

TARIFF DETERMINATION PROCEDURE



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1. Introduction

Under the Electricity Act 2003, the tariff for Distribution Licensees is determined by the State Commissions. The tariff is determined on a Cost Plus basis by the State Commission as per tariff regulations. Cost Plus determination of tariff implies that the tariff determined under this process recovers all the cost of the Distribution Licensee and adds a specific amount as a return.

Section 61 of the Electricity Act authorizes the State Commission to specify terms and conditions for determination of tariff and Section 62 of the Electricity Act state:

“The Appropriate Commission shall determine the tariff in accordance with the provisions of this Act for

...

(d) retail sale of electricity ...”

The Electricity Act also provides for public information, public hearings, and stakeholder consultations before determining tariffs. The process of determination tariff is dealt with scrutiny under regulatory prudence so that no burden is transferred unfairly to the consumer.

This document provides information on the tariff determination process by regulatory commissions. We are thankful to Prayas Energy Group for their publications which helped us making this document.

2. Tariff Regulations

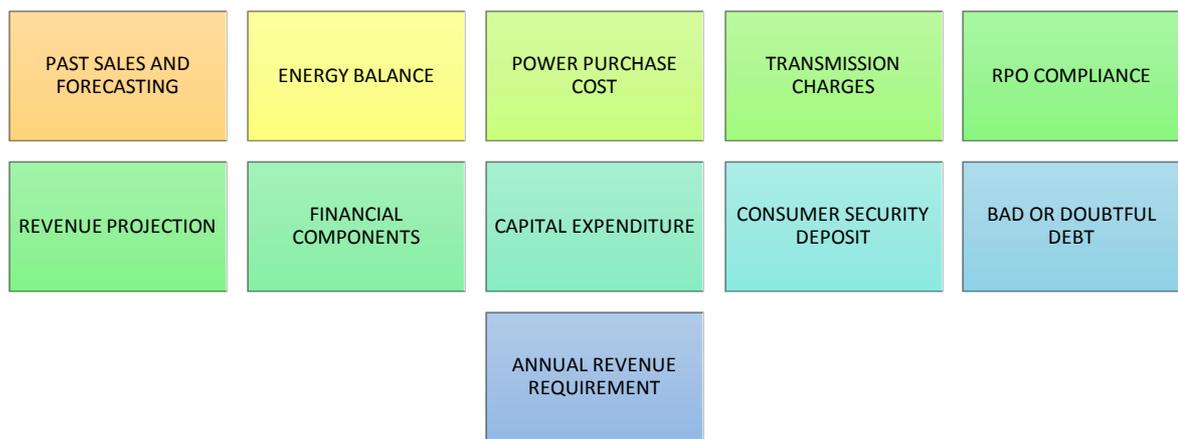
The State Commissions specify the regulatory framework for the determination of tariff in accordance with Section 61 of the Electricity Act. The regulatory framework also forms the guiding principles under which a tariff petition is drafted and filed before the commission. The State Commission considers the propositions made in the petition from the regulations’ view, compliance of earlier orders and directives, safeguarding of consumer interest, and determines tariff so that cost of electricity is recovered reasonably. The Rajasthan Electricity Regulatory Commission (RERC) has also specified multiyear tariff regulations periodically and determines tariff as per RERC (Terms and Conditions for Determination of Tariff) Regulations, 2019 currently.

3. Major Components of Tariff Petition

A tariff petition is an extensive document that contains a lot of information regarding the financial and operational capacity of Discoms. It provides an estimate of total energy requirement and sales forecast for the Discoms, sources of electricity to meet this requirement, cost of purchase of power, operation and maintenance expenses, other

expenses to be made in compliance with of commission’s directives or earlier tariff orders, proposed tariff schedules and other information. A tariff petition may also have some additional information, such as

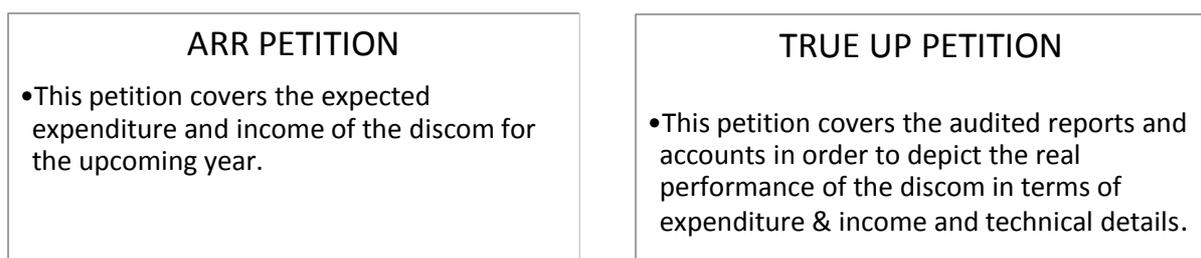
1. Reply to directives given by commission in the previous year
2. Treatment of carrying cost
3. Indicative tariff schedule
4. Amendments such as the addition of a new consumer category, merging of consumer categories, rebates or incentives for consumer categories, etc.



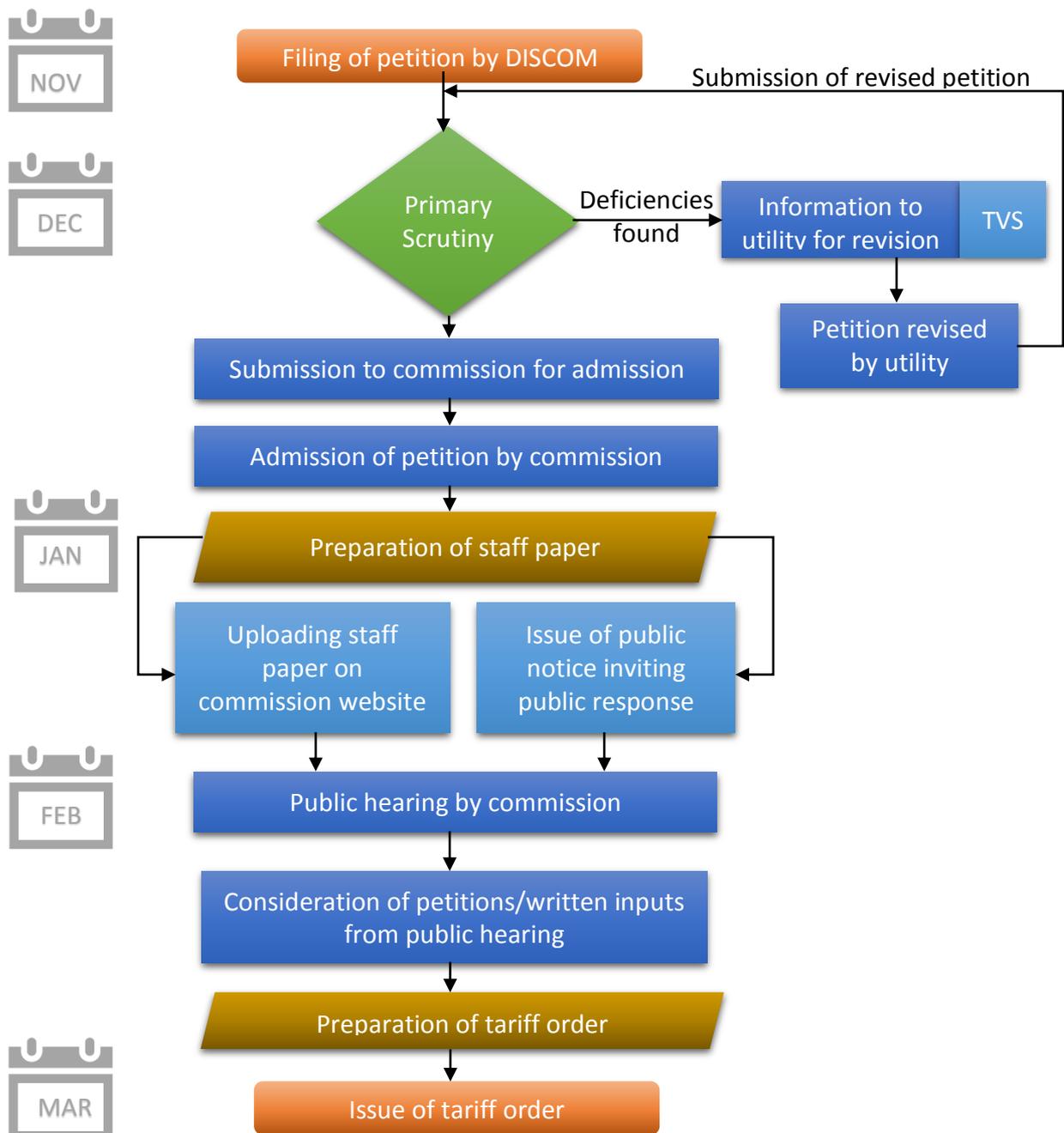
4. Tariff Determination Procedure

The first step of tariff determination is filling with tariff petition or ARR petition by Discoms. This petition gives an estimate of overall revenue requirements including Power Purchase Costs, O&M Expense, Capital investments, etc. and the proposed tariff required to meet this revenue requirement. The petition also provides an in-depth overview of the financial, operational, and technical situation of Discoms.

In Rajasthan, the Discoms file ARR petition to RERC which are reviewed, and any clarifications, missing information, or data gaps are asked from the Discoms. TVS (Technical Verification Session) is called upon thereafter and companies submit the revised petition for admission. Though there are specific timelines for filing these petitions, it is often seen that the Discoms do not adhere to those timelines. The two petitions filed as a process of tariff determination are:



The petitions are published in the public domain on the commission’s website, Discoms’ websites, and major newspapers and are also available in all subdivisions of the Discoms. Comments and suggestions are invited from consumers on these petitions through advertisements and notices. Public hearings are conducted with participation from a consumer before finalizing the tariff order. Points raised by consumers and responses received are considered while preparing the tariff order. A flowchart of a typical tariff petition filing process is given below:



5. Factors for Tariff Determination

The determination of the Tariff is dependent on various factors which can be segregated as Controllable and Uncontrollable. Controllable factors are those which are in control of Discoms, whereas uncontrollable factors as the name suggests are beyond the control of and could not be determined by Discoms. The various controllable and uncontrollable factors are as follows:

Controllable Factor

- Expenses controlled by
 - Optimisation of resources
 - Management level discussions
- Variation in technical and commercial losses
- Variation in performance parameters
- Capitalization on account of time and cost overruns
- Variation in interest and financial charges
- Interest on working capital
- O&M expenses

Uncontrollable Factor

- Force Majeure
- Change in Law
- Variation in Sales
- Variation in cost of power purchase from approved sources
- Variation in market interest rates for long term loans

6. Computation of Tariff Components

- a) Sales: Sales of Discom is gauged by calculating the Compound Annual growth rate for electricity Sales in the previous year.
- b) Energy Balance: Energy balance quantifies the amount of energy Distribution Company is deficit/surplus with. It is calculated by the following formulas:

Energy available at state periphery = Energy available from central generating plant – Interstate transmission loss + Energy available from state generation plant

Energy Surplus or deficit = Energy available at state periphery – Energy requirement at state periphery

- c) Distribution losses:
The losses incurring at the distribution level are also considered for tariff determination. This also reflects the operational efficiency of Distribution Companies in the distribution of power. Distribution losses are calculated by taking billing efficiency and collecting efficiency.

$$\text{Billing Efficiency} = \frac{\text{Total energy billed to consumers (kWh)}}{\text{Total Energy Input (kWh)}}$$

$$\text{Collection Efficiency} = \frac{\text{Revenue Collected (INR)}}{\text{Billed Amount (INR)}}$$

$$\text{AT\&C Losses} = \{1 - (\text{Billing efficiency} \times \text{Collection efficiency})\} \times 100$$

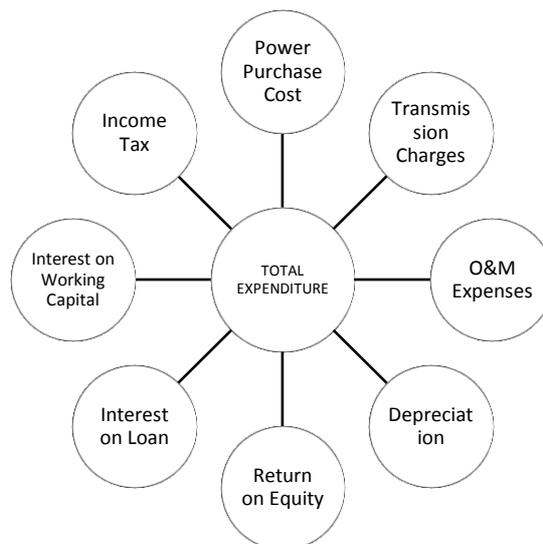
- d) Power purchase cost: Average Power purchase cost is calculated by the following formula:

$$\text{Total variable charges} = \text{Energy available during the year (kWh)} \times \text{Variable charges (INR/kWh)}$$

$$\text{Total power purchase cost} = \text{Fixed cost according to share of dicom(INR)} + \text{Total variable charges(INR)}$$

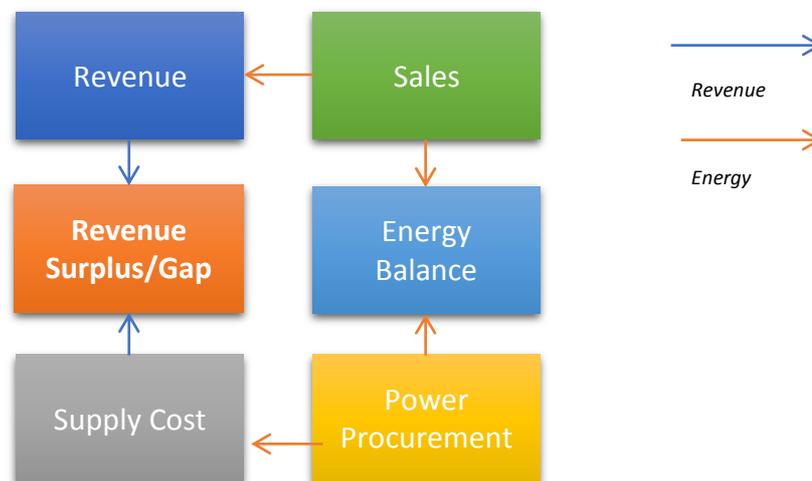
$$\text{Average cost} = \frac{\text{Total power purchase cost(INR)}}{\text{Energy available during the year(kWh)}}$$

- e) Transmission Charges: Transmission charges are computed as per actual determined based on CERC/RERC orders.
- f) O&M Expenses: The commission generally specify have benchmark values for O&M expenses based on Distribution Companies assets as per tariff regulations.
- g) Depreciation: Commission calculates the depreciation of assets under this head. Usually, the commission calculates an average depreciation rate for assets based on type.
- h) Working Capital: Working capital is accounted for as:
- Operation and maintenance expense for one month
 - Maintenance spares at @ 15% of operation and maintenance expenses as specified
 - Receivables equivalent to one and a half (1½) months of billing of consumers
- i) Aggregate Revenue Requirement(ARR): Aggregate Revenue Requirement of the Distribution Business for the respective Years of the Control Period, as approved by the Commission.



$$\text{Aggregate revenue Requirement} = \text{Total Expenditure} - \text{Total Income}$$

- j) Sale of surplus power: Discoms at times are left with excess power after catering to the demand and earns revenue by selling this surplus power.
- k) Non-Tariff Income:
- Income from the sale of scrap
 - Income from investments
 - Interest income on advances to suppliers/contractors
 - Income from rental from staff quarters
 - Income from rental from contractors
 - Income from advertisements
 - Income from the sale of tender documents
- l) Revenue Gap/Surplus: Difference between the total ARR of the Distribution Company for the year and the expected revenue generation from the existing tariff. The effective revenue surplus or gap determines if the tariff needs to be increased or kept the same or decreased.



7. Tariff Order and Consumers

The final tariff order details the tariff schedules for each consumer category and also includes specific directives to Discoms to protect consumer interest and compliance with regulations. The key chapters in a Tariff Order or ARR Order are as follows:

- Introduction chapter
- Stakeholder comments/ Objections
- True up chapter
- APR (Annual Performance Review) chapter
- ARR (Annual revenue requirement) chapter
- Way forward
- Commission directive chapter
- Tariff Design

Fixed Charges	Variable Charges	Minimum consumption charges
Late Payment Surcharge	Maximum Demand	Billing Cycle
Fuel Cost Adjustment	Connected load	Contract Demand
Security Deposit	Regulatory Surcharge	Time of Day Tariff
Electricity Duty	Cross Subsidy	Voltage Level