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# **CER - Programme on Tariff Setting in the Power Sector**

## **Distribution Tariff Setting Framework - A Comparison Across States**

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**Kanpur**

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**ABPS Infrastructure Advisory Private Ltd.**

# Agenda

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1. **Regulatory Process**
2. **MYT Framework**
3. **Distribution Loss vs. AT&C Loss**
4. **Capex Approval**
5. **O&M Expenses & Sharing of Gains/Losses**
6. **Fuel Surcharge Adjustment**
7. **Tariff Philosophy**

# States considered for comparison

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1. Gujarat
2. Kerala
3. Tamil Nadu
4. Telangana
5. Uttar Pradesh
6. Assam
7. Chhattisgarh
8. Maharashtra
9. Uttarakhand

# Process of Tariff Regulation - 1/5

- ERC has to issue the Order within 120 days from submission of Petition with all data as per the stipulated Formats
- Important Deadlines
  - Deadline for submission of Petition - November 30 of previous Financial Year, so that revised tariffs effective for entire year
  - Regulators generally will not approve retrospective tariffs
- Petition has to be filed on affidavit

# Process of Distribution Tariff Regulation - 2/5

## ARR Petition

- Consumer category-wise sales projections (metered and un-metered)
  - Agricultural consumption norm
  - Status of metering
  - Feeder level/DTC metering
- Distribution/transmission loss assessment & improvement trajectory – break-up into technical and commercial losses
- Energy Input requirement [ $EI = \text{Sales} / (1 - \text{loss } \%)$ ]
- Details of all expenses and revenue with current tariffs, with estimated revenue gap
- Data in accordance with ERC Formats
- Data to be submitted for PY, CY and Control Period or MYT Period, as applicable
- CY data based on half year actuals and balance estimated

# Process of Tariff Regulation – 3/5

- Proposed method to recover revenue gap
  - Tariff increase
  - Efficiency improvement
  - State Government subsidy
  - Regulatory Asset
- Tariff Petition
  - Average Cost of Supply (ACoS) vs. Voltage-wise Cost of Supply (VCoS) vs. Cost to serve (CTS)
  - Extent of cross-subsidy in prevailing tariffs
  - Cross-subsidy reduction trajectory
  - Proposed consumer category-wise tariffs

# Process of Tariff Regulation - 4/5

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## After filing of Petition

- Technical validation session - data gaps, inconsistencies, regulatory requirements
- Admission of Petition by ERC
- Petition published and objections invited from stakeholders
- Utility has to respond to issues raised by each objector
- Public Hearing at different locations
- Submission of additional data/clarifications sought by ERC
- Issue of Tariff Order by ERC

# Process of Tariff Regulation - 5/5

## Analysis of Order

- if any ground for review, then review to be sought
  - Mistake or error apparent on the face of the record
  - new evidence that has come to light subsequently
  - any other sufficient reason
- Alternatively, appeal to Appellate Tribunal and then SC
- **Implement the Tariff Order provisions**
  - revised tariffs
  - comply with directives
  - Streamline regulatory MIS to meet ERC requirements



# Admission of Petition

A	Admission of Petition	
1	Telangana	After receipt; subject to basic scrutiny
2	Gujarat	After receipt; subject to basic scrutiny
3	Kerala	After receipt; subject to basic scrutiny
4	Tamil Nadu	After receipt; subject to basic scrutiny
5	Uttar Pradesh	After removal of all deficiencies
6	Maharashtra	After TVS and after removal of all deficiencies & submission of revised Petition, if required
7	Assam	After receipt; subject to basic scrutiny
8	Chhattisgarh	After receipt; subject to basic scrutiny
9	Uttarakhand	After receipt; subject to basic scrutiny

# Technical Validation Session

B	Technical Validation Session (TVS)	
1	Telangana	Informal discussion after admission of Petition; conducted by ERC officers
2	Gujarat	After admission of Petition; conducted by ERC officers
3	Kerala	After admission of Petition; conducted by ERC officers
4	Tamil Nadu	Informal discussion after admission of Petition; conducted by ERC officers
5	Uttar Pradesh	Informal discussion after admission of Petition; conducted by ERC officers
6	Maharashtra	Before admission of Petition; conducted by ERC officers
7	Assam	After admission of Petition; conducted by ERC officers; sometimes in presence of Commission
8	Chhattisgarh	After admission of Petition; conducted by ERC officers; sometimes in presence of Commission
9	Uttarakhand	After admission of Petition; conducted by ERC officers

# Public Hearings

C	Public Hearings	
1	Telangana	One location per DISCOM, for 2 DISCOMs
2	Gujarat	One location for 4 State DISCOMs
3	Kerala	Normally 3 locations across State for State DISCOM; however, as latest revision was suo-motu, Commission held PH at 7 locations across State
4	Tamil Nadu	3 locations across State for State DISCOM
5	Uttar Pradesh	4 locations for 5 DISCOMs
6	Maharashtra	Six Divisional HQ for State DISCOM
7	Assam	One location for State DISCOM
8	Chhattisgarh	One location for State DISCOM
9	Uttarakhand	4 locations across State for State DISCOM

# Issuance of Tariff Order

D	Operative Order/Detailed Order	
1	Telangana	Detailed Orders generally issued before March 31st
2	Gujarat	Detailed Orders generally issued before March 31st
3	Kerala	Generally Orders issued before March 31st; Detailed Orders only
4	Tamil Nadu	Generally Orders issued after March 31st; Detailed Orders only
5	Uttar Pradesh	Generally Orders issued after March 31st; Detailed Orders only
6	Maharashtra	Generally Orders issued after March 31st; Operative Order issued only once in its history
7	Assam	Last Detailed Tariff Order issued before March 31st; no Operative Order
8	Chhattisgarh	Operative Order issued before 31st March, followed by Detailed Order in April; done for last 4 Tariff Orders
9	Uttarakhand	Detailed Orders issued before March 31st

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# Control Period

A	Control Period	
1	Telangana	5 Years - FY 2014-15 to FY 2018-19
2	Gujarat	5 years - FY 2016-17 to FY 2020-21
3	Kerala	4 years - FY 2018-19 to FY 2021-22
4	Tamil Nadu	3 years - FY 2016-17 to FY 2018-19
5	Uttar Pradesh	3 years - FY 2016-18 to FY 2019-20
6	Maharashtra	4 years - FY 2016-17 to FY 2019-20
7	Assam	3 years - FY 2016-17 to FY 2018-19; FY 2019-20 to FY 2021-22
8	Chhattisgarh	5 years - FY 2016-17 to FY 2020-21
9	Uttarakhand	3 years - FY 2016-17 to FY 2018-19

# Annual vs. Multi-Year ARR Determination

B	Annual/Multi-Year ARR	
1	Telangana	Multi-Year ARR for Wires Business; Annual ARR for Retail Supply Business
2	Gujarat	Multi-Year ARR for Control Period
3	Kerala	Multi-Year ARR for Control Period
4	Tamil Nadu	Multi-Year ARR for Control Period
5	Uttar Pradesh	Multi-Year ARR for Control Period
6	Maharashtra	Multi-Year ARR for Control Period
7	Assam	Multi-Year ARR for Control Period
8	Chhattisgarh	Multi-Year ARR for Control Period
9	Uttarakhand	Multi-Year ARR for Control Period, excluding Power Purchase expenses

# Annual vs. Multi-Year Tariff Determination

C	Annual/Multi-Year Tariff	
1	Telangana	Multi-Year Tariff for Wires Business; Annual Tariff for Retail Supply Business
2	Gujarat	Annual Tariff determination based on ARR approved in MYT Order and impact of true-up of previous year
3	Kerala	Multi-Year/ Annual Tariff provisions exist
4	Tamil Nadu	Annual Tariff determination for FY 2017-18 based on combined Revenue Gap/ (Surplus) of FY 2016-17 & FY 2017-18
5	Uttar Pradesh	Annual Tariff determination for ensuing year based on revised ARR and impact of true-up of previous year
6	Maharashtra	Multi-Year Tariff determined for Control Period
7	Assam	Annual Tariff determination for ensuing year based on revised ARR and impact of true-up of previous year
8	Chhattisgarh	Annual Tariff determination for ensuing year based on revised ARR only for sales and power purchase, and impact of true-up of previous year
9	Uttarakhand	Annual Tariff determination for ensuing year based on revised ARR and impact of true-up of previous year



# Mid-Term Review

D	Mid-Term Review	
1	Telangana	Not Applicable
2	Gujarat	Along with tariff determination for 4th year of Control Period; ARR for remaining 2 years of Control Period may be revised depending on option exercised by Utility
3	Kerala	Along with process for 3rd year of Control Period; ARR and Tariff for remaining 2 years of Control Period may be revised depending on DISCOM Petition
4	Tamil Nadu	Not Applicable
5	Uttar Pradesh	Not Applicable
6	Maharashtra	Along with process for 3rd year of Control Period; ARR and Tariff for remaining 2 years of Control Period revised
7	Assam	Not Applicable
8	Chhattisgarh	Provision for review of operational parameters, before tariff determination for 4th year of Control Period
9	Uttarakhand	Not Applicable

# True-Up

E	True-Up	
1	Telangana	At end of 5-year Control Period for Wires Business; annual true-up for Supply Business
2	Gujarat	Annual true-up based on audited accounts & prudence check
3	Kerala	Annual true-up based on audited accounts & prudence check
4	Tamil Nadu	Annual true-up based on audited accounts & prudence check
5	Uttar Pradesh	Annual true-up based on audited accounts & prudence check; <a href="#">scope for provisional true-up based on provisional/unaudited accounts</a>
6	Maharashtra	Annual true-up based on audited accounts & prudence check
7	Assam	Annual true-up based on audited accounts & prudence check
8	Chhattisgarh	Annual true-up based on audited accounts & prudence check; <a href="#">scope for provisional true-up based on provisional/unaudited accounts</a>
9	Uttarakhand	Annual true-up based on audited accounts & prudence check

# APR/Provisional True-up of Current Year

F	Annual Performance Review/Provisional True-up of current year	
1	Telangana	Not done
2	Gujarat	Not done
3	Kerala	Not done
4	Tamil Nadu	Provision exists in MYT Regulations for APR and consequent revision of ARR of balance Control Period; not exercised till date
5	Uttar Pradesh	Done; Revenue Gap/ (Surplus) passed through in tariff of ensuing year
6	Maharashtra	Done; Revenue Gap/ (Surplus) passed through in tariff of ensuing year
7	Assam	Done, for getting base values for ensuing year; Revenue Gap/ (Surplus) not passed through in tariff of ensuing year
8	Chhattisgarh	Not done
9	Uttarakhand	Done, for getting base values for ensuing year; Revenue Gap/ (Surplus) not passed through in tariff of ensuing year

# Basis of Tariff Revision

G	Tariff Revision for ensuing year/s - Based on	
1	Telangana	True-up of previous year; holistically revised ARR of ensuing year
2	Gujarat	True-up of previous year and ARR approved in MYT Order; except at the time of MTR, where the ARR for ensuing year is revised
3	Kerala	True-up of previous year; holistically revised ARR of ensuing year
4	Tamil Nadu	True-up of previous year; APR of current year; holistically revised ARR of remaining years of Control Period
5	Uttar Pradesh	True-up of previous year; APR of current year; holistically revised ARR of ensuing year
6	Maharashtra	True-up of previous year; APR of current year; holistically revised ARR of remaining years of Control Period
7	Assam	True-up of previous year; holistically revised ARR of ensuing year
8	Chhattisgarh	True-up of previous year; revised ARR of ensuing year only based on revised sales and power purchase
9	Uttarakhand	True-up of previous year; revised ARR of ensuing year only based on revised power purchase

# Suo-motu Tariff Revision

H	Suo-motu Tariff Revision	
1	Telangana	Not done till date
2	Gujarat	Not done till date
3	Kerala	Done - combined for FY 2016-17 & FY 2017-18; provision removed from latest MYT Regulations
4	Tamil Nadu	Done - FY 2014-15
5	Uttar Pradesh	Done - FY 2018-19
6	Maharashtra	Not done till date
7	Assam	Not done till date
8	Chhattisgarh	Not done till date
9	Uttarakhand	Not done till date

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# Distribution Loss - Questions

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1. What is Distribution Loss?
2. What are technical losses & commercial losses?
3. How is collection efficiency considered?
4. What is the difference between Distribution Loss and AT&C loss?
5. What is the treatment given to excess Distribution Losses?

# Distribution Loss vs. AT&C Loss

A	Approach	
1	Telangana	Distribution Loss reduction trajectory stipulated in Order
2	Gujarat	Distribution Loss reduction trajectory stipulated in Order
3	Kerala	Distribution Loss reduction trajectory stipulated in Order
4	Tamil Nadu	Distribution Loss reduction trajectory stipulated in Order
	Uttar	
5	Pradesh	Distribution Loss reduction trajectory stipulated in Order
6	Maharashtra	Distribution Loss reduction trajectory stipulated in Order
7	Assam	Distribution Loss reduction trajectory stipulated in Order
8	Chhattisgarh	Distribution Loss reduction trajectory specified in Regulations
9	Uttarakhand	Distribution Loss reduction trajectory stipulated in Order



# Distribution Loss Targets

B	Targets - UDAY vs. ERC target	
1	Telangana	ERC target different w.r.t. UDAY target
2	Gujarat	ERC target different w.r.t. UDAY target
3	Kerala	ERC target different w.r.t. UDAY target [actual loss levels slightly lower than UDAY target]
4	Tamil Nadu	ERC target lower than UDAY target; based on data submitted by Utility
5	Uttar Pradesh	ERC target different w.r.t. UDAY target
6	Maharashtra	ERC target different w.r.t. UDAY target
7	Assam	ERC target different w.r.t. UDAY target
8	Chhattisgarh	Adopted UDAY target - DISCOM has filed Appeal
9	Uttarakhand	ERC target different w.r.t. UDAY target

# Excess Losses/Gains w.r.t. Target Losses

C	Treatment of Excess Losses/Gains w.r.t. Loss target	
1	Telangana	No sharing of excess losses/ gains w.r.t. Losses
2	Gujarat	Passed through at Average Power Purchase Rate
3	Kerala	Passed through at Average Power Purchase Rate
4	Tamil Nadu	Passed through at Average Power Purchase Rate
5	Uttar Pradesh	Lower of actual or target Distribution Loss is considered for allowing power purchase requirement at time of truing up
6	Maharashtra	Passed through at Average Billing Rate
7	Assam	Passed through at Average Power Purchase Rate
8	Chhattisgarh	Not passed through citing metering issues; Regulations cite linkage to average power purchase rate
9	Uttarakhand	Passed through at Average Billing Rate

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# Capital Investment Plan and Related Expenses...1/6

## A Capital Investment Plan

- Scheme-wise Capital Investment Plan
  - Details of ongoing schemes with progress details – capex, capitalisation
  - Scheme wise details of new schemes along with Project Report and Cost Benefit Analysis, or
  - Scheme-wise list of approved capex schemes & capitalisation
  
- Means of Finance
  - Details of funds tie up for proposed Capital Expenditure along with supporting documents
  - Appropriate Debt : Equity Ratio

# Capital Expenditure Plan and Related Expenses...2/6

- ❑ Normative Debt : Equity Ratio is generally 70:30
- ❑ The equity in excess of 30% shall be treated as normative debt for the Utility.
- ❑ 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.
- ❑ Further, in case of the retirement or replacement of the assets, the equity capital approved shall be reduced to the extent of 30% (or actual equity component if it is lower than 30%) of the original cost of the retired or replaced asset.
- ❑ The loan capital shall also be reduced to the extent of 70% (or the actual loan component) of the original cost of the asset replaced/retired.

# Capital Expenditure Plan and Related Expenses...3/6

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## Capitalisation-Issues

- Typically Utilities tend to project higher capitalisation for ensuing year as it increases ARR
- Capitalisation typically allowed on the basis of actual capitalisation achieved in the past and after assessment of preparedness of licensee to undertake capex

# Capital Expenditure Plan and Related Expenses...4/6

## B Assets and Depreciation

- Opening Block of Gross Fixed Assets
- Cumulative Depreciation – capped till 90% of asset value
- Asset Capitalisation during the year

### Depreciation Rate

- Straight Line Depreciation based on Tariff Regulations

### Advance Against Depreciation (AAD) [no longer existing]

- Tool to provide upfront depreciation **to meet loan repayments**
- AAD was provided in case repayment during the year is more than depreciation during the year
- Alternatively, if cumulative repayment was more than cumulative depreciation
- Depreciation in future years to be adjusted for advance provided after the loan repayment obligations are over

# Capital Expenditure Plan and Related Expenses...5/6

## C Interest and Financing Charges

- Details of existing outstanding loans with interest rate and repayment period
- New long-term loans proposed during the year

### Interest Charges

- For existing loans, interest to be computed on average of opening and closing balance after considering repayment
- For new loans, interest to be computed for the period commencing from the date on which loan is likely to be drawn
- Issues related to re-financing of loans (normative/actual)

### Financing Charges

- Mostly applicable on new loans such as guarantee charges, upfront fees, LC charges, etc.



# Capital Expenditure Plan and Related Expenses...6/6

## D Return

- Return on Equity as per Regulations
- Return to be allowed on actual equity invested against approved capex schemes and not on equity appearing in books
- Return on opening equity as well as equity contribution equal to 50% of capitalisation during the year
- Linkage between RoE and Depreciation beyond 70% of asset cost

# Consumer Contribution, Deposit Works & Grant

- ❑ Relevant for Transmission and Distribution business
- ❑ Covers Capital Works carried out using:
  - ❑ Part or entire funds from the Users - Deposit Works or Consumer Contribution
  - ❑ Grant funds received from State/Central Govt, including APDRP, RGGVY, etc.
  - ❑ Any other grant or funds of similar nature received without any obligation to return the same and carrying no interest costs
- ❑ ROE, Depreciation, and Interest are not allowed on such Capital Works, since, such funds cannot be considered as 'equity' or 'own funds' or 'loan funds'

# Capex Approval Process

CAPEX APPROVAL		
1	Telangana	Separate Business Plan approved for MYT Control Period
2	Gujarat	Approved in MYT/MTR Order
3	Kerala	Approved in MYT Order
4	Tamil Nadu	Separate Capital Investment Plan approved for MYT Control Period
5	Uttar Pradesh	Prior In-principle approval required for schemes above Rs. 10 crore
6	Maharashtra	Prior In-principle approval granted for schemes above Rs. 10 crore, based on Capex approval guidelines and DPR submission
7	Assam	Separate Business Plan approved for MYT Control Period
8	Chhattisgarh	Separate Capital Investment Plan approved for MYT Control Period
9	Uttarakhand	Separate Business Plan approved for MYT Control Period

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# O&M Expenses...1/3

## ➤ A Employee Expenses Projections

- Number of Employees
- Employee expenses under various heads such as Basic, DA, Allowances, Bonus, Terminal Benefits

### Alternative approaches

- Total Employee Expenses based on past trends
- Increase in total basic salary and other components as % of basic
- Projections based on per employee cost (will factor the reduction in employees due to retirement)
- Other specific factors such as Wage Revision Arrears

### Benchmarks for Employee Expenses

- Employee Expenses /units sold

# O&M Expenses...2/3

## B Administrative and General Expenses

- A&G expenses under various heads such as Rent, Taxes, Travelling and Conveyance, Audit Fees, Billing and Collection, Consultancy Charges, etc.

### Alternative approaches

- Total A&G expenses based on past trends
- Total A&G expenses based on WPI and CPI (60:40) weightage
- Linked to no. of consumers or sales, etc.

### Benchmarks for A&G Expenses

- A&G Expenses/unit sold
- A&G Expenses/Number of Consumers

# O&M Expenses...3/3

## C Repairs and Maintenance Expenses

- R&M expenses for different class of assets

### Alternative approaches

- Total R&M expenses based on past trends
- Total R&M expenses as % of GFA
- Specific requirements for the year for meeting expenses due to Force Majeure, etc.

# O&M Expenses

1	Telangana	Employee expenses, A&G expenses, and R&M expenses approved based on past expenses, and escalated at CPI & WPI
2	Gujarat	Employee expenses, A&G expenses, and R&M expenses approved based on past expenses, and escalated at CPI & WPI
3	Kerala	O&M norms specified in Regulations; composite employee and A&G expenses linked to no. of consumers, no. of distribution transformers, length of HT line, and energy sales; R&M expenses specified at 3% of opening GFA, excluding land value
4	Tamil Nadu	Employee expenses, A&G expenses, and R&M expenses approved based on past expenses after sharing of gains & losses, and escalated at 4% per annum
5	Uttar Pradesh	Employee and A&G expenses approved based on past expenses and escalated at average 3-year CPI & WPI, respectively; R&M expenses linked to average % of GFA based on past trend and escalated at average 3-year WPI
6	Maharashtra	Employee expenses, A&G expenses, and R&M expenses approved based on past expenses after sharing of gains & losses, and escalated at average 5-year CPI & WPI in the ratio of 70:30
7	Assam	Employee and A&G expenses approved based on past expenses and escalated at average 3-year CPI & WPI, respectively; R&M expenses linked to average % of GFA based on past trend and escalated at average 3-year WPI
8	Chhattisgarh	Employee expenses, A&G expenses, and R&M expenses approved based on past expenses, and escalated at CPI & WPI
9	Uttarakhand	Employee expenses, A&G expenses, and R&M expenses approved based on past expenses, and escalated at CPI & WPI



# Losses/Gains w.r.t. O&M Expenses

1	Telangana	No sharing of excess losses/gains w.r.t. Losses
2	Gujarat	Sharing of gains & losses done after true-up, in the ratio of 2/3:1/3 for Utility:Consumers
3	Kerala	Sharing of gains done after true-up, in the ratio of 2/3:1/3 for Utility:Consumers; Loss to be borne entirely by DISCOM
4	Tamil Nadu	Sharing of gains & losses done after true-up, in the ratio of 2/3:1/3 for Utility:Consumers
5	Uttar Pradesh	Sharing of gains & losses for O&M expenses done after true-up in the <b>ratio of 50:50 for Utility:Consumers</b>
6	Maharashtra	Sharing of gains done after true-up, in the ratio of 1/3:2/3 for Utility:Consumers; Sharing of losses done after true-up, in the ratio of 2/3:1/3 for Utility:Consumers
7	Assam	Sharing of gains & losses done after true-up, in the ratio of 2/3:1/3 for Utility:Consumers
8	Chhattisgarh	Employee expenses considered uncontrollable; sharing of gains & losses for A&G and R&M expenses done after true-up in the <b>ratio of 50:50 for Utility:Consumers</b>
9	Uttarakhand	Sharing of gains & losses done after true-up, in the ratio of 2/3:1/3 for Utility:Consumers

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# Fuel Surcharge Adjustment

1	Telangana	No FPPPA mechanism
2	Gujarat	Base FPPPA determined in Tariff Order; Quarterly pass through of Additional FPPPA of nth quarter in n+2 quarter subject to ceiling of 10 paise/kWh per Quarter
3	Kerala	Quarterly pass through of FPPPA of nth quarter after ERC approval in the n+2 quarter
4	Tamil Nadu	Provision for FSA exists in MYT Regulations; Mechanism not implemented as Licensee does not claim
5	Uttar Pradesh	Quarterly pass through of FPPPA of nth quarter after ERC approval in the n+2 quarter
6	Maharashtra	Monthly pass through of FPPPA of nth month in n+2 month, subject to ceiling of 20% of average energy charge; post-facto vetting on bi-monthly basis
7	Assam	Quarterly pass through of VCA of nth quarter after ERC approval in the n+2 quarter, subject to 25% of Variable Charges; no FPPPA passed through in last 2 years as no claims received from DISCOM
8	Chhattisgarh	Quarterly pass through of VCA of nth quarter after ERC approval in the n+2 quarter
9	Uttarakhand	Quarterly pass through of FPPPA of nth quarter after ERC approval in the n+2 quarter

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# Cost of Supply

- Average Cost of Supply - total cost divided by total units
- Voltage-wise Cost of Supply - at each voltage level
- Category-wise cost to serve - cost incurred to serve each consumer category - used in AP, Telangana & Haryana
  - › demand related costs
  - › energy related costs
  - › consumer related costs

# Cost to Serve - Methodology...1/2

All expenses are classified under:

- Demand Related Cost
  - Fixed charges in power purchase cost and substantial portion of interest, depreciation and employee expenses
  - *allocated to different consumer categories on the basis of share in total coincident demand*
  
- Energy Related Cost
  - variable cost of power purchase
  - *allocated on the basis of share in total energy input*
  
- Consumer Related Cost
  - Remaining portion of employee, depreciation and interest expenses
  - *allocated on the basis of share of number of consumers.*

# Cost to Serve - Methodology..2/2

- **Apportionment of Distribution losses**
  - classified under demand related losses and energy related losses.
  - Demand Related losses (coincident & non-coincident demand losses) allocated to consumer categories on the basis of their coincident demand.
  - Total coincident demand is summation of demand with allocated demand losses.
  - Energy Related Losses allocated to various consumer categories on the basis of share in energy input.
  - Total category-wise energy input is summation of energy input plus allocated energy losses.

# Cost of Supply

A	Cost of Supply	
1	Telangana	Category-wise Cost-to-Serve
2	Gujarat	Average Cost of Supply - latest ACOS FY 2018-19 is Rs. 5.13/kWh
3	Kerala	Average Cost of Supply - latest ACOS FY 2017-18 is Rs. 5.26/kWh
4	Tamil Nadu	Average Cost of Supply - latest ACOS FY 2017-18 is Rs. 5.85/kWh
5	Uttar Pradesh	Average Cost of Supply - latest ACOS FY 2018-19 is Rs. 6.73/kWh
6	Maharashtra	Average Cost of Supply - latest ACOS FY 2018-19 is Rs. 7.25/kWh
7	Assam	Average Cost of Supply - latest ACOS FY 2018-19 is Rs. 7.35/kWh
8	Chhattisgarh	Average Cost of Supply - latest ACOS FY 2018-19 is Rs. 6.20/kWh
9	Uttarakhand	Average Cost of Supply - latest ACOS FY 2018-19 is Rs. 5.04/kWh



# Category & Slab Rationalization...1/2

- Section 62 (3) of EA 2003 allows tariff to be differentiated on following parameters
  - load factor
  - power factor
  - total consumption of energy during any period
  - time of supply
  - geographical position in any area
  - nature of supply
  - purpose of supply
- Historically, categories/sub-categories have been created based on specific requests from time to time

# Category & Slab Rationalization...2/2

- The rationalization of the tariff structure is of prime importance - however, one should ensure that there is no tariff shock to any consumer category
- Telescopic tariff for domestic category - tariff increases as consumption increases, but all consumers benefit from lower tariffs for the lower consumption slabs

# Categories & Consumption Slabs

B	Tariff Categories	
1	Telangana	Total 16 categories; 8 in LT category and 8 in HT category; different telescopic tariffs for LT Residential depending on consumption level; consumption slabs of 0-200 units, 201-300 units, 301-400 units, 401-800 units, above 800 units per month
2	Gujarat	Total 21 categories; 13 in LT category and 8 in HT category; telescopic tariff for LT Residential; consumption slabs of 0-50 units, 51-100 units, 101-200 units, 210-250 units, above 250 units per month
3	Kerala	Total 20 categories; 9 in LT category, 6 in HT category, and 5 in EHT category; ; non-telescopic tariff for LT Residential beyond certain consumption level; telescopic tariff for consumption slabs of 0-50 units, 51-100 units, 101-150 units, 151-200 units, 201-250 units per month; different non-telescopic tariff for 0-300 units, 0-350 units, 0-400 units, 0-500 units, above 500 units per month
4	Tamil Nadu	Total 18 categories; 12 in LT category and 6 in HT category; telescopic tariff for LT Residential; consumption slabs of 0-50 units, 51-100 units, 101-250 units, above 250 units per month
5	Uttar Pradesh	Total 15 categories; 10 in LT category and 5 in HT category; telescopic tariff for LT Residential; consumption slabs of 0-150 units, 151-300 units, 301-500 units, above 500 units per month
6	Maharashtra	Total 19 categories; 9 in LT category and 10 in HT category; telescopic tariff for LT Residential; consumption slabs of 0-100 units, 101-300 units, 301-500 units, 501-1000 units, above 1000 units per month
7	Assam	Total 20 categories; 10 in LT category and 10 in HT category; telescopic tariff for LT Residential; consumption slabs of 0-120 units, 121-240 units, above 240 units per month
8	Chhattisgarh	Total 18 categories; 8 in LT category and 10 in HT category; Voltage-wise categorisation in HT as 220 kV, 132 kV, 33 kV and 11 kV with gradually increasing tariffs with decrease in voltage; telescopic tariff for LT Residential; consumption slabs of 0-40 units, 41-200 units, 201-600 units, above 600 units per month
9	Uttarakhand	Total 8 categories; 6 in LT category and 2 in HT category; telescopic tariff for LT Residential; consumption slabs of 0-100 units, 101-200 units, 201-300 units, 301-400 units, 401-500 units, above 500 units per month



# Regulatory Asset...1/2

- A mechanism to carry forward that portion of the revenue requirement for a year that have, voluntarily or otherwise, not been included and effectively removed from the tariff request for the year.
- Instances when Regulatory Asset is created
  - Natural Calamity
  - Funding terminal liabilities
  - Delayed implementation of tariff revision
  - Contractual Obligations
  - To avoid tariff shock to consumers when revenue gap is too high
- Regulatory Asset is to be amortized along with interest in future years

# Regulatory Asset...2/2

- Amount of RA amortised each year and interest on outstanding amount should be added to revenue requirement
- Period of Amortisation and amount to be amortised is contingent upon the revenue gap for the year including the ensuing year
- Period for Amortisation of RA should not exceed 3-5 years depending upon the revenue gap during each year

# Regulatory Assets

C	Regulatory Asset	
1	Telangana	Not created till date
2	Gujarat	Not created till date
3	Kerala	Unmet Revenue Gap of Rs. 5200 crore approved
4	Tamil Nadu	Present Regulatory Asset of around Rs. 10,300 crore, after adjusting RA of Rs. 22000 crore against GoTN support against UDAY MoU
5	Uttar Pradesh	Outstanding RA is around Rs. 40,500 crore; Regulatory Surcharge allowed @4.28% of Fixed Charges plus Energy Charges
6	Maharashtra	Created last year to avoid tariff shock; balance amount of Rs. 12000 crore to be recovered from FY 2019-20 onwards
7	Assam	Created in past to avoid tariff shock; amortised fully now
8	Chhattisgarh	Created in past to avoid tariff shock; amortised fully now
9	Uttarakhand	Not created till date

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# Thank you