Chhattisgarh State Electricity Regulatory Commission (Terms and Conditions for determination of tariff according to Multi-Year Tariff principles and Methodology and Procedure for determination of Expected revenue from Tariff and Charges) Regulations, 2021 *[Draft]*

Chhattisgarh State Electricity Regulatory Commission released draft CSERC (Terms and Conditions for determination of tariff according to Multi-Year Tariff principles and Methodology and Procedure for determination of Expected revenue from Tariff and Charges) Regulations, 2021 based on the objections/suggestions/comments received on the Draft MYT Regulations, 2020. The important highlights of this draft regulation are given below:

❖ General principles listed in the regulation are shown below:

General Principle	
Control Period	FY 2022-23 to FY 2024-25
Capital Investment Plan	Approval for entire control period to be determined before start of control period
Mid-Term Review	No such provision (due to 3 years Control Period)
Determination of Tariff	Each year of control period
Truing up	Preceding year prior to commencement of next control period
Pass Through of gains or losses on account of uncontrollable factors	Net gains/losses passed on to beneficiaries/consumers through next ARR
Sharing of gains or losses for efficiency linked controllable items	Net Gain: **2:1** (Beneficiary/Consumer(s) : Licensee) Net Loss: **1:1** (Beneficiary/Consumer(s) : Licensee)
Sharing of gains on account of over achievement of target set for energy losses	**1:1** (Beneficiary/Consumer(s) : Licensee)

Financial Principles:

❖ **Return on Equity (Regulation 23):**
- 14% for Generation, Transmission & SLDC.
- 16% for Distribution
- Grossed up by MAT rate
- Rate of pre-tax RoE = Base Rate / (1- MAT Rate)

❖ **Depreciation (Regulation 25):**
- Value Base = Capital Cost of the asset
- Straight Line Method
- Depreciation on new assets will be charged on **day-wise** pro-rata basis during the first year of the COD of the asset.

❖ **Working Capital (Regulation 26):**
- For Coal-based Generating Stations:
  - Cost of coal – 10 days (pit-head), 20 days (non-pit-head)
  - Cost of secondary fuel oil for one month
  - Maintenance & General Expenses for 15 days

        - Maintenance spares @ 20% of O&M Expenses (in case of new generating stations: % of opening GFA)
        - Receivables equivalent to 1 month of capacity charges & energy charges
    - Transmission:
        - Maintenance & General Expenses for 15 days
        - Maintenance spares @ 20% of O&M Expenses
        - Receivables equivalent to 1 month of fixed cost
    - Distribution Wheeling :
        - Maintenance & General Expenses for 15 days
        - Maintenance spares @ 20% of O&M Expenses
        - One month equivalent of the revenue from charges for use of Distribution wires at prevailing tariffs
    - Retail Supply:
        - Maintenance & General Expenses for 15 days
        - Maintenance spares @ 20% of O&M Expenses
        - Receivables equivalent to 1 month of the revenue from sale of electricity at the prevailing tariffs
- **Interest on Working Capital (Regulation 26):** SBI MCLR (one year tenor) + 200 bps (prevailing on 30th Sept. of current FY).
- **O&M Expenses (Regulation 40.5, 73.5, 84.4, 93.6, 102.5):**
    - **Human Resource Expenses:**
        - Employee Costs
        - Impact of Pay revision
        - Manpower deployed on outsourcing basis
        - **Consideration of CPI (IW) for normalisation of Employee Cost**
    - **Maintenance & General Expenses:**
        - A&G Expenses
        - R&M Expenses
        - **Consideration of WPI for normalisation of A&G and R&M Expenses**
        - Base year M&G expenses for FY 2022-23 considered at 51% of O&M expenses allowed in the CERC (Terms & Conditions of Tariff) Regulation, 2019 & projections @ escalation of 3.5% for the remaining year of the control period.
- **Non-tariff Income (Regulation 41, 73.7, 84.6, 95):**
    - Disposal of assets
    - Income from investments, rents
    - **Disposed value of scrap/assets after adjusting its depreciated value**
    - Rental income for using assets which includes receipts against advertisements
    - Interest on advances to suppliers/contractors
- **Income from Other Business (Generation) (Regulation 42):**
    - 2/3rd of the income from will be deducted from the Aggregate Revenue Requirement.
    - **1/3rd of the income from such other business shall be retained by generator**.
- **Allocation Matrix (Distribution Wheeling Business) (Regulation 81):**

Particulars	Distribution Wheeling Business (%)	Retail Supply Business (%)
Power Purchase Expenses	-	100
Inter-State Transmission Charges	-	100
Intra-State Transmission Charges	-	100
Operation & Maintenance Expenses:		
Human Resource Expenses	65	35
Maintenance & General Expenses:		
Repair & Maintenance Expenses	**90**	**10**
Administrative and General Expenses	90	10
Depreciation	90	10
Interest on Long-term Loan Capital	90	10
Interest on Working Capital	10	90
Contribution to Pension and Gratuity Fund	65	35
Provision for bad and doubtful debts	10	90
Return on Equity	90	10
Income Tax	90	10

- A new chapter **Determination of Input Price of Coal and Lignite from Integrated Mine** is added (Chapter 5).
- **Determination of Input Price of Coal and Lignite from Integrated Mine:**
  - Input Price of coal and lignite for energy charges:
    - Determined by the Commission, before that, price will be adopted from the notified price of Coal India Limited commensurate with the grade of the coal from the integrated mine
    - Input price of coal from the integrated mine(s) will be trued up yearly

Input Price of Coal = Run of Mine (ROM) Cost + Additional Charges;

1. Run of Mine Cost components & calculations (Regulation 53):

i. When allocated through auction mode:
ROM Cost = (Quoted Price of Coal) + (Fixed Reserve Price)
Where,
a. Quoted Price of coal is the Final Price Offer of coal in respect of the concerned coal block or mine, along with subsequent escalation, if any, as provided in the Coal Mine Development and Production Agreement
b. Fixed Reserve Price is the fixed reserve price per tonne along with subsequent escalation, if any, as provided in the Coal Mine Development and Production Agreement

ii. When allocated through allotment route:

ROM Cost = [(Annual Extraction Cost / ATQ) + Mining Charge] + (Fixed Reserve Price)

Where,

a. Annual Extraction Cost is the cost of extraction of coal as computed in accordance with Regulation 36F of these regulations
b. Mining Charge is the charge per tonne of coal paid by the generating company to the Mine Developer and Operator engaged by the generating company for mining, wherever applicable
c. Fixed Reserve Price is the fixed reserve price per tonne along with subsequent escalation, if any, as provided in the Coal Mine Development and Production Agreement

2. Additional Charges components & calculations (Regulation 54):

i. Crushing Charges = Annual Crushing Cost / Quantity
ii. Transportation Charges = Annual Transportation Cost / Quantity
iii. Handling charges = Annual Handling Cost / Quantity; and
iv. Washing Charges = Annual Washing Cost / Quantity

The CSERC MYT Regulations, 2021 (Draft) can be accessed here

CER's Opinion:

We are pleased to note that several inputs given on the previous draft of the regulations have been incorporated in this revised draft[1]. Some important ones are highlighted here along with additional ones for consideration.

1) **Efficiency factor in MYT Regulation:**

It is proposed to incorporate appropriate efficiency parameters in tariff as an incentive measure to encourage continual improvement across cost components. For example, the current practice of approving norm based O&M Expenses adjusted by the appropriate price index should also incorporate as explained below:

$$O\&M_t = O\&M_{t-1} \times \left(1+ \frac{\text{Price Index}_t}{\text{Price Index}_{t-1}} - X_t^{O\&M}\right)$$

Where,

O&M - O&M expenditure norm;
Price Index – Consumer Price Index for Industrial Workers (Base year - 2016);
$X_t^{O\&M}$ – Factor representing an annual target for efficiency improvement in O&M.

Determining the X-factor:
Appropriate benchmarking studies (for example, Data Envelopment Analysis) should be conducted to set benchmark for efficiency improvement across individual 'controllable' cost parameters across the MYT control period. Since such studies take time, it is suggested that the regulation may incorporate the above suggested approach in principle, and specify a conservative factor keeping in view the actual norm set by the other ERCs. The X-factor should be linked to a target level of identified efficiency index. Such an index may be based on availability for generation and transmission, and reliability of electricity supply to consumers (Example - SAIDI/SAIFI).

An alternate approach may be adopted wherein norm for individual controllable and partially controllable cost parameters such as Employee cost, R&M and A&G. It is advisable that a trajectory for efficiency factor should ideally be provided in advance for each year of the MYT control period.

2) **Return on Equity (Regulation 23.3):**

As Capital Asset Pricing Model (CAPM), often used for calculating return on equity, provides an estimate of post-tax RoE that should not be grossed up by the rate of

[1] For further details and comments given herein, refer to CER's 1st Regulatory Manthan on Developing A Multi-year Tariff framework: Insights and Discussion on the Draft Regulation of Gujarat and Chhattisgarh (https://cer.iitk.ac.in/RM/rm1) and CER's Newsletter Volume 03 Issue 03. (https://cer.iitk.ac.in/newsletters/regulatory_insights/Volume03_Issue03.pdf#page=4)

effective tax. Adoption of such approach across the sector is erroneous, and provides excess return. This places additional burden on tariff paid by the consumers.

A recent study at CER, IITK using CAPM and multi-factor models, using a comprehensive data for over 125 infrastructure companies between 1998-2018, estimates the cost of equity for conventional generation sector to range between 12.86-16.52%, on a post-tax basis, refer Figure 1: Cost of Equity – CAPM and Three-Factor Model.

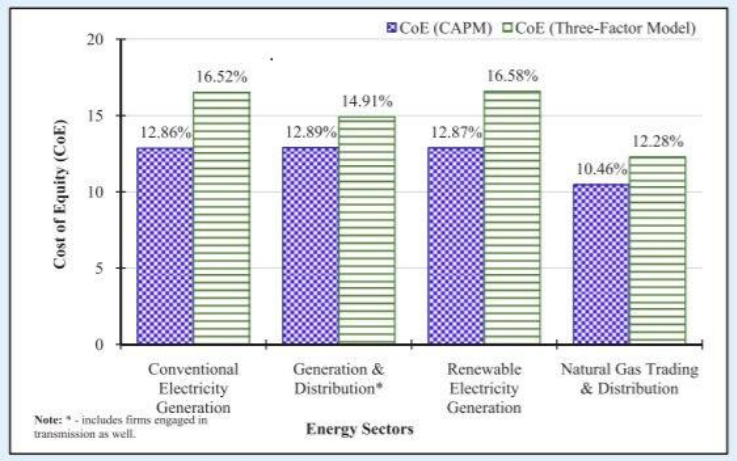

Figure 1: Cost of Equity – CAPM and Three-Factor Model
Refer: Regulatory Insight - Volume 03 Issue 01
(Link - https://cer.iitk.ac.in/newsletters/regulatory_insights/Volume03_Issue01.pdf)

3) **Pre- or Post-tax RoE? :**

As per Section 23.1 of the draft regulation, "Return on equity shall be computed on **pre-tax basis** in accordance with Regulation 23.2 and to be grossed up as per Regulation 23.3". (Emphasis added)
Given that the above mentioned return is being grossed up by the effective rate of tax, it should be called a **post-tax RoE** instead.

4) **Working Capital (Regulation 26):**

It needs to be clarified that Maintenance & General expense also includes expenditure towards consumption of maintenance spares; if so, then the maintenance spares at 20% of O&M expenses should be excluded from the definition of working capital to avoid double counting.

5) **Applicability of NAPAF & NAPLF beyond the MYT Control Period (Regulation 43.1 & 43.2):**

The proposed regulation are applicable till FY 2024-25. Therefore referring to the NAPAF & NAPLF for HTPS up to FY 2026-27 is not desirable.

6) **Relaxation in Gross Station Heat Rate of 500 MW series plants (Regulation 43.3):**

It needs to be clarified that is there any reason for proposing higher norms for 500 MW series plants (2390 kcal/kWh) on account of gross station heat rate in the draft

regulation, as these plants are efficient than 300 MW series plants.

7) <u>Upper limit for Input Coal Price (Regulation 49):</u>

It is suggested that in the case of integrated mine(s), the input coal price determine by the Commission should be limited to the lower of market price or the FOB price (excluding all taxes & levies) at Coal India Limited for the equivalent grade. This would ensure that the mine operator adopts the efficient and cost-effective practices for various mining operations.

8) Chapter 5 of the draft regulation refers to the Regulation 36D, 36E, 36F, 46.2 and 46.3. These regulations are not included in the draft regulations, and hence need to be appropriately incorporated and referred to.