Distribution Utilities Forum (DUF)- Fourth Meeting

(Date 10th June, 2019)

Assam Power Distribution Company Limited

Presented by:
Nilmadhab Deb, AGM(F&A)
O/o CGM(Com & EE), APDCL
Mobile No. 8638867278
E-mail: nil_aseb@rediffmail.com

Organisational profile:

- Journey of power distribution sector at a glance since the reforms of the sector in FY 2004-05 :

Particulars	**2004-05**	**2017-18**
Peak Demand (MW)	646	1823
Consumer base [No. (%)]:		
a) Domestic	957674(85%)	3930759(92%)
b) Others	164220(15%)	361886(8%)
Total::	**1121894**	**4292645**
Energy handled per month (MU)	300.76	780.38
AT& C Loss **(Country average)**	39% **(34.9%)**	15.7% **(18.8%)**
Asset Base (Rs. Crore)	765.43	3823.62

Present status of APDCL:

Operational Profile

Particulars	Unit	FY 17-18	FY 18-19 (Prov.)
Peak Demand	MW	1823	1894
Percapita consumption	kWh	300	314
Gross Power Purchase	MU	9364.54	9773.63
Energy at APDCL periphery	MU	8272.93	8776.61
Energy Sold	MU	6813.81	7200.99
Distribution Loss		**17.64%**	**17.95%**
Number of consumers			
a. Domestic	No.	3930759	5037280
b. Others	No.	361886	384673
Total	No.	**4292645**	**5421953**

Infrastructure profile

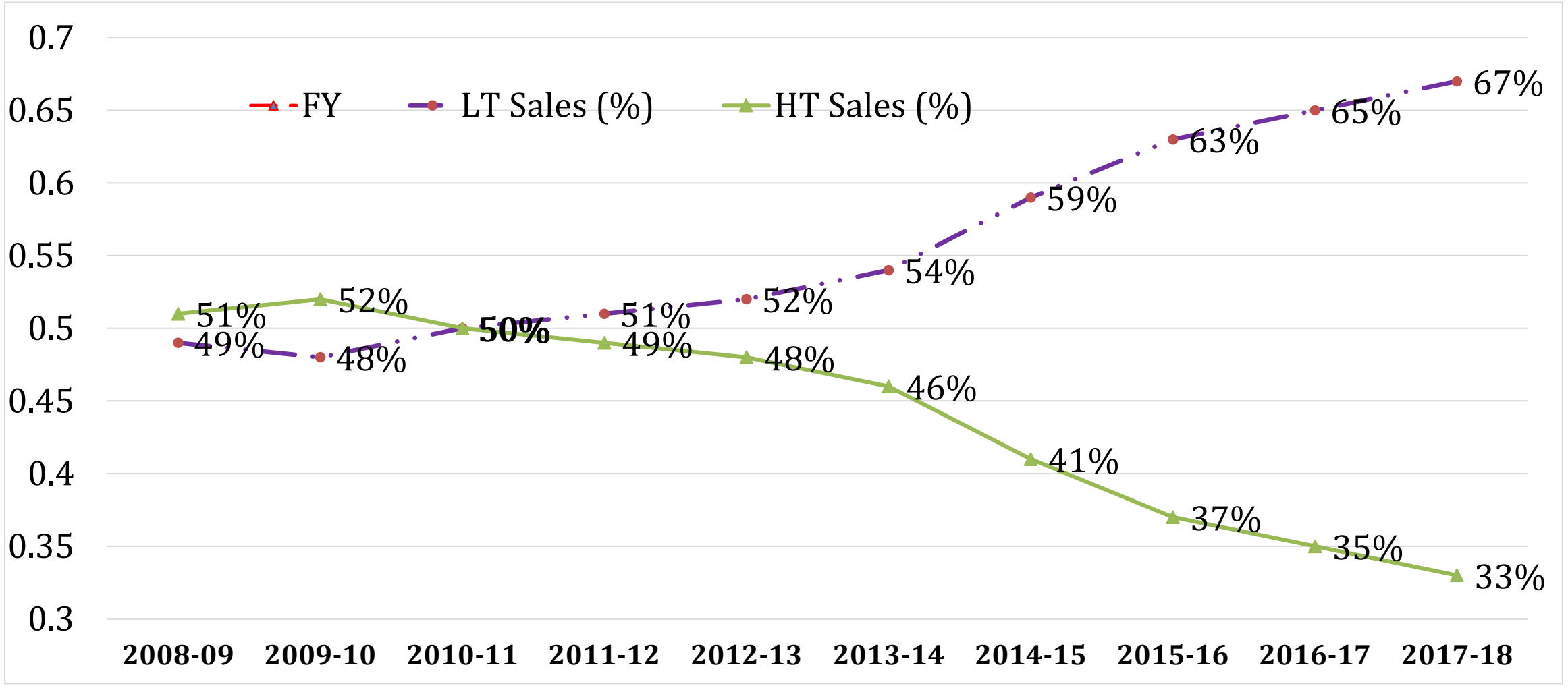
33/11 KV S/S (Nos)	510.00
33 KV line (Km)	8672.57
11 Kv line (Km)	88046.47
LT Line 3 phase (Km)	155677.36
LT Line 1 phase (Km)	157342.52

Financial Profile

Particulars	Unit	FY 17-18	FY 18-19 (Prov.)
Power purchase cost	Rs. Crore	4,506.31	4,860.94
Employee Expenses	Rs. Crore	742.06	861.83
R&M Expenses	Rs. Crore	124.26	130.56
Other costs	Rs. Crore	63.30	60.23
Interest & finanace charges	Rs. Crore	267.39	279.07
Depreciation	Rs. Crore	45.81	57.09
Less, Other Income etc.	Rs. Crore	593.51	498.59
Less, OFR/support from Govt.	Rs. Crore	560.60	630.30
Total Revenue Requirement	**Rs. Crore**	**4,595.02**	**5,120.82**
Revenue Receipt(incl. Subsidy)	Rs. Crore	4,759.45	5,161.84
Surplus(+)/Gap(-)	Rs. Crore	**164.44**	**41.01**

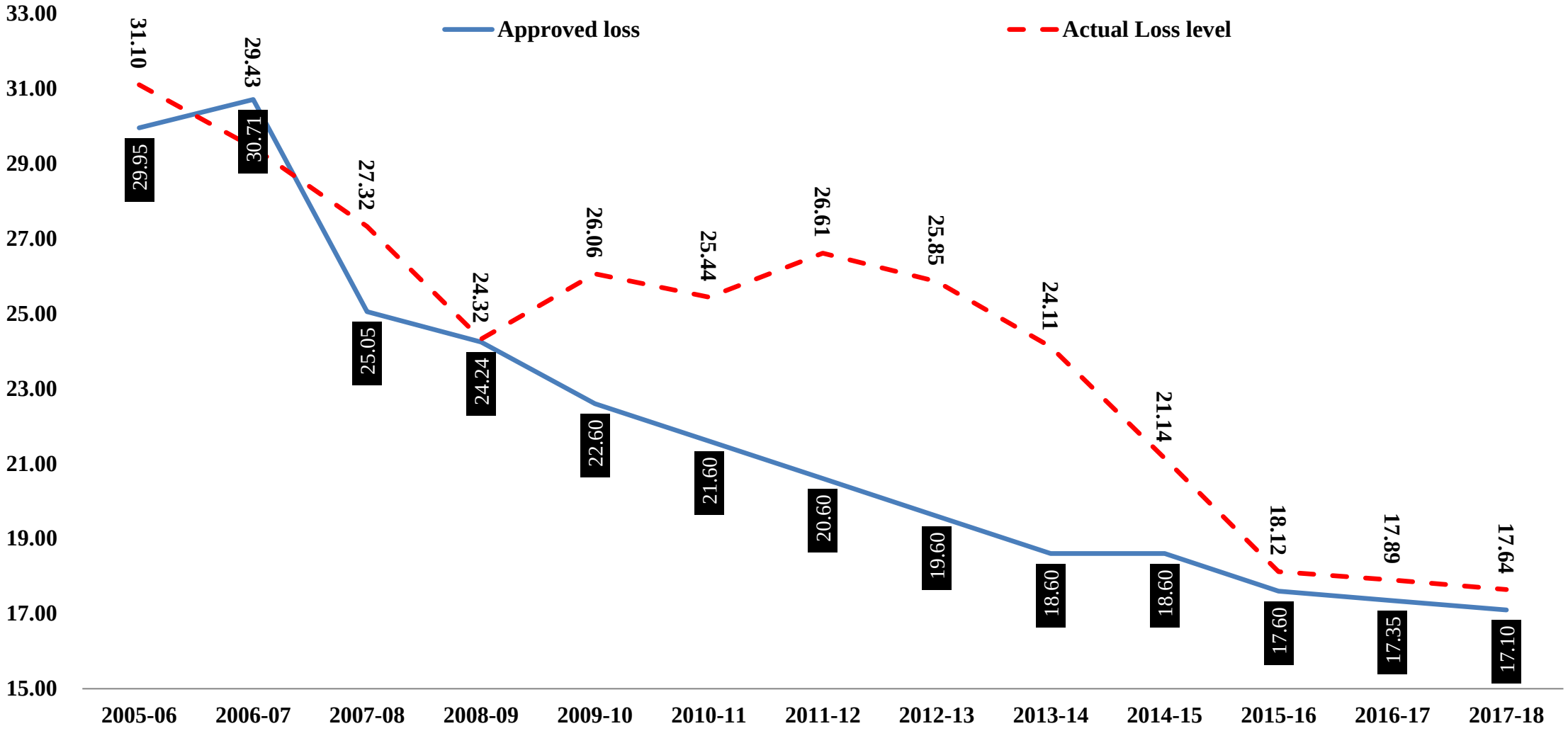
Sales Mix

Change in consumption pattern in last decade is depicted below:

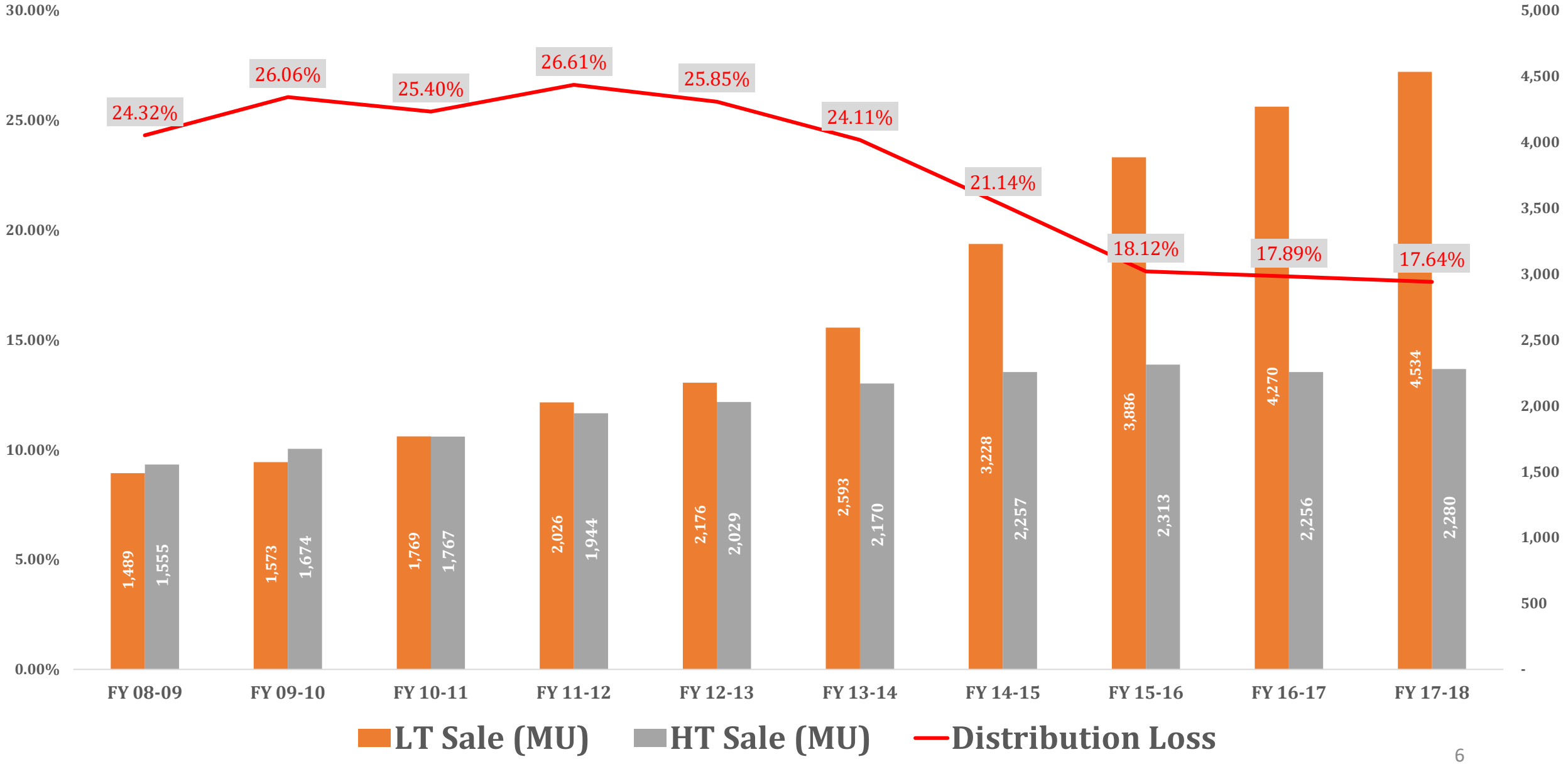


Distribution loss

Year on year actual loss against approved is depicted below:



Sustainable efficiency against adverse sale mix:



Consumer category-wise profile FY 19

Category	No. of Consumer	% Share	% Share of consumption	% Contribution to revenue
Domestic	5037280	93%	54.3%	39.4%
Commercial	273205	5%	14.4%	19.2%
Industrial	21071	0%	14.1%	19.2%
Tea, Coffee etc.	1186	0%	7.1%	9.4%
Bulk Supply	2083	0%	6.7%	8.8%
Agriculture	31578	1%	0.5%	0.6%
Public lighting	1756	0%	0.2%	0.2%
Others	53794	1%	2.6%	3.2%
	5421953	**100%**	**100%**	**100%**

Serious challenge after SAUBHAGYA…

- Inclusion of more than 16 lakh low end consumers has exposed APDCL for incremental losses both technically as well as commercially.

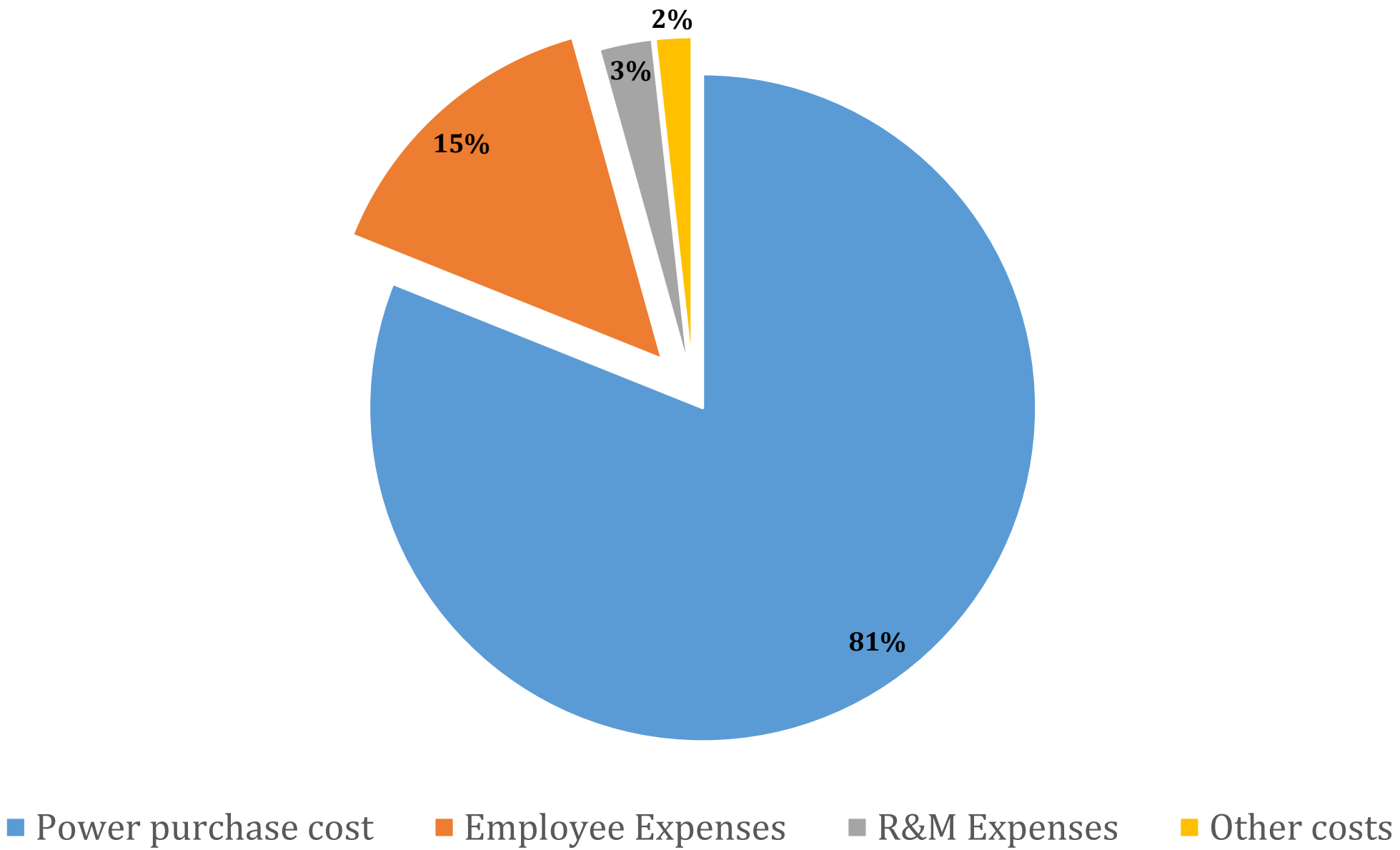
SERC Approved loss matrix for FY 18-19			
		Quantum in MU	
			Cumulative Sale
Energy purchase at source		9839.22	
CTU Loss	1.47%	144.637	
Entry to STU		9694.58	
STU Loss	3.44%	333.494	
Entry to APDCL		9361.09	
33kV Loss	5.00%	468.054	
33kV Sale		***616.92***	**616.92**
Entry to 11kV		8276.12	
11 kV Loss	6.32%	522.709	
11kV Sale		***1853.19***	**2470.11**
Entry to LT		5900.22	
LT Loss	9.94%	586.707	
LT Sale		***5313.51***	**7783.62**

Average loss from source to sale **20.89%**

Techno-commercial impact

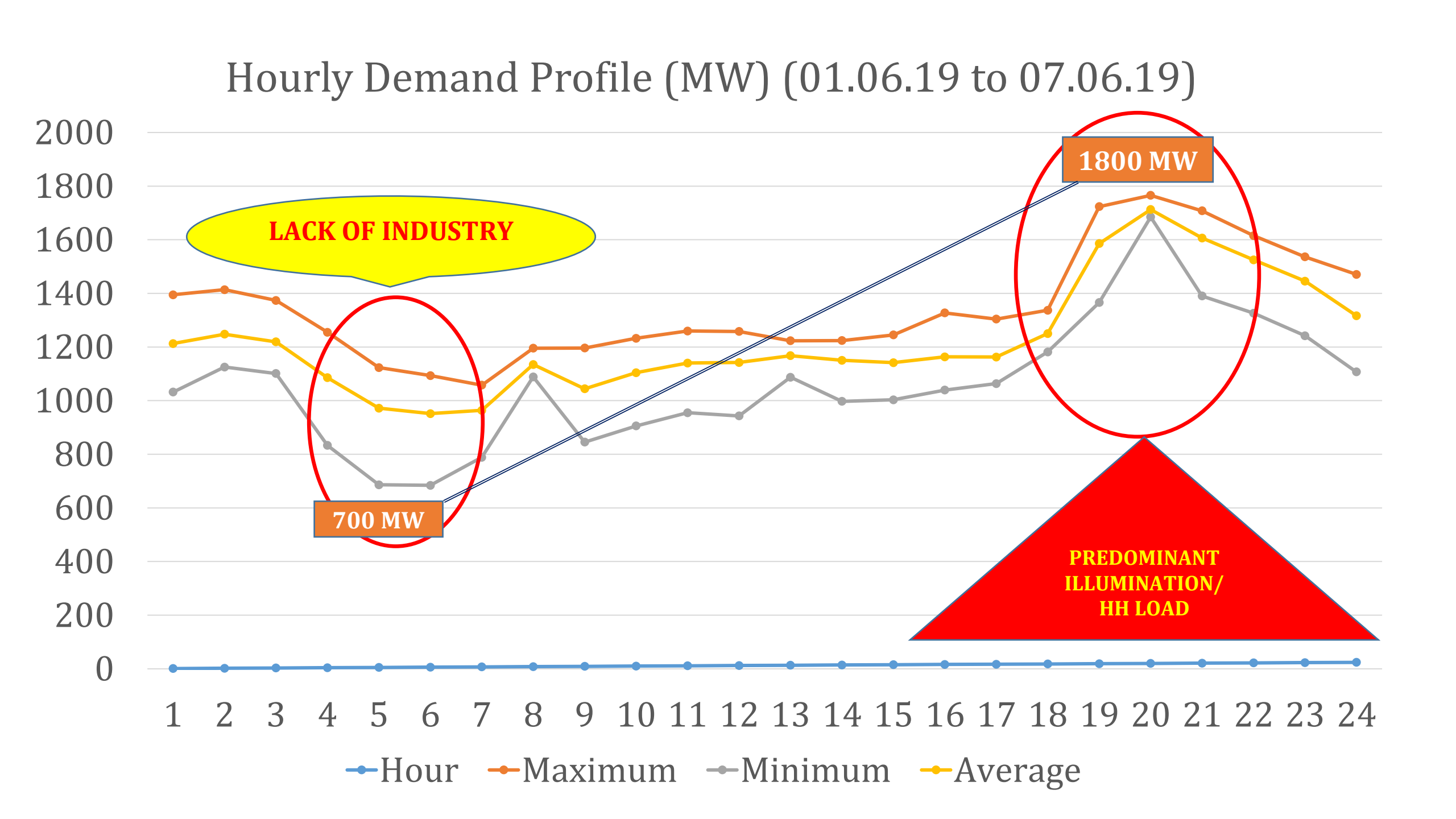
	Approved loss	LT	11 kV	33 kV
Energy sale		**1**		
LT Loss	9.94%			
Energy requirement at LT		1.11	**1**	
11 kV Loss	6.32%			
Energy requirement at 11 kV		1.19	1.07	
33 kV Loss	5.00%			
Energy requirement at 33 kV		1.25	1.12	**1**
STU Loss	3.44%			
Energy requirement at STU		1.29	1.16	1.04
CTU Loss	1.47%			
Energy requirement at source		**1.31**	**1.18**	**1.05**
Technical aspect:				
Loss involved from source to sale		23.74%	15.32%	4.86%
Average loss		20.89%		
Incremental loss		**2.85%**		
Commercial aspect:				
Approved Avg. Billing Rate (Rs./kWh)		6.71	8.78	8.71
Approved Avg. Cost of supply (Rs./kWh)		7.56	6.98	6.65
Incremental cost per unit (Rs./kWh)		**-0.85**		

Cost structure



Source of Power

		Allocation (MW)	%	Effective Capacity (MW)			
				Summer		Winter	
				Off-Peak	Peak	Off-Peak	Peak
Hydro	State	100.00	5%	87.00	97.00	0.00	67.00
	CSGS	387.42	21%	234.00	349.00	8.00	270.00
	Sub-total:	**487.42**	**26%**	**321.00**	**446.00**	**8.00**	**337.00**
Gas	State	266.70	14%	176.00	176.00	158.00	176.00
	CSGS	466.53	25%	312.00	312.00	312.00	312.00
	Sub-total:	**733.23**	**39%**	**488.00**	**488.00**	**470.00**	**488.00**
Coal	CSGS	589.98	**32%**	484.29	489.22	484.29	489.22
RE	Solar	30.00	2%	20.00	5.00	20.00	5.00
	Wind	25.00	1%	25.00	25.00	25.00	25.00
	Small Hydro	7.05	0%	7.05	7.05	7.05	7.05
	Total::	**1872.68**	**100%**	**1345.34**	**1460.27**	**1014.34**	**1351.27**


Hourly Demand Profile (MW) (01.06.19 to 07.06.19)
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hour
Maximum
Minimum
Average
LACK OF INDUSTRY
700 MW
1800 MW
PREDOMINANT ILLUMINATION/ HH LOAD

Reasons for relatively higher CoS

- **Negatively skewed consumer mix :**

  *Compel to resort to permissible PR from allocated sources with additional FC liability.

  *Sale of additional power at IEX with significantly lower price.

- ***Monsoon dilemma*:**

  *Lead to high hydro generation but often load crashes with even moderate rainfall due to drop in atmospheric temperature.

  *Serious challenge to maintain the system within permissible DSM limit.

- **Significant increase in PoC charges consequent to revision in methodology.**
- **Cost escalation owing to significant delay in commissioning of projects.**

Reasons for relatively higher CoS

- **Installation of Solar power is posing serious challenge to commercial prospects.**

  *RTS installation by high end consumers- *loss of revenue vis-à-vis challenge to optimal use of allocated power*.

  *Setting up of Solar projects on BOO basis in compliance to Solar Policy will also put serious challenge both operationally as well as commercially .

- **Above all, it needs no mention that adequate establishment cost will be pre-requisite for sustainable commercial proposition with implementation of SAUBHAGYA.**

THANK YOU