

# **NORTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED**

**(Distribution & Retail Supply Licensee)**



**Summary of Filing of ARR & Tariff Proposals  
for Retail Supply Business for FY 2018-19 along with  
Cross Subsidy Surcharge & Additional Surcharge for  
Open Access Consumers FY 2018-19**

**December 2017**

## SUMMARY OF ARR & FPT FOR RETAIL SUPPLY BUSINESS FOR FY 2018-19

This filing is made by the Northern Power Distribution Company of Telangana Limited (TSNPDCL) under Section 64 of the Electricity Act, 2003 for determination of the ARR and Tariff for Retail Supply Business for the year 2018-19. The licensee has filed the ARR for FY2018-19 on 15.12.2017 and subsequently has made Filings for Proposed Tariffs along with Cross Subsidy Surcharge and Additional Surcharge Proposals on 21.12.2017.

### Key Projections for Ensuing Year 2018-19

- i) **Sales Forecast** The Licensee submits the following forecast of energy sales (in million units) as part of the current application to the Hon'ble Commission:

#### Sales in MU

Consumer Category	2016-17	2017-18	2018-19
	Actuals	Estimate	Projection
Domestic Supply : Category I	2,862.00	2,976.77	3,194.61
Non-Domestic Supply : Category II	596.63	632.57	682.10
Industrial Supply : Category III	244.21	259.15	264.33
Cottage Industries : Category IV	7.23	7.67	7.93
Agriculture : Category V	5,606.04	6,186.49	7,087.81
Public Lighting : Category VI	278.86	300.26	317.10
General Purpose : Category VII	42.09	44.33	48.61
<b>TOTAL 'LOW TENSION'</b>	<b>9,637.06</b>	<b>10,407.24</b>	<b>11,602.49</b>
Industrial Segregated : Category I	1,332.68	1,502.90	1,604.25
Industrial Non-Segregated : Category II	124.38	140.79	152.77
Airport, Bus & Railway Stations : Cat. III	7.76	7.58	7.73
Irrigation & Agriculture : Category IV	508.88	647.95	4,373.95
Railway Traction : Category V	410.69	396.98	368.47
Colony Lighting VI	154.63	161.92	167.55
Electric Co-Op Societies	708.50	862.63	971.90
<b>TOTAL 'HIGH TENSION'</b>	<b>3,247.52</b>	<b>3,720.76</b>	<b>7,646.62</b>
<b>TOTAL (LT + HT)</b>	<b>12,884.58</b>	<b>14,128.00</b>	<b>19,249.11</b>

### ii) Losses

#### a) Discom's Losses

The table below provides the Discom's losses including and excluding EHT sales for years 2016-17, 2017-18 and 2018-19.

Particulars	2016-17	2017-18		2018-19
	Actual	TSERC	Proj.	Proj.
Discom Losses (incl EHT) (%)	12.20%	10.20%	10.75%	8.88%
Discom Losses (Excl EHT) (%)	13.70%	11.93%	11.96%	11.55%

For the FY 2017-18 & 2018-19 the licensee has assumed the voltage wise loss levels, at the same level as approved by the then Hon TSERC in its tariff Order dated 27th Mar, 2015.

## Transco & PGCIL Losses

The Hon'ble Commission had approved a loss trajectory for the licensee as per the MYT Order for balance period of 3rd control period for FY 2017-18 & FY 2018-19 issued by the Hon'ble Telangana State Regulatory Commission for FY 2017-18 and FY 2018-19 **3.10%** & **3.09%** respectively and the losses external to the TSTransco system are estimated to be 2.47 %. This is applicable for procurement of power from Central Generating Stations, CSPGCL (Marwah Thermal Power) and other medium & short term purchases.

### iii) Expenditure Projections

#### a) Power Purchase Cost:

As per the sales forecast and projected losses, TSNPDCL would require 16,596 MU for 2017-18 and 22,098 MU for 2018-19 for sale of power to various categories aggregated by energy losses and the cost of this energy would be Rs.7,772 Cr. and Rs.9,471 Cr. respectively after considering net of Pool transactions.

Details	2017-18	2018-19
Power Purchase (MU)	16,597.51	22,097.62
Power Purchase / Procurement Cost (Rs. Cr.)	7,772.18	9,470.54

#### b) TS Transco Charges

The licensee has adopted the Transmission capacity contracted and rate of Transmission charges per MW per month as per the MYT Order for balance period of 3rd control period for FY 2017-18 & FY 2018-19 issued by the Hon'ble Telangana State Regulatory Commission. Accordingly, the Transmission charges are expected for 2017-18 and 2018-19 are Rs. 325.47 Cr. and Rs. 448.51 Cr. respectively.

#### c) Power Grid & ULDC Charges

PGCIL & ULDC charges projection for H2 2017-18 and 2018-19 has been done based on the CERC determined charges for stations connected to PGCIL as shown below:

Details	2017-18	2018-19
PGCIL Charges Rs. Crores	302.01	332.66
ULDC Charges Rs. Crores	1.63	0.87
<b>PGCIL &amp; ULDC Charges</b>	<b>303.65</b>	<b>333.53</b>

#### d) SLDC Charges

SLDC charges are calculated for the years FY 2017-18 & FY 2018-19 at the rate and Transmission capacity contracted, as given in the MYT Order issued by the Hon'ble Commission for balance two years period FY 2017-18 & FY 2018-19 of 3rd control period. The charges are expected at Rs.9.56 Cr. for 2017-18 and Rs.10.99 Cr for 2018-19.

Details	2017-18	2018-19
Capacity Contracted (MW)	4,619.17	5,111.26
Annual Fee Rs. / MW / Year	2908.44	3578.01
Operating Charges Rs. / MW / Month	1481.88	1492.87
<b>SLDC Charges ( Rs. Cr.)</b>	<b>9.56</b>	<b>10.99</b>

**e) Distribution Cost**

The licensee has adopted the Distribution cost for FY 2017-18 and FY 2018-19 as approved by the Hon TSERC in its tariff Order dated 27th Mar, 2015 for 3rd MYT control period (FY 2014-15 to 2018-19).

The distribution costs for 2017-18 and 2018-19 are Rs 1,633 Crores and Rs 1,920 Crores respectively.

Details (Rs. In Crores)	2017-18	2018-19
Return on Capital Employed	328.59	404.02
O&M Expenses	1104.00	1277.39
Depreciation	372.40	427.63
Taxes on Income	9.56	10.58
Special Appropriation for Safety measures	68.41	71.42
Other Expenditure	1.45	1.52
<b>Gross ARR</b>	<b>1884.41</b>	<b>2192.56</b>
<i>Less: O&amp;M Expenses Capitalized</i>	77.72	82.94
<b>Less: Non-Tariff Income</b>	173.76	189.15
<b>Net ARR of TSNPDCL</b>	<b>1632.93</b>	<b>1920.47</b>

**f) Interest on Consumer Security Deposits**

The licensee has adopted 6.25% p.a. as interest rate which is prevailing bank rate of RBI on security deposit for FY 2017-18 and FY 2018-19 in these filings. The interest on consumer security deposit for 2017-18 is estimated at Rs.45.27 Cr. and Rs.53.15 Cr. for 2018-19.

Details (Rs. Cr.)	2017-18	2018-19
Opening Balance	708.47	740.22
Additions during the Year	31.75	220.30
Closing Balance	740.22	960.53
Average Balance	724.35	850.38
Interest @ % p.a.	6.25%	6.25%
<b>Interest Cost</b>	<b>45.27</b>	<b>53.15</b>

**g) Supply Margin**

The licensee has proposed 2% on equity portion of approved regulatory rate base (RRB) in MYT order for the third control period as Supply Margin in Retail Supply Business.

Details (Rs. Cr.)	2017-18	2018-19
Supply Margin in Retail Supply Business	13.14	16.16

**h) Other Costs**

The licensee has proposed reactive power charges payable to southern grid, wheeling charges payable to other states and assets maintenance charges to SRPC under this head.

Details (Rs. Cr.)	2016-17	2017-18	2018-19
Reactive charges	1.24	1.24	1.24
Assets Maintenance charges	0.06	0.06	0.06
Wheeling charges KPTCL	0.62	0.62	0.62
Conjestion charges	0.13	0.13	0.13
<b>Other Costs</b>	<b>2.05</b>	<b>2.05</b>	<b>2.05</b>

**Aggregate Revenue Requirement for Retail Supply Business**

The Aggregate Revenue Requirement for the Retail Supply Business is provided below for 2017-18 and 2018-19.

Details (Rs. Cr.)	2017-18	2018-19
Transmission Cost	325.47	448.51
SLDC Cost	9.56	10.99
Distribution Cost	1,632.93	1,920.47
PGCIL & ULDC charges (Rs. Cr.)	303.65	333.53
<b>Network and SLDC Cost</b>	<b>2,271.61</b>	<b>2,713.49</b>
Power Purchase / Procurement Cost (Net)	7,772.18	9,470.54
Interest on Consumer Security Deposits	45.27	53.15
Supply Margin in Retail Supply Business	13.14	16.16
Other Costs, if any	2.05	2.05
<b>Supply Related Cost</b>	<b>7,832.65</b>	<b>9,541.91</b>
<b>Aggregate Revenue Requirement</b>	<b>10,104.26</b>	<b>12,255.40</b>

**iv) Revenue Projections**

**a) Revenue from Sale of Power at Current Tariffs:** Revenue from sale of power at current tariffs is arrived at Rs.4,230.15 Cr. for 2017-18 and Rs.6,746.81 Cr. for 2018-19. The Category-wise revenue from sale of power at current tariffs is provided in the table below.

**Rs. (in Crores)**

Consumer Category	Revenue from Current Tariffs	
	FY 2017-18	FY 2018-19
<b>LT</b>		
Domestic Supply : Cat. I	1,035.13	1,105.57
Non-Domestic Supply : Cat. II	623.58	670.37
Industrial Supply : Cat. III	209.65	214.10
Cottage Industries : Cat. IV	3.61	3.74
Irrigation & Agriculture : Cat. V	39.40	41.41
Public Lighting : Cat. VI	177.28	186.61
General Purpose : Cat. VII	33.86	36.97
<b>TOTAL 'LOW TENSION'</b>	<b>2,122.52</b>	<b>2,258.75</b>
<b>HT</b>		
Industrial Segregated : Cat. I	1,119.57	1,188.76
Others : Cat. II	148.59	160.60
Airport, Bus & Railway Stations : Cat. III	6.71	6.84
Irrigation & Agriculture : Cat. IV	394.53	2,722.74
Railway Traction : Cat. VA	247.52	203.93
Colony Lighting Cat. VI	104.45	107.99
Electric Co-Op Societies	86.26	97.19
<b>TOTAL 'HIGH TENSION'</b>	<b>2,107.62</b>	<b>4,488.06</b>
<b>TOTAL (LT + HT)</b>	<b>4,230.15</b>	<b>6,746.81</b>

**b) Non-tariff Income at Current Charges:** The non-tariff income is estimated as Rs.30.73 Cr. in 2017-18 & Rs.31.34 Cr. in 2018-19.

**Rs. (in Crores)**

Non-Tariff Income	2017-18	2018-19
Reconnection Fee LT	10.60	10.81
Reconnection Fee HT	0.31	0.31
Application Registration Fee	0.80	0.81
Supervision Charges from customers	1.15	1.18
Capacitor Charges	5.63	5.75
Meter Testing / Shifting Charges	0.76	0.78
Other Miscellaneous Income	11.48	11.71
<b>Total Non-Tariff Income</b>	<b>30.73</b>	<b>31.34</b>

**C) Revenue from Cross Subsidy Surcharge and Additional Surcharge:** The licensee does not project any open access sales for the FY 2017-18. Hence, Revenue from Cross Subsidy Surcharge and Additional Surcharge of the TSNPDCL for the current year 2017-18 is nil.

**v) Revenue Gap at Current Tariff and Charges:** The Revenue Gap at current tariffs with estimated ARR for FY 2017-18 is Rs. 1793.42 Crores.

**Rs. (in Crores)**

Details	2017-18
Aggregate Revenue Requirement (Rs. Crs.)	10,104.26
Revenue from Current Tariffs (Rs. Crs.)	4,230.15
Non - Tariff Income (Rs. Crs.)	30.73

Details	2017-18
<b>Revenue (Deficit) / Surplus at Current Tariffs (Rs. Crs.)</b>	<b>(5,843.38)</b>
Subsidy (Rs. Crs.)	4,049.96
<b>Net Gap (Deficit) / Surplus (Rs. Crs.)</b>	<b>(1,793.42)</b>

**vi) Tariff proposals for FY2018-19:** The licensee submits the Hon'ble Commission for retaining the tariffs as per the Tariff Order of FY 2017-18, for the ensuing year FY 2018-19.

**vii) New Category Proposal for Electric Vehicles: Tariff for Electric Vehicle Charging Stations/ Charging Infrastructure/ Battery Swap:**

The National Electric Mobility Mission Plan 2020, notified by the Department of Heavy Industry, Ministry of Heavy Industries and Public Enterprises, Government of India seeks to enhance national energy security, mitigate adverse environmental impacts from road transport vehicles and boost domestic manufacturing capabilities for Electric Vehicles (EVs). It is envisaged that EVs are expected to play a significant role in India's transition to a low-carbon eco-system.

As per estimates, based on Total Cost of Ownership (TCO), commercial fleet of cars (taxis) could possibly be among the first adopters of EVs on a large scale followed by private vehicles. TSDiscs are of the view that the activity of usage of power for Charging Infrastructure/ Battery swap should be recognized as a commercial activity. Considering the above, the licensee proposes the tariff for this category as follows:

For Electric Vehicle Charging Stations/ Charging Infrastructure/ Battery Swap set up at LT voltage level	Tariff applicable would be as per the LT II (Non-domestic/commercial) category tariff notified by Hon'ble TSERC in the 2017-18 Tariff Order.
For Electric Vehicle Charging Stations/ Charging Infrastructure/ Battery Swap set up at HT voltage level	Tariff applicable would be as per the HT II (Others) category tariff notified by Hon'ble TSERC in the 2017-18 Tariff Order (for respective voltages)

**viii) Proposal of Two-Part tariff to HT-IV(A)-Lift Irrigation Schemes:**

Based on the data received from Irrigation Department (Government of Telangana) major irrigation project – Kaleshwaram 2,305 MW would be operational in the ensuing year. The other new Lift Irrigation (LI) schemes expected to be operational in FY 2018-19 contribute another 208 MW. Hence the projected load from LIS schemes in the ensuing year would be 4,140 MW including existing loads. The projected sales from LI schemes for FY 2018-19 are 5,583 MU.

It may be observed from the above that projected demand from the LI schemes on the grid is substantial. TS Discs would have to contract adequate quantities of power in advance in order to ensure continued supply of power to LI schemes and all other category of consumers.

TS Discs have endeavoured to minimize the power purchase through optimal contracting through non-RTC contracts. It may be appreciated that such contracts would still have fixed cost commitment due to non-off take of power by the Discom in a scenario of reduced demand from the LI schemes when compared to the projected loads.

The above situation has an adverse impact on the financials of the Discoms. Further as per the recommendations of the committee constituted by Ministry of Power (MoP) on rationalization of Tariff structures, greater emphasis has been placed on recovery of fixed and variable costs through two part tariff structures. Hence Discoms need to enhance the recovery of fixed charges through two part tariff structures which are reflective of the fixed and energy costs commitments of power contracts.

In view of the above, TS Discoms propose the introduction of two-part tariff structure for HT- IV Lift Irrigation Schemes as follows:

<b>Current Tariff Structure:</b> Energy Charge – INR 6.40/KWh	<b>Proposed Tariff Structure:</b> Demand Charge – INR 390/KVA/month Energy Charge – INR 4.88/KWh
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**Proposed Tariff Conditions –**

Demand Charges would be levied on **80%** of Contracted Maximum Demand (CMD) or Recorded Maximum Demand (RMD) for Operational Months – July to November (5months). Demand Charges would be levied on **30%** of Contracted Maximum Demand (CMD) or Recorded Maximum Demand (RMD) for Non-Operational Months – December to June (7months).

**ix) Determination of Cross subsidy Surcharge for FY 2018-19:**

The licensee has adopted the methodology stated in the amended National Tariff Policy notified by Ministry of Power on 28<sup>th</sup> January, 2016 for determination of the cross-subsidy surcharge. The Cross Subsidy computed by the licensee for each category is as shown below:

Categories	Average Realization (Rs./unit)	Weighted PP (Rs./unit) as per Tariff Policy - Jan 2017	Wheeling Charges (Rs./unit)	Applicable Loss%	Cross Subsidy Surcharge (Rs./unit)	20% Limit on the Avg. Realization	Cross Subsidy Surcharge as per Tariff Policy Jan 17. Limiting CSS to 20% of realization
<b>HIGH TENSION</b>							
<b>HT Category at 11 kV</b>							
HT-I Indl Segregated	8.25	4.29	0.73	10.83%	2.71	1.65	1.65
HT-II - Industrial Non Segregated	10.25	4.29	0.73	10.83%	4.71	2.05	2.05
HT-III - Aviation	8.86	4.29	0.73	10.83%	3.33	1.77	1.77
HT -IV A Govt Lift Irrigation	5.97	4.29	0.73	10.83%	0.44	1.19	0.44
HT-VI -Colony Supply	6.55	4.29	0.73	10.83%	1.02	1.31	1.02
Rural co-operatives	1.02	4.29	0.73	10.83%	0.00	0.20	0.00
Temporary	0.00	4.29	0.73	10.83%	0.00	0.00	0.00
<b>HT Category at 33 kV</b>							
HT-I Indl Segregated	7.26	4.29	0.15	6.97%	2.50	1.45	1.45
HT-II - Industrial Non Segregated	9.48	4.29	0.15	6.97%	4.71	1.90	1.90
HT-III - Aviation	0.00	4.29	0.15	6.97%	0.00	0.00	0.00
HT -IV A Govt Lift Irrigation	5.37	4.29	0.15	6.97%	0.60	1.07	0.60
HT-VI -Colony Supply	6.46	4.29	0.15	6.97%	1.70	1.29	1.29
Temporary	0.00	4.29	0.15	6.97%	0.00	0.00	0.00
<b>HT Category at 132 kV</b>							
HT-I Indl Segregated	6.66	4.29	0.13	3.09%	2.11	1.33	1.33

Categories	Average Realization (Rs./unit)	Weighted PP (Rs./unit) as per Tariff Policy - Jan 2017	Wheeling Charges (Rs./unit)	Applicable Loss%	Cross Subsidy Surcharge (Rs./unit)	20% Limit on the Avg. Realization	Cross Subsidy Surcharge as per Tariff Policy Jan 17. Limiting CSS to 20% of realization
HT-II - Industrial Non Segregated	29.11	4.29	0.13	3.09%	24.57	5.82	5.82
HT-III - Aviation	0.00	4.29	0.13	3.09%	0.00	0.00	0.00
HT -IV A Govt Lift Irrigation	6.18	4.29	0.13	3.09%	1.63	1.24	1.24
HT-V –RailwayTraction	5.55	4.29	0.13	3.09%	1.00	1.11	1.00
HT-VI -Colony Supply	6.45	4.29	0.13	3.09%	1.90	1.29	1.29
Temporary	0.00	4.29	0.13	3.09%	0.00		0.00

The licensee humbly requests the Hon'ble Commission not to restrict the Cross Subsidy Surcharge at 20% of tariff payable by the consumer as the tariffs are not within +/-20% Average Cost of Supply. Further, the licensee humbly submits that the Hon'ble Commission may notify a roadmap/ methodology for reduction of cross subsidy across the consumer categories. This will enable the licensee in fixing up cross subsidy surcharge without any under recovery.

**x) Determination of Additional Surcharge for FY 2018-19:**

The Hon'ble Commission has issued Additional Surcharge Order for FY 2017-18 considering the actual parameters viz. Fixed PP Costs, Transmission & Distribution Costs, Open Access & Backed Down energy of FY 2016-17. The Licensee has arrived at the stranded cost by limiting the fixed costs attributable only to the Open Access sales. Hence, the Additional Surcharge computation for FY 2018-19 has been tabulated below.

S. No.	Particulars	Unit	Value
A	Long Term Available Capacity (excluding market purchase)	MW	7670.04
B	Capacity stranded due to open access	MW	246.51
C	Approved/Actual Total Fixed Charges (excluding market purchase)	INR Cr	15,317
D = C/A	Fixed Charge/ MW available	INR Cr/ MW	2.00
E = D*B	Fixed Charge for Stranded Capacity	INR Cr	492.29
F	Transmission Charge Paid	INR Cr	2,575.42
G	Projected Energy Requirement	MU	64290.84
H = F/G	Transmission Charges per kWh (Inclusive of PGCIL charges)	Rs./kWh	0.401
I	Distribution Charges as approved in TO	Rs./kWh	0.78
J = H+I	Total T&D charges per kWh	Rs./kWh	1.181
K	Projected Energy consumed by open access consumer from DISCOM	MU	2162.74
L = K * J	T&D charges paid by Open access consumer to DISCOM	INR Cr	255.5
M	Projected Demand Charges recovered by DISCOMs from Open Access	INR Cr	303.29
N = M - L	Demand Charges to be adjusted	INR Cr	47.81
O = E - N	Net stranded charges recoverable	INR Cr	444.48

S. No.	Particulars	Unit	Value
P	Open Access Sales	MU	2159.45
Q = O/P	Additional Surcharge derived	Rs./kWh	2.06

The licensee submits that in the above computation, capacity stranded due to open access is limited to backed down units or open access volumes whichever is lower as shown in S.No. B. Hence the licensee submits that limiting the additional surcharge derived as per S. No. Q above to the OA units as a percentage of backed down units would lead to double accounting and under recovery of stranded assets.

**xi) Revenue at Proposed Tariffs:** The gross revenue at proposed tariffs with the projected sales for FY 2018-19 is shown below:

Consumer Category	FY 2018-19
<b>LT</b>	
Domestic Supply : Cat. I	1,105.57
Non-Domestic Supply : Cat. II	670.37
Industrial Supply : Cat. III	214.10
Cottage Industries : Cat. IV	3.74
Irrigation & Agriculture : Cat. V	41.41
Public Lighting : Cat. VI	186.61
General Purpose : Cat. VII	36.96
<b>TOTAL 'LOW TENSION'</b>	<b>2,258.75</b>
<b>HT</b>	
Industrial Segregated : Cat. I	1,188.76
Others : Cat. II	160.60
Airport, Bus & Railway Stations : Cat. III	6.84
Irrigation & Agriculture : Cat. IV	2,651.39
Railway Traction : Cat. VA	203.93
Colony Lighting Cat. VI	107.99
Electric Co-Op Societies	97.19
<b>TOTAL 'HIGH TENSION'</b>	<b>4,416.70</b>
<b>TOTAL (LT + HT)</b>	<b>6,675.46</b>

**xii) Revenue from Cross Subsidy Surcharge and Additional Surcharge:** The licensee does not project any open access sales for the FY 2018-19. Hence, Revenue from Cross Subsidy Surcharge and Additional Surcharge of the TSNPDCL for the current year 2018-19 is nil.

**xiii) Revenue Gap at proposed tariff:** The Revenue Gap at proposed tariffs with estimated ARR for FY2018-19 is Rs. 5,548.60 Crores as shown below:

Details	2018-19
Aggregate Revenue Requirement (Rs. Crs.)	12,255.40
Revenue from Current Tariffs (Rs. Crs.)	6,675.46
Non - Tariff Income (Rs. Crs.)	31.34
<b>Revenue (Deficit) / Surplus at Current Tariffs (Rs. Crs.)</b>	<b>(5,548.60)</b>