

**Comments/Suggestions from Power Foundation of India (PFI) on the  
Draft Maharashtra Electricity Regulatory Commission (Multi Year Tariff)  
Regulations, 2024**

- 1) PFI is a Policy Research and Advocacy entity, a registered society under the aegis of the Ministry of Power, Government of India, and supported by twelve leading Central Power Sector Organisations, to undertake evidence-based policy research and facilitate informed decision making by the Regulators, Ministry and stakeholders concerned with the Power Sector. It is led by Director General Shri Sanjiv Nandan Sahai (Former Secretary in Ministry of Power, Government of India).
- 2) Maharashtra Electricity Regulatory Commission (MERC) has sought comments / suggestions from various stakeholders on draft *MERC (Multi Year Tariff) Regulations, 2024*. MERC has for the first time introduced the concept of Ceiling Tariff in case of distribution of electricity in the same area by two or more Distribution Licensees which is noted to be in line with Section 62(1)(a) of the Electricity Act, 2003. Further, MERC in the said draft Regulations has for the first time provided detailed methodology for determining tariff for Battery Energy Storage System (BESS). PFI has accordingly reviewed and analysed the draft Regulations with respect to the initiatives for 'Ceiling Tariff' and BESS. Accordingly, the comments / suggestions of PFI on the said draft Regulations are as follows:

**A. CEILING TARIFF – GENERAL COMMENT**

- a) In the state of Maharashtra, the parallel licensee scenario is already operational in Mumbai City with the choice for consumer to changeover or switchover from one DISCOM to another. However, the Commission at present determines separate tariff for various DISCOMs operating in the common area. In the present draft Regulations, for conceptualizing the 'Ceiling Tariff', MERC has proposed to introduce :
  - i) Uniform Wheeling Charges
  - ii) Uniform Demand / Fixed Charges and
  - iii) Uniform Category wise Energy Charges
- b) However, the detailed methodology / procedure to determine various sub-heads of the Ceiling Tariff are not mentioned in the Regulations which will ensure competition and level playing field for the existing DISCOMs. Therefore, following aspects should have formed

part of the draft Regulations and comments / suggestions of the stakeholders should have been sought accordingly:

- i) What will be the methodology for computation of Ceiling Tariff ?
  - ii) How uniform Fixed Charges and Energy Charges will be determined when there are different and distinct PPAs of DISCOMs which have validity till 25 years, approved by the Commission, operating in same area ?
  - iii) How to ensure dip in revenue of a DISCOM due to migration of Sales towards more competitive DISCOM, payment liabilities of legacy PPAs (Fixed Cost), being legally enforceable and approved by the Commission, will be maintained ?
  - iv) Should there be a cross subsidy balancing fund and adjusting surplus/(gap) to cover the commitments arising from legacy PPAs entered to cater the DISCOM load ?
  - v) What will be the controllable and uncontrollable parameters in determination of Ceiling Tariff ?
- c) Therefore, it is suggested that MERC to incorporate the solutions to the issues listed above in the draft Regulations and accordingly seek comments / suggestions on the detailed procedure and computation of Ceiling Tariff.
- d) However, as of now, the comments / suggestions are split separately section wise in the subsequent paragraphs i.e., Uniform Wheeling Charges, Uniform Fixed Charges and Uniform Energy Charges.

#### **B. REGULATION 96- "UNIFORM WHEELING CHARGES"**

- a) In the present draft Regulations, following has been proposed for Uniform Wheeling Charges:

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

##### **A. Uniform Wheeling Charge for HT Consumers:**

(INR/kVAh) =

$$\Sigma(WHT_1, WHT_2, \dots, WHT_n) * 10 / \Sigma(EWHT-D1, EWHT-D2, \dots, EWHT-Dn)$$

Where,

$WHT_n$  = ARR of the  $n$ th Distribution Wires Business pertaining to HT level in INR Crore

$EWHT-D_n$  = Projected Wheeling Energy pertaining to HT level of  $n$ th Distribution Wires Business in Million kVAh or MkVAh.

**B. Uniform Wheeling Charge for LT Consumers:**

(INR/kWh) or (INR/kVAh) =

$$\frac{\sum(WLT_1, WLT_2, \dots, WLT_n) * 10}{\sum(EWLT-D_1, EWLT-D_2, \dots, EWLT-D_n)}$$

Where,

$WLT_n$  = ARR of the  $n$ th Distribution Wires Business pertaining to LT level in INR Crore

$EWLT-D_n$  = Projected Wheeling Energy pertaining to LT level of  $n$ th Distribution Wires Business in MU or MkVAh, as the case may be.

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

- b) It is to be noted that MERC has proposed uniform wheeling charges by computing cumulative Wires ARR of all DISCOMs operating in a particular area and dividing the same through summation of Sales of all DISCOMs in the same area. However, through the proposed mechanism it is always possible that one DISCOM will have surplus while another DISCOM will have deficit when compared with the standalone wheeling charges, as demonstrated in the Table below :

Particulars	DISCOM 1 (D1)	DISCOM 2 (D2)	DISCOM 3 (D3)
Wires ARR (Rs Cr)	x	y	z
Wheeling Sales (MU)	a	b	c
Wheeling charges (Rs/kWh)	$x/a * 10 = X$	$y/b * 10 = Y$	$z/c * 10 = Z$
Uniform Wheeling Charges (Rs/kWh)	$=(x+y+z)/(a+b+c) * 10 = Q$		
<p><b>Due to various reasons like difference in network ageing (old and new network) of D1, D2, D3 recovery of CAPEX through ARR, i.e., Return on Equity, Interest on Loan, Depreciation would be different for different DISCOMs.</b></p> <p><b>Let us take a case that there is an Open Access consumer in the geography of D1. Earlier D1 levied Wheeling Charges as X (Rs/kWh) to said Open Access consumer. When uniform Wheeling Charges introduced :</b></p>			

Particulars	DISCOM 1 (D1)	DISCOM 2 (D2)	DISCOM 3 (D3)
If $X < Q$	D1 will have profit as the standalone Wheeling charges (X) is less than the cumulative wheeling charges (Q) for all DISCOMs.		
If $X > Q$	D1 will be at loss as the standalone Wheeling charges (X) is less than the cumulative wheeling charges (Q) for all DISCOMs.		

- c) As tabulated above, there will be the scenario where one DISCOM will have surplus while another DISCOM will have deficit when compared with its standalone wheeling charges. The networks are established to cater to different consumers and demand mix, thus cost of averaging of network as mentioned in the draft Regulations is not appropriate methodology. Further, through such methodology **recovery of surplus/deficit**, created if any (as tabulated above), in wheeling charges is not mentioned in the draft Regulations which will create Regulatory imbalance for DISCOMs and Open Access consumers.

#### C. REGULATION 111- "UNIFORM DEMAND OR FIXED CHARGES"

- a) In the draft MYT Regulations, 2024 following has been proposed for Uniform Fixed/ Demand charges:

*"111.2 In case more than one Distribution Licensees are operating within the same geographic area, the Commission shall determine consumer category wise uniform Demand / Fixed Charges for all Distribution Licensee in that area:*

*Provided that the determination of such Uniform Demand/Fixed Charges by the Commission, shall be same for a specific consumer category across all the Distribution Licensees in that area."*

- b) At the foremost, it is to be noted that MERC has not specified any specific methodology for determining the uniform Demand/Fixed charges for consumer categories across all the Distribution Licensees operating within the same geographic area.
- c) Fixed charges are levied to recover Fixed Cost of DISCOMs. Fixed Cost of DISCOMs comprises of Fixed Cost of GENCOs, Transmission Charges and Fixed Cost of DISCOMs.
- d) Further, it is not specified in the draft Regulations as to how we can have uniform Fixed charges for different and distinct DISCOMs operating in the same region when we have different parameter for each DISCOM like Power Purchase portfolio (legacy PPAs), O&M

Cost, Loan Rates, etc. All these parameters combined together forms part of the Aggregate Revenue Requirement (ARR) of DISCOMs.

- e) Diagrammatic representation of this issue is combined with the ceiling tariff (Rs./kWh) in subsequent paragraphs.

#### **D. REGULATION 112- “DETERMINATION OF THE ‘CEILING TARIFF’”**

- a) Section 62(1)(a) of the Electricity Act, 2003 proposes the enabling provisions for determination of the Ceiling Tariff by the Commission. However, the methodology for determination of Ceiling Tariff has not been specified in the MERC MYT Regulations, 2019. With prevailing parallel licensee operation in Mumbai and anticipating similar such parallel license operation in the State, MERC has proposed the following provisions for Ceiling tariff:

*“112.2 In case more than one Distribution Licensees are operating within the same geographical area, the Commission shall determine ‘Ceiling Tariff’ in that area of supply within **three years** from the date of operationalisation of the second distribution licensee or if the difference between Average Cost of Supply for Retail Supply Business of such licensees is **less than INR 0.50/kVAh (or kWh) or any other higher number**, as decided by the Commission subject to the **maximum upto INR 1.00/kVAh (or kWh)**, whichever is earlier.*

*112.3 Ceiling Tariff’ shall be determined based on following methodology:*

- a. **Uniform Wheeling Charges** shall be determined as per Regulation 96 A*
- b. **Uniform Demand/Fixed Charges** shall be decided as per Regulation 111.2.*
- c. **Consumer category-wise or uniform ceiling rate for Energy Charge** shall be decided to ensure that approved Retail Supply Aggregate Revenue Requirement of respective Distribution Licensee shall be recovered without creating revenue gap of **more than 10%** or any other number decided by the Commission by considering the approved sales forecast for that Distribution Licensee.*
- d. Energy Charge for certain category of consumers which requires to be provided with lower tariff, shall be fixed by the Commission and licensee shall levy same tariff to such consumer category:  
Provided that to maintain level playing field, parallel licensees in that area shall endeavour to **maintain proportion of sales of such consumer***

*categories in its total sales for a given month equal to proportion of total sale of such consumer categories in total sales in that area.*

*Provided further that in case any Distribution Licensee not able to maintain such proportion of sales of such consumer categories then it shall pay for quantum of such lower proportion 'at the rate of prevalent **cross-subsidy** for such consumer category (i.e. difference of Average Billing Rate and Average Cost of Supply of licensee with higher proportion of sale of such consumer category)' for such consumer category to other parallel Distribution Licensee who has higher proportion of such sales on monthly basis.*

- e. *Distribution Licensee may offer 'Energy Charge' lower than Ceiling Energy Charge approved by the Commission:*

*Provided that Distribution licensee may revise such 'Energy Charge' on quarterly basis to factor in variation in power purchase expenses:*

*Provided further that during 'Ceiling Tariff' situation, Distribution Licensee may undertake new power procurement without seeking prior approval of the Commission.*

- f. **No True-up** of Retail Supply Business of Distribution Licensees subjected to 'Ceiling Tariff' shall be undertaken under these Regulations.

*Provided further that under 'Ceiling Tariff' circumstances, Distribution Licensee shall incorporate  $Z_{FAC}$  in their Energy Charge.*

*112.4 Based on above principles, the Commission in its Tariff Order granting 'Ceiling Tariff' shall laydown detailed procedure for the implementation of the 'Ceiling Tariff'*

- b) As above, MERC has proposed that in case more than one Distribution Licensees are operating within the same geographical area, the Commission will determine 'Ceiling Tariff' in that area of supply within 3 years from the date of operationalisation of the second distribution licensee or if the difference between ACoS for Retail Supply Business of such licensees is less than INR 0.50/kVAh (or kWh) or any other higher number, as decided by the Commission subject to the maximum upto INR 1.00/kVAh.
- c) MERC has however, not proposed any reasoning for capping the difference between ACoS for Retail Supply Business of licensees upto Rs 1.00/ kVAh.
- d) Further, it is not specified in the Regulations as to how we can have a ceiling tariff for different and distinct DISCOMs operating in the same region when we have different

parameter for each DISCOM like Sales mix, Power Purchase portfolio, cost of supply, revenue recovery, etc. ?

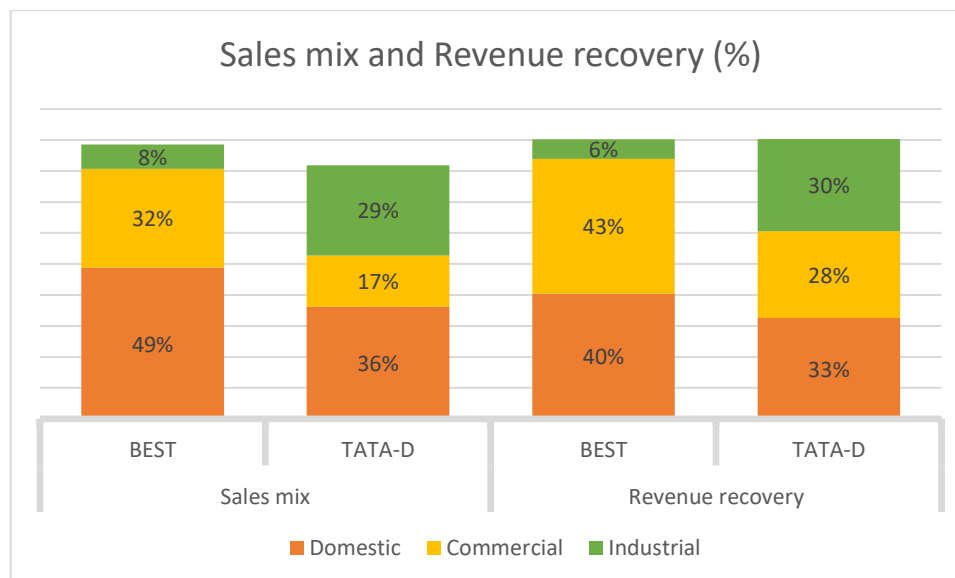
- e) Produced below is the snapshot of different parameters for BEST and TATA Power-D that shows that the aforesaid parameters varies significantly across the DISCOMs:

Parameters	BEST		TATA POWER-D	
<b>Sales (MU)</b>	4078.43		5331.57	
<i>Domestic</i>	1987.72		1929.75	
<i>Commercial</i>	1305.11		881.8	
<i>Industrial</i>	318.57		1555.05	
<i>Others</i>	467.03		356.93	
Power Purchase Quantum (MU)	4,407.20		4,952.87	
Power Purchase Cost (Rs. Cr.)	2,790.15		2,852.16	
Average Power Purchase Cost (Rs/kWh)	6.33		5.76	
<b>Other ARR Items (RoE+IoL+Dep-NTI+O&amp;M)</b>	873.52		561.43	
<b>Fixed Cost component (as per MERC)</b>	73%		52%	
<b>Supply ARR (Rs. Cr.)</b>	3,048.89		2993.57	
<b>Wire ARR (Rs. Cr.)</b>	614.78		420.02	
<b>Revenue</b>				
<b>Tariff</b>	<b>Fixed Charges</b>	<b>Energy Charges</b>	<b>Fixed Charges</b>	<b>Energy Charges</b>
<b>Domestic</b>				
0-100 units	75	1.74	75	1.75
101-300 units	115	4.37	115	4.30
301-500 units	115	7.21	115	7.75
>500 units	140	8.77	140	8.45
<b>Commercial</b>				
≤ 20 kW load	405	5.13	405	5.00
> 20 kW and ≤ 50 kW load	335	5.17	335	5.05
<b>Industrial (LT)</b>				
Upto 20 kW load	405	4.75	405	4.60
Above 20 kW load	335	5.02	335	4.80
<b>Industrial (HT)</b>	335	5.55	335	5.19
<b>Revenue (Rs. Cr.)</b>	3,390.29		3,149.81	
<i>Domestic</i>	1371.47		1026.02	
<i>Commercial</i>	1474.47		882.31	
<i>Industrial</i>	214.11		935.79	

Parameters	BEST	TATA POWER-D
Others	330.24	305.69

Source- True-Up Orders for FY 2021-22

- f) As shown in the Table above, there is significant variation between the parameters of BEST and TATA-D. Variation in Sales mix and Revenue recovery is shown below:



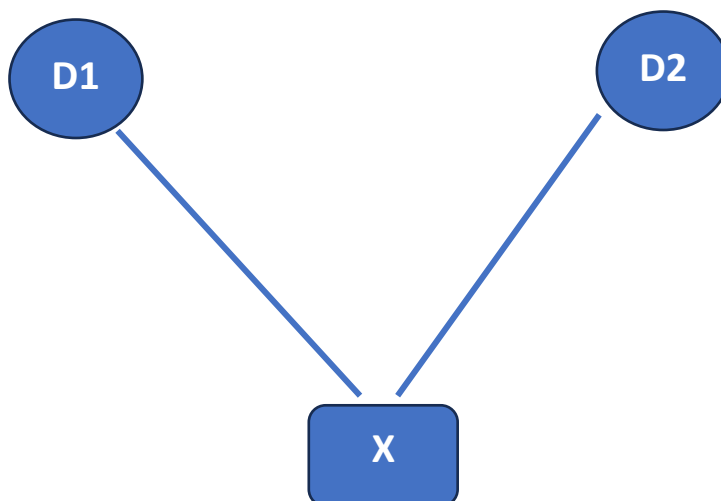
- g) Further, the Power purchase cost and other CAPEX items in the ARR also varies among the DISCOMs as shown below:

*(as % of the total ARR)*

Particulars	BEST	TATA-D
Power Purchase cost	76%	84%
Other cost elements in the ARR	24%	16%

- h) So, deriving the Ceiling tariff by aggregating the costs of DISCOMs operating in the same geographical area, i.e., Power Purchase Cost, O&M Cost, Financing Cost, Depreciation, Return on Equity etc., will only result in deviation from recovering the actual cost of Supply of a DISCOM which in turn may lead to loss of competition among the DISCOMs.
- i) Legally, PPA cost (Fixed Cost and Variable Cost) of a DISCOM cannot be loaded to other DISCOM. So, determining uniform Demand charges based on the pooling of Fixed Cost of individual DISCOMs will cripple the cash flow of the DISCOMs whose Fixed Cost obligation is higher than other DISCOM and now recovered less through uniform Fixed Charges.
- j) The modalities of uniform Ceiling Tariff despite having different Cost of Supply is depicted as follows:



**Assumptions:**

- D1 and D2 are two DISCOMs operating in the same geographical area.
  - D1 has cheaper Power purchase portfolio as compared to D2 and has lesser ACoS (Average cost of Supply) than D2.
  - X is aggregation of D1 and D2 used for computing the Ceiling Tariff, as per the proposed mechanism, combining the sales mix and expenses of D1 and D2 and deriving numbers on average basis for the sake of simplicity.
- k) The Energy Charge Rate as per the proposed Ceiling tariff concept may be as follows:

(Rs./kWh)			
Consumer category	D1	D2	X
Domestic	5	7	6
Commercial	6	8	7
Industrial	7	9	8

- l) As tabulated above, Energy Charge Rate of D1 is less than that of X while Energy Charge Rate of D2 is more than that of X. So, D1 will always have profit while D2 will bear the loss in the proposed mechanism of Ceiling Tariff.
- m) Further, MERC has proposed that parallel licensees in an area shall endeavour to maintain proportion of sales of such consumer categories in its total sales for a given month equal to proportion of total sale of such consumer categories in total sales in that area. In case any Distribution Licensee not able to maintain such proportion of sales of such consumer categories then it shall pay for quantum of such lower proportion 'at the rate of prevalent cross-subsidy for such consumer category (i.e. difference of ABR and ACoS of licensee with higher proportion of sale of such consumer category)' for such

consumer category to other parallel Distribution Licensee who has higher proportion of such sales on monthly basis.

- n) It is to be noted that the said draft Regulations specifically provides the variation in Sales as an “Uncontrollable factor” which means that the licensee does not have any control over the quantum of Sales in its area of supply. So, it is contrary to the above proposed provisions of Ceiling tariff which mandates the licensee to maintain proportion of sales of such consumer categories for which  $ABR < ACoS$  in total sales in that area.

**Therefore, to summarise, it is submitted that formulation of Ceiling Tariff should be executed in such a way that it promotes Competition in distribution sector promoting different DISCOMs to supply electricity in a particular region. But such competition should take care of the recovery of existing cost of legally enforceable different & distinct Power Purchase Agreements of multiple DISCOMs operating in the same region. Since, Ceiling Tariff is arriving out by aggregating / considering the costs of all DISCOMs operating in a particular region i.e., Power Purchase Cost, O&M Cost, Financing Cost, Depreciation, Return on Equity etc.**

**Accordingly, it is submitted that the methodology for computation of such Ceiling Tariff (Fixed/Demand Charges and Energy Charges) should be part of the said Regulations which is currently not present and stakeholders comments should be sought on such methodology before determining category wise Ceiling Tariff.**

**E. REGULATIONS 137- “Determination of Tariff of Standalone Battery Energy Storage System (BESS)”**

- a) BESS is an emerging technology evolving at faster pace considering the need of the hour to provide RTC RE. Ministry of Power vide Order dated 15/03/2024 has approved scheme for Viability Gap Funding (VGF) for development of BESS with total outlay of Rs. 9,400 Cr..
- b) However, it is noted that MERC has not provided trajectory for Capital Cost to be considered in the Control Period governed by these Regulations. Such trajectory is essential for a developer to better assess the Regulatory framework for investing in this technology.
- c) Trajectory for CAPEX of BESS has been mentioned in ATB (Annual Technology Baseline) report 2023 released by NREL (National Renewable Energy Laboratory) and National Electricity Plan 2022 of Central Electricity Authority (CEA) which may be suitably considered by MERC for the Control Period.

### **Operating Parameters for BESS**

- a) BESS efficiency plays a major role in tariff and should be evaluated carefully as it includes the energy for charging the battery.
- b) As per draft Regulation 137 of the said Regulations, it is noted that Round-trip Efficiency of BESS shall be minimum 75% for each monthly operating period which is significantly lower than the global standards. NREL 2023 ATB and GUVNL Phase-II Standalone BESS tender has considered Round trip efficiency of BESS as 85% which may be considered by MERC.

### **Return on Equity (RoE)**

- a) MERC has considered RoE of Standalone BESS as 18% post tax. However, CERC in its *draft (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations 2024* has considered the RoE of 14% post tax for all projects stipulated in the said Regulations except for SHP which is 14.5% post tax.
- b) It is noted that when Solar and Wind technologies were in the nascent stage, then also *MERC (Terms and Conditions for determination of RE Tariff) Regulations, 2010* provided 19% pre-tax RoE for Solar and Wind. Further, the risk associated with RE technologies at that point of time was also substantial including timely availability of land, timely revenue recovery from DISCOMs, regulatory risks to avoid time overrun and cost overrun etc. Similar or even lesser risk is associated with BESS currently. Therefore, post-tax 18% RoE for BESS appears to be on higher side as compared to 19% pre-tax RoE for Solar and Wind during 2010 provided by MERC.
- c) Further, Ministry of Power vide its order dated 15/03/2024 has notified Viability Gap Funding scheme for standalone BESS. Considering the financial assistance under VFG scheme which is capped at Rs. 96 lakh/MWh or 40% of the capital cost, Return on Equity (18% post tax) under these Regulations is on higher side which must be kept lower or at par with RoE of conventional Power Plants (15.5% post tax) where no financial assistance is available.

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