Discussion Paper on Draft JERC (Multi Year Tariff) Regulations, 2018

Joint Electricity Regulatory Commission

July 2018

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List of Acronyms

AAD	Advance against Depreciation
ABT	Availability Based Tariff
EA	2003 Electricity Act 2003
APR	Annual Performance Review
ARR	Aggregate Revenue Requirement
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
ckt-km	Circuit kilometres
COD	Commercial Operation Date
CPI	Consumer Price Index
CTU	Central Transmission Utility
DISCOM	Distribution Companies
FERV	Foreign Exchange Rate Variation
GFA	Gross Fixed Asset
IWC	Interest on Working Capital
JERC	Joint Electricity Regulatory Commission
kWh	kilo Watt hour
MNRE	Ministry of New and Renewable Energy
NEP	National Electricity Policy
TP	Tariff Policy
OA	Open Access
O&M	Operation and Maintenance
ROCE	Return on Capital Employed
RoE	Return on Equity
R&M	Repair and Maintenance
SEB	State Electricity Board

SERC	State Electricity Regulatory Commission
SLDC	State Load Dispatch Centre
STU	State Transmission Utility
ToD	Time of Day
TSU	Transmission System User
UI	Unscheduled Interchange
WPI	Wholesale Price Index

1 Introduction

The Electricity Act, 2003 (EA 2003), as amended in the year 2007, requires the appropriate Commission to be guided by Multi-Year Tariff (MYT) principles while specifying the Terms and Conditions for determination of tariff. Section 61 of the EA 2003 stipulates:

> *"The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely:-*
>
> *(a**) The principles and methodologies specified by the Central Commission for determination of the tariff applicable to generating companies and transmission licensees**;*
>
> *(b) The generation, transmission, distribution and supply of electricity are conducted on commercial principles;*
>
> *(c) The factors which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments;*
>
> *(d) Safeguarding of consumers' interest and at the same time, recovery of the cost of electricity in a reasonable manner;*
>
> *(e) The principles rewarding efficiency in performance;*
>
> *(f) **Multi year tariff principles**;*
>
> *(g) That the tariff progressively reflects the cost of supply of electricity and also reduces cross-subsidies in the manner specified by the Appropriate Commission;*
>
> *(h) The promotion of co-generation and generation of electricity from renewable sources of energy;*
>
> *(i) **The National Electricity Policy and tariff policy**" (**emphasis added**)*

Accordingly, the Commission is guided by the principles and methodologies specified in the prevalent CERC Tariff Regulations wherever it has deemed it necessary.

Further, the Commission is also guided by some of the principles and methodologies specified by the Forum of Regulators in Model Regulations for Multi Year Distribution Tariff, 2011 based on Section 166 of the Act, which stipulates the following:

> *"(1) The Central Government shall constitute a coordination forum consisting of the Chairperson of the Central Commission and Members thereof, the Chairperson of the Authority, representatives of generating companies and transmission licensees engaged in inter-State transmission of electricity for smooth and coordinated development of the power system in the country.*
>
> *(2) The Central Government shall also constitute a forum of regulators consisting of the Chairperson of the Central Commission and Chairpersons of the State Commissions."*

1.1 About JERC

Joint Electricity Regulatory Commission (JERC) is a two-member body designated to function as an autonomous authority responsible for regulation of the power sector in the state of Goa and Union Territories of Andaman & Nicobar, Lakshadweep, Chandigarh, Daman & Diu, Dadra & Nagar Haveli and Puducherry. The powers and the functions of the Commission are as prescribed in the Electricity Act 2003.

2 MYT Overview - General Principles

This paper discusses the contours of the Multi-Year Tariff (MYT) principles for formulation of Regulations for determination of tariff for the next Control Period beginning April 1, 2019. The broad objectives of any MYT framework are to:

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

2.1 Contours of Multi-Year Tariff

2.1.1 Duration of Control Period

In this context, the Tariff Policy, 2016 stipulates the following:

> *"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. In cases of lack of reliable data, the Appropriate Commission may state assumptions in MYT for first control period and a fresh control period may be started as and when more reliable data becomes available"*

Accordingly, as the control period starting on April 1, 2019 would only be the second control period, the Commission believes that there is still a lack of reliable data and shall continue with a 3 year control period for now.

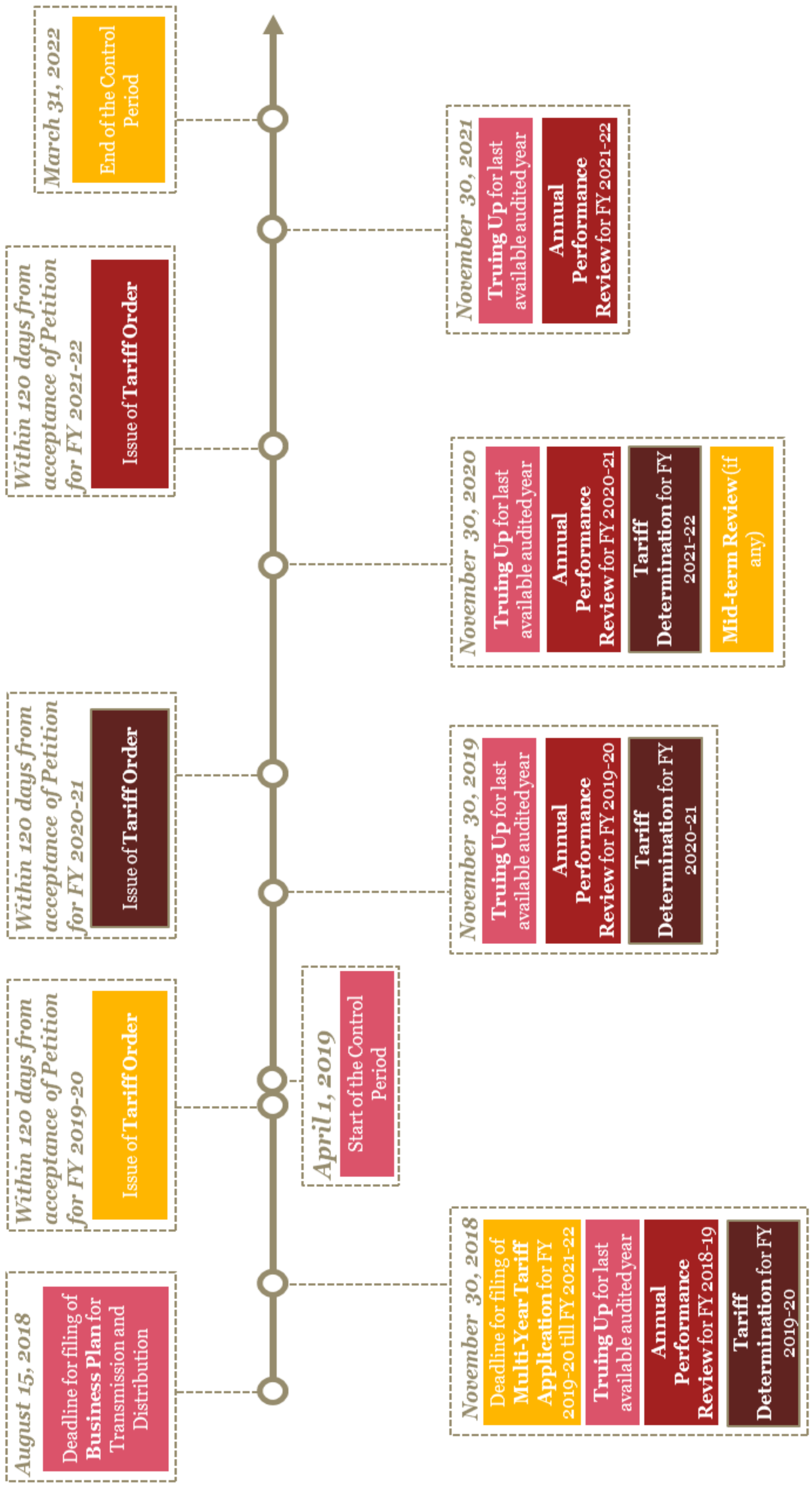
2.1.2 Timeline

The key events in an MYT Framework are as below:

- Filing of Business plan
- Filing of MYT Application
- Truing up
- Annual Performance Review
- Issuing of Tariff Order
- Mid-term review

The timeline for the above events as relevant to the second control period are specified below:

Figure 1: Timeline of Key Events in the MYT Framework



2.1.3 Cost plus Regulation vs Performance based Regulation

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

The alternative approach to the 'Cost-Plus' approach to regulation is Performance Based Regulation (PBR). Rather than frequent reviews of utility's costs and determining tariffs to reimburse utilities for what they spend, PBR takes a longer term view and focuses on efficient performance by utilities. In a well-designed PBR, good performance should lead to higher profits, while poor performance should lead to lower profits. In general, PBR mechanisms provide utilities with a fixed price or a fixed level of revenues, as opposed to a predetermined level of profits. As a result, utilities can earn higher or lower profits depending upon how efficiently they plan for and operate their systems. The most commonly discussed PBR mechanism is the 'price cap'. Price caps differ from the cost plus approach in two fundamental ways. First, prices are put in place for longer periods of time (e.g., four to six years) as compared to the annual tariff determination usually undertaken under the cost-plus approach. The fixed prices over longer periods are intended to provide incentives to reduce costs. Second, utilities are allowed to lower their prices to some customers, as long as all prices stay within the cap (or caps). This flexibility allows the utilities to provide competitive price discounts to customers that might otherwise leave their system.

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

The modified 'cost-plus' approach followed in the existing JERC MYT Regulations for Distribution, 2014, is well understood by all the stakeholders and has stood the test of time, and has also been largely effective in achieving the desired objectives.

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

2.2 Business Plan

The Forum of Regulators (FOR), in its report on MYT framework and Distribution Margin, has recommended as under:

> *"2.5.4 Distribution licensees should submit the business plan and power purchase plan, for approval of the Commission, at least six months prior to submission of MYT petitions, comprising the following aspects:*
>
> - *Category-wise sales projections*
> - *Load growth details*
> - *Power Procurement Plan from short-term and long-term sources*
> - *Details of load shedding*

- *Capital expenditure and capitalisation plans, financing pattern and impact on related expenses*
- *Employee rationalisation*

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

The JERC MYT Regulations for Distribution, 2014 state the following:

> *"5.1 The Distribution Licensee shall file Business Plan, for Control Period of three financial years from April 1, 2015 to March 31, 2018, which shall comprise but not be limited to detailed category-wise sales and physical targets, power procurement plan, capital investment plan, financing plan and Provided that in case the Commission issues guidelines and formats, from time to time, the same shall be adhered to by the Distribution Licensee.*
>
> *5.2 The capital investment plan shall show separately, on-going projects that will spill into the financial year 2015-2016 and new projects (along with justification) that will commence and scheduled to be completed within or beyond the tariff period i.e. by or beyond 31.03.2018. The Commission shall consider and approve the capital investment plan for which the Distribution Licensee shall provide relevant technical and commercial details.*
>
> *5.3 The Distribution Licensees shall project the power purchase requirement after considering effect of target set for Energy Efficiency (EE) and Demand Side Management (DSM) schemes.*
>
> *Provided that the power purchase cost of the respective Distribution Licensee shall be allowed after considering the target set by the Commission for Energy Efficiency (EE) and Demand Side Management (DSM) schemes, if any, and any shortfall in meeting the target shall be disallowed by the Commission at marginal cost of power purchase of that Distribution Licensee for determination of tariff."*

The FOR recommendations provide for submission of Business Plan six months prior to the submission of MYT Petition, i.e., 30th November. However, since the suggested date has already passed, the Commission has proposed that the Business Plan approved by the authorized signatory shall be submitted by August 15, 2018

The objective of requiring the filing of Business Plan around 3 to 6 months prior to the submission of the MYT Petition is that the Utilities will be required to prepare a long-term plan for the critical aspects of their business, mainly, capital investment, sales projections, power purchase planning and contracting, etc., and also provide various scenarios for these aspects for the Commission's consideration. Once the Commission issues an order on Business Plan after due regulatory process, the utilities are required to file their MYT Petition in accordance with the Order by the Commission. If the Commission is unable to issue an order in due time, the Licensees may file their MYT petition based on the submitted Business Plan.

The Commission has analysed the merits and demerits of filing a separate Business Plan, as under:

Merits

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

Demerits

1. Separate filing of the Business Plan and MYT Petition necessitates two separate regulatory processes, with similar end objectives, though the tariffs are not determined in the MYT Business Plan.
2. In case of separate filing of the Business Plan and MYT Petition, the MYT Petition is based on the approved Business Plan. The filing of any review petition or appeal against the Business Plan Order may impinge on the subsequent ARR and tariff determination exercise.

Though there are merits and demerits to both approaches, the Commission believes that it is essential to separate the business plan filings with the MYT petition filings. As business plans contain target trajectories for various parameters for the whole of the control period, it needs to be approved before the filing of ARR for the control period and the tariff proposal for the first year of the control period. Further, it is integral that Capital Investment Plan be approved beforehand as it affects various components of ARR determination and hence tariff determination.

2.2.1 Sales Forecast

In this context, FOR in its Model MYT Regulations, 2011 stipulates the following:

> *"6.2 The forecast of Aggregate Revenue Requirement shall be developed using the assumptions relating to the behaviour of individual variables that comprise the Aggregate Revenue Requirement during the Control Period.*
>
> *6.3 The forecast of expected revenue from tariff and charges shall be developed based on the following:*
>
> *(a) Estimates of quantum of electricity to be supplied to consumers and wheeled on behalf of Distribution System Users for each financial year within the Control Period; and*
> *(b) Prevailing tariff as at the date of making the application."*

The provision for sales forecast in the existing JERC MYT Regulations adheres to these principles and the Commission proposes that the same principles shall be continued for the control period starting from April 1, 2019. The sales forecast shall be filed as part of the business plan and the forecast shall be based on actual demand of electricity in previous Years, anticipated growth in demand in coming Years, expected growth in the number of Consumers, changes in pattern of consumption and target distribution losses.

2.2.2 Power Procurement Plan

In this context, FOR in its Model MYT Regulations, 2011 stipulates the following:

> *(a) "Comprehensive Power Procurement Plan shall be submitted as part of MYT petition to the Commission.*
> *(b) The Distribution Licensee shall prepare a short term (less than 1 year) and a medium term (5 years) plan, separately stated for peak and off-peak periods, for unrestricted demand of electricity for each consumer category in its area of operation as per Regulation 16 and Regulation 17 of these regulations…"*

As there is no provision that details the contents of a Power Procurement Plan in the existing JERC MYT Regulations, the Commission proposes that a provision shall be added for the control period starting from April 1, 2019 based on the above principles laid out by FOR, with a slight modification that Power

Procurement Plan shall be submitted as part of the Business Plan, in line with the existing JERC MYT Regulations.

2.2.3 Proposed Changes in the Regulations

In view of the explanations provided above for the necessity of Capital Expenditure Plan, Sales Forecast, Power Procurement Plan and other parameters which provide a long term view, to be filed as part of the Business Plan, Regulation 8 of existing JERC MYT Regulations for Distribution, 2014 is revised as follows:

a) The Transmission Licensee and Distribution Licensee shall file for the Commission's approval a Business Plan for the entire Control Period, approved by its authorized signatory by August 15, 2018.

b) The Business Plan shall be filed separately for the Retail Supply and Distribution Wires Business by the Distribution Licensee.

c) The Business Plan filed by the Transmission Licensee shall inter-alia contain:

   i. Projections for growth of load in the transmission network;
   ii. **Capital Investment Plan** for the entire Control Period commensurate with load growth, transmission loss reduction trajectory and quality improvement measures proposed in the Business Plan;
   iii. **Capital structure** of each scheme proposed and cost of financing (interest on debt) and return on equity, terms of the existing loan agreements, etc.;
   iv. **Performance Targets** items such as, availability of transmission system, transformer failure rate, and any other parameters for quality of supply for each year of the Control Period, consistent with the Capital Investment Plan proposed by the Transmission Licensee;
   v. Projections for number of employees during the Control Period based on proposed recruitments and retirement;
   vi. Proposals in respect of income from Other Business.

d) The Business Plan filed by Distribution Licensee shall inter-alia contain:

   i. **Capital Investment Plan** for the entire Control Period commensurate with load growth, distribution loss reduction trajectory and quality improvement measures proposed in the Business Plan;
   ii. **Capital Structure** of each scheme proposed and cost of financing (interest on debt and return on equity), terms of the existing loan agreements, etc.;
   iii. **Sales Forecast** for each customer category and sub-categories for each Year of the Control Period;
   iv. **Power Procurement Plan** based on the Sales Forecast and distribution loss trajectory for each Year of the Control Period;
   v. **Targets** for distribution loss for the Control Period consistent with the Capital Investment Plan proposed by the Licensee;
   vi. Projections for number of employees during the Control Period based on proposed recruitments and retirement;
   vii. Proposals in respect of income from Other Business.

Capital Investment Plan

a) The Capital Investment Plan to be submitted as part of Business Plan shall include details of New Projects planned during the Control Period, purpose of investment, capital structure, implementation schedule, capitalisation schedule, financing plan, cost-benefit analysis, improvement in operational efficiency envisaged in the Control Period owing to proposed investment along with details of ongoing projects that will spill over into the Control Period under review along with justification;

b) The Capital Investment Plan proposed by the Transmission Licensee shall be in conformity with the plans made by the CEA/CTU and with the Capital Investment Plan of the Distribution Licensee;
c) During the Annual Performance Review, the Commission shall monitor the Year wise progress of the actual capital expenditure incurred by the Licensee vis-à-vis the approved capital expenditure. The Licensees' shall submit the actual capital expenditure incurred along with the Annual Performance Review filing;
d) In case, during the Annual Performance Review, the cumulative (up to the current Year starting from first Year of the Control Period) actual capital expenditure incurred is less than by 50% of the cumulative approved capital expenditure, the Commission shall true-up the costs incidental to the actual capital expenditure in the current Year and remaining Years of the Control Period;
e) In case the capital expenditure is required for emergency work which has not been approved in the Capital Investment Plan, the Licensee shall submit an application containing all relevant information along with reasons justifying emergency nature of the proposed work seeking approval of the Commission

Sales Forecast

a) The Distribution Licensee shall forecast sales for each customer category and sub-categories, at different voltage levels, for each Year of the Control Period in their Business Plan filings, for the Commission's review and approval;
b) The forecast shall be based on actual demand of electricity in previous Years, anticipated growth in demand in coming Years, expected growth in the number of Consumers, changes in pattern of consumption, target distribution losses;
c) The Licensee shall indicate separately the sale of electricity to traders or another Licensee and category wise sales to open access customers.

Power Procurement Plan

a) The Distribution Licensee shall prepare a plan for procurement of power to serve the demand for electricity in its Area of Supply and submit such plan to the Commission for approval as a part of Business Plan
b) The power procurement plan of the Distribution Licensee shall comprise the following:
    i. A quantitative forecast of the unrestricted base load and peak load for electricity within its Area of Supply;
    ii. An estimate of the quantities of electricity supply from the identified sources of power purchase, including own generation if any;
    iii. An estimate of availability of power to meet the base load and peak load requirement
    iv. Standards to be maintained with regard to quality and reliability of supply, in accordance with the relevant Regulations of the Commission;
    v. Measures proposed for energy conservation, energy efficiency, and Demand Side Management;
    vi. The requirement for new sources of power procurement, including augmentation of own generation capacity, if any, and identified new sources of supply, based on (i) to (v) above;
c) The sources of power, quantities and cost estimates for such procurement
d) The forecast or estimate shall be prepared using forecasting techniques based on past data, sales forecast, overall economic growth, consumption growth of electricity-intensive sectors, advent of

competition in the electricity sector, trends in captive power, impact of loss reduction initiatives, improvement in Generating Station Plant Load Factors and other relevant factors;

e) Where the Commission has specified a percentage of the total consumption of electricity in the area of a Distribution Licensee to be purchased from co-generation or renewable sources of energy, the power procurement plan shall include the plan for procurement from such sources upto the specified level

f) The Distribution Licensee shall also consult the State Transmission Utility at the time of preparation of the power procurement plan, to ensure consistency of such plan with the transmission system plan;

g) The Distribution Licensee may, as a result of additional information not previously known or available to it at the time of submission of the procurement plan under Regulation apply for modification in the power procurement plan for the remainder of the Control Period, as part of its Petition for Mid-term review;

h) The Commission may, as a result of additional information not previously known or available to the Commission at the time of approval of the procurement plan, if it deems appropriate, suo motu or on a Petition filed by the Distribution Licensee, modify the procurement plan of the Distribution Licensee for the remainder of the Control Period, as part of the Mid-term Review.

2.3 Multi Year Tariff Application

The draft Regulations provided for following provisions in respect of multi-year tariff application:

a) The Applicant shall submit the forecast of Aggregate Revenue Requirement for the entire Control Period and tariff proposal for the first Year of the Control Period, in such manner, and within such time limit as provided in these Regulations and accompanied by such fee payable, as may be specified by the Commission from time to time by November 30, 2018.

b) The Applicant shall develop the forecast of Aggregate Revenue Requirement using the assumptions relating to the behaviour of individual variables that comprise the Aggregate Revenue Requirement during the Control Period, including inter-alia detailed category-wise sales and demand projections, power procurement plan, Capital Investment Plan, financing plan and physical targets, in accordance with guidelines and formats, as may be prescribed by the Commission from time to time.

c) The Applicant shall develop the forecast of expected revenue from tariff and charges based on the following:

   i. In the case of a Transmission Licensee, estimates of transmission capacity allocated to Transmission System Users for ensuing financial Year within the Control Period

   ii. In the case of a Distribution Licensee, estimates of quantum of electricity to be supplied to Consumers and to be wheeled on behalf of distribution system users for ensuing financial Year within the Control Period

   iii. Prevailing tariffs as on the date of making the application.

d) Based on the forecast of Aggregate Revenue Requirement and expected revenue from tariff and charges, the Transmission Licensee and Distribution Licensee for the Distribution Wires Business and Retail Supply Business, shall propose the Tariff that would meet the gap, if any, in the Aggregate Revenue Requirement

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

f) On receipt of application, the Commission shall either:
   i. issue an Order approving the Aggregate Revenue Requirement for the entire Control Period and the tariff for the first Year of the Control Period, subject to such modifications and conditions as it may specify in the said Order; or
   ii. reject the application for reasons to be recorded in writing, as the Commission may deem appropriate

2.4 Annual Performance Review, Truing-up and tariff determination during the Control Period

The Generating Company, Transmission Licensee and Distribution Licensee shall file an application for annual performance review of current year, truing up of the previous year or the year for which the audited accounts are available and determination of tariff for the ensuing year by 30 November each year. The scope of the annual review, truing up and tariff determination shall be a comparison of the performance of the Transmission Licensee or Distribution Licensee with the approved forecast of Aggregate Revenue Requirement and expected revenue from tariff and charges and shall comprise of the following:

a) **True-up:** a comparison of the audited performance of the applicant for the financial year for which the true up is being carried out with the approved forecast for such previous financial year, subject to the prudence check
b) **Annual Performance Review**: a comparison of the revised performance targets of the applicant for the current financial year with the approved forecast in the Tariff Order corresponding to the control period for the current financial year subject to prudence check
c) **Tariff determination** for the ensuing year of the control period based on revised forecast of the Aggregate Revenue Requirement for the year
d) Review of compliance with directives issued by the Commission from time to time
e) Other relevant details, if any

2.5 Controllable and Uncontrollable Factors

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

2.5.1 Controllable factors

Controllable factors are those considered to be under the utility's control. The Commission needs to define these factors under the MYT framework as there should be no ambiguity regarding what is a controllable parameter that a licensee can control and what is an uncontrollable parameter, the financial implication of which shall be passed on to the consumer.

In view of the above, after comparing the norms stipulated by various other SERCs and studying the best practices, it is proposed that the existing Regulations shall be slightly updated in order to reduce ambiguity during filing of petitions. The updated list of parameters proposed for the control period starting on April 1, 2019 are as follows:

a) Variations in capitalisation on account of time and/or cost overruns/ efficiencies in the implementation of a capital expenditure project not attributable to an approved change in scope of such project, change in statutory levies or force majeure events
b) Variation in Interest and Finance Charges, Return on Equity, and Depreciation on account of variation in capitalization
c) Variations in technical and commercial losses of Distribution Licensee
d) Availability of transmission system
e) Variations in performance parameters
f) Failure to meet the standards specified in the Joint Electricity Regulatory Commission for the State of Goa & UTs (Standard of Performance for Distribution Licensees) Regulation, 2015, as amended from time to time
g) Variations in labour productivity
h) Variation in Operation & Maintenance expenses, except to the extent of inflation
i) Bad debts written off.

2.5.2 Uncontrollable factors

Uncontrollable costs usually include costs over which the utility has no control, such as variation in the cost of power purchase, etc.

In this context, the Tariff Policy stipulates the following:

> *"Pass through of past losses or profits should be allowed to the extent caused by uncontrollable factors. During the transition period controllable factors should be to the account of utilities and consumers in proportions determined under the MYT framework.*
>
> ..
>
> *Uncontrollable costs should be recovered speedily to ensure that future consumers are not burdened with past costs. Uncontrollable costs would include (but not limited to) fuel costs, costs on account of inflation, taxes and cess, variations in power purchase unit costs including on account of hydro-thermal mix in case of adverse natural events."*

In view of the above, after comparing the norms stipulated by various other SERCs and studying the best practices, it is proposed that the existing Regulations shall be slightly updated in order to include more parameters and reduce ambiguity during filing of petitions. The updated list of parameters proposed for the control period starting on April 1, 2019 are as follows:

a) Force Majeure events
b) Change in law, judicial pronouncements and Orders of the Central Government, State Government or Commission
c) Variation in the number or mix of Consumers or quantities of electricity supplied to Consumers
d) Transmission loss
e) Variation in the cost of power purchase due to variation in the rate of power purchase from approved sources, subject to clauses in the power purchase agreement or arrangement approved by the Commission
f) Variation in fuel cost
g) Change in power purchase mix
h) Inflation
i) Transmission Charges for a Distribution Licensee
j) Variation in market interest rates for long-term loans

k) Employee expenses limited to one time payment owing requirements of a pay commission and terminal liability of employees
l) Taxes and Statutory levies
m) Taxes on income
n) Income from realisation of bad debts written off

2.6 Sharing of Gains and losses

Clause 8.1 (2) of the Tariff Policy stipulates:

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

The mechanism of sharing of gains and losses is intended to share the benefits of better performance of the utility as well as the impact of poor performance with regard to controllable parameters to be borne by the utility, while at the same time ensuring that the utility has enough incentive to improve its operational efficiency.

2.6.1 Sharing of gains or losses on account of controllable factors

Regulation 10 of JERC MYT Regulations for Distribution, 2014 specifies the mechanism for sharing of gains or losses on account of controllable and uncontrollable factors as under:

> *"10.1 The licensee shall pass on to the consumers, the 70% of the gain arising from over achievement of the norms laid down by the Commission in these Regulations or targets set by the Commission from time to time and retaining balance 30% with themselves.*
>
> *10.2 The approved aggregate gain or loss to the Distribution Licensee on account of uncontrollable factors shall be passed through, as an adjustment in the tariff of the Distribution Licensee, as specified in these Regulations and as may be determined in the Order of the Commission passed under these Regulations. 10.3 The Distribution Licensee shall submit such details of the variation between expenses incurred and revenue earned and the figures approved by the Commission, in the prescribed format to the Commission, along with the detailed computations and supporting documents as may be required for verification by the Commission.*
>
> *10.4 Nothing contained in this Regulation 10 shall apply in respect of any gain or loss arising out of variations in the price of fuel and power purchase, which shall be dealt with as specified t1y the Commission from time to time."*

Under the approach recommended by FOR, the licensee gets to retain 2/3rd of the efficiency gains, but has to be bear the entire efficiency losses. Hence, another option for sharing the gains and losses may be as under:

a) One-third of such gain may be passed on to the consumers as a rebate in tariffs over a period of time as may be specified by the Commission.

b) The balance amount, which will amount to two-thirds of such gain for generation Companies or licensees, may be utilized by the utility at its discretion.

However, losses on account of controllable factors have to be borne by the utility only, since, the operational norms as well as the O&M norms are being specified based on the actual performance of the utility in the previous Control Period.

The practices followed by selected other SERCs in this regard have been reproduced below:

Table 1: Sharing of gains or losses on account of controllable factors by SERCs

States	Sharing of gains due to controllable factors	Sharing of losses due to Controllable factors
Gujarat	1/3 - Consumers 2/3 - Retain	1/3 - Consumers 2/3 - Absorbed
Maharashtra	1/3 - Consumers 2/3 - Retain	1/3 - Consumers 2/3 - Absorbed
Madhya Pradesh	Only for Transmission 1/3 - Beneficiaries 2/3 - Transmission Licensee	Not specified
Andhra Pradesh	Not specified	
Jharkhand	To be specified in MYT Order	
Assam	1/3 - Consumers 2/3 - Retain	1/3 - Consumers 2/3 - Absorbed

It is seen that most SERCs have adopted the approach of sharing the gains as well as losses, though the percentage shares vary. Further, most states propose retaining of 2/3rd of the gains achieved as opposed to retaining only 30% of the gains achieved in the existing JERC Regulations. Therefore, the Commission believes that the mechanism of sharing of gains for over performing in controllable parameters under the existing regulations do not provide enough of an incentive to improve on the target trajectories set by the Commission.

In view of the above, the Commission proposes that the gains shall be shared equally between Licensee and the Consumers. The revised provision is as follows:

a) Approved aggregate gain to the Transmission Licensee or Distribution Licensee on account of controllable factors shall be shared equally between Licensee and Consumers.
b) Approved aggregate loss, if any to the Transmission Licensee or Distribution Licensee on account of controllable factors shall be on account of the Licensee, and shall not be passed on the Consumers.

2.6.2 Mechanism for pass through of gains or losses on account of uncontrollable factors

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

> *"6.2.3 The entire gains and losses on account of uncontrollable factors shall be passed on to consumers during the truing up process."*

Hence, it is proposed to continue with the present approach of passing through the gain or loss to the Licensee on account of uncontrollable factors as an adjustment in the tariff of the Licensee.

3 Financial Principles

3.1 Financial Principles for Generation Business

The capital cost for a generating company shall be determined by the Commission, guided by the relevant provisions of the prevalent CERC Tariff Regulations governing generation of electricity, for existing projects as well as new projects. The norms for additional capitalisation and renovation and modernisation for a generating company shall be in accordance with the prevalent CERC Tariff Regulations, governing generation of electricity.

The financial principles including principles governing Debt to Equity Ratio, Return on Equity, Interest on Loan, Foreign Exchange Risk Variation, Interest on Working Capital, treatment of Tax on Income, norms for working capital etc. for a generating company shall be as specified in the prevalent CERC Tariff Regulations, governing generation of electricity.

3.2 Capital Cost

As explained in section 2.2 of this report there is a need to file a capital investment plan as part of the business plan for approval of capital expenditure. This is critical, since the capital expenditure has a significant bearing on the tariff payable by the consumers through related expenses like depreciation, interest on long-term loans, return on equity, etc. Currently, under JERC Regulations, Capital Expenditure plan is being approved by the Commission as a part of the business plan.

As there is no section that details the components of capital cost in the existing JERC MYT Regulations, 2014, the Commission has proposed that the provision from the prevalent CERC Tariff Regulations and provisions adopted by other SERCs shall be used as reference for the control period starting from April 1, 2019.

In view of the above, it is proposed that components of capital cost for the control period starting from April 1, 2019 shall include the following:

(a) The expenditure incurred or projected to be incurred, including interest during construction and financing charges, as admitted by the Commission after prudence check
(b) Capitalised initial spares subject to the ceiling rates specified in this Regulation
(c) Expenses incurred by the Licensee on obtaining right of way, as admitted by the Commission after prudence check
(d) Additional capitalisation
(e) Any gain or loss on account of foreign exchange rate variation pertaining to the loan amount availed up to the Date of Commercial Operation, as admitted by the Commission after prudence check

3.3 Consumer Contribution, Deposit Work, Grant and Capital Subsidy

The existing JERC MYT Regulations do not contain a separate clause for treatment of capital expenditure that have been funded through deposit works, consumer contribution and grants. Allowing depreciation, interest on long-term loans and return on equity on capital expenditure created out of Consumer Contribution or grants will result in making available undue surplus to the transmission and distribution licensee at the expense of the consumers.

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

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

a. The works carried out by the Transmission Licensee and Distribution Licensee after obtaining a part or all of the funds from the users shall be classified as Deposit Works;
b. Capital works undertaken by the Transmission Licensee and Distribution Licensee utilising grants received from the State and Central Governments, including funds under various schemes shall be classified under category of Grants;
c. The works carried out with any other grant of similar nature or such amount received without any obligation to return the same and with no interest costs attached to such subvention shall also be classified as works performed through Consumer Contribution, Deposit Work, Grant and Capital Subsidy.
d. The expenses on such capital expenditure shall be treated as follows:
   (i) normative O&M expenses shall be allowed;
   (ii) the debt to equity ratio shall be considered after deducting the amount of financial support provided through Consumer contribution, deposit work, capital subsidy or grant;
   (iii) depreciation to the extent of works performed through Consumer Contribution, Deposit Work, Grant and Capital Subsidy shall not be allowed
   (iv) provisions related to return on equity shall not be applicable to the extent of financial support provided through consumer contribution, deposit work, capital subsidy or grant;
   (v) provisions related to interest on loan capital shall not be applicable to the extent of financial support provided through consumer contribution, deposit work, capital subsidy or grant.

3.4 Debt to Equity Ratio

The Commission has specified the debt to equity ratio of 70:30 in the existing Regulations for financing new capital expenditure on projects. It is proposed to continue with the same debt-equity ratio for tariff determination for Transmission and Distribution licensees for the Control Period beginning from FY 2019 since this is the standard practice being followed in the power sector in India.

However, it is clarified that the debt-equity ratio of 70:30 is to be applied on the asset value after reducing the funds received through consumer contribution, grants, and deposit works. This is required because the issue of funding through debt or equity is relevant only if there is a need for funds for meeting the capex requirement, after utilisation of funds received in the form of consumer contribution, grants, and deposit works, which have neither any repayment obligation nor any servicing cost. This will ensure that only the amount invested by the utility in the form of equity or debt, is entitled to returns or interest, as applicable.

Further, if the actual equity deployed is more than 30%, then the equity in excess of 30% shall be treated as a normative loan. However, if the actual equity deployed is less than 30% of the capital cost of the capitalised asset, the actual equity shall be considered for determination of tariff

In the case of existing projects, the debt to equity ratio of the period ending March 31, 2018 shall be considered. Further, regarding the case of de-capitalisation or retirement or replacement of assets, it is proposed that the equity capital approved as mentioned above, shall be reduced to the extent of 30% (or actual equity component based on documentary evidence, if it is lower than 30%) of the original cost of the de-capitalised or retired or replaced asset, and the debt capital approved as mentioned above, shall be reduced to the extent of actual debt component, based on documentary evidence, of the original cost of the de-capitalised or retired or replaced asset.

3.5 Return on Equity

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

The Commission has adopted the RoE approach in the existing JERC MYT Regulations for Distribution, 2014 for distribution licensees and the CERC Tariff Regulations, 2014 for the transmission licensees for the Control Period ending March 31, 2018.

In this context, Clause 5(a) of the Tariff Policy notified on January 28, 2016 stipulates:

> *"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.*
>
> *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."*

For the purposes of return on equity, any cash resources available to the company from its share premium account or from its internal resources that are used to fund the equity commitments of the project under consideration should be treated as equity subject to limitations contained in Clause 5(a) of the Tariff Policy below:

> *"The Central Commission may adopt either Return on Equity or Return on Capital approach whichever is considered better in the interest of the consumers.*

> *The State Commission may consider 'distribution and supply margin' as basis for allowing returns in distribution business at an appropriate time. The State Commission may also consider price cap regulation based on comprehensive study. The Forum of Regulators should evolve a comprehensive approach in this regard. The considerations while preparing such an approach would, inter-alia, include issues such as reduction in Aggregate Technical and Commercial losses, improving the standards of performance and reduction in cost of supply"*

3.5.1 Post-Tax Vs Pre-Tax Rate of Return

The issue is whether the returns to the investor should be allowed on a post-tax basis or on pre-tax basis. Both the approaches have merits and demerits.

Under the post-tax approach, the Commission has to assess the income tax liability at the time of determination of ARR and tariff, which can be complicated in case of entities that are undertaking other non-core businesses also, irrespective of whether they are regulated or not. Another negative aspect of the post-tax approach is that there is no inducement for better tax planning. However, in case of post-tax returns, the tax benefits available to the sector are passed on to the consumers.

On the other hand, the pre-tax return approach is aimed at encouraging power sector entities to do better tax planning and does not have the above de-merits of post-tax return approach. The income tax liability does not have to be projected in advance, and at the end of the year, does not have to be matched with the actual income tax paid, etc. The issue of estimating the income tax for Utilities operating in several States/Businesses will also not arise.

It should also be noted that the erstwhile State Electricity Boards (SEBs) were not liable to pay income tax. However, post EA 2003, most of the erstwhile SEBs have been unbundled and the successor companies engaged in the business of generation, transmission and distribution of electricity are liable to pay income tax.

Under the mechanism of pre-tax returns, the benefits of Section 80 IA applicable to new units are not passed on to the beneficiaries and the tax recovered by utilities in some cases are more than the actual income tax. Under the regulated business, in general, the profit of the Utilities should be equal to RoE specified because all other elements of tariff are based on the general premise of pass through of costs subject to achievement of normative performance parameters. Practically, however, the profit of the Utilities is influenced by other factors such as profits of non-core business carried out by the Utilities, UI earnings, efficiency gains, incentive earned, difference in the depreciation allowed under tariff and as per Income Tax Act, 1961, income tax holiday allowed in power sector, etc.

Under the regulated business, when the Utilities are allowed specified post tax rate of return on equity in addition to prudently incurred expenses, the recovery of tax on specified Return on Equity by the Utilities needs to be allowed based on actual tax paid on Return on Equity on 'no profit' and 'no loss' basis, as tax on Return on Equity is a sort of reimbursement to ensure the recovery of the specified RoE.

Since both approaches have their merits and demerits, it is proposed to continue with the post-tax approach Distribution Wires Business and Retail Supply of Electricity to allow the pass through of tax benefits available to the utilities to Consumers. However, for transmission business, the approach as adopted by the CERC in the prevalent tariff regulations is proposed to be adopted.

3.5.2 Rate of Return

Return on equity shall be computed on the paid up equity determined as explained in section 3.4 on the assets put to use.

For a Transmission Licensee , the return shall be computed on the paid up equity capital determined in accordance with Regulation 26 on the assets put to use for the Transmission Licensee and shall be allowed in accordance with the prevalent CERC Tariff Regulations for transmission system. For Distribution Wires Business, the return is allowed at a post-tax rate as specified in the prevalent CERC Tariff Regulations for Transmission System, as the transmission and the distribution wires business are of similar nature. For a Retail Supply Business, the return is allowed at the post tax rate of 16 per cent per annum.

The equity base considered for the calculation of return on equity shall be the average of equity capital at the beginning and end of the year.

3.6 Interest on Loan

Based on the experience of the Commission in the current Control Period, and experiences in other States and also due to changes in the interest rate regime, certain modifications and additional provisions are proposed in the context of Interest on Long-term loans, as under:

a) The loans arrived at in the manner indicated in section 3.4 on the assets put to use, shall be considered as gross normative loan for calculation of interest on loan

b) The normative loan outstanding as on April 1, 2019, shall be worked out by deducting the cumulative repayment as admitted by the Commission up to March 31, 2018, from the gross normative loan

c) For new loans proposed for each financial Year of the Control Period, interest rate shall be considered as lower of
   i) 1 year State Bank of India (SBI) MCLR / any replacement thereof as notified by RBI for the time being in effect applicable for 1 Year period, as may be applicable as on 1st April of the relevant Year plus 100 basis points, and
   ii) weighted average rate of interest proposed by the Distribution Licensee.

d) The above interest computation shall exclude interest on loan amount, normative or otherwise, to the extent of capital cost funded by Consumer Contribution, Grants or Deposit Works carried out by Transmission Licensee or Distribution Licensee

e) The finance charges incurred for obtaining loans from financial institutions for any Year shall be allowed by the Commission at the time of Truing-up, subject to prudence check.

f) The excess interest during construction on account of time and/or cost overrun as compared to the approved completion schedule and capital cost or on account of excess withdrawal of the debt funds disproportionate to the actual requirement based on Scheme completion status, shall be allowed or disallowed partly or fully on a case to case basis, after prudence check by the Commission

g) If the excess interest during construction allowed by the Commission is on account of delay attributable to an agency or contractor or supplier engaged by the Transmission Licensee, any liquidated damages recovered from such agency or contractor or supplier shall be taken into account for computation of capital cost

h) Interest shall be allowed on the amount held as security deposit held in cash from Retail Consumers at the Bank Rate as on 1st April of the financial Year in which the Petition is filed.

3.7 Foreign Exchange Rate Variation

Clause 5(e) of the Tariff Policy notified on January 28, 2016 clearly states the following:

> *"Foreign exchange variation risk shall not be a pass through. However, appropriate costs of hedging and swapping to take care of foreign exchange variations should be allowed for debt obtained in foreign currencies. This provision would be relevant only for the projects where tariff has not been determined on the basis of competitive bids."*

In view of the above, following provisions are proposed for the Control Period starting from April 1, 2019:

If the Transmission or Distribution licensee has any foreign exchange exposure in respect of the interest on the foreign currency loan, the licensee is allowed to hedge the exposure partly or in full (at its discretion) and the cost of hedging or swapping the foreign exchange exposure shall be allowed.

Further, any extra rupee liability towards interest payment and loan repayment corresponding to the foreign currency loan in the relevant year arising to the extent of the unhedged foreign exchange exposure is allowed if the Commission finds it to be prudent.

3.8 Depreciation

The principles behind the charging of depreciation and the depreciation rates have been debated over the years, including the linkage of depreciation to creation of a reserve fund for replacement of assets versus the linkage of depreciation to providing cash flow for repayment of loans taken by the utility. In regulatory perspective, depreciation, being the only cash source available to the utility after meeting all other expenses, is considered as a source for repayment of loans.

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

> *"**The Central Commission may notify the rates of depreciation in respect of generation and transmission assets**. The depreciation rates so notified would also be applicable for distribution with appropriate modification as may be evolved by the Forum of Regulators.*
>
> ..
>
> ***The rates of depreciation so notified would be applicable for the purpose of tariffs as well as accounting.***
>
> ***There should be no need for any advance against depreciation.***
>
> *Benefit of reduced tariff after the assets have been fully depreciated should remain available to the consumers. "**(emphasis added)***

The JERC MYT Regulations, 2014 specified the straight line method for determination of depreciation expenses, and a residual value of 10%. The remaining depreciable value of an asset as on 31st March of the year closing after a period of 12 years from date of commercial operation is to be spread over the balance useful life of that asset. Further, the repayment of loan has also been considered on normative basis, and has been considered equal to the annual depreciation allowed, as CERC has retained the approach of linking the normative loan repayment to the depreciation allowed for that year. Therefore, the Commission has retained the above provisions for the second control period.

Further, the Tariff Policy stipulates that the depreciation rates specified by the CERC should be adopted for transmission business, and may be adopted for the distribution business as well. The Tariff Policy also states that the same rate of depreciation should be considered for tariff purposes as well as accounting purposes while determining the tariff. These provisions have also been retained.

3.8.1 Advance against Depreciation for Distribution Licensee

For the distribution business, the Commission, instead of considering higher depreciation rate as prescribed by CERC for first 12 years and reducing it later based on balance depreciation and useful life, has linked depreciation with the useful life of the assets and created a provision of advance against depreciation, in case depreciation is not sufficient to meet the loan repayment obligation. The Commission has adopted a different approach for distribution business as distribution business assets are added continuously, unlike a generation business. It is further noticed that utilities are not able to segregate assets which have completed 12 years of life and assets which have not. This has resulted in higher depreciation rate for assets, which are even more than 12 years old. Hence, it has been proposed to allow depreciation for distribution companies on a straight line basis for the entire life at rates proposed in Appendix I to the regulations and provide an option of advance against depreciation to allow the utilities to meet the obligations of loan repayment. AAD shall be applicable for the Distribution Licensee as follows:

AAD = Loan (raised for capital expenditure) repayment amount based on loan repayment tenure, subject to a ceiling of 1/10th of loan amount **minus** depreciation

Further, advance against depreciation shall be permitted only if the cumulative repayment up to a particular Year exceeds the cumulative depreciation up to that Year and shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

3.8.2 Proposed Provision for the Second Control Period

In view of the above, following provisions shall be added for the control period starting from April 1, 2019:

a) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission after reducing the the approved original cost of the retired or replaced or decapitalized assets and the assets financed through consumer contribution, deposit work, capital subsidy or grant.
b) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.
c) Land other than the land held under lease shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the assets.
d) In case of existing assets, the balance depreciable value as on April 1, 2019, shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to March 31, 2018, from the gross depreciable value of the assets.
e) The depreciation shall be chargeable from first Year of commercial operations. In case of projected commercial operation of the assets during the Year, depreciation shall be computed based on the average of opening and closing value of assets, provided that depreciation will be re-calculated during truing-up for assets capitalised at the time of truing up of each Year of the Control Period,

based on documentary evidence of asset capitalised by the Applicant, subject to the prudence check of the Commission.

f) For Transmission Licensee, the depreciation shall be calculated at rates and norms specified in the prevalent CERC Tariff Regulations for transmission system.

g) The depreciation for a Distribution Licensee shall be shall be calculated annually, based on the Straight Line Method, over the Useful Life of the asset at rates specified in Appendix I of the Regulations.

h) In addition to allowable depreciation, the Distribution Licensee shall be entitled to advance against depreciation (AAD), computed in the manner given hereunder:
AAD = Loan (raised for capital expenditure) repayment amount based on loan repayment tenure, subject to a ceiling of 1/10th of loan amount minus depreciation as calculated on the basis of these Regulations

i) AAD shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year and shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

j) The Licensee shall provide the list of assets added during each Year of Control Period and list of assets completing 90% of depreciation in the Year along with Petition for annual performance review, true-up and tariff determination for ensuing Year.

k) The remaining depreciable for a Distribution Licensee shall be spread over the balance useful life of the asset, on repayment of entire loan.

3.9 Interest on Working Capital

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

Further, SBI has moved to the concept of 'Marginal Cost of Funds based Lending Rate (MCLR)' from 'Base Rate'. As mandated by RBI, all rupee loans sanctioned and credit limits renewed w.e.f. April 1, 2016 would be priced with reference to MCLR, which will be the internal benchmark (means a reference rate determined internally by the bank). The current loans provided by SBI consider MCLR as the benchmark plus an appropriate margin.

Accordingly, it is proposed to link the rate on interest on working capital to MCLR and the following provision is proposed:

(a) The rate of interest on Working Capital shall be equal 1 Year State Bank of India (SBI) MCLR / any replacement thereof as notified by RBI for the time being in effect applicable for 1 Year period, as may be applicable as on 1st April of the financial Year in which the Petition is filed plus 200 basis points.

3.10 Tax on Income

The existing JERC MYT Regulations for Distribution notified on June 30, 2014 stipulate the following:

> *"(a)* ***Income Tax, if any, on the Licenced business of the Distribution Licensee shall be treated as expense and shall be recoverable from consumers through tariff.*** *However, tax on any income other than that through its Licenced business shall not be a pass through, and it shall be payable by the Distribution Licensee itself.*
>
> *(b) The income tax actually payable or paid shall be included in the ARR. The actual assessment of income tax should take into account benefits of tax holiday, and the credit for carry forward losses applicable as per the provisions of the Income Tax Act 1961 shall be passed on to the consumers.*
>
> *(c) Tax on income, if any, liable to be paid shall be limited to tax on return on the equity component of capital employed. However any tax liability on incentives due to improved performance shall not be considered."* **(emphasis added)**

For Transmission, JERC currently follows the prevalent CERC Tariff Regulations. The prevalent CERC Tariff Regulations stipulate that actual income tax paid shall not be a pass through as the return on equity is computed on a pre-tax basis.

Further, as explained in section 3.5, since RoE shall be calculated on a post-tax basis for the Distribution Wires Business and Retail Supply of Electricity, it is proposed that the tax on income streams shall be allowed as an expense in ARR calculation.

3.11 Rebate

As there is no provision for treatment of rebates in the existing JERC Regulations, it is proposed that the provision in the prevalent CERC Tariff Regulations shall be adopted for the second control period.

Further, since the existing CERC provisions only provide for application of rebates and not for the treatment of rebates given/received in determination of ARR, some additions to the provision in existing CERC Tariff Regulations have been proposed. For a transmission licensee and a generation company, the normative IWC is computed by considering receivables for 2 month, hence, the cost of such receivable is already being allowed. In case, the transmission licensee or the generation company provide a rebate to their respective beneficiaries for early payment, then the prompt payment rebate given to the beneficiary should not be allowed as an expense, else, it will amount to double-benefit for the utility.

In view of the above, it is proposed that the rebate given by the transmission licensee and the generation company to their respective beneficiaries shall not be allowed as an expense for the Transmission Licensee, as the case may be.

The following provisions are proposed to be incorporated:

a) The rebate to be provided by a Generating Company or Transmission Licensee to a Distribution Licensee for early payment of bills shall be in accordance with the prevalent CERC Tariff Regulations.
b) Such rebate earned by the Distribution Licensee shall be considered under Non-Tariff Income for the Distribution Licensee.
c) Any rebate provided by the Generating Company or Transmission Licensee to the beneficiaries shall not be allowed as an expense for the Generating Company or Transmission Licensee, as the case may be.

3.12 Late Payment Surcharge

As there is no provision for late payment surcharge in the existing JERC Regulations, it is proposed that the provision in the prevalent CERC Tariff Regulations shall be adopted for the second control period.

Further, as regards to Delayed Payment Charges (DPC), DISCOMs have submitted in their Petitions for truing up that for the purpose of ARR determination, the Commission considers revenue from Tariff on accrual basis, i.e., amount billed by the DISCOM to all the consumers, however, all the consumers do not make timely payments for the bills raised. Because of delays in the payment by the consumers, the working capital requirements of the DISCOMs are increased, which are funded by DPC. Hence, by considering income on accrual basis and simultaneously considering DPC in the ARR, the DISCOMs are doubly penalized. The same rationale is applicable for the Transmission Business as well. In view of the same, it is proposed not to consider interest on delayed or deferred payment on bills as part of Non-Tariff Income, for the Transmission, Distribution Wires and Retail Supply Business.

In view of the above, two new provisions shall be added for the control period starting from April 1, 2019 as below:

a) The delayed payment charge and interest on delayed payment earned by the Transmission Licensee or the Distribution Licensee shall not be considered under its Non-Tariff Income.
b) The delayed payment charge paid or payable by the Distribution Licensee to the Generating Company or the Transmission Licensee shall not be allowed as an expense for such Distribution Licensee.

4 Generation

4.1 Components of Tariff

The computation of Aggregate Revenue Requirement for a generation business shall comprise of the following components:

a) Return on Equity
b) Interest and finance charges on Loan
c) Depreciation
d) Interest on Working Capital
e) Operation and maintenance expenses
f) Income tax

The treatment of each of the above components shall be in accordance with the prevalent CERC Tariff Regulations governing generation of electricity.

4.2 Norms of Operation

The norms of operation for a generation station including Normative Annual Plant Availability Factor (NAPAF), Normative Annual Plant Load Factor (NAPLF), gross station heat rate, auxiliary consumption etc. shall be in accordance with the prevalent CERC Tariff Regulations governing generation of electricity.

5 Intra-State Transmission

5.1 O&M Expenses

While specifying the normative O&M expenses for the transmission licensee, one of the aspects to be considered is whether the normative O&M expenses should be specified in a consolidated manner or separately, as employee expenses, A&G expenses, and Repair & Maintenance expenses. Both options have their merits and de-merits. If the O&M expenses are specified in a consolidated manner, the utility has the flexibility to manage its expenditure through own resources (which will increase the employee expenses) or through outsourcing (which will increase the A&G expenses), as appropriate. However, under this dispensation, the variation in the individual heads of employee expenses, A&G expenses, and Repair & Maintenance expenses are difficult to track, and there are occasions when the Commission may wish to consider these separately, due to specific treatment to be given for pay revision, etc. This issue also depends on the nature of the business, i.e., transmission or distribution. However, based on past experiences and after reviewing the best practices across states, the Commission proposes that O&M expenses shall be continued to be considered separately as per the existing JERC Regulations.

In view of the above, it is proposed that transmission licensee shall submit the required O&M expenses for the Control Period as a part of Multi-Year Tariff Petition. The O&M expenses for the base year will be approved by the Commission taking into account the latest available audited accounts, business plan filed, estimates of the actuals for the base year, prudence check and any other factors considered appropriate by the Commission. The O&M expenses for the n^{th} year of the Control Period shall be approved based on the formula given below:

$O\&M_n = (R\&M_n + EMP_n + A\&G_n) \times (1 - X_n)$ + Terminal Liabilities

Where,

$R\&M_n = K \times GFA_{n-1} \times (WPI_{inflation})$

$EMPn = (EMPn\text{-}1) \times (1+Gn) \times (CPI_{inflation})$

$A\&G_n = (A\&G_{n-1}) \times (CPI_{inflation})$

'K' is a constant (expressed in %). Value of K for each Year of the Control Period shall be determined by the Commission in the MYT Tariff Order based on Licensee's filing, benchmarking of repair and maintenance expenses, approved repair and maintenance expenses vis-à-vis GFA approved by the Commission in past and any other factor considered appropriate by the Commission;

$CPI_{inflation}$ – is the increase in Consumer Price Index (CPI) for immediately preceding three Years before the base Year;

$WPI_{inflation}$ – is the average increase in the Wholesale Price Index (CPI) for immediately preceding three Years before the base Year;

EMP_n – Employee expenses of the Transmission Licensee for the nth Year;

$A\&G_n$ – Administrative and General expenses of the Transmission Licensee for the nth Year;

$R\&M_n$ – Repair and Maintenance expenses of the Transmission Licensee for the nth Year;

GFA_{n-1} – Gross Fixed Asset of the transmission Licensee for the n-1th Year;

X_n is an efficiency factor for nth Year. Value of X_n shall be determined by the Commission in the MYT Tariff Order based on Licensee's filing, benchmarking, approved cost by the Commission in past and any other factor the Commission feels appropriate;

G_n is a growth factor for the nth Year. Value of G_n shall be determined by the Commission in the MYT tariff order for meeting the additional manpower requirement based on Licensee's filings, benchmarking, approved cost by the Commission in past and any other factor that the Commission feels appropriate.

R&M expenses shall be indexed to WPI because R&M expenses mostly include purchases of industrial goods. The prices for these goods are more in line with WPI than CPI. Accordingly, employee and A&G expenses shall be indexed to CPI as the change in expenses for these components are more in line with CPI.

5.2 Norms of Working Capital for Transmission Licensee

The prevalent CERC Tariff Regulations, 2014 stipulate the following norms:

> "*(i) Receivables equivalent to two months of fixed cost;*
>
> *(ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and*
>
> *(iii) Operation and maintenance expenses for one month."*

Regarding inclusion of one month of O&M expenses as a part of the working capital requirement, as O&M expenses incurred for a given month are recoverable along with the tariff in the next month, the same needs to be a part of working capital. In addition, exclusion of the same may also have impact on the liquidity position of the utilities.

Further, the Regulations for control period starting from April 1, 2019 provide for a rebate of 1% if the payment is made within 30 days and a late payment surcharge of 1.5% in case the payment is delayed beyond 60 days. As the payments are to be made by the beneficiaries without surcharge within a period of 60 days, it is imperative that working capital towards 60 days receivables is provided.

In view of the above, it is proposed that the prevalent CERC Tariff Regulation as stated shall be applicable for the Control Period starting from April 1, 2019.

5.3 Non-Tariff Income

The Commission proposes the below provisions for non-tariff income based on the review of regulations followed by various other SERCs in order to provide more clarity to licensees during their ARR filings:

The Non-Tariff Income shall inter-alia include:

a) Income from rent on land or buildings
b) Income from sale of scrap
c) Income from statutory investments
d) Interest on advances to suppliers/contractors
e) Rental from staff quarters
f) Rental from contractors
g) Income from hire charges from contactors and others
h) Income from advertisements, etc.
i) Miscellaneous receipts like parallel operation charges
j) Deferred Income from grant, subsidy, etc., as per Annual Accounts
k) Excess found on physical verification
l) Interest on investments, fixed and call deposits and bank balances
m) Prior period income, etc.

The non-tariff income shall be deducted from ARR of the licensee to calculate the net ARR.

5.4 Transmission Loss

The Commission conducted a review of regulations adopted by various other SERCs. The regulations are as follows:

Table 2: Treatment of Transmission Loss by SERCs

States	Treatment of Transmission Loss
Himachal Pradesh	Borne by the Transmission System Users in proportion to their usage of the intra-State transmission system
Gujarat	
Maharashtra	
Madhya Pradesh	A trajectory of target transmission losses for the control period is provided in the Regulation
Karnataka	• Borne by the Transmission System Users in proportion to their usage of the intra-State transmission system • In case the actual transmission loss exceeds the normative loss level approved by the Commission, Licensee is liable for penalty of 1% of the allowable RoE for every 0.5% variation
Andhra Pradesh	No provision
Jharkhand	No provision
Assam	Borne by the Transmission System Users in proportion to their usage of the intra-State transmission system

In majority of the states, transmission losses are borne by the transmission system users in proportion to their usage of the intra-state transmission system. In view of the above, a new provision for treatment of transmission losses shall be added accordingly for the control period starting from April 1, 2019.

5.5 Norms of Operations for Transmission Licensee

The norms of operations for a Transmission Licensee shall be applicable as specified in the prevalent CERC Tariff Regulations.

Further, 50 percent of incentive earned by the transmission licensee for exceeding the norms of operations shall be shared between the beneficiaries in the ratio of their average allotted transmission capacity for the year.

5.6 Sharing of charges for Intra-State Transmission Network

The annual transmission charges of the Transmission Licensee shall be determined by the Commission on the basis of an application made by the Transmission Licensee for the determination of tariff. These charges are computed based on the aggregate revenue requirement of the Transmission Licensee for the financial year as approved by the Commission.

Further, since the transmission network in the regions regulated by JERC is not wide, the Commission proposes adoption of postage stamp method for computation of transmission charges.

Accordingly, after reviewing the regulations of a select sample of states, it is proposed that the following methodology for sharing of charges for intra-State Transmission Network shall be adopted:

a) The Aggregate Revenue Requirement of the Transmission Licensee, as approved by the Commission, shall be shared by all long-term users and medium-term users of the transmission system on monthly basis in the ratio of their respective contracted transmission capacities to the total contracted transmission capacity, in accordance with the following formula:

   ATC_n = (Transmission ARR / 12) x (CC_n / SCC)

   Where,

   ATC_n = annual transmission charges payable by the nth long-term user or medium-term user of the transmission system;

   Transmission ARR = Aggregate Revenue Requirement of the Transmission Licensee, determined in accordance with these Regulations;

   CC_n = capacity contracted in MW by the nth long-term user or medium-term user of the transmission system;

   SCC = sum of capacities contracted in MW by all long-term users and medium-term users of the transmission system

b) The Short-term Open Access Consumers shall pay transmission charges on Rs/MW/day basis determined in accordance with JERC (Connectivity and Open Access in Intra-State Transmission and Distribution) Regulations, 2017.

c) 3 75% of charges collected from the Short-term Open Access Consumers shall be adjusted towards reduction in the charges payable by the Long-term and Medium-term Open Access Consumers. The remaining 25% of the charges collected from Short-term Open Access users shall be retained by the Transmission Licensee."

5.7 Consequential Impact of any Government of India Scheme

As there is a possibility that new Government schemes that impact the transmission licensee might come into force at any time during the course of the control period, the Commission proposes that there is a need for a provision which specifies how to deal with the consequential impact of any Government of India scheme for waiver/reduction of transmission charges, incentives, and losses for any entity/ies, on the transmission charges payable by the other entities. the Commission proposes that they shall be addressed through separate Orders to be issued by the Commission from time to time.

6 Distribution Wires Business

6.1 Separation of Accounts of Distribution Licensee

The Tariff Policy, 2016 stipulates the following regarding benefits of introducing competition in to the market wherever there is no natural monopoly:

> *"The real benefits of competition would be available only with the emergence of appropriate market conditions. Shortages of power supply will need to be overcome. Multiple players will enhance the quality of service through competition. All efforts will need to be made to bring power industry to this situation as early as possible in the overall interests of consumers. Transmission and distribution, i.e. the wires business is internationally recognized as having the characteristics of a natural monopoly where there are inherent difficulties in going beyond regulated returns on the basis of scrutiny of costs."*

As the distribution wires business is a natural monopoly, separating it from the retail supply of electricity would help introduce some much-needed completion in the retail supply market.

Therefore, it is proposed to continue with the emphasis on the separation of the accounting of wires related costs and supply related costs, as it is required to move towards greater competition in the retail supply business. Since distribution wires business is quite similar to transmission business, it acts as a natural monopoly because of its capital-intensive investment requirements whereas retail supply business has significantly lesser capital investment requirements and hence the barriers of entry are comparatively much lower. Further, it is also essential for un-bundling of cost and tariff components and forms a pre-requisite for appropriate determination of wheeling charges and affects open access transactions as mandated under the EA 2003.

From the study of the provisions regarding allocation of costs between Wires Business and Retail Supply Business by various SERCs in their Tariff Regulations, it is observed that no scientific or uniform methodology for such allocation is being adopted yet. The following approaches are being adopted:

(i) Allocation Matrix/Statement or detailed head-wise principles of allocation are specified by the SERC in the Regulations
(ii) Broad principles of allocation of costs are specified in the Regulations, based on which the Commission determines the ratios of allocation of costs
(iii) The Allocation Matrix/Statement is prepared by the Distribution Licensees and submitted to the SERC for approval

After a review of the provisions adopted by various other SERCs, the Commission believes that an allocation statement with detailed head-wise principles is necessary as it provides clarity to the distribution licensees and maintains consistency in approach across multiple licensees.

In view of the above, the following allocation statement has been proposed in cases where the Distribution Licensee is not able to submit the audited and certified separate accounts for Distribution Wires Business and Retail Supply Business:

Table 3: Allocation Statement for segregation of Distribution Wires Business and Retail Supply Business

Particulars	Wires Business (%)	Retail Supply Business (%)
Power Purchase Expenses	0%	100%
Inter-State Transmission Charges	0%	100%
Intra-State Transmission Charges	0%	100%
Employee Expenses	40%	60%
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%
Return on Equity	90%	10%
Non-Tariff Income	10%	90%
Income from Other Business	50%	50%

6.2 O&M Expenses

While specifying the normative O&M expenses for the distribution wires business, one of the aspects to be considered is whether the normative O&M expenses should be specified in a consolidated manner or separately, as employee expenses, A&G expenses, and Repair & Maintenance expenses. Both options have their merits and de-merits. If the O&M expenses are specified in a consolidated manner, the utility has the flexibility to manage its expenditure through own resources (which will increase the employee expenses) or through outsourcing (which will increase the A&G expenses), as appropriate. However, under this dispensation, the variation in the individual heads of employee expenses, A&G expenses, and Repair & Maintenance expenses are difficult to track, and there are occasions when the Commission may wish to consider these separately, due to specific treatment to be given for pay revision, etc. This issue also depends on the nature of the business, i.e., transmission or distribution. However, based on past experiences and after reviewing the best practices across states, the Commission proposes that O&M expenses shall be continued to be considered separately as per the existing JERC Regulations.

In view of the above, it is proposed that distribution licensee shall submit the required O&M expenses for the Control Period as a part of Multi-Year Tariff Petition. The O&M expenses for the base year will be approved by the Commission taking into account the latest available audited accounts, business plan filed, estimates of the actuals for the base year, prudence check and any other factors considered appropriate by the Commission. The O&M expenses for the n^{th} year of the Control Period shall be approved based on the formula given below:

$O\&M_n = (R\&M_n + EMP_n + A\&G_n) \times (1 - X_n) +$ Terminal Liabilities

Where,

$R\&M_n = K \times GFA_{n-1} \times (WPI_{inflation})$

$EMPn = (EMPn\text{-}1) \times (1+Gn) \times (CPI_{inflation})$

$A\&G_n = (A\&G_{n-1}) \times (CPI_{inflation})$

'K' is a constant (expressed in %). Value of K for each Year of the Control Period shall be determined by the Commission in the MYT Tariff Order based on Licensee's filing, benchmarking of repair and maintenance expenses, approved repair and maintenance expenses vis-à-vis GFA approved by the Commission in past and any other factor considered appropriate by the Commission;

$CPI_{inflation}$ – is the increase in Consumer Price Index (CPI) for immediately preceding three Years before the base Year;

$WPI_{inflation}$ – is the average increase in the Wholesale Price Index (CPI) for immediately preceding three Years before the base Year;

EMP_n – Employee expenses of the Transmission Licensee for the nth Year;

$A\&G_n$ – Administrative and General expenses of the Transmission Licensee for the nth Year;

$R\&M_n$ – Repair and Maintenance expenses of the Transmission Licensee for the nth Year;

GFA_{n-1} – Gross Fixed Asset of the transmission Licensee for the n-1th Year;

X_n is an efficiency factor for nth Year. Value of X_n shall be determined by the Commission in the MYT Tariff Order based on Licensee's filing, benchmarking, approved cost by the Commission in past and any other factor the Commission feels appropriate;

G_n is a growth factor for the nth Year. Value of G_n shall be determined by the Commission in the MYT tariff order for meeting the additional manpower requirement based on Licensee's filings, benchmarking, approved cost by the Commission in past and any other factor that the Commission feels appropriate.

R&M expenses shall be indexed to WPI because R&M expenses mostly include purchases of industrial goods. The prices for these goods are more in line with WPI than CPI. Accordingly, employee and A&G expenses shall be indexed to CPI as the change in expenses for these components are more in line with CPI.

6.3 Norms of Working Capital for Distribution Wires Business

All SERCs use a standard formula as norm for determination of working capital requirement, wherein O&M expenses as well as cost of maintenance spares is allowed, in addition to the receivables. Regarding inclusion of one month of O&M expenses as a part of the working capital requirement, as O&M expenses incurred for a given month are recoverable along with the tariff in the next month, the same needs to be a part of working capital. In addition, exclusion of the same may also have impact on the liquidity position of the utilities.

Further, the Regulations for control period starting from April 1, 2019 provide for a rebate of 1% if the payment is made within 30 days and a late payment surcharge of 1.5% in case the payment is delayed beyond 60 days. As the payments are to be made by the beneficiaries without surcharge within a period of 60 days, it is imperative that working capital towards 60 days receivables is provided.

Further, in order to obtain a better picture of existing norms, a sample of states spread across India were selected for review. The norms followed by the selected SERCs are as follows:

Table 4: Norms of Working Capital for Distribution Wires Business adopted by SERCs

States	O&M Expenses	Maintenance spares	Receivables
Himachal Pradesh	1 month	40% of R&M expenses for 1 month	Receivables for 2 months of the wheeling charges
Gujarat	1 month	1% of historical cost	1 month of expected revenue from charges for use of Distribution Wires - security deposit
Maharashtra	1 month	1% of the opening GFA for the Year	1.5 month of expected revenue from charges for use of Distribution Wires at the prevailing Tariff - security deposits in cash or eq.
Assam	1 month	15% of the O&M expenses	2 months of expected revenue from wheeling charges at prevailing tariffs – security deposit

In view of the above, the following norms were proposed for the control period starting from April 9, 2009:

a) Operation and maintenance expenses for one (1) month; plus
b) Maintenance spares at 40% of R&M expenses for one (1) month; plus
c) Receivables equivalent to two (2) months of the expected revenue from charges for use of Distribution Wires at the prevailing tariffs;
   Less
d) Amount, if any, held as security deposits under clause (b) of sub-section (1) of Section 47 of the Act from distribution system users except the security deposits held in the form of Bank Guarantees

6.4 Wheeling Losses

6.4.1 Distribution Loss vs. AT&C loss

Technical Losses: Every element in a power system (a line or a transformer, etc.) offers resistance to power flow and thus, consumes some energy while performing the duty expected of it. The cumulative energy consumed by all these elements is classified as **"Technical Loss".**

Commercial Losses: Losses that occur on account of non-performing and under-performing meters, wrong application of multiplying factors, defects in CT and PT circuitry, meters not read, pilferage by manipulating or by-passing of meters, theft by direct tapping, etc., correspond to energy consumed but not metered or billed and are hence, categorised as "**commercial losses**".

The combination of "Technical" and "Commercial" losses in the electricity distribution business is termed as **Distribution loss.**

In addition to the above, there is also a loss in revenue collected due to non-realisation of billed amount. The aggregate of distribution loss and revenue loss due to non-realisation (collection inefficiency) is termed as **"AT&C loss"** (Aggregate Technical and Commercial loss). Therefore, AT&C loss of the distribution licensee is the combination of technical losses, commercial losses and collection inefficiency.

Since the beginning of the reform process, distribution loss reduction has been one of the primary benchmarks for measuring the performance of a distribution utility. The SERCs have either adopted distribution losses reduction or AT&C loss reduction approach as a performance benchmark.

Distribution loss reduction is a widely used approach at the national and international level to measure the performance of the distribution licensee. Distribution loss is simple to compute as it takes into account the energy input and energy billed to the consumers, thereby taking into consideration the technical losses and unaccounted energy due to theft and misuse. However, in many cases, the actual distribution losses are estimated to be higher than the reported losses, on account of the assessment of un-metered agricultural consumption. Thus, distribution loss method has certain limitations, particularly in case of significant un-metered consumption.

On the other hand, AT&C loss method covers the whole basket of losses of the distribution system and includes technical losses, billing inefficiency, theft, and collection inefficiency. If units sold, units billed and units collected can be computed accurately, then AT&C loss method would be the best indicator of measuring the efficiency of the distribution licensee. However, computation of AT&C losses leads to creation of complexities as it combines technical and commercial parameters, i.e., energy input in units and amount collected in Rupees. Some other issues in AT&C loss computation are as follows:

- Units realised have to be derived based on units billed and collection efficiency
- Units billed may not be measured accurately due to un-metered consumption, thus having the same drawback as distribution loss method
- Revenue collected may include the past arrears
- Amount collected against other charges may not be separately accounted for
- If AT&C loss computation is attempted on cash basis alone (total amount collected/total amount spent), it can lead to distorted results.

Considering the high commercial losses in the Indian power system, the Tariff Policy framed under Section 3 of Electricity Act 2003 has favoured the adoption of the AT&C loss method, as reproduced below:

> *"5(a) The State Commission may consider 'distribution margin' as basis for allowing returns in distribution business at an appropriate time. The Forum of Regulators should evolve a comprehensive approach on "distribution margin" within one year.* ***The considerations while preparing such an approach would, inter-alia, include issues such as reduction in Aggregate Technical and Commercial losses****, improving the standards of performance and reduction in cost of supply."* ***(Emphasis added)***

However, till date, only few SERCs like Delhi Electricity Regulatory Commission have adopted the AT&C loss approach for approving the ARR and tariff of distribution licensees. The Orissa Electricity Regulatory Commission has recognized AT&C Loss as a performance parameter for measuring, monitoring and controlling the efficiency of the operation of the distribution licensees, however, for approving the ARR and tariff, OERC has considered distribution loss targets and not the AT&C loss targets.

Further, it is not prudent to burden consumers who are paying bill on time for the licensees' inability to collect the billed amounts from certain consumers. Further, the inclusion of collection inefficiency by determining the tariffs on the basis of AT&C loss will result in further increase in the consumers' tariff, if collection efficiency is less than 100%. Considering this aspect and in view of issues discussed above, **it is proposed to continue with Distribution Loss approach for approving the ARR and tariff of**

Distribution Licensees in the State, with the trajectory of distribution loss being stipulated in the multi-year tariff order rather than being specified in the Regulations.

6.5 Non-Tariff Income

The existing JERC Tariff Regulations for Distribution, 2014 stipulate the following:

a) *"All incomes being incidental to electricity business and derived by the Licensee from sources, including but not limited to profit derived from disposal of assets, rents, delayed payment surcharge, meter rent (if any), income from investments other than contingency reserves, miscellaneous receipts from the consumers and income to Licensed business from the Other Business of the Distribution Licensee shall constitute Non-Tariff Income of the Licensee.*
b) *Interest on security deposits, in excess of the rate specified by the Commission shall be considered as Non-Tariff income of the Licensees.*
c) *The amount received by the Licensee on account of Non-Tariff Income shall be deducted from the aggregate revenue requirement in calculating the net revenue requirement of such Licensee."*

As the existing JERC Regulations do not provide much clarity regarding what parameters are considered as non-tariff income, the Commission proposes the below provisions for non-tariff income based on our review of regulations followed by various other SERCs in order to provide more clarity to licensees during their ARR filings:

The Non-Tariff Income shall inter-alia include:

a) Income from rent of 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, 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, etc.

The non-tariff income shall be deducted from ARR of the licensee to calculate the net ARR.

6.6 Determination of Wheeling Charges

The wheeling charges of the Distribution Licensee are to be determined by the Commission on the basis of an application for determination of tariff made by the Distribution Licensee in accordance with the MYT Regulations.

In this context, the APTEL in Judgment dated July 3, 2012 ruled as under:

> *"70. Thus, in accordance with the statutory regulations, the State Commission is required to specify the wheeling charges in Rs/unit and fixed/demand charges in any combination so as to ensure the recovery of the wheeling cost from the wheeling consumers and not to burden the other retail consumers in accordance with the provisions of the Electricity Act, 2003.*
>
> *71. Thus, the principle of recovery of wheeling charges has already been laid down by this Tribunal and accepted by the State Commission in the Regulations.* ***Therefore, it would be appropriate to direct the State Commission to determine the wheeling charges as a combination of fixed/demand charges in Rs. Per KW and variable charges in accordance with the regulatory provisions specifying the methodology to recover the wheeling charges****. Accordingly directed.*
>
> *72. The Appellant is also directed to co-operate with State Commission by furnishing required particulars to the State Commission to enable it to determine the wheeling charges in the light of the findings of this Tribunal and to pass an order in accordance with the law. Thus, this issue is decided in favour of the Appellant."* ***(emphasis added)***

In view of the above, the Commission shall specify the Wheeling Charge of Distribution Wires Business of the Distribution Licensee in its Order passed under sub-section (3) of Section 64 of the Act. The revenue from Wheeling Charges paid by the distribution system users under the above provision shall be used to reduce the Aggregate Revenue Requirement of the Wires Business to be recovered from the retail Consumers of the concerned Distribution Licensee. Further, wheeling charges payable by a distribution system user, other than the retail Consumers getting electricity supply from the same Distribution Licensee, may comprise any combination of fixed/demand charges, and variable charges, as may be stipulated by the Commission.

7 Retail Supply of Electricity

7.1 O&M Expenses

While specifying the normative O&M expenses for the retail supply business, one of the aspects to be considered is whether the normative O&M expenses should be specified in a consolidated manner or separately, as employee expenses, A&G expenses, and Repair & Maintenance expenses. Both options have their merits and de-merits. If the O&M expenses are specified in a consolidated manner, the utility has the flexibility to manage its expenditure through own resources (which will increase the employee expenses) or through outsourcing (which will increase the A&G expenses), as appropriate. However, under this dispensation, the variation in the individual heads of employee expenses, A&G expenses, and Repair & Maintenance expenses are difficult to track, and there are occasions when the Commission may wish to consider these separately, due to specific treatment to be given for pay revision, etc. This issue also depends on the nature of the business, i.e., transmission or distribution. However, based on past experiences and after reviewing the best practices across states, the Commission proposes that O&M expenses shall be continued to be considered separately as per the existing JERC Regulations.

In view of the above, it is proposed that distribution licensee shall submit the required O&M expenses for the Control Period as a part of Multi-Year Tariff Petition. The O&M expenses for the base year will be approved by the Commission taking into account the latest available audited accounts, business plan filed, estimates of the actuals for the base year, prudence check and any other factors considered appropriate by the Commission. The O&M expenses for the n^{th} year of the Control Period shall be approved based on the formula given below:

$$\mathbf{O\&M_n = (R\&M_n + EMP_n + A\&G_n) \times (1 - X_n) + Terminal\ Liabilities}$$

Where,

$R\&M_n = K \times GFA_{n-1} \times (WPI_{inflation})$

$EMPn = (EMPn\text{-}1) \times (1+Gn) \times (CPI_{inflation})$

$A\&G_n = (A\&G_{n-1}) \times (CPI_{inflation})$

'K' is a constant (expressed in %). Value of K for each Year of the Control Period shall be determined by the Commission in the MYT Tariff Order based on Licensee's filing, benchmarking of repair and maintenance expenses, approved repair and maintenance expenses vis-à-vis GFA approved by the Commission in past and any other factor considered appropriate by the Commission;

$CPI_{inflation}$ – is the increase in Consumer Price Index (CPI) for immediately preceding three Years before the base Year;

$WPI_{inflation}$ – is the average increase in the Wholesale Price Index (CPI) for immediately preceding three Years before the base Year;

EMP_n – Employee expenses of the Transmission Licensee for the nth Year;

$A\&G_n$ – Administrative and General expenses of the Transmission Licensee for the nth Year;

$R\&M_n$ – Repair and Maintenance expenses of the Transmission Licensee for the nth Year;

GFA_{n-1} – Gross Fixed Asset of the transmission Licensee for the n-1th Year;

X_n is an efficiency factor for nth Year. Value of X_n shall be determined by the Commission in the MYT Tariff Order based on Licensee's filing, benchmarking, approved cost by the Commission in past and any other factor the Commission feels appropriate;

G_n is a growth factor for the nth Year. Value of G_n shall be determined by the Commission in the MYT tariff order for meeting the additional manpower requirement based on Licensee's filings, benchmarking, approved cost by the Commission in past and any other factor that the Commission feels appropriate.

R&M expenses shall be indexed to WPI because R&M expenses mostly include purchases of industrial goods. The prices for these goods are more in line with WPI than CPI. Accordingly, employee and A&G expenses shall be indexed to CPI as the change in expenses for these components are more in line with CPI.

7.2 Norms of Working Capital for Retail Supply Business

All SERCs use a standard formula as norm for determination of working capital requirement, wherein O&M expenses as well as cost of maintenance spares is allowed, in addition to the receivables. Regarding inclusion of one month of O&M expenses as a part of the working capital requirement, as O&M expenses incurred for a given month are recoverable along with the tariff in the next month, the same needs to be a part of working capital. In addition, exclusion of the same may also have impact on the liquidity position of the utilities.

Further, the Regulations for control period starting from April 1, 2019 provide for a rebate of 1% if the payment is made within 30 days and a late payment surcharge of 1.5% in case the payment is delayed beyond 60 days. As the payments are to be made by the beneficiaries without surcharge within a period of 60 days, it is imperative that working capital towards 60 days receivables is provided.

Further, in order to obtain a better picture of existing norms, a sample of states spread across India were selected for review. The norms followed by the selected SERCs are as follows:

Table 5: Norms of Working Capital for Retail Supply Business adopted by SERCs

States	O&M Expenses	Maintenance spares	Receivables	Less: Power Purchase expenses
Himachal Pradesh	1 month	40% of R&M expenses for 1 month	Receivables for 2 months from sale of electricity – Security Deposit	1 month
Gujarat	1 month	1% of historical cost	1 month of expected revenue from sale of electricity at the prevailing tariffs - security deposit	
Maharashtra	1 month	1% of the opening GFA for the Year	1.5 month of expected revenue from sale of electricity at the prevailing tariffs, incl. CSS and AS-	1 month, incl. transmission and SLDC charges

			security deposits in cash or eq.	
Assam	1 month	15% of the O&M expenses	2 months of expected revenue sale of electricity at the prevailing tariff – security deposit	1 month

In view of the above, the following norms were proposed for the control period starting from April 1, 2019:

a) Operation and maintenance expenses for one (1) month; plus
b) Maintenance spares at 40% of R&M expenses for one (1) month; plus
c) Receivables equivalent to two (2) months of the expected revenue from Consumers at the prevailing tariffs;
Less
d) Amount, if any, held as security deposits under clause (b) of sub-section (1) of Section 47 of the Act from Consumers except the security deposits held in the form of Bank Guarantees

7.3 Provision for bad and doubtful debts

The existing JERC MYT Regulations, 2014 state the following:

> *"Bad and Doubtful Debt Bad shall be limited to 1% of the receivables in the true-up, subject to the condition that amount of bad and doubtful debt is actually written-off in the licensee's books of accounts."*

A slight change has been proposed in the existing regulation for Bad Debts written off i.e. instead of a fixed norm of 1%, the new norm will be based on the trend of actual write-off of bad debts in the previous years but limited to 1% of the annual revenue requirement of the distribution licensee. Further, any revenue realized from such write-off shall be included as an uncontrollable item under the Non-Tariff Income of the year in which such revenue is realised.

7.4 Non-Tariff Income

The existing JERC Tariff Regulations for Distribution, 2014 stipulate the following:

> a) *"All incomes being incidental to electricity business and derived by the Licensee from sources, including but not limited to profit derived from disposal of assets, rents, delayed payment surcharge, meter rent (if any), income from investments other than contingency reserves, miscellaneous receipts from the consumers and income to Licensed business from the Other Business of the Distribution Licensee shall constitute Non-Tariff Income of the Licensee.*
> b) *Interest on security deposits, in excess of the rate specified by the Commission shall be considered as Non-Tariff income of the Licensees.*
> c) *The amount received by the Licensee on account of Non-Tariff Income shall be deducted from the aggregate revenue requirement in calculating the net revenue requirement of such Licensee."*

As the existing JERC Regulations do not provide much clarity regarding what parameters are considered as non-tariff income, the Commission proposes the below provisions for non-tariff income based on our review of regulations followed by various other SERCs in order to provide more clarity to licensees during their ARR filings:

The Non-Tariff Income shall inter-alia include:

a) Income from rent of land or buildings
b) Income from sale of scrap
c) Income from statutory investments
d) Interest on advances to suppliers/contractors
e) Rental from staff quarters
f) Rental from contractors
g) Income from hire charges from contactors and others
h) Income from advertisements, etc.
i) Meter/metering equipment/service line rentals
j) Service charges
k) Customer charges
l) Recovery for theft and pilferage of energy
m) Rebate availed on account of timely payment of bills
n) Miscellaneous receipts
o) Deferred Income from grant, subsidy, etc., as per Annual Accounts
p) Prior period income, etc.

The non-tariff income shall be deducted from ARR of the licensee to calculate the net ARR.

7.5 Receipts on account of Cross-Subsidy Surcharge and Additional Surcharge

Any additional income from additional surcharge and cross-subsidy surcharge needs to be deducted in the computation of annual revenue requirement. Accordingly, the below provisions are proposed to be added for the control period starting from April 1, 2019:

a) The Cross-Subsidy Surcharge received by the Distribution Licensee in accordance with the JERC (Connectivity and Open Access in Intra-State Transmission and Distribution) Regulations, 2017, as amended from time to time, at the rate approved by the Commission shall be deducted from the Aggregate Revenue Requirement in calculating the tariff for Retail Supply of electricity by such Distribution Licensee, at the time of truing up.
b) The Additional surcharge received by the Distribution Licensee in accordance with the JERC (Connectivity and Open Access in Intra-State Transmission and Distribution) Regulations, 2017, as amended from time to time, at the rate approved by the Commission shall be deducted from the Aggregate Revenue Requirement in calculating the tariff for Retail Supply of electricity by such Distribution Licensee, at the time of truing up.

7.6 Determination of Tariff

Currently, states have different and complex tariff structure with several consumer categories and sub-categories. Further, the tariff is not reflective of the actual cost incurred by the utilities. The Ministry of

Power constituted two committees for simplification of tariff categories of consumers and rationalisation of tariff structure. Subsequently, changes were proposed in the Draft Tariff Policy issued in May 2018. The Central Electricity Authority had also issued a "consultation paper on open access", which identified tariff rationalisation as one of the issues.

The Delhi Electricity Regulatory Commission (DERC) also issued an approach paper on Tariff Rationalisation presenting the present structure of tariffs, issues and challenges with the current structure and the way forward:

"ARR of Distribution Licensees has two types of cost component based on their nature:

i) Fixed Cost: Fixed charges of Generating stations, Transmission charges, Return on Equity, Interest on Loan, Depreciation, Operation & Maintenance Charges etc.
ii) Variable Cost: Fuel Cost of Generating stations

Accordingly, the tariff for Distribution Licensees is also determined in two parts, comprising of Fixed Charge and Energy Charge.

Ideally the fixed cost should be recovered through fixed charges and variable cost should be recovered through energy charges of the tariff respectively. However, the present retail tariff applicable in most of the states in India includes only a part of the fixed cost into recovery as fixed charges, whereas major portion of the fixed cost is recovered through energy charge component of the retail tariff."

With this backdrop in mind, the Commission has proposed provisions in draft regulations, specifying broad principles for rationalisation of tariff. The foremost requirement is to assess the actual cost of supply to each category or sub-category of consumers. This shall help in analysing the current status cost coverage and cross subsidy and formulate a plan for rationalisation. The following provisions have been proposed in Regulations:

a) The Commission shall endeavour to determine cost of supply for each category/ sub-category of Consumers. The Commission shall endeavour to reduce gradually the cross-subsidy between Consumer categories with respect to the cost of supply in accordance with the provisions of the Act.

b) The tariff determination may be based on the following principles:

   i. The tariff for all categories shall be two part, consisting of fixed and variable charges.

   ii. The fixed charges in tariff shall progressively reflect actual fixed cost incurred by Distribution Licensee;

   iii. The overall Retail Supply tariff for different Consumer categories shall progressively reflect the cost of supply for different categories of Consumers;

   iv. The tariffs for residential Consumers shall be set considering the affordability of tariffs for various class of Consumers;

   v. The tariffs shall be set in such a manner that it may not present a tariff shock to any category of Consumers.