physical verification;
(m) Deferred Income from grant, subsidy, etc., as per Annual Accounts;
(n) Prior period income;
(o) Supervisory charges for contractual works;
(p) Any Other Non-Tariff Income;

Provided that the interest/dividend earned from investments made out of Return on Equity corresponding to the Distribution Wires Business of the Distribution Licensee shall not be included in Non-Tariff Income."

8.8 Income from Other Business

8.8.1 Other Businesses means the business opted by the licensee for optimum utilisation of its assets and shall be considered in respect of a Distribution Licensees only, in accordance with the provisions of Section 51 of the Act. As per the existing Regulations, Commission has allowed to share one third of revenue from the Other Business after deduction of all direct and indirect costs attributed to such Other Business. Shared revenue needs to be deducted from the Aggregate Revenue Requirement of the Distribution Licensee.

8.8.2 As per the section 51 of the Electricity Act, the main moto for allowing Distribution Licensee to be involved in Other business is for the optimum utilisation of licensee assets, which help in reducing cost of serve to the consumers. Therefore, sharing of profit in ratio of 2/3rd: 1/3rd look a practical approach, where 1/3rd should be allowed to be retained by Distribution Companies and 2/3rd should be deducted from the ARR of the Licensees. This will be in line with Section 51 of the Electricity Act, 2003.

8.8.3 However, to avoid sudden transition in sharing of Income from other business from one third to two third, the Commission propose to share half of the income from other business during fourth Control Period and proposed to amend the Regulation as reproduced below:

*"Where the Distribution wire business of the Distribution Licensee is engaged in any Other Business under Section 51 of the Act for optimum utilisation of its assets, an amount equal to **half** of the revenues from such Other Business after deduction of all direct and indirect costs attributed to such Other Business shall be deducted from the Aggregate Revenue Requirement in determining the wheeling charges of Distribution Wires Business of the Distribution Licensee:"*

8.9 Component of ARR for Retail Supply Business

8.9.1 Regulation 94.1 of the GERC MYT Regulations, 2016 specifies the component of ARR of the Distribution Wire Business for the respective year of Control Period. It is proposed to continue with the same ARR Component with slight modification for fourth Control Period as under:

"(a) Cost of own power generation /power purchase expenses including Inter-State Transmission Charges excluding rebate on power purchase;
(b) Intra-State Transmission charges
(c) SLDC Fees & Charges;
(d) Depreciation;
(e) Interest and Finance Charges;
(f) Interest on working capital and on consumer security deposits;
(g) Operation and Maintenance expenses;
(h) Bad debts written off, if any;
(i) Return on Equity;
(j) Income Tax;
(k) Balance Aggregate Revenue Requirement for Distribution Wires Business, as determined under Chapter 7 of these Regulations, after deducting income from Wheeling Charges payable by Distribution System Users other than the retail consumers getting electricity supply from the same Distribution Licensee;
minus:
(l) Non-Tariff Income;
(m) Income from Other Business, to the extent specified in these Regulations;
(n) Receipts on account of cross-subsidy surcharge;
(o) Receipts on account of additional surcharge on charges for wheeling;
(p) Revenue from Sale of Surplus Power (Other than to retail consumers)"

8.9.2 Further, proviso as proposed for the distribution wire business that already been explained in section above related to prior period income/expenses and Penalties / Compensation is also proposed for the Distribution supply business, as under:

"Provided further that prior period income/expenses shall be allowed by the Commission at the time of truing up based on audited accounts if the income/expenses in that prior period have been allowed on actual basis, on a case to case 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/accidents, as a consequence of the orders of the Commission shall not be allowed to be recovered through the Aggregate Revenue Requirement: whereby the details of

penalties and compensation paid or payable, if any, is required to be submitted to the Commission along with the Petition under these Regulations."

8.9.3 Moreover, for further clarification in philosophy for determination of tariff for retail supply of electricity, additional proviso is proposed as below:

"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:"

8.9.4 The Commission also feels that during the MYT Fourth Control Period, there may be a possibility of new deemed Distribution Licensee (specifically SEZ developer or any other licensee as defined under section 14 of the Electricity Act 2003) may commence their distribution license business and hence, till the time of determination of tariff for respective licensee, the ceiling tariff as defined under section 62 of the Electricity Act 2003 will be made applicable.

"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."

8.9.5 Further, the Commission in its past Order has observe the need of incentivising consumers for taking supply at higher voltages, bulk consumption, maintain power factor as per code, etc. This could help licensee to reduce distribution losses and improving system reliability. Accordingly, to enable the Licensee to provide such incentive to consumers proviso is proposed as under:

"99.4. The Distribution Licensee may propose other rebates for inter-alia, taking supply at higher voltages, bulk consumption, power factor, etc., as a part of their Petition, and the revenue impact of rebates shall be passed on through the Aggregate Revenue Requirement and tariffs, subject to the Commission's approval."

8.10 Cost of power generation/power purchase

8.10.1 The Commission has already issued the Guidelines for Procurement of Power by Distribution Licensees in order to ensure standardization and reduce the subjectivity in process of procurement of power through a transparent and economic mechanism as well as to protect consumers' interest. The Guidelines of Procurement of Power clearly specifies that every year by 31st January, the Distribution Licensee is required to submit Power Procurement Plan for 5 years.

8.10.2 The existing MYT Regulation specified that the Distribution Licensee shall be allowed to recover the cost of power generated by the Generation Business or purchased from approved sources for supply to consumers based on the power procurement plan of the Distribution Licensee, approved by the Commission.

8.10.3 Hence, at present the Commission proposes to continue with existing provisions without any modification.

> *"99.6.1. The Distribution Licensee shall be allowed to recover the cost of power generated by the Generation Business or purchased from approved sources for supply to consumers based on the power procurement plan of the Distribution Licensee, approved by the Commission."*

8.11 Additional power procurement

8.11.1 Section 86(1)(b) of the Act underlines the power of the State Commission to regulate the electricity purchase and procurement process of Distribution Licensees including the price in which it is procured.

8.11.2 Power procurement guideline issued by the Commission underlined the process to be followed by the licensee for procuring power. However, it fails to address various situations under which the Distribution Licensee is allowed to enter into additional agreement or arrangement for procurement of power and treatment of power purchase from unapproved sources.

8.11.3 There can be a situation wherein the variable cost of power purchase from a tied-up source of power is higher than that of alternative sources of power such as IEX, DEEP Portal, etc, and the Distribution Licensee can optimise its cost of power purchase by procuring power from the alternative source in such situations so as to reduce the burden of the tariff on the consumers .

8.11.4 Accordingly, the Commission has proposed following provisions to further clarify the Distribution Licensee to enter into additional agreement or arrangement for procurement of power from other sources so as to optimise their power purchase cost.

> *"**99.7. Approval of additional Procurement***
> *99.7.1. The Distribution Licensee may initiate the process of additional power procurement during the year, in accordance with the Guidelines for Procurement of Power by Distribution Licensees issued by the Commission, as amended from time to time and with prior approval of the Commission.*
> *Provided that the prior approval of the Commission shall not be required for purchase of power from Renewable Energy sources at the generic/preferential tariff determined by the Commission for meeting its Renewable Purchase Obligation (RPO).*
>
> *99.7.2. Where the Distribution Licensee is to procure power on a short-term basis or there is a shortfall due to any reason whatsoever, or failure in the supply of electricity from any approved source of supply during the year, for any reason whatsoever, the licensee may enter into a short-term arrangement or agreement for procurement of power through power exchanges or through a transparent process of open tendering and competitive bidding.*
> *Provided the Distribution Licensee shall submit to the Commission its details, including the quantum, Tariff computations, duration, supplier particulars, method of supplier selection and any such other details as the Commission may require so*

as to carry out the prudence check within fifteen days from the date of entering into an agreement or arrangement.
Provided that in case procurement of short-term power exceeds the approved annual short term procurement plan, the Distribution licensee shall obtain prior approval from the Commission or any appropriate body as may have been constituted for the purpose by the Commission.

99.7.3. Any variation, in the quantum or cost of power procured, including from a source other than a previously approved source, that is expected to be in excess of five per cent, of that approved by the Commission, on a quarterly basis, shall require its prior approval.

99.7.4. Where the Distribution Licensee has identified a new short-term source of supply from which power can be procured at a Tariff that reduces its approved total power procurement cost or when faced with emergency conditions that threaten the stability of the distribution system, or when directed to do so by the SLDC to prevent grid failure., it may enter into a short-term power procurement agreement or arrangement with such supplier without the prior approval of the Commission.
Provided the Distribution Licensee shall submit to the Commission its details, including the quantum, Tariff computations, duration, supplier particulars, method of supplier selection and any such other details as the Commission may require so as to carry out the prudence check within fifteen days from the date of entering into an agreement or arrangement.

99.7.5. The Commission may permit any Distribution Licensee to make purchase of power without prior approval subject to Competitive/Open Process in the event of an unforeseen and an exceptional situation. However, the Distribution Licensee shall not, thereby, be exempted from demonstrating the need and the reason for departure from a competitive process together with the economic justification for the purchase, the means, whereby, in the absence of competition, the Distribution Licensee proposes to secure the best possible terms and such other information as the Commission may require.
Provided that, where the Commission has reasonable grounds to believe that the agreement or arrangement entered into by the Distribution Licensee does not meet the criteria specified in Regulations 99.7, it may disallow any increase in the total cost of power procurement over the approved level arising therefrom or any loss incurred by the Distribution Licensee as a result, from being passed through to consumers..”

8.12 O&M norms for Retail Supply Business

8.12.1 The approach proposed to be adopted for determination of the O&M norms for Retail supply business is similar to that of adopted for Distribution wire business. The same has already been discussed in the previous section.

8.12.2 Regulation proposed for the determination O&M expenses for the supply business is as follows:

“99.10 Operation and Maintenance expenses:

(a) The Operation and Maintenance shall be derived on the basis of the average of the actual audited Operation and Maintenance expenses for the past three Years ending March 31, 2020, excluding abnormal Operation and Maintenance expenses, if any, subject to prudence check by the Commission:

Provided that the average of such Operation and Maintenance expenses shall be considered as Operation and Maintenance expenses for the Year ended March 31, 2019, and shall be escalated at the respective escalation rate for FY 2019-20 and FY 2020-21, to arrive at the Operation and Maintenance expenses for the base year ending March 31, 2021;

Provided further that the escalation rate for FY 2019-20 and FY 2020-21 shall be computed by considering the (WE_{WPI}) weightage to the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years as per the Office of Economic Advisor, Ministry of Commerce and Industry, Government of India and the (WE_{CPI}) weightage to the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years as per the Labour Bureau, Government of India.

(b) The Operation and Maintenance expenses for n^{th} year of the Control Period shall be determined based on the formula shown below:

O&Mn = (R&Mn + EMPn + A&Gn)
Where,
R&Mn –Repair and Maintenance Costs of Distribution Retail Supply Business for the n^{th} year;
EMPn –Employee Cost of Distribution Retail Supply Business for the n^{th} year;
A&Gn –Administrative and General Costs of Distribution Retail Supply Business for the n^{th} year;

It should be ensured that all such expenses capitalized should not form a part of the O&M expenses being specified here. The above components shall be computed in the manner as specified below:

(i) $R\&Mn = K * GFA * (1+Index\ Esc_n)$
(ii) $EMPn+ A\&Gn= (EMPn-1 + A\&Gn-1) * (1+Index\ Esc_n)$

Where,

'K' is a constant (expressed in %) governing the relationship between R&M costs and Gross Fixed Assets (GFA) for the n^{th} year. The value of 'K' will be specified by the Commission in the MYT Order but Distribution Retail Supply Business may propose the same in their MYT Petition.
'GFA' is the Opening balance of the gross fixed assets of the n^{th} year.
EMP_{n-1} - Employee Cost of Distribution Retail Supply Business for the immediately preceding year;
$A\&G_{n-1}$- A&G of Distribution Retail Supply Business for the immediately preceding year;

Provided that for first year of control period EMP_{n-1} and $A\&G_{n-1}$ shall mean Employee and A&G expenses of base year as derived in Regulation 99.10 (a) above;

Index $_{Esc}$ means the average Inflation escalation to be considered on the basis weightage of WPI and CPI respectively of the relevant year and to be computed as below:

*Index $Esc_n = WE_{CPI}$*CPIn + WE_{WPI}*WPIn*

Whereby,

WE_{CPI} : Weightage of CPI Index and;
WE_{WPI}: Weightage of WPI Index;
'WPIn' (expressed in %) means the average yearly inflation of Wholesale Price Index (all commodities) over the years for the n^{th} year.
'CPIn' (expressed in %) means the average yearly inflation of Consumer Price Index (Industrial workers) over the years for the n^{th} year.

Note: Source for CPI and WPI calculation as under:
Wholesale Price Index numbers as per Office of Economic Advisor, Ministry of Commerce & Industry, Government of India {Base Year: 2011-12 Series};
Consumer Price Index for Industrial Workers (all India) as per Labour Bureau, Government of India {Base Year: 2001=100}

Provided that for the purpose of determination of Operation and Maintenance Expenses for the whole Control Period, WPIn is to be computed based on the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years at the time of filing of Petition, as per the Office of Economic Advisor, Ministry of Commerce & Industry, Government of India and CPIn is to be computed based on the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the past three financial years, at the time of filing of Petition, as per the Labour Bureau, Government of India and such escalation factor so derived to be applied to Operation and Maintenance expenses of each preceding year.

Provided further that, in the Truing-up of the O&M expenses for any particular year of the Control Period, WPIn is to be considered based on the average yearly inflation derived based on the monthly Wholesale Price Index of the respective past three financial years (including the year of Truing-up) and CPIn is to be considered based on the average yearly inflation derived based on the monthly Consumer Price Index for Industrial Workers (all-India) of the respective past three financial years (including the year of Truing-up), for the purpose of determination of Operation and Maintenance Expenses for that year.

Note:-

(a) For State Distribution Retail Supply Business WE_{CPI}:WE_{WPI} is to be considered as 75:25.

(b) For Private Distribution Retail Supply Business WE_{CPI}:WE_{WPI} is to be considered as 45:55.

(c) O&M expense shall be allowed on normative basis and shall be trued-up only to the account of variation in Wholesale Price Index and Consumer Price Index.

(d) The impact of Wage Revision, if any, may be considered at the time of true-up for any Year, based on documentary evidence and justification to be submitted by

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

(e) Any variation in actual and normative O&M cost excluding any abnormal expenses or wage revision shall be subject to the sharing of efficiency gains or losses as per framework specified in this Regulations.

(f) In the case of a Deemed Distribution Licensee whose tariff is yet to be determined by the Commission till the coming into force of these Regulations, the Commission may determine the Operation and Maintenance expenses on a case to case basis.

(g) For the purpose of estimation, the same Index Esc_n value as derived for FY 2020-21 shall be used for all years of the Control Period. However, at the time of true-up of any particular year the Commission will consider the actual values of the WPI and CPI over past three years including True-up year."

8.13 Sales forecast

8.13.1 In accordance to Existing MYT Regulation, the retail supply licensee is required to submit the forecast of the expected sales of electricity to each tariff category/sub-category and to each tariff slab within such tariff category/sub-category to the Commission along with the tariff petition.

8.13.2 However, there is need of the additional provision for clarification in examination of such forecast as under:

" 101.3. The Commission shall examine the forecasts for their reasonableness based on growth in the number of consumers, pattern of consumption, losses and demand of electricity in previous years and anticipated growth in the next year and any other factor, which the Commission may consider relevant and approve. the sales forecast with such modifications as deemed fit."

8.14 Non- Tariff Income for Retail Supply business

8.14.1 It was proposed to continue with the existing Regulation with minor modification in the regulation as below:

"*102.2. The indicative list of various heads to be considered for Non-Tariff Income shall be as under :*

(a) Income from rent of land or buildings or other asset;
(b) Income from sale of scrap;
(c) Income from statutory investments;
(d) Income from interest on contingency reserve investment;
(e) Interest on advances to suppliers/contractors;
(f) Rental from staff quarters;
(g) Rental from contractors;
(h) Income from hire charges from contactors and others;
(i) Income from advertisements, sale of tender, etc.;

(j) Meter/metering equipment/service line rentals;
(k) Service charges, supervision charges for contractual works, etc.;
(l) Customer charges;
(m) Recovery for theft and pilferage of energy;
(n) Prompt Payment Rebate
(o) Miscellaneous receipts;
(p) Deferred Income from grant, subsidy, etc., as per Annual Accounts;
(q) Prior period income,
(r) Rebate on Power Purchase and Transmission Charges;
(s) Any Other Non-Tariff Income:"

8.15 Fuel Price and Power Purchase Price Adjustment (FPPPA)

8.15.1 The Commission in its Order in Case No. 1309/2013 and 1313/2013 vide dated October 29, 2013, has approved the formula for FPPPA to recover the difference between actual power purchase cost and base power purchase cost approved by the Commission.

8.15.2 Further, in the above mentioned Orders the Commission has directed the Licensee to approach the Commission for the prior approval for any increase in FPPPA beyond ten paise per kWh in a quarter, along with computation of FPPPA charge.

8.15.3 The Commission has also directed that the FPPPA calculations shall be submitted to the Commission within one month from the end of the relevant quarter and same has to be published in the Licensee's website.

8.15.4 The existing GERC MYT Regulations, includes the FPPPA mechanism for recovery of variation power purchase cost. However, it doesn't specify the process of determination of FPPPA. Hence, it is proposed to include following Regulation in the draft MYT Regulations, 2021 as under:

*"**108. Fuel Price and Power Purchase Price Adjustment***

108.1. The amount of Fuel Price and Power Purchase Price Adjustment (FPPPA) shall be determined only for any variation in the actual power purchase cost and Base Power Purchase cost approved, whereby the Power procurement is from the approved sources.

108.2. FPPPA shall be determined as per the Order of the Commission in Case No. 1309/2013 and 1313/2013 vide dated 29.10.2013 or as amended from time to time.

Provided Information regarding FPPPA recovery and the FPPPA calculations shall be kept on the website of the Licensee.

108.3. For any increase in FPPPA beyond ten (10) paise per kWh in a quarter, worked out on the basis of approved formula of the Order as issued by the Commission from time to time basis, prior approval of the Commission shall be necessary and only on approval of such additional increase by the Commission, the

FPPPA can be billed to consumers. FPPPA calculations shall be submitted to the Commission within one month from the end of the relevant quarter."