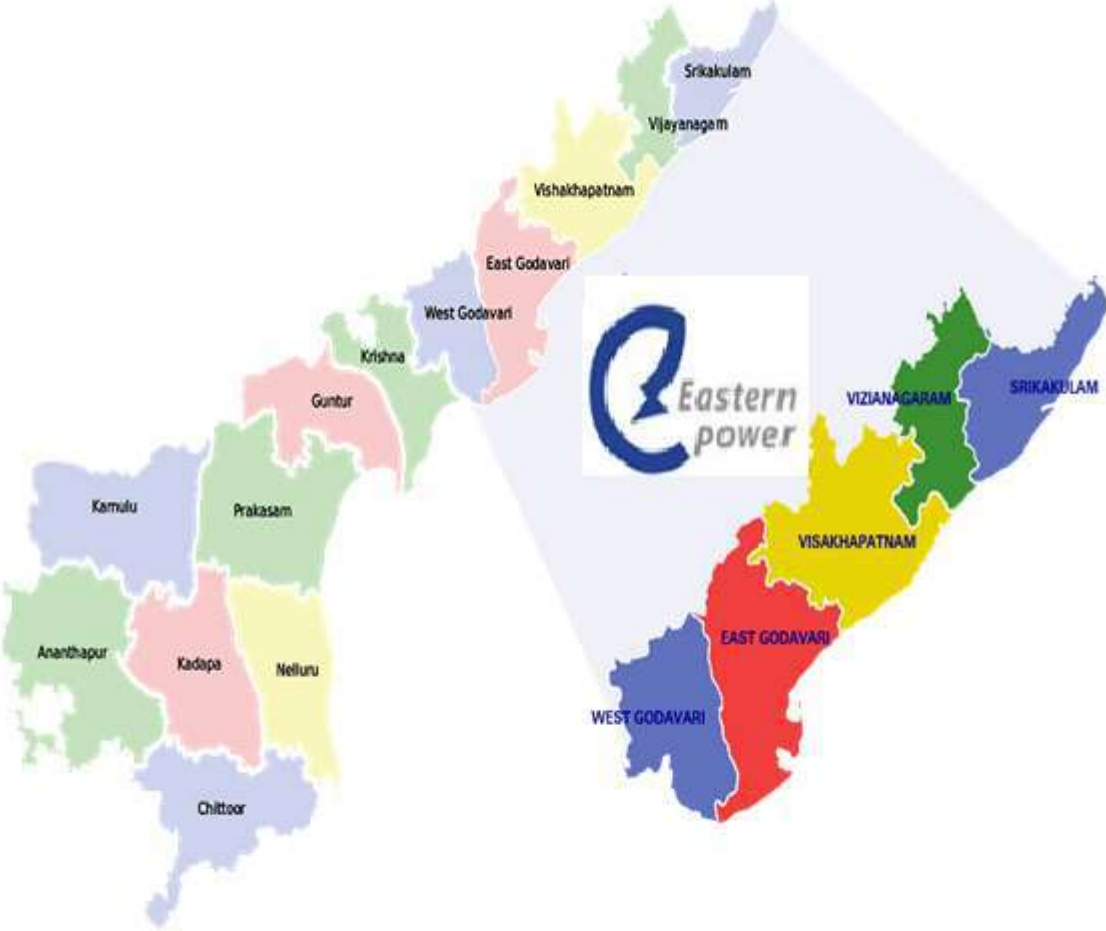




ఆంధ్ర ప్రదేశ్ తూర్పు ప్రాంత విద్యుత్ పంపిణీ సంస్థ

Eastern Power Distribution Company Of Andhra Pradesh Limited

(A Govt. Of A.P.Enterprise & An ISO 9001:2015 & ISO 27001:2013 Certified Company) CIN:U40109AP2000SGC034117



**Aggregate Revenue Requirement and Tariff Proposal for
the Retail Supply Business for FY: 2021-22**

29th November'2020

**BEFORE THE HONOURABLE ANDHRA PRADESH ELECTRICITY REGULATORY
COMMISSION**

AT ITS OFFICE AT 4th FLOOR, SINGARENI BHAVAN, RED HILLS, HYDERABAD

FILING NO. _____/2020

CASE NO. _____/2020

In the matter of:

Filing of the ARR application in respect of Retail Supply Business and proposed Tariffs for the FY 2021-22 under multi-year tariff principles in accordance with the “Andhra Pradesh Electricity Regulatory Commission (Terms And Conditions For Determination Of Tariff For Wheeling And Retail Sale Of Electricity) Regulation, 2005” by the Eastern Power Distribution Company of Andhra Pradesh Limited (‘APEPDCL’ or ‘the Company’ or ‘the Licensee’) as the Distribution and Retail Supply Licensee.

In the matter of:

EASTERN POWER DISTRIBUTION COMPANY OF ANDHRA PRADESH LIMITED

... Applicant

**AFFIDAVIT OF APPLICANT VERIFYING THE APPLICATION ACCOMPANYING
FILING AS PER TERMS AND CONDITIONS OF TARIFF FOR WHEELING AND
RETAIL SALE OF ELECTRICITY**


I, Sri N. Gangadhar, son of Sri N. Pallarao, aged about 58 Years, working for gain at the Eastern Power Distribution Company of Andhra Pradesh Limited do solemnly affirm and say as follows:

- 1 I am the Chief General Manager/PPA, RA& QC of APEPDCL, the Licensee that has, vide the Honourable Commission’s approval in proceedings no. APERC/Secy/Engg/No.6, dt.31.3.2000, been granted the distribution and retail supply functions that APTransco was authorised to conduct or carry out under the Act and the license, with respect to the business of distribution and retail supply of electricity in the Eastern distribution zone in Andhra Pradesh. On December 27, 2000, the Honourable Commission has awarded a Distribution and Retail Supply License to APEPDCL, to be effective from April 1, 2001. I am competent and duly authorised by APEPDCL to affirm, swear, execute and file this affidavit in the present proceedings.
- 2 As such, I submit that I have been duly authorised by the Board of Directors of APEPDCL to submit the application, as per Terms and Conditions of Tariff for Wheeling and Retail Sale of Electricity (Regulation 4 of 2005) of APEPDCL for the FY 2021-22 to the Honourable Commission.

3 I submit that I have read and understood the contents of the appended application of APEPDCL. The facts stated in the application are true to the best of my knowledge, which are derived from the official records made available and certain facts stated are based on information and advice which, I believe to be true and correct.


I submit that for the reasons, and facts stated in the appended application this Applicant pray that the Honourable Commission may be pleased to

- (a) Take the accompanying ARR, Tariff Proposal along with Cross Subsidy Surcharge Application of APEPDCL on record and treat it as complete;
- (b) Grant suitable opportunity to APEPDCL within a reasonable time frame to file additional material information that may be subsequently available;
- (c) Consider and approve APEPDCL's ARR and Tariff application including all requested regulatory treatments in the filing;
- (d) Pass such order as the Honourable Commission may deem fit and proper in the facts and circumstances of the case.


DEPONENT
CHIEF GENERAL MANAGER
PPA, RA & QC
A.P.E.P.D.C. LTD.
VISAKHAPATNAM-19

VERIFICATION:

I, the above named Deponent solemnly affirm at Visakhapatnam on this 29th day of November, 2020 that the contents of the above affidavit are true to my knowledge, no part of it is false and nothing material has been concealed there from.


DEPONENT
CHIEF GENERAL MANAGER
PPA, RA & QC
A.P.E.P.D.C. LTD.
VISAKHAPATNAM-19


Solemnly affirmed and signed before me.
Company Secretary

CORPORATE OFFICE
Eastern Power Distribution
Company of A.P. Ltd.,
VISAKHAPATNAM

**BEFORE THE HONOURABLE ANDHRA PRADESH ELECTRICITY REGULATORY
COMMISSION**

**AT ITS OFFICE AT 4th FLOOR, SINGARENI BHAVAN, RED HILLS, HYDERABAD
500 004**

FILING NO. _____/2020

CASE NO. _____/2020

In the matter of:

Filing of the ARR application in respect of Retail Supply Business and proposed Tariffs for the FY 2021-22 under multi-year tariff principles in accordance with the “Andhra Pradesh Electricity Regulatory Commission (Terms And Conditions For Determination Of Tariff For Wheeling And Retail Sale Of Electricity) Regulation, 2005 and First Amendment Regulation, 2014” by the Eastern Power Distribution Company of Andhra Pradesh Limited (‘APEPDCL’ or ‘the Company’ or ‘the Licensee’) as the Distribution and Retail Supply Licensee.

In the matter of:

EASTERNPOWER DISTRIBUTION COMPANY OF ANDHRA PRADESH LIMITED

... Applicant

The Applicant respectfully submits as under:

- 1** This filing is made by the **EASTERN POWER DISTRIBUTION COMPANY OF ANDHRA PRADESH LIMITED (APEPDCL)** under Section 61 of the Electricity Act 2003 for determination of the Aggregate Revenue Requirement and Tariff for the Retail Supply Business for the year FY 2021-22.
- 2** The licensee has adopted the following methodology to arrive at the ARR for retail supply business.
 - **Distribution Cost:** The licensee has considered the Distribution cost for FY 2021-22 as approved in MYT for 4th control period (FY 2019-20 to FY 2023-24) of Rs. 2549 Crores.
 - **Transmission Cost:** The licensee has considered the Transmission cost for FY 2021-22 as approved in MYT for 4th control period (FY 2019-20 to FY 2023-24) of Rs. 862.65 Crores.
 - **SLDC Cost:** The licensee has considered the SLDC cost for FY 2021-22 as Rs.12.62 Crs. based on the approved SLDC MYT Order for FYs: 2019-20 to 2023-24.
 - **PGCIL and ULDC Costs:** The licensee has considered PGCIL and ULDC Charges as per the CERC Regulations. The estimated PGCIL and ULDC Costs for FY 2021-22 is Rs. 537.01 Crores and 5.37 Crores respectively.

- **Distribution losses:** The licensee has considered losses for FY 2021-22 as approved for 4th control period (FY 2019-20 to FY 2023-24) as LT:3.97%, 11kV:3.10% & 33kV:2.77%.
- **Transmission & PGCIL Losses:** The Licensee has considered the Transmission loss as approved for 4th Control period (FY 2019-20 to FY 2023-24) and added 0.4% towards external CTU losses as 3.46% (including external PGCIL losses).

3 Filing of Retail Supply ARR for FY 2021-22

As per Regulation No. 4 of 2005, the licensee is required to file the Aggregate Revenue Requirement (ARR) for Retail Supply Business and Tariff proposal for the entire control period i.e., for the period from FY 2019-20 to FY 2023-24. However, the licensee requested the Honourable Commission to allow for submission of the ARR and Tariff filing for Retail Supply Business for FY 2021-22 on yearly basis.

The Honourable Commission has been kind enough in granting permission to submit the ARR & Tariff petitions relating to Retail Supply Business on Annual basis for FY 2021-22 vide APERC proceeding number T-87/07/2020, Dated:17.09.2020.

4 Performance Analysis of APEPDCL for the previous year FY 2019-20 and current year FY 2020-21

Performance Analysis: A brief analysis of the licensee business for FY 2019-20 and FY 2020-21 as follows:

- **Sale of Energy and Distribution Loss for FY 2019-20 & FY 2020-21**

Particulars	FY 2019-20					
	As per DISCOM Filings		APERC Order		Actuals	
	MU	%	MU	%	MU	%
I) Total Metered Sales	19,887.52	84.23%	19,905	85.11%	18,354.04	82.55%
a) EHT sales	6,417.98	27.18%	6,417.98	27.44%	4,864.91	21.88%
b) HT sales	4,547.90	19.26%	4,565.70	19.52%	4,301.46	19.35%
c) LT Metered sales	8,921.64	37.78%	8,921.64	38.15%	9,187.67	41.32%
II) LT Agricultural Sales	2,280.67	9.66%	2,090.27	8.94%	2,422.77	10.90%
III) Total Sales	22,168.19	93.89%	21,995.59	94.04%	20,776.81	93.44%
IV) ADD: Distribution Losses						
Distribution Losses (Incl. EHT sales)	1,443.76	6.11%	1,393.04	5.96%	1,458.02	6.56%
V) DISCOM Power purchase						
a) Discom Input (Excl. EHT sales)	17,193.97		16,970.65		17,369.92	
b) Discom input (Incl. EHT sales) and excluding Transmission losses	23,611.95	100%	23,388.63	100%	22,234.83	100.00%

Particulars	FY 2020-21					
	As per DISCOM Filings		APERC Order		Revised Estimates	
	MU	%	MU	%	MU	%
I) Total Metered Sales	20,987.75	82.23%	20,932.62	84.05%	18,087.58	82.55%
a) EHT sales	5,956.14	23.34%	5,956.15	23.92%	4,270.79	19.49%
b) HT sales	4,663.77	18.27%	4,608.67	18.51%	4,174.10	19.05%
c) LT Metered sales	10,367.83	40.62%	10,367.80	41.63%	9,642.69	44.01%
II) LT Agricultural Sales	2,905.71	11.38%	2,399.41	9.63%	2,413.65	11.02%
III) Total Sales	23,893.46	93.62%	23,332.02	93.69%	20,501.23	93.56%
IV) ADD: Distribution Losses						
Distribution Losses (Incl. EHT sales)	1,629.51	6.38%	1,572.33	6.31%	1,410.18	6.44%
V) DISCOM Power purchase						
a) Discom Input (Excl. EHT sales)	19,566.83		18,948.20		17,640.62	
b) Discom input (Incl. EHT sales) and excluding Transmission losses	25,522.97	100%	24,904.35	100.00%	21,911.41	100%

- **Revenue**

The table below shows a comparison of the revenue from various consumer categories as approved in the Tariff Order and as billed (FY 2019-20) and expected to be billed (FY 2020-21) by APEPDCL.

Category Wise Revenue: (Figures shown in Rs Crores)

Category	2019-20 (Rs. Crs.)		2020-21 (Rs. Crs.)	
	APERC Target	2019-20 (Actual)	APERC Target	2020-21 (Revised Estimate)
Category - LT	4431.46	4623.77	5330.85	4962.08
I(A): Domestic- LT	2113.63	2280.76	2670.42	2650.59
II: Commercial and others- LT	1150.72	1169.11	1172.67	995.02
III: Industry- LT	327.11	295.82	310.76	287.57
IV: Institutional- LT	201.81	210.95	347.39	258.69
V: Agriculture & Related- LT	638.19	667.13	829.61	770.22
Category - HT	7054.88	6200.89	7235.11	6048.00
I (B): Townships, Colonies, Gated Communities and Villas - HT	18.47	20.79	24.04	24.08
II: Commercial and others- HT	762.90	830.87	794.93	743.28
III: Industry- HT	4964.55	4636.71	4886.88	4399.26
IV: Institutional- HT	386.19	455.61	765.81	586.21
V :Agriculture & Related - HT	883.09	213.46	715.17	247.44
RESCOs	39.68	43.46	48.28	47.73
Total (LT+HT)	11486.34	10824.66	12565.96	11010.08

5 Retail Supply Business Provisional True-up for FY 2019-20

Hon'ble Commission has issued orders on 26.11.2020 on the Petitions filed by the licensee for True-up claims in respect of Retail Supply Business for FY 2014-15, FY2016-17, FY 2017-18 and FY 2018-19.

The provisional True-up/down of power purchase cost for FY 2019-20 as per the latest information is given below. The annual accounts for FY 2019-20 are under finalization. Necessary Statutory Audit has been commenced and C&AG audit to be completed. Once Audit is completed the DISCOM will file True-Up/ True-Down petition in pursuant to the regulations. Liberty may be granted to the DISCOM to file True-Up/ True-Down for FY 2019-20 upon completion of the Audit please

2019-20			
Particulars	Approved	Actual (Provisional)	Diff.
Power Purchase/ Procurement Cost Rs. Crs.	9329.18	9,059.91	-269.27

The station wise estimated power purchase cost for FY 2019-20 is as per Retail Supply Format No.1.4 PP Cost.

6 ARR Projections for FY 2021-22

Sales Estimates for FY 2021-22

1. The licensee has been adopting Compounded Annual Growth Rate (CAGR) with adjustments, based approach for Sales forecasting for the purpose of Annual ARR filings for Retail Supply Business (RSB) for several years. The CAGR forecast takes into account the first year and the last year of the historical period in the formula and all the observed values in the intermediate years are left unprocessed. In the past Annual Sales for the ensuing year are forecasted first based on CAGR approach and monthly split of the sales was carried out based on same proportion/ratio of the sales in previous year.
2. The CAGR based approach is observed to forecast the sales in an exponential manner rather than on a linear line. Annual ARR exercise requires sales forecast for a shorter period of one to one & half years unlike for a Multi-Year Tariff Exercise which requires for 5 years. But in linear trend approach which is dependent on regression analysis devising a linear equation, all the values of the observed time period in the history are mathematically involved in the analysis and amply considered.
3. In view of the above, Licensee is attempting to deviate from CAGR approach to Monthly Trend based on Time Series Data approach for forecasting of sales for Annual ARR exercise, in the present filings.

4. **The Monthly Linear Trend** method is a time series model of sales forecasting which assumes that the underlying factors, which drive the demand for electricity, are expected to follow the same monthly /annual trend as in the past and hence the forecast for electricity is also based on the assumption that the past trend in consumption of electricity will continue in the future. The strength of this method, when used with balanced judgment, lies in its ability to reflect recent changes and therefore is probably best suited for a short-term projection as used for the ARR/ Tariff filing.
5. However, the trend-based approach has to be adjusted for judgment on the characteristics of the specific consumer groups/ categories. For example, while this method may provide a better estimate of consumption by the domestic and commercial, Industrial & Institutional categories of consumers, it may not be very suitable for the Agriculture / Lift Irrigation category because of the high dependence of demand on the end-use.
6. Sales forecast is carried out based on actuals for the period from FY 2014-15 to FY 2019-20. The forecast is carried out based on time series data from October'20 to March'22.

The total sales forecast for key categories is as follows:

Category	Revised Estimate	FY 2021-22 (MU)
	FY 2020-21 (MU)	
LT Supply	12,056.34	12,733.86
I(A): Domestic- LT	6,355.75	6,360.04
II: Commercial and others- LT	927.50	1,162.84
III: Industry- LT	364.20	382.56
IV: Institutional- LT	340.85	375.04
V: Agriculture & Related- LT	4,068.04	4,453.38
Agriculture other than Aquaculture	2,413.65	2,534.34
Aquaculture and animal husbandry	1,654.38	1,919.04
HT Supply	8444.89	9862.60
I(B): Townships, Colonies, Gated Communities and Villas - HT	31.49	32.27
II: Commercial and others- HT	646.39	785.81
III: Industry- HT	6,264.09	7,055.96
Industry other than Energy Intensive Industries	3,700.43	4,023.61
Energy Intensive Industries	2,563.67	3,032.34
IV: Institutional- HT	747.84	946.94
Railway Traction	618.61	795.66
V :Agriculture & Related - HT	341.27	606.52
RESCOs	413.80	435.10
Total	20,501.23	22,596.46

Yearly Growth Rate

Sales Growth from FY 2019-20 to 2020-21 & 2020-21 to 2021-22					
Category	Total Growth	Growth from 19-20 to 20-21		Total Growth	Total Growth
	2019-20/ 2018-19	H1 20-21/ H119-20 Actuals	H2 20-21 (Revised Estimate) / H219-20 Actuals	2020-21/ 2019-20	2021-22/ 2020-21
LT Supply	11.54%	0.35%	7.67%	3.84%	5.62%
I(A): Domestic- LT	10.70%	6.56%	8.77%	7.50%	0.07%
II: Commercial and others- LT	8.21%	-27.45%	-0.53%	-15.22%	25.37%
III: Industry- LT	-1.24%	-12.44%	5.21%	-3.69%	5.04%
IV: Institutional- LT	11.13%	-10.05%	1.72%	-4.06%	10.03%
V: Agriculture & Related- LT	15.37%	0.24%	9.00%	5.09%	9.47%
Agriculture	11.14%	-2.54%	1.26%	-0.38%	5.00%
Aquaculture and animal husbandry	23.22%	4.48%	22.97%	14.24%	16.00%
HT Supply	-1.00%	-17.72%	2.92%	-7.87%	16.79%
I (B): Townships, Colonies, Gated Communities and Villas - HT	3.86%	10.46%	-1.06%	5.44%	2.49%
II: Commercial and others- HT	10.15%	-28.10%	2.53%	-13.71%	21.57%
III: Industry- HT	-0.11%	-16.15%	1.94%	-7.48%	12.64%
Industry other than Energy Intensive Industries	-1.55%	-13.24%	0.50%	-6.62%	8.73%
Energy Intensive Industries	1.99%	-20.21%	4.00%	-8.69%	18.28%
IV: Institutional- HT	6.94%	-34.87%	3.06%	-15.93%	26.62%
Institutional excl.Railway Traction- HT	2.52%	0.98%	15.33%	8.15%	17.06%
Railway Traction- HT	7.67%	-40.42%	1.16%	-19.67%	28.62%
V :Agriculture & Related - HT	-40.67%	-10.52%	10.88%	-1.72%	77.73%
Lift Irrigation- HT	-54.20%	-17.60%	3.60%	-10.21%	128.01%
Agriculture excluding lift irrigation- HT	12.32%	4.57%	18.79%	11.85%	13.24%
RESCOs	7.18%	3.36%	15.09%	8.84%	5.15%
Total	5.64%	-7.62%	5.57%	-1.33%	10.22%

Number of hours of Supply to LT Agricultural Consumers in FY 2021-22

The licensee is extending 9 hours of power supply to agricultural consumers from 15.02.2019 as per orders of the Government of Andhra Pradesh vide G.O.Ms.No.17, dt.15-02-2019.

Revenue estimate at Current Tariffs for APEPDCL in FY 2021-22

Revenue projected at Current Tariff incl. NTI, Cross Subsidy Surcharge is Rs.12075.31Cr.

Revenue from key categories at current tariff for FY 2021-22 is shown below

Category	Revised Estimate FY 2020-21 (Cr.)	FY 2021-22 (Cr.)
LT Supply	4729.04	4860.26
I(A): Domestic- LT	2527.73	2284.61
II: Commercial and others- LT	977.09	1210.43
III: Industry- LT	280.53	293.13
IV: Institutional- LT	252.10	273.78
V: Agriculture & Related- LT	691.59	798.32
HT Supply	5884.76	6736.45
I(B): Townships, Colonies, Gated Communities and Villas - HT	23.47	24.02
II: Commercial and others- HT	730.79	840.64
III: Industry- HT	4278.18	4719.24
IV: Institutional- HT	571.75	682.28
V :Agriculture & Related - HT	240.84	428.49
RESCOs	39.73	41.77
Total Revenue	10613.80	11596.72
Revenue from Cross Subsidy Surcharge	62.43	65.55
Revenue from REC Certificates	0.00	0.00
Non Tariff income	396.28	413.05
Total Revenue including Non Tariff income, Cross Subsidy Surcharge	11072.51	12075.31