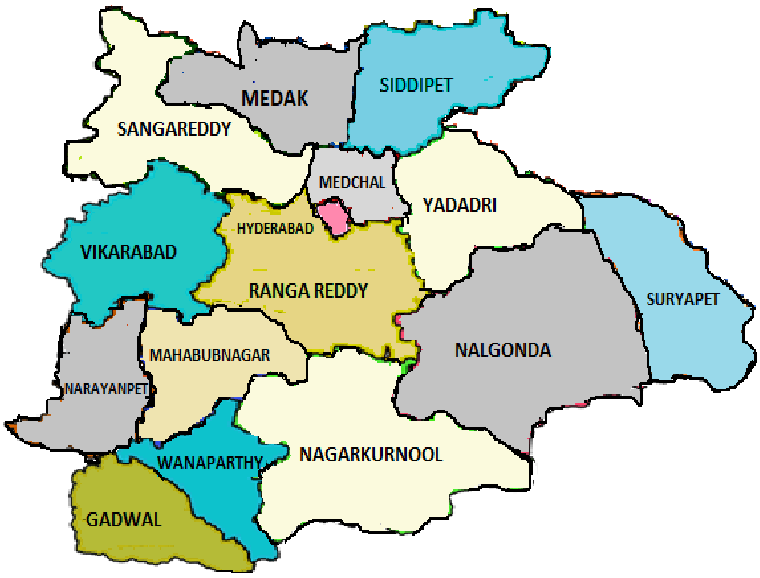
SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

(Distribution & Retail Supply Licensee)

Summary of ARR & Wheeling Tariff Proposal for Distribution Business for the 4th Control Period (FY 2019-20 to FY 2023-24)



16th December 2019

SUMMARY OF AGGREGATE REVENUE REQUIREMENT (ARR) & WHEELING TARIFF PROPOSALS FOR THE DISTRIBUTION BUSINESS FOR THE 4th CONTROL PERIOD 2019-20 TO 2023-24

With the enactment of Andhra Pradesh Reorganization Act, 2014, the Telangana State has been carved out from the undivided Andhra Pradesh State as the 29th State of the Republic India on 02.06.2014. On the event of State bifurcation, the name of Central Power Distribution Company of Andhra Pradesh Limited (APCPDCL) has been changed to Southern Power Distribution Company of Telangana Limited (TSSPDCL).

This filing is made by the **SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED (TSSPDCL)** under Section 62 of the Electricity Act 2003 for determination of the ARR and Wheeling Tariff for the Distribution Business for the Control period (FY 2019-20 to 2023-24).

1 **Distribution Plan (Capital Investment Plan):** The Distribution licensee has filed Resource Plan for the Fourth control period i.e. from FY 2019-20 to 2023-24 which inter alia contains Sales Forecast, Distribution loss trajectory, Load Forecast and Distribution Plan as per the guidelines for the approval of the Honble Commission on 31.10.2018. The licensee adopts the Distribution Plan submitted in the Resource Plan filings in the current filing.

The licensee has prepared and submitted a detailed capital investment plan in Distribution Plan for the Control Period based on a comprehensive analysis of state of the existing network loading conditions and the expected future loading of the network during each year of the control period based on the projected load growth. The proposed capital investment of the licensee has been classified into the following areas-

- **Base Capital Expenditure:** The primary purpose of the capital expenditure proposed under this head is to meet the load growth of the licensee and to strengthen its distribution network. The key elements of the proposed base capital expenditure include the following
  - Substation Additions
  - New PTR additions in existing Substations
  - PTR enhancements in existing Substations
  - Feeder Additions
  - DTR Unit Additions

  To estimate the above network additions for the control period, the licensee has defined certain trigger points for peak loading of each of the above network elements. Network additions are proposed once the peak loading exceeds the predefined trigger points. The extent of network capacity proposed to be added is commensurate to meet the increased load growth.

- **Other Capital Expenditure**

  - **Loss Reduction**: The licensee has identified certain areas viz installation of high quality meters and replacement of existing conductor with higher capacity conductor which have a good potential of reducing losses. Accordingly the licensee has proposed the requisite capital expenditure under this head.
  - **Reliability and Contingency Improvement:** The licensee has identified certain areas such as reconductoring of lines, replacement of OH lines with UG cables and provision of alternate supplies at 33KV and 11KV voltage levels which have a good potential for improving the reliability and quality of supply to the consumer. Accordingly the licensee has proposed the requisite capital expenditure under this head.
  - **Renovation and Modernization:** The licensee has proposed certain capex under this head to replace the assets which have outlived their useful lives and also in improving the performance of certain existing assets
  - **Technology Upgradation:** Keeping in view the changing electricity distribution business environment and with the objective of providing the best quality of service to consumers, the licensee would like to leverage technology in an optimal manner. In this regard, licensee has identified Geographical Information System, WAN, AMR solutions, SCADA, ERP/IT application are key areas of investment.
  - **New Consumer Related Capex:** The meter and the associated network infrastructure related to the release of service to a new consumer falls under this head.
  - **Civil Infrastructure Development:** The licensee has proposed investments under this head to cater to construction of new office buildings and in improving the amenities at the existing offices.

The following table provides a summary of the investment plan for each of the years of the Control Period.

All figures in Rs. Crs

Network Element	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Substation Additions	234	212	502	736	687
PTR Additions	3	9	13	20	25
PTR Enhancements	32	13	9	15	12
Feeder Additions	7	10	17	20	28
DTR Unit Additions	832	931	1049	1187	1351
Base Capex Sub-total	**1107**	**1175**	**1590**	**1977**	**2102**
AT & C Loss Reduction	26	29	30	31	32
Reliability Improvement & Contingency Schemes	32	37	40	45	51
Renovation & Modernisation	167	199	222	249	282
New Consumer Capex	192	193	199	204	211
Civil Infrastructure Development	12	14	16	18	21
Technology Upgradation	59	59	60	60	60
Land Cost for SS	13	9	25	35	34
Road Cutting Cost (Cables for SS)	24	21	68	122	112
Other Capex Sub-total	**525**	**561**	**659**	**764**	**801**
Total Capex for DISCOM	**1632**	**1736**	**2248**	**2741**	**2904**

2 **O&M expense projection** – *The Operation and Maintenance (O&M) costs includes employee-related costs, repair & maintenance costs and administrative & general costs of the licensee.* In line with the requirement of the Regulation, the licensee has adopted commission approved methodology for projection of O&M Cost for the control period:

- Employee expenses (EE) and Administrative & General (A&G) expenses are projected considering norms linked to network elements which include Substations, DTRs, line length (Circuit km) and number of consumers.
- Repairs and Maintenance expenses (R&M) increase in proportion to Gross fixed assets (GFA)
- Escalation Rate for EE and A&G: The norms arrived at for the year 2018-19 are escalated year on year using the weighted average of Consumer Price Index (CPI) for industrial workers and Wholesale Price Index (CPI- Industrial Workers: 60% and WPI: 40%). An increase in CPI proportionately increases impact on EE while an increase in WPI proportionately increases the A&G Expenses. Based on the CERC adopted methodology, the rate of escalation

has been computed using CPI and WPI indices of past 5 years which works out to 5.42% p.a.

- R&M as % of GFA has been arrived at by taking the average norm for past five years period (FY 2014-15 to FY 2018-19) of TSSPDCL put together is determined as base norm for the Licensee. This base norm is applied on the proposed GFA of each year of the fourth control period to arrive at the R&M expenses for each year. The norms determined for R&M expenses for the fourth control period for TSSPDCL is 1.13%.

The Licensee has projected the total O&M expenses for the Fourth Control period as shown in the table below.

All figures in Rs. Crs

O&M cost projection	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
Employee Cost	2469	2699	2978	3328	3704
A&G Expenses	178	195	215	241	268
R&M Cost	161	192	214	240	273
Total O&M Expenses	**2808**	**3086**	**3407**	**3809**	**4245**

3 Return on Capital Employed

The licensee has computed the ROCE as provided in the Clause 15 of the Regulation which specifies that the ROCE be computed by multiplying the Regulated Rate Base (RRB) by the Weighted Average Cost of Capital (WACC).

All figures in Rs Crs

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Regulated Rate Base	5676	6734	7453	8478	9807
Weighted Average Cost of Capital (WACC)	11.24%	11.47%	11.71%	11.86%	11.94%
Return on Capital Employed	**638**	**772**	**873**	**1006**	**1171**

4 Depreciation:

The depreciation has been calculated for every year considering the Depreciation rates of Ministry of Power for each class of asset base and also Fully Depreciated Assets during the control period. The Fully depreciated assets during the year have been deducted from the opening balance of the Gross Assets in the next consecutive years to calculate the depreciation. Depreciation computation after considering the Fully Depreciated Assets (FDA) is tabulated below.

(Rs. in Crores)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	1011	1157	1283	1448	1609

5 Aggregate Revenue Requirement (ARR) for each year of the 4th control period:-

The ARR for the Distribution business for each year of the Control Period is determined as follows.

(Rs. in Crores)

Particulars	2018-19 (Base Year)	2019-20	2020-21	2021-22	2022-23	2023-24
Operation and Maintenance Charges	2538.26	2808.18	3086.00	3406.86	3809.44	4245.19
Depreciation	855.81	1010.58	1156.66	1282.68	1448.19	1609.01
Taxes on Income	0.00	48.92	58.05	64.24	73.07	84.53
Other Expenditure	21.69	0.00	0.00	0.00	0.00	0.00
Special Appropriations	0.00	50.00	50.00	50.00	50.00	50.00
Total Expenditure	**3415.76**	**3917.69**	**4350.71**	**4803.79**	**5380.70**	**5988.73**
Less: O&M expenses capitalized	134.25	145.82	155.95	206.84	255.80	271.63
Net Expenditure	**3281.52**	**3771.87**	**4194.76**	**4596.95**	**5124.91**	**5717.10**
Add Return on Capital Employed	542.28	638.21	772.20	872.61	1005.86	1171.20
ARR	**3823.80**	**4410.08**	**4966.96**	**5469.56**	**6130.77**	**6888.31**
Less NTI	412.39	450.65	456.87	495.82	536.47	585.52
Distribution ARR net NTI	**3411.41**	**3959.43**	**4510.09**	**4973.74**	**5594.30**	**6302.79**
Less Wheeling Revenue from third Party	24.45	24.84	45.17	47.14	50.33	52.74
Net ARR transferred to Retail Supply Business	**3386.97**	**3934.58**	**4464.92**	**4926.60**	**5543.97**	**6250.05**

6 Loss Trajectory:-

The licensee has implemented various loss reduction measures like strengthening of the network infrastructure, addition of network elements, and vigorously undertaking the Energy Audit to keep a close tab on the losses. However the actual losses are higher than the approved loss levels set for the third control period.

Further, as per Clause 5.11 (h) of National Tariff Policy, 2016, "***2. In cases where operations have been much below the norms for many previous years, the initial starting point in determining the revenue requirement and the improvement trajectories should be recognized at "relaxed" levels and not the "desired" levels.*** *Suitable benchmarking studies may be conducted to establish the "desired" performance standards. Separate studies may be required for each utility to assess the capital expenditure necessary to meet the minimum service standards*."

In view of the above, the licensee humbly requests the Hon'ble Commission to consider the actual losses of FY 2018-19 and approve the revised voltage wise loss trajectory for the 4th control period as given in the below table.

Losses	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
	Actuals	Projection				
LT Loss (%)	6.05%	5.93%	5.81%	5.69%	5.58%	5.47%
11 kV Loss (%)	4.70%	4.65%	4.61%	4.56%	4.51%	4.47%
33 kV Loss (%)	3.70%	3.68%	3.66%	3.64%	3.63%	3.61%

7 Wheeling Charges:-

Distribution Licensee has proposed allocation of ARR components to the various voltages for determination of wheeling charges as shown below

1. Operation and Maintenance expenses
    a. Employee Expenses (EE) – Driven by number of Substations, line length, DTRs & number of consumers
    b. Administrative & General Expenses (A&G) – Driven by number of Substations, line length, DTRs & number of consumers
    c. Repairs & Maintenance (R&M) expenses – Driven by assets
2. Depreciation – Driven by assets
3. Interest/ROCE – Driven by assets
4. Other Expenses– Driven by assets
5. O&M capitalized – Driven by O&M expenses

The licensee is proposing the following distribution wheeling charges for each year of the control period.

Wheeling Tariff – Rs./kVA/month					
Voltage Level	**FY 19-20**	**FY 20-21**	**FY 21-22**	**FY 22-23**	**FY 23-24**
33 kV (Rs./kVA/Month)	35.88	37.43	38.22	39.93	40.96
11 kV (Rs./kVA/Month)	302.81	314.71	327.55	348.78	368.33
LT (Rs./kVA/Month)	791.92	853.33	905.81	981.85	1068.48

Though the licensee has proposed the Wheeling Tariff applicable for FY 2019-20 based on the Distribution Cost estimates; but the licensee is currently collecting the wheeling charges as applicable for FY 2018-19 in view of Honble Commission Order in IA No. 4 of 2019 in OP No. 78 & 79 of 2015 dt. 06.11.2019.