

## **CHAPTER – 4**

### **Modified Annual Revenue Requirement for FY-2018 (2nd year of 4th Control period)**

**The Commission vide Tariff Order dated 30th March 2016, approved the Annual Revenue Requirement for the 4th control period commencing from FY-17 to FY-19.**

FY-16 is the base years for the 4th control period. There is large variation in the actual energy requirement, power purchase cost and asset base compared to the approved level. This variation in the power procurement plan and costs warrants for seeking modification for Annual Revenue Requirement for FY-18 ie., 2nd year of the 4th control period.

As per 2.8.2 of the MYT regulations-2006, The Distribution Licensee may, as a result of additional information not previously known or available to him at the time of forecast under the MYT framework for the Control Period, apply for modification of the ARR and ERC for the remainder of the control period.

Based on the above Principles, BESCOM seeks modification for FY-18 as under:

#### **4.1 Power Purchase Costs:**

**4.1**The energy required by ESCOMs of Karnataka for the Financial Year 2017-18 is 66655.40 MUs considering STU transmission losses of 3.37%. The ESCOM wise energy requirement is shown below.

**Table 4.1**

<b>ESCOMs</b>	<b>Energy requirement in MUs</b>
BESCOM	31271.00
GESCOM	9059.54
HESCOM including Hukkeri Society & SEZ	12999.67
MESCOM	5585.97
CESC, Mysore	7739.22
<b>Total</b>	<b>66655.40</b>

**4.2** Energy being purchased by ESCOMs from different sources viz., KPCL Hydel, Thermal, Central Generating Stations , IPPs, NCE projects and others through short term purchases to meet the deficit.

### **Hydro and Thermal Stations of KPCL:**

The Energy availability of Hydel and Thermal stations of State Owned Power plants as per the details furnished by KPCL in their letter dated 14th November 2016 is considered. The KPCL considering the anticipated inflows based on ten years moving average less by 1% auxiliary consumption as per PPA in respect of Hydel Stations. Energy availability in respect of Thermal Stations is as per the targeted availability defined in the PPA/regulations wherever applicable and less by applicable auxiliary consumption of each station. The KPCL has projected the Energy from Yermarus Thermal Station I & II and BTPS Unit III. However, energy from these two thermal power plants are not considered since YTPS yet to declared Commercial Operation and BTPS Unit-III yet to be stabilized.

The availability of Energy from Hydel & Thermal Power Stations details furnished by KPCL is as shown in Table 4.2 & 4.3.

### **HYDEL ENERGY**

**Table 4.2**

<b>Sl. No.</b>	<b>Generating Source</b>	<b>Energy in MUs</b>
1	Sharavathy valley project ( Sharavathy, Linganamakki & Chakra Projects)	4914.10
2	Kali Valley projects ( Nagajari & Supa Projects)	3172.76
3	Varahi Valley projects ( Varahi & Mani Projects)	1068.73
4	Bhadra & Bhadra Right Bank	60.65
5	Ghataprabha(GDPH)	82.75
6	Mallapur & Others	0.00
7	Kadra Dam	362.8
8	Kodasalli Dam	340.17
9	Gerusoppa/STRP	521.59
10	Almatti Dam Power House	481.63
12	Shiva & Shimsa	292.24
13	Munirabad	91.46
14	MGHE-Jog	279.58
<b>Total KPCL Hydel</b>		<b>11668.46</b>

**THERMAL POWER STATIONS:****Table 4.3**

Sl. No.	Stations	Installed Capacity in MW	Net generation in MUs
1	RTPS I &7	1470	8728.84
2	RTPS Unit 8	250	1515.24
3	BTPS Unit I	500	3244.90
4	BTPS Unit II	500	3297.52
<b>Total</b>			<b>16786.50</b>

Total Hydel generation would be 11668.46 MUs and Thermal is around 16786.50 MUs for 2017-18, totaling to 28454.96 MUs from KPCL Station.

**Cost Projection of KPCL Hydel and Thermal Stations****Hydel Stations:**

The tariff rates worked out by KPCL based on KERC order dated 03.08.2009 for hydel stations except for Shivasamudram, Shimsha, and Munirabad & MGHE. The tariff for the hydel stations is based on the design energy, over and above the design energy paid at 15 paise per kWh or 3% of the ROE whichever is less. The tariff for the Hydel station of Shiva and Shimsha, Munirabad & MGHE is based on the KERC tariff order dated 25.02.2015. The Capacity charges and primary energy rate details furnished by the KPCL is as shown in Table-4.4.

**Table 4.4**

Sl. No.	Source	Design energy in MUs	Paise per Unit
<b>A</b>	<b>KPCL - Hydel</b>		
1	Sharavathy valley project( Sharavathy, Linganamakki & Chakra Projects))	3737.95	44.19
2	Kali Valley projects( Nagajari & Supa Projects)	2058.77	66.69
3	Varahi Valley projects( Varahi & Mani Projects)	848.69	122.56
4	Varahi 3 &4	845	39.15
5	Bhadra & Bhadra Right Bank	50.49	367.59
6	Ghataprabha(GDPH)	84.97	198.56
7	Mallapur & Others		
8	Kadra Dam	419.90	203.86
9	Kodasalli Dam	372.48	153.57
11	Gerusoppa/STRP	442.62	164.19
12	Almatti	384.00	165.47
13	Shiva & Shimsa	249.48	99.68
14	Munirabad	64.69	68.04
15	MGHE-Jog	118.00	59.41

**NOTE:**

Paise 4 as royalty charges is considered for the actual generation.

**KPCL Thermal Stations:**

The tariff rates worked out by KPCL based on various tariff orders in respect of thermal stations 1 to 7, BTPS unit-1, BTPS Unit-2 and RTPS Unit-8 is considered. The Capacity and energy charges of all thermal station furnished by KPCL is considered and shown in Table-4.5.

**Table 4.5**

Sl. no.	Stations	2017-18	
		Fixed cost Rs in Crores	Variable cost Paise per Kwh
1	RTPS unit 1 to 7	810.82	334.46
2	RTPS unit-8	232.15	288.70
3	BTPS unit-1	280.73	352.40
4	BTPS unit-II	482.13	304.60

The average cost of hydel stations works out to **84.31** paise per unit and thermal units is around **435.51** paise per unit. The Income tax is included in the capacity charges component in respect of RTPS and BTPS Units. In case of hydel stations, tax component included in the primary energy charges component.

**Central Generating Stations:**

**4.1** ESCOMs have a share in Central Generating station of NTPC, Neyveli Lignite Corporation, Nuclear power stations and other Joint Venture Projects. The allocation of capacity entitlement from these stations includes both firm and unallocated share. The unallocated share varies depending upon the allocation by Ministry of Power, GoI.

**4.2** The energy available to KPTCL depends on the scheduled generation and share in the station in a month and other parameters such as available capacity, forced outages, auxiliary consumption and planned outages. The net energy available at ex-bus generation details furnished by Central Generating Stations to CEA for preparation of LGBR for the year 2015-16 is considered for energy available for 2017-18. Out of the total month wise energy available at Ex-bus, the share of

Karnataka including unallocated share for the month of October 2016 is taken to arrive the energy available to Karnataka for FY 2017-18. In order to arrive energy available at Karnataka Periphery, POC losses of injection State/Power station and losses of withdrawal state for the week 21.11.2016 to 27.11.2016 as notified by the NLDC is taken. The schedule energy available at ex-bus and share of Karnataka is shown in Table-4.6 and net energy available at KPTCL periphery after considering the POC losses is shown in Table – 4.7

**Table 4.6**

Sl. No.	Stations	Total Energy scheduled at EX-bus in MUs	Share of Karnataka in %	Karnataka Share in MUs
1	RSTP-I&II	14694.00	22.429	3295.72
2	RSTP-III	3583.00	23.315	835.38
3	RSTP-Talcher	14151.00	18.857	2668.45
4	Simhadri station I & II	6955.00	24.579	1209.47
5	Vallur unit-I & II	7975.00	11.242	646.55
6	NLC II Stage-1	3386.00	27.754	939.75
7	NLC II Stage-2	4610.00	28.255	1302.56
8	NLC expansion I	2694.00	29.508	794.95
9	NLC expansion Stage II ( Unit-1)	2688.00	27.618	742.37
10	Tuticorn Unit-2X 500 Mw	6634.00	22.365	783.69
11	MAPS	2633.00	7.37	194.05
12	Kaiga Unit-1& 2	2823.00	27.4	773.50
13	Kaiga Unit-3&4	2781.00	29.2	812.05
14	Kudamkulam Unit-1	6240.00	22.1	1127.04

**Table 4.7**

Stations	Energy scheduled @ generators Ex-bus in MUs	Injection loss in %	With drawl loss in %	Injection state POC loss in MUs	Energy scheduled after Injection state loss	withdrawal state POC loss in MUs	Energy @ KPTCL periphery
N.T.P.C-RSTP-I&II	3208.55	0.83	1.83	27.35	3268.36	59.81	3208.55
NTPC-III	813.28	0.83	1.83	6.93	828.44	15.16	813.28
NTPC-Talcher	2568.01	1.97	1.83	52.57	2615.89	47.87	2568.01
NLC TPS2-Stage 1	914.9	0.83	1.83	7.80	931.95	17.05	914.90
NLC TPS2-Stage 2	1268.11	0.83	1.83	10.81	1291.74	23.64	1268.11
NLC TPS1-Expn	773.92	0.83	1.83	6.60	788.35	14.43	773.92
NLC II expansion I	722.74	0.83	1.83	6.16	736.21	13.47	722.74
MAPS	190.35	0.83	1.83	0.16	193.90	3.55	190.35
Kaiga Unit 1&2	753.04	0.83	1.83	6.42	767.08	14.04	753.04
Kaiga Unit 3 &4	790.57	0.83	1.83	6.74	805.31	14.74	790.57
Simhadri Unit -1 &2	1171.54	1.33	1.83	22.74	1686.73	30.87	1655.87
Tuticorn Unit-2X 500 MW	757.2	1.58	1.83	23.44	1460.25	26.72	1433.53

KudamKulam	1339.18	1.08	1.83	12.17	1114.87	20.40	1094.47
Vallur TPS Sg I ,2 &3	631.04	0.58	1.83	5.20	891.35	16.31	875.04
DVC - Mejsa thermal Power Station	1446.16	1.08	1.83	16.08	1473.12	26.96	1446.16
DVC - Koderma Thermal Power Station	1807.7	1.08	1.83	20.10	1841.40	33.70	1807.70
<b>Total</b>	<b>20926.23</b>						<b>20316.23</b>

**4.3**The power drawl from the Central Sector Generating Stations either through the PGCIL lines or any lines constructed by developer selected through competitive bidding route from the generating plants. ESCOMs will pay Transmission charges to PGCIL for Transmitting the CGS power and other states power. The POC charges for the quarter October-2016 to December -2016 notified by the CERC vide order dated 19.10.2016 is considered for payment of transmission charge to PGCIL for 2017-18. As per the order, charges includes POC rate, Reliability support Charges and HVDC Charges. The total transmission charges payable by ESCOMs for the year 2017-18 is Rs. 1325.65 crore, the details as shown in Table 4.8. The SRLDC POSOCO charges of Rs 3.48 crore for the year 2016-17 is taken for 2017-18.

**Table 4.8**

Sl no	Injection Power station	Total Capacity	Share of Karnataka	Entitlement of the States	POC Slab rate RS / MW/m onth	Reliability support Charges Rs./MW/ month	HVDC Charge s for Rs/MW / month	Total in Rs	Amount in Rs
1	RSTP	1959.7	22.429	439.55					
2	RSTP stage III	471.25	23.315	109.87					
3	Talcher	1885	18.857	355.45					
4	Simhadri	947.5	24.579	232.89					
5	NTPC Vallur	1399.65	11.242	157.35					
6	NLC stage TPS-II stage-1	521.98	27.754	144.87					
7	NLC stage TPS-II stage-II	711.02	28.255	200.90					
8	NLC expansion	384.3	29.508	113.40					
9	NLC Expansion - II	450	27.618	124.28					
10	Tuticorn Unit-2X 500 Mw	947.5	22.365	211.91					
11	MAPS	393.8	7.37	29.02					
12	Kaiga Unit1&2	393.8	27.4	107.90					
	Kaiga Unit 3&4	393.8	29.2	114.99					
13	Kudamkulam Unit-1	922	22.1	203.76					
14	DVC	450	100	450					
				2996.14	327380	25321	16010	368711	13256518074

**4.4** The tariffs of CGS units are due for revision w.e.f 01.04.2014. However, capacity charges in respect of NTPC stations are based on tariff petition filed before CERC for the control period 2014-19 is considered for financial Year 2017-18 except for Simhadri Super Thermal Power Station Stage-II and Ramgundam Super Thermal Power Station Stage-III. The CERC issued tariff order on 29.7.2016 for Simhadri and on 8.11.2016 for Ramgundam Super thermal Station Unit III. These capacity charges are considered for 2017-18. In respect of NLC station, tariff proposed by NLC stations before CERC for the year 2017-18 is taken except for NLC I-Expansion (420 MW). The CERC issued order on 4th October 2016 for this project, the same is taken for 2017-18. The three months average of the variable cost paid for the month from July-2016 to September-2016 is considered for NTPC, NLC MAPS, Kaiga and KudamKulam power stations. The tariff order dated 3.10.2016 of CERC in respect of Mejia Thermal Power Stations Unit Nos (7&8)(2X500MW) and 6.7.2015 order for Kodema Thermal Power Station unit No. 1& II (1000 MW) is considered for DVC projects towards capacity charges.

**4.5** The capacity charges (Fixed Cost) and variable cost considered for 2017-18 is shown in Table-4.9.

Table 4.9

Central Projects	FC Rs in Cr	VC Paise per Kwh
N.T.P.C-Ramagundam	239.12	213.69
NTPC-VII	61.76	209.95
NTPC-Talcher	193.32	163.00
NLC TPS2-Stage 1	82.75	265.03
NLC TPS2-Stage 2	111.42	265.03
NLC TPS1-Expn	80.74	253.67
NLC II Expansion-1	107.23	202.00
MAPS		227.59
Kaiga unit I &II		319.41
Kaiga Unit 3 &4		319.41
Simhadri Unit -1 &2	266.17	274.45
KudamKulam		436.41
Vallur TPS	237.08	219.84
Tuticorn	234.76	236.37
Damodar valley Corporation- Mejia thermal Power Station	208.22	230.73
Damodar valley Corporation- Kodemma thermal Power Station	322.72	212.10

**4.6** Income tax for the CGS station included in the capacity charges payment as per CERC Tariff Regulations 2014-19 and hence not considered, In case of nuclear stations, income tax shall be claimed separately and hence considered for MAPs and Kaiga power stations.

## **5. Independent Power Producers:**

**5.1** The generation of 1200 MW of UPCL Unit -1 & Unit-2 taken at 85% of 90% installed capacity as per PPA/ approval. The auxiliary consumption of 5.25% as per CERC Regulation 2014 and additional auxiliary consumption 1.2% allowed by CERC vide order dated 20.02.2014 and 10.07.2015 is taken. The capacity charges determined by CERC vide order dated 10.07.2015 for 2013-14 and average variable cost paid for the month of October 2016 is considered. The energy and cost details is shown in Table-4.10.

**Table 4.10**

<b>Stations</b>	<b>Energy in Mus</b>	<b>Fixed cost Rs in Cr</b>	<b>Variable cost Paise per Kwh</b>
UPCL	7462.68	1231.50	259

## **6. Non-conventional Energy Source (NCE source):**

**6.1** The actual generation of NCE projects for the year 2015-16 has been considered for 2017-18 including Solar, Co-generation, Bio-mass, and Wind Mills and Mini Hydel projects.

**6.2** Project which are expected to be commissioned during 2017-18 is considered based on the details furnished by the M/s. KREDL in respect of Wind, Co-generation, Bio-mass and Hydel Generation. In addition, ESCOMs have signed PPA for 1 to 3 MW farmer based Solar PV. The rate as agreed at Rs 8.40 per unit is considered.

**6.3** The KREDL has furnished solar projects likely to be commissioned during 2017-18 and for such projects PPA already signed with ESCOMs. The PLF is based on KERC order dated 30.7.2015 is considered to arrive energy.

**6.4** ESCOM wise NCE energy projected for FY 2017-18 is shown in Table 4.11.



Table 4.11

(Energy in MUs)

Minor IPPs	BESCOM	GESCOM	HESCOM	MESCOM	CESC
Existing NCE projects					
Co-generation		6.60	111.69		41.80
Bio-mass	39.36	75.92			4.43
Mini-Hydel	453.41	63.11	17.76	252.70	222.13
Windmill	2160.70	165.31	616.29	269.43	188.95
KPCL wind mill	7.80				
Solar	490.41	329.00	124.67	126.49	191.41
KPCL Solar	4.07	2.71	3.83		
NTPC Bundled Power	304.68	33.10	123.12	53.83	67.39
Captive		10.73		2.44	
			142.06		
<b>Total D1</b>	<b>3460.43</b>	<b>686.48</b>	<b>1139.42</b>	<b>704.89</b>	<b>716.11</b>
New NCE Projects					
Co-generation		0.00			
Bio-Mass	0.00	0.00			
Mini-Hydel	1.05	6.99		28.91	
Wind Mill	56.00	38.26	67.87		
Solar Park	278.49	79.74	113.39	46.73	64.41
Solar -KREDL	672.66	102.51	434.58	116.68	240.73
NTPC-Wind					
<b>Total D2</b>	<b>1008.20</b>	<b>227.50</b>	<b>615.84</b>	<b>192.31</b>	<b>305.14</b>
<b>Total of D1&amp;D2</b>	<b>4468.63</b>	<b>913.98</b>	<b>1755.26</b>	<b>897.20</b>	<b>1021.25</b>

**6.5** The average cost of the year 2015-16 is considered for existing Hydro and Wind projects.

**6.6** In respect of new Bio-mass, Co-generation, Wind Mill and Mini Hydel the tariff considered is as per the KERC order dated 1.1.2015.

**6.7** The rate as per KERC order dated 24.02.2015 is considered for existing Bio Mass and Co-generation projects.

**6.8** In respect of Solar Power Projects, the rate obtained through tender is considered. The details is shown in **Table-4.12 annexed**.

**6.9** The 600 MW Solar Park expected to commission in September 2017. The tentative bundled tariff rate proposed by NTPC is 350 paise per unit.

## 7. Jurala Project:

The 50% of the energy from Jurala Priyadarshni Hydro Electric Projects for the year 2015-16 is considered for 2017-18. The TSERC vide tariff order dated 27.03.2015 determined the retail supply tariff for the financial year 2015-16. The same tariff is considered for FY 2017-18.

**Table 4.13**

	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Total
Energy in Mus	0.00	0.00	0.00	0.00	0.00	8.35	1.07	-0.18	-0.22	-0.05	0.00	0.00	8.976
Amount in Rs Cr	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	51.17

- 8.** The energy from T. B. Dam power is shared between AP/Telangana and Karnataka. The 1/5th share of revenue expenditure and energy has been shared between two states. The actual cost and energy for the FY 2015-16 is considered for 2017-18. The power purchase cost and energy from T. B. Dam has been estimated to 21.87 MUs and Rs. 2.46 crore.

**Table 4.14**

	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Total
Energy in Mus	0.14	0.11	-0.20	2.80	3.47	2.90	4.24	4.93	0.86	2.65	0.01	-0.04	21.87
Amount in Rs crore	0.05	0.08	0.08	0.06	0.08	0.57	0.11	0.08	0.08	0.36	0.47	0.44	2.46

## **9. Medium Term Power Purchase – Co generation power plant for a period of 5 years**

GoK vide order dated 11.11.2016 accorded approval to purchase power from Bagasse Based Co-generation Units of sugar factories in the State with the approval of KERC, for a period of 5 years commencing from 2016-17 at the tariff determined by KERC. As per the proposal given by South India Sugar Mills Association, 28 sugar factories with an exportable capacity of 501 MW are willing to enter into PPA with ESCOMs. The total energy expected from these sugar factories for the financial year 2017-18 considering PLF of 60% is around 1334.36 MUs. The details shown in Table-4.15.

Table 4.15

List of Sugar mills			
Sl.No.	Name of the Sugar Mill	Exportable during the season in MW	Energy in Mus
A	Member Units		
1	Godavari Bio-refineries Ltd.	28.00	72.58
2	Jamakhandi Sugars Ltd -I	14.00	36.29
3	Jamakhandi Sugars Ltd -II	14.00	36.29
4	Nirani Sugars Ltd	27.00	69.98
			0.00
5	NSL Sugars Ltd, Koppa	12.50	32.40
6	Parry Sugar Industries Ltd. - Haliyal	19.50	50.54
7	EID Parry (India) Pvt Ltd (Lessee: Sadashiva Sugars Ld.	9.00	23.33
8	Shamnur sugars Ltd	10.00	25.92
9	Sri Chamundeshwari Sugars Ltd	20.00	51.84
10	Sri Prabhulingeshwara Sugars & Chemicals	25.00	64.80
11	Core Green Sugar & Fuels Pvt Ltd	15.00	38.88
12	Manali Sugars Ltd, malaghan, Bijapur	10.00	25.92
13	NsL sugars Ltd., Aland	19.00	49.25
14	NSL Sugars Ltd., Desanur (Thungabhadra)	16.80	43.55
15	Vijaynagar Sugars Ltd	16.00	41.47
16	Davanagere Sugar co.	12.00	31.10
17	Bhalkeshwara Sugars Ltd	9.00	23.33
18	G M Sugars Ltd	10.00	25.92
19	Shiraguppi Sugar Ltd	12.00	31.10
20	GEM Sugars Ltd	12.00	31.10
21	Shree Renuka Sugars Ltd., Budatti	25.00	64.80
22	Shree Renuka Sugars Ltd., Havalga	20.00	51.84
23	Shree Renuka Sugars Ltd., Munoli	15.00	38.88
24	KPR Sugars Ltd	18.00	46.66
25	Shivashakthi Sugars Ltd	24.00	62.21
26	Indian Cane Power Ltd	54.00	139.97
27	Soubhagya Lakshmi Sugar Ltd	26.00	67.39
28	Harsha Sugars Ltd	22.00	57.02
29	Sovereign Industries Ltd.		0.00
<b>Total</b>		<b>514.80</b>	<b>1334.36</b>

The projected rate per unit considered for procurement of above power is Rs. 4.50/unit (short term rate approved by KERC).

The projected energy and cost allocated among the ESCOMs as per GoK order dated 18.3.2016 except Sharavathy Valley Project, Kali Valley projects and RTPS Unit-1 to 7.

## **Sales and Distribution Loss for FY-18 (2nd year of 4th control period):**

Category wise sales and number of installations for FY-18 as approved in the Commission's order dated 30th March 2016 is as under:

**Table 4.16**

Category	FY-18	
	Approved Nos.	Approved Sales
LT-2a*	7570528	7148.71
LT-2b	11374	43.49
LT-3	1039878	2123.51
LT-4 (b)	873	3.08
LT-4 (c)	1897	7.21
LT-5	204951	1256.11
LT-6 WS	76046	564.92
LT-6 SL	65910	374.34
LT-7	659470	200.79
HT-1	261	779.37
HT-2 (a)	7265	4832.95
HT-2 (b)	6481	2947.52
HT2C	540	243.59
HT-3(a)& (b)	39	105.62
HT-4	328	108.04
HT-5	908	84.80
<b>Sub-Total other than BJ/KJ and IP sets</b>	<b>9646750</b>	<b>20824.05</b>
BJ/KJ	631754	49.15
IP Sets	883519	6980.27
<b>Sub Total BJ/KJ and IP sets</b>	<b>1515273</b>	<b>7029.42</b>
<b>Total</b>	<b>11162023</b>	<b>27853.46</b>

The actual category wise sales for FY 2015-16 is 24,538.4 MU as against the approved sales of 25,341.9 MUs. There is a reduction of sales to an extent of 803.5 MU against the approved level. Based on the actuals of FY-16 and half yearly sales of FY-17(Upto Sept-16), category wise sales for FY-18 are modified.

### **Projection of Energy Sales in MU:**

The normal concept of estimating the sales for FY-18 is by repeating the half yearly sales for FY-17 and computing CAGR values with the FY-17 figure as base figure. For FY-18, suitable CAGR value is considered for estimating the figures for FY-18.

Over the years, it has been found that there is a reduction in the energy consumption during the second half of each financial year. This is demonstrated through the half yearly sales figures in FY-15 and FY-16. The below table depicts the half yearly sales for FY-15, FY-16 and FY-17.

**Table 4.17**

(In MU)

Tariff	FY-15		FY-16		FY-17
	Apr-14 to Sept-14	Oct-14 to Mar-15	Apr-15 to Sept-15	Oct-15 to Mar-16	Apr-16 to Sept-16
HT-1	322.23	333.85	334.99	337.77	344.83
HT-2A	2514.67	2100.42	2327.95	2265.25	2376.76
HT-2B	1480.29	1257.35	1397.79	1217.11	1414.09
HT-2C	81.15	102.89	118.51	114.02	138.73
HT-3	3.27	12.80	26.69	30.42	4.56
HT-4	75.16	50.49	51.42	45.16	63.02
HT-5	247.28	32.89	36.36	37.86	37.41
<b>HT Total</b>	<b>4724.06</b>	<b>3890.68</b>	<b>4293.73</b>	<b>4047.58</b>	<b>4379.41</b>
LT-1	69.01	66.41	65.59	63.14	66.35
LT-2	2898.75	2769.84	3079.46	2947.91	3324.70
LT-3	845.81	803.01	904.43	849.64	971.61
LT-4	2627.49	3249.82	3207.82	2990.03	3383.45
LT-5	570.18	559.25	591.30	559.10	592.66
LT-6A [WS]	230.61	205.05	206.50	198.17	238.61
LT-6B [SL]	185.55	204.77	184.04	182.22	180.43
LT-7	93.56	89.11	86.10	81.42	77.92
<b>LT Total</b>	<b>7520.96</b>	<b>7947.27</b>	<b>8325.23</b>	<b>7871.64</b>	<b>8835.72</b>
<b>Total</b>	<b>12245.02</b>	<b>11837.95</b>	<b>12618.96</b>	<b>11919.23</b>	<b>13215.13</b>

The table below depicts the half yearly percentage sales for FY-15 and FY-16:

**Table 4.18**

(In per %)

Tariff	Apr-14 to Sept-14	Oct-14 to Mar-15	Apr-15 to Sept-15	Oct-15 to Mar-16
HT-1	0.49	0.51	0.50	0.50
HT-2A	0.54	0.46	0.51	0.49
HT-2B	0.54	0.46	0.53	0.47
HT-2C	0.44	0.56	0.51	0.49
HT-3	0.20	0.80	0.47	0.53
HT-4	0.60	0.40	0.53	0.47
HT-5	0.88	0.12	0.49	0.51
<b>HT total</b>	<b>0.55</b>	<b>0.45</b>	<b>0.51</b>	<b>0.49</b>
LT-1	0.51	0.49	0.51	0.49
LT-2	0.51	0.49	0.51	0.49
LT-3	0.51	0.49	0.52	0.48

LT-4	0.45	0.55	0.52	0.48
LT-5	0.50	0.50	0.51	0.49
LT-6A [WS]	0.53	0.47	0.51	0.49
LT-6B [SL]	0.48	0.52	0.50	0.50
LT-7	0.51	0.49	0.51	0.49
<b>LT total</b>	<b>0.49</b>	<b>0.51</b>	<b>0.51</b>	<b>0.49</b>
<b>Total</b>	<b>0.51</b>	<b>0.49</b>	<b>0.51</b>	<b>0.49</b>

From the above, it can be seen that there is a decrease in the second half year sales. Reflecting on the previous half yearly growth, BESCO with a considerate view has projected the sales for second half of FY17. The percentage considered for second half is also depicted in the last column.

**Table 4.19**

(Rs. In Mu)

Tariff	FY-15		FY-16		FY-17		% considered over the first half year sales
	Apr-14 to Sept-14	Oct-14 to Mar-15	Apr-15 to Sept-15	Oct-15 to Mar-16	Apr-16 to Sept-16	Oct-16 to Mar-17	
<b>HT-1</b>	322.23	333.85	334.99	337.77	344.83	344.83	50.00
<b>HT-2A</b>	2514.67	2100.42	2327.95	2265.25	2376.76	2024.65	46.00
<b>HT-2B</b>	1480.29	1257.35	1397.79	1217.11	1414.09	1204.59	46.00
<b>HT-2C</b>	81.15	102.89	118.51	114.02	138.73	133.29	49.00
<b>HT-3</b>	3.27	12.80	26.69	30.42	4.56	5.15	53.00
<b>HT-4</b>	75.16	50.49	51.42	45.16	63.02	55.89	47.00
<b>HT-5</b>	247.28	32.89	36.36	37.86	37.41	38.94	51.00
<b>HT total</b>	<b>4724.06</b>	<b>3890.68</b>	<b>4293.73</b>	<b>4047.58</b>	<b>4379.41</b>	<b>3807.33</b>	
<b>LT-1</b>	69.01	66.41	65.59	63.14	66.35	63.75	49.00
<b>LT-2</b>	2898.75	2769.84	3079.46	2947.91	3324.70	3194.32	49.00
<b>LT-3</b>	845.81	803.01	904.43	849.64	971.61	896.87	48.00
<b>LT-4</b>	2627.49	3249.82	3207.82	2990.03	3383.45	3123.19	48.00
<b>LT-5</b>	570.18	559.25	591.30	559.10	592.66	569.42	49.00
<b>LT-6A [WS]</b>	230.61	205.05	206.50	198.17	238.61	211.60	47.00
<b>LT-6B [SL]</b>	185.55	204.77	184.04	182.22	180.43	180.43	50.00
<b>LT-7</b>	93.56	89.11	86.10	81.42	77.92	74.86	49.00
<b>LT total</b>	<b>7520.96</b>	<b>7947.27</b>	<b>8325.23</b>	<b>7871.64</b>	<b>8835.72</b>	<b>8314.42</b>	
<b>Total</b>	<b>12245.02</b>	<b>11837.95</b>	<b>12618.96</b>	<b>11919.23</b>	<b>13215.13</b>	<b>12121.76</b>	

Estimation of energy sales are prepared with a few modifications such as,

- IP sales is computed by multiplying the approved specific consumption of 8037 units/IP/annum with the end year installations figure of FY-17
- BJ/KJ sales is not doubled as a part of the sales is considered under LT2a category.

The energy sales for FY17 and FY18 are shown in the table below:

**Table 4.20**

(Rs. In MU)

Tariff category	FY-16	FY-17 (Upto Sept-16)	FY-17 (doubling)	FY-17 with corrections	FY-18 Estimations
LT-1	57.45	66.35	66.35	66.35	68.87
LT-2(a)	6056.06	3301.86	6670.08	6536.79	7019.42
LT-2(b)	42.59	22.83	45.67	45.97	46.96
LT-3	1754.07	971.61	1943.21	1868.47	1998.94
LT-4(a)	6189.80	3379.82	6759.64	6677.06	6837.80
LT-4(b)					
LT-4( c )	3.44	1.18	2.36	2.36	1.92
LT-4(d)	4.61	2.45	4.90	4.90	5.12
LT-5	1150.40	592.66	1185.32	1162.08	1187.24
LT-6a(i)WR	404.68	238.61	477.22	450.20	448.19
LT-6a(ii)SL	366.26	180.43	360.86	360.86	353.24
LT-6b(i)					
LT-6b(ii)					
LT-7	167.52	77.92	155.84	152.78	158.63
<b>LT Total</b>	<b>16196.88</b>	<b>8835.72</b>	<b>17671.44</b>	<b>17327.83</b>	<b>18126.33</b>
HT-1	672.95	344.83	689.66	689.66	738.04
HT2 (a)					0.00
HT-2(a)	4593.21	2376.76	4753.53	4401.41	4409.04
HT-2(b)	2614.91	1414.09	2828.17	2618.68	2613.04
HT-2©	232.54	138.73	277.46	272.02	272.02
HT-3(a)	56.92	4.22	8.44	9.02	9.77
HT3 (b)	0.18	0.35	0.69	0.69	0.81
HT-4	96.59	63.02	126.05	118.91	119.06
HT-5	74.22	37.41	74.83	76.36	76.36
<b>HT TOTAL</b>	<b>8341.52</b>	<b>4379.41</b>	<b>8758.81</b>	<b>8186.74</b>	<b>8238.13</b>
<b>TOTAL</b>	<b>24538.40</b>	<b>13215.13</b>	<b>26430.25</b>	<b>25514.57</b>	<b>26364.46</b>
<b>Inter ESCOM Sales</b>					
<b>GRAND TOTAL</b>	<b>24538.40</b>	<b>13215.13</b>	<b>26430.25</b>	<b>25514.57</b>	<b>26364.46</b>
<b>Growth Rate</b>	<b>0.4</b>		<b>7.7</b>	<b>4.0</b>	<b>3.3</b>

### **Projection of installations:**

Estimation of number of consumers for FY-18 is computed by doubling the half yearly consumers added for FY-17 and computing CAGR values with this FY-17 figure as final figure. For FY-18, suitable CAGR value is considered for estimating the number of consumers for FY-18. For FY18, one year CAGR is considered more appropriate.

Estimation of energy sales are prepared with a few modifications such as,

- For IP sets i.e., LT4a, 20,000 numbers are added to FY-17.

- Wherever the CAGR value is negative or exorbitant, FY17 number of consumers are retained.

The below table depicts the projected number of consumers for FY-17 and FY-18.

**Table 4.21**

(In Lakhs)

Sl. No.	Consumer Category	As on 31/03/2016	Upto 30/09/2016	As on 31/03/2017	CAGR 5 years	CAGR 4 years	CAGR 3 years	CAGR 2 years	CAGR 1 year	As on 31/03/18
1	LT 1(a)	772458	775682	778906	1.8%	2.2%	2%	1%	1%	785408
2	LT 1(b)									
3	LT2 (a)	6797203	6969346	7141489	5.7%	5.7%	6%	6%	5%	7503213
4	LT2 (b)	11242	10991	10991	-2.4%	4.6%	4%	5%	-2%	10991
5	LT3	944998	963531	982064	6.0%	6.1%	6%	7%	4%	1020584
6	LT4 (a)	809178	819984	830790	5.8%	6.2%	6%	4%	3%	850790
7	LT4 (b)									
8	LT4 (c)	740	497	497	1.0%	0.9%	-1%	-12%	-33%	497
9	LT4 (d)	1413	1425	1437	10.0%	7.5%	8%	5%	2%	1461
10	LT5	189452	190866	192280	4.6%	4.8%	4%	5%	1%	195150
11	LT6 (a)(i) WR	61667	64719	67771	9.5%	9.3%	9%	8%	10%	74479
12	LT6 (a)(ii) SLR	59838	60462	61086	4.2%	4.1%	4%	3%	2%	62360
13	LT6 (b)(i)	0								0
14	LT6 (b)(ii)	0								0
15	LT7	485141	525163	565185	30.4%	33.9%	28%	27%	16%	658436
<b>LT TOTAL</b>		<b>10133330</b>	<b>10382666</b>	<b>10632496</b>	<b>6.1%</b>	<b>6.4%</b>	<b>6%</b>	<b>6%</b>	<b>5%</b>	<b>11163370</b>
16	HT1	197	202	207	9.3%	9.3%	9%	5%	5%	218
17	HT2 (a)	6297	6140	6140	7.5%	7.5%	7%	6%	-2%	6140
18	HT2 (a)	0		0						0
19	HT2 (b)	5827	5565	5565	6.3%	5.7%	6%	7%	-4%	5565
20	HT2 (c)	533	561	589			28%	24%	11%	651
21	HT3 (a)	25	23	23	1.8%	2.3%	5%	-8%	-8%	23
22	HT3 (b)	9	11	11	22.4%	38.4%	54%	135%	22%	11
23	HT4	272	256	256	6.0%	4.2%	10%	9%	-6%	256
24	HT5	475	640	805		81.0%		65%	69%	1364
<b>HT TOTAL</b>		<b>13635</b>	<b>13398</b>	<b>13596</b>	<b>9.3%</b>	<b>9.3%</b>	<b>10%</b>	<b>9%</b>	<b>0%</b>	<b>14228</b>
<b>TOTAL</b>		<b>10146965</b>	<b>10396064</b>	<b>10646092</b>	<b>6.11%</b>	<b>6.40%</b>	<b>6.25%</b>	<b>6.17%</b>	<b>5%</b>	<b>11177597</b>

#### 4.1 Capital Investment Plan:

Capital investment plan for FY-18 which was projected by BESCO was accepted by the Commission with a note that, BESCO should make efforts to work out the Techno-economic analysis for the works considered in system strengthening, improvement and other works for the control period, so as to ascertain the extent of Capex investment required for reduction of losses.

Based on the previous years' achievements and the new works to be undertaken as per the GoI schemes in a time bound manner and considering the long term



loans tied up by BESCOM, the Commission recognizes the Capex proposal of BESCOM at Rs.967.30 for FY18.

**Approved Capex plan is as under:**

**Table 4.22**

**(Rs. In Crore)**

Sl No	Particulars	FY -18
1	11 KV Evacuation & Link Lines	72.05
2	Safety and Strengthening of HT/LT network including OH/UG cable and AB cable works	38.33
3	HT Reconductoring	29.6
4	LT Reconductoring	29.63
5	Providing Additional DTC's/Enhancement of DTC's	48.83
6	Planned works (RE / SCP / TSP/Drinking Water Ganga Kalyana and service connection)	47.21
7	Local Planning	36.01
8	RMU Works	4.232
9	Safety Measures/ Hazardous (shifting DTC at school premises)	12.74
10	OH to UG Conversion	2.10
11	Infrastructure to Unauthorized IP sets	5.19
12	Providing & replacement of RMUs	0.59
13	Replacement of meters, Smart meters, replacement of HTMC of HT installation	23.77
14	DTC Metering programme	2
15	IPDS	100
16	DDUGJY	100
17	HVDS	100
18	NJY Phase-3	250
19	DSM	64.97
20	DAS	-
<b>Total</b>		<b>967.30</b>

**Distribution loss:**

Approved distribution loss for FY-18 as per the Tariff order dated 30th March 2016 is as follows;

**Approved Distribution Losses for FY 18:**

**Table 4.23**

**Figures in % Losses**

Particulars	FY18
Upper limit	13.00
<b>Average</b>	<b>12.75</b>
Lower limit	12.50

Target fixed by the Commission will be achieved and no modification is proposed for the distribution loss.

## 4.2 Operation and Maintenance expenses:

As per the norms specified under the MYT Regulations, the O & M expenses are controllable expenses and the distribution licensee is required to incur these expenses within the approved limits.

The Commission had computed the O & M expenses for FY17-19 duly considering the actual O & M expenses of FY15 as per the audited accounts (being the latest audited accounts data available) to arrive at the O & M expenses for the base year i.e. FY16. The actual O& M expenses for FY15 are Rs.1065.76 Crores.

Considering the Wholesale Price Index (WPI) as per the data available from the Ministry of Commerce & Industry, Government of India and Consumer Price Index (CPI) as per the data available from the Labour Bureau, Government of India and adopting the methodology followed by CERC with CPI and WPI in a ratio of 80 : 20.

Further, BESCO's proposal for factoring the revision of pay scales for the employees, Commission opined that, additional employee cost due to revision of pay scale effective from 1st April, 2017, such expenses could be factored only after being incurred by the distribution licensee. Commission has decided to look into the issue, at the time of approving the APR for relevant years when the actual revision of pay scales takes place instead of loading these costs upfront.

Under the above back ground Commission approved O&M cost for FY-18 as under:

**Table 4.24**

**(Rs. In Crore)**

Particulars	FY16	FY17	FY18
No. of Installations		10574032	11162023
CGI based on 3 Year CAGR		6.01%	5.73%
Inflation index		7.24%	7.24%
Base Year O&M expenses (as per actuals of FY15 )-Rs. Crs	1201.45		
<b>Total allowable O&amp;M Expenses-Rs. Crs</b>		<b>1348.61</b>	<b>1510.01</b>

O&M expenses for base year FY-16 is now available. Added to this inflation index and consumer growth are projected, O&M expenses are modified from the approved figures, Commissions assumptions of inflation index and consumer growth index are reworked taking following factors into consideration:

As informed in the truing up of FY-16, expenditure towards new recruitment was included in FY-16. Additional employee cost was incurred to an extent of Rs.15.83 Crs as the cost incurred is for different spans of the financial year as explained in the earlier truing up chapter. Owing to this new recruitment, it is estimated that an annual expenditure of Rs.46.10 Crs. will be incurred.

**Table 4.25**

<b>Name of the Post</b>	<b>Nos.</b>	<b>Avg. Salary per employee</b>	<b>Annual increase</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Assistant Line Man ( ALM)	627	19497	14.67
Assistant Engineer (Ele,)	15	43940	0.79
Assistant Accounts Officer (AAO)	3	43940	0.16
Junior Engineer (JE)	19	28816	0.66
Assistant	249	25137	7.51
Junior Assistant(JA)	284	22195	7.56
Junior Line Man (JLM)	1229	10000	14.75
<b>TOTAL</b>	<b>2426</b>	<b>193525</b>	<b>46.10</b>

Further, it is submitted to the Commission that the following aspects will have impact on FY-18 O&M expenses.

The recruitment of 100 Assistant Accounts Officers and about 2500 Assist Linemen recruitment is under process. Endurance test for the recruitment for the Assistant Linemen was conducted from 18th Oct 2016 to 23rd Oct 2016. This recruitment process will be completed and employees will be recruited at the end financial year FY-17. Hence, additional expenses on this account for FY-18 will have impact (to an extent of Rs.35 Crs).

Revision of pay scales is due from 01.04.2017.ie. FY-18, and Commission opined that such expenses will be factored only after being incurred.

As the Commission doesn't want to load these expenditure at upfront the same is not considered for FY-18 modification.

Actual FY-16 O&M expenses and adjusted actual expenditure are as follows:

**Table 4.26**

(Rs. In Crore)

Sl No.	Particulars	Amount in Crs.
1	Employee benefits expenses (Employees Expenses)	851.56
2	Other Operating expenses(Repair and Maintenance Expenditure )	82.7
3	Other expenditure (A&G expenditure)	219.17
<b>Total</b>		<b>1153.43</b>
Add:	Additional employee cost on account of 2426 employees during 2016 ( estimated annual expenditure Rs.46.10 minus actual cost incurred for few month of FY-16 RS.15.83=30.27)	30.27
	Adjusted O&M cost for FY-16	1183.70

Considering Rs. 1183.70 Crs. as O&M cost of FY-16, and applying the inflation index and consumer growth rate as approved by the Commission in its Tariff order dated 30th March 2016, revised O&M cost for FY-18 is tabulated as under.

**Table 4.27**

(Rs. In Crore)

Particulars	FY16	FY17	FY18
CGI based on 3 Year CAGR		6.25%	5.78%
Inflation index		7.24%	7.24%
Base Year O&M expenses (FY-16 adjusted O&M cost)	1183.7		
<b>Total allowable O&amp;M Expenses-Rs. Crs</b>		<b>1331.54</b>	<b>1491.60</b>

For segregating the O&M cost into Repair and Maintenance cost, Employees cost and Administration and General Expenses the percentage for FY-16 is considered.

**Table 4.28**

(Rs. In Crore)

Particulars	% of cost over total cost	O&M Cost
Other operating (Repair & Maintenance) expenses	7%	104.41
Employee Benefits Expense	74%	1103.78
Other expenses	19%	283.40
<b>Total</b>	<b>100%</b>	<b>1491.60</b>

### 4.3 Depreciation:

Commission approved the depreciation for FY-18, based on the gross block of opening and closing balance of fixed assets, as per the audited accounts for FY15 and estimation of FY-16 based on the approved capex plan of FY-16 and FY-17.

Approved level of depreciation for FY-18, in the Tariff Order dated 30th March 2016 is as follows:

#### Approved Depreciation for FY18:

Table 4.29

(Rs. In Crore)

Particulars	FY18
Buildings	4.55
Civil	0.17
Other Civil	0.08
Plant & M/c	109.27
Line, Cable Network	327.75
Vehicles	1.06
Furniture	0.61
Office Equipment's	0.87
Intangible assets	0.01
<b>Sub Total</b>	<b>444.35</b>
Depreciation Withdrawn AS12	144.15
<b>Total</b>	<b>300.20</b>

As the actual accounts of FY-16 are now available, considering the same level of capitalization as approved for FY-17 and FY-18, modified gross block of assets for FY-18 and depreciation is worked out as follows:

Table 4.30

(Rs. In Crore)

Particulars	A/c Code	Fixed Assets						
		Closing Balance As at 31-3-2016	FY-17 proposed Additions	Closing balance for FY-17	FY-18 proposed additions	Closing balance for FY-18	Rate of depreciation	Modified Depreciation for FY-18
Land & Rights	10.1	7.55	0.02	7.58	0.01	7.59		
Buildings	10.2	106.77	14.78	121.56	9.05	130.61	3.34%	3.93
Civil Works (Pipeline,	10.3	4.07	0.26	4.33	0.16	4.49	5.28%	0.21

Sewage, Drainage, Water supply)								
Other Civil Works	10.4	1.61	0.23	1.84	0.14	1.98	5.28%	0.09
Plant & Machinery	10.5	1986.52	336.02	2322.54	205.76	2528.30	5.28%	120.14
Lines Cable Networks	10.6	6742.16	927.14	7669.30	567.73	8237.03	5.28%	391.42
Vehicles	10.7	24.46	0.15	24.61	0.09	24.70	5.28%	1.17
Furniture & Fixtures	10.8	13.62	0.97	14.59	0.59	15.18	6.33%	0.86
Office Equipment	10.9	13.97	2.43	16.40	1.49	17.89	6.33%	1.02
<b>Current Year Total</b>		<b>8900.75</b>	<b>1282.00</b>	<b>10182.75</b>	<b>785.03</b>	<b>10967.78</b>		<b>518.86</b>
<b>Less Depreciation withdrawn AS12 as approved by the Commission for FY-18</b>								<b>144.50</b>
<b>Modified depreciation for FY-18</b>								<b>374.36</b>

#### 4.4 Interest and finance charges:

Commission approved the interest on long term loan considering interest rate of 11.25% for FY17-19 for new long term loans and considering the long term loan opening balance at Rs.3005.12 Crs.

#### Approved Interest on Loans for FY17-19:

Table 4.31

Particulars	(Rs. In Crore)		
	FY17	FY18	FY19
<b>Opening Balance long term loans</b>	<b>3005.12</b>	<b>3350.41</b>	<b>3641.73</b>
Add new Loans	697.65	674	410
Less: Repayments	352.36	382.68	382.48
Total loan at the end of the year	3350.41	3641.73	3669.25
<b>Average Loan</b>	<b>3177.77</b>	<b>3496.07</b>	<b>3655.49</b>
Interest on long term loans	282.84	319.09	337.99
Weighted average rate of interest in %	8.90%	9.13%	9.25%

As discussed in the earlier truing up chapter for FY-16, opening balance of long term loan for FY-16 is Rs. 3,349.78 Crs. as against the estimated figures Rs.3005.12 Crs. for FY-16. Loans are borrowed at the competitive rates. Getting loans from the Commercial banks has become bleak and BESCO has opted loans from Central Financial institutions. Majority of the loan drawn for capital

works for FY-16 is from Rural Electrification Corporation (REC) and the rate of interest is between 11.5 to 12.5%.

Hence, the Commission's assumption for fresh loans at 11.25% rate of interest is beyond reach.

Interest on long term loan is modified by revising the opening balance loan for FY-16(as per actuals) and considering the same approved borrowings for FY-17 and FY-18 and rate of interest at average 2

Modified interest on long term loan:

**Table 4.32**

<b>(Rs. In Crore)</b>		
<b>Particulars</b>	<b>FY17</b>	<b>FY18</b>
<b>Opening Balance long term loans</b>	<b>3349.78</b>	<b>3695.07</b>
Less: Repayments	352.36	382.68
Total loan at the end of the year	2997.42	3312.39
<b>Average Loan</b>	<b>3173.60</b>	<b>3503.73</b>
int. on weighted average of 7.77%	246.59	272.24
Add new Loans	697.65	674
Interest on new loan at 11.75%	81.97	79.20
<b>Total interest on long term loan</b>	<b>328.56</b>	<b>351.43</b>
Weighted average rate of interest in %	8.49%	8.41%

### **Interest on working capital:**

BESCOM in its tariff filing appealed to the Commission to adopt the Prime lending rate of SBI for the purpose of computation interest on working capital. But the Commission commented that, BESCOM's methodology of computation of interest on working capital, is not relevant in the context of ARR. Regulations have been framed to encourage efficiency in operation keeping in view the spirit of the provisions of the Electricity Act, 2003. Hence Commission decided to allow 11.75% rate of interest. Approved interest on working capital is as under:

### **Approved Interest on Working Capital for FY-18:**

**Table 4.33**

<b>(Rs. In Crore)</b>	
<b>Particulars</b>	<b>FY 18</b>
One-twelfth of the amount of O&M Expenses	125.83
Opening Gross Fixed Assets (GFA)	8740.30
Stores, materials and supplies 1% of Opening	87.40

balance of GFA	
One-sixth of the Revenue	2542.25
Total Working Capital	2755.48
Rate of Interest (% p.a.)	11.75%
<b>Interest on Working Capital</b>	<b>323.77</b>

BESCOM has submitted before the Commission that, optimal efforts are being made to bring the financial efficiency in operating the funds. Base rate prescribed by the RBI to the banks is at 10% and as noted by the Commission, the average interest paid on working capital for FY-15 is 10.92% which is 92 points above the base rate.

*As per the MYT regulations, Commission is approving the costs taking into consideration Controllable and un-Controllable factors*

*As per the MYT frame work, Targets will be set for items that are deemed by the Commission as “controllable”. Trajectory for specific variables may be stipulated by the Commission where the performance of the applicant is sought to be improved upon through incentives and disincentives. Such variables for which trajectory may be stipulated include, but not limited to, distribution losses and collection efficiency.*

*Commission shall fix the Trajectory for specific variables, where the performance of the Licensee is sought to be improved through incentives and disincentives.*

Interest on working capital is termed as controllable and as per the Commission’s MYT regulations, rate of interest (Target) is fixed at the SBI prime lending rates. Commission is levying penalty (dis-incentivize) for not achieving the targets, in commensurate to this Commission is requested to allow incentive for the targets reached by BESCOM.

The extract of the National Tariff Policy is reiterated

- 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” evels 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.*
- 3. Once the revenue requirements are established at the beginning of the*



*control period, the Regulatory Commission should focus on regulation of outputs and not the input cost elements. At the end of the control period, a comprehensive review of performance may be undertaken.*

In the above context, the relevance for seeking incentives for better performance is obligated.

Interest on working capital is modified taking into consideration of modified GFA, O&M Expenditure and 2 months receivable and considering the interest on working capital at prime lending rate of SBI. Modified calculations are as under.

**Table 4.34**

**(Rs. In Crore)**

<b>Particulars</b>	<b>FY 18</b>
One-twelfth of the amount of O&M Expenses (RS.1487.74/12)	123.97
Opening Gross Fixed Assets (GFA)	10182.75
Stores, materials and supplies 1% of Opening balance of GFA	101.82
One-sixth of the Revenue	2484.76
Total Working Capital	2710.545
Rate of Interest (% p.a.)	14.05%
<b>Interest on Working Capital</b>	<b>380.83</b>

### **Interest on Consumer security deposit:**

Commission vide Order dated 30th March 2016, approved the interest on Consumer security deposit for FY-18 as follows:

### **Approved Interest on Consumer Security Deposits for FY-18:**

**Table 4.35**

**(Rs. In Crore)**

<b>Particulars</b>	<b>FY 18</b>
Opening balance of consumer security deposits	3471.94
Interest on consumer security deposits as filed	85.66
Rate of Interest as filed	9.00%
Rate of Interest at bank rate to be allowed as per Regulations	7.75%
<b>Approved Interest on average Consumer Security Deposit</b>	<b>280.70</b>

As per the final accounts, closing balance of consumer security deposit is Rs.

3233.44 Crs.

As per the RBI notified WEEKLY STATISTICAL SUPPLEMENT dated 15th April 2016, Bank rate as on 01.04.2016 was 7.75%.

Consumer security deposits estimated to be added in FY-17 and FY-18 is retained at the approved level.

Considering the above factors modified Interest on consumer security deposit worked out as under:

**Table 4.36**

Particulars	(Rs. In Crore)	
	FY 17	FY 18
Opening balance of consumer security deposits	3233.44	3541.08
Proposed additions in Cr.	214	214
<b>Total</b>	<b>3447.44</b>	<b>3755.08</b>
Average Deposit held	3340.44	3648.08
Rate of Interest at bank rate to be allowed as per Regulations	7.75%	7.75%
<b>Revised Interest on average Consumer</b>	<b>267.18</b>	<b>291.02</b>

#### 4.1.1 Other Interest and Finance Charges:

BESCOM has claimed an amount of Rs.10.19 Crores towards other interest and finance charges for each year of the control period FY17-19. Considering, the expenditure on this item in the earlier years, the Commission decided to allow an amount of Rs.10.19 Crores towards interest and finance charges for each of the years during the control period FY17-19.

BESCOM is retaining the amount approved i.e. Rs.10.19 Crs. on other Interest and Finance charges for FY-18.

#### 4.1.2 Interest and other expenses Capitalized:

Commission approved the interest capitalization based on the previous years. Hence, BESCOM is not proposing any modification for FY-18. The approved amount of Rs. 82 Crs. of interest and other expenses capitalized is retained.

**Modified Interest and finance charges:**

Consolidated Interest and finance charges for FY-18 is tabulated as under:

**Table 4.37**

<b>(Rs. In Crore)</b>		
<b>Particulars</b>	<b>Approved for FY-18</b>	<b>Modified for FY18</b>
Interest on Loan Capital	319.09	351.43
Interest on Working Capital	323.77	380.83
Interest on Consumers Security Deposit	280.7	291.02
Other Interest & Finance Charges	10.19	10.19
Interest capitalized	-82	-82
<b>Total Interest and Finance charges</b>	<b>851.75</b>	<b>951.47</b>

**4.5 Other Debits and Prior period Credits:**

The Commission has not been considering the projections for other debits and Prior period Credits for the reason that, the same cannot be estimated beforehand. Hence, no modifications proposed.

**4.6 Return on Equity:**

Commission approved the return on equity as Rs.40.54 Cr. details are as under:

**Approved Return on Equity for FY18:****Table 4.38**

<b>(Rs. In Crore)</b>	
<b>Particulars</b>	<b>FY 18</b>
Opening Balance of Paid Up Share Capital	546.915
Share Deposit	188.03
Reserves and Surplus	(429.21)
Less Recapitalized Security Deposit	(100.00)
Total Equity	205.74
Approved Return on Equity with MAT	40.54

Commission in principle is not allowing Return on equity for the reason that the net worth is eroded.

In several filings BESCOM pleaded to allow return on equity, as the electricity

distribution business is an regulated business. Loss incurred will be made good at the time of truing up exercise as the loss incurred is only due to higher power purchase cost which is uncontrollable.

Earlier statements are reiterated for the kind consideration of the Commission:

“It is submitted before the Commission, that the distribution business is regulated and income and expenditure are determined by KERC. The difference in the expenditure and the receipts will be validated by the regulator and appropriately loss will be compensated. Such being the case, any loss in the distribution business will be compensated in the future years which compensate the loss and restore the equity. Treatment of ROE on the principles laid down is applicable for business which shows profit but it is not true for Companies with loss.

For Instance, during FY-09, BESCOM suffered loss to an extent of Rs.537 Crs. However, while truing up FY-09, Commission approved the additional subsidy to an extent of Rs.626 Crs and directed GoK to pay the same in 36 monthly installments. Such being the case, FY-09 accounts are to be redrafted duly creating the receipts receivable from GoK. This results in the restoration of the equity in full. It is true that the Commission trued up the figures for FY-08 and FY-09 during FY-11; it is only a time run case. Thus, to conclude that the net worth is eroded after viewing the final accounts is not convincing as Commission approved the expenditure and approved additional subsidy to BESCOM and the source from whom the additional subsidy is recoverable.

The same scenario of FY-09 is repeated during FY-13. Loss incurred due to increase in the Power purchase cost and the truing up of FY-13 is submitted along with this filing, Commission is requested to allow increase in power purchase cost. By this, the eroded net worth will be restored in full. Hence it is requested to allow the Return on equity for the share capital held by BESCOM”

Further, Commission without commenting anything on the submission made by BESCOM, chose to disallow return on equity, considering the equity is eroded.

Further, following judgments of the Hon'ble Tribunal is placed for kind consideration of the Commission.

### **Appeal No. 192 of 2013:**

It is clear that the Return on Equity can be allowed only when the **equity is used for creation of capital assets** and not when the amount claimed to be equity by the Appellant is used to meet the revenue expenditure.

### **Appeal No.27 of 2013:**

It is also the settled position of law **that if two interpretations are possible then the interpretation which is beneficial to the subject should be accepted.**

As per audited accounts, Note No. 30 General Notes, Government of Karnataka induced (disbursed) an equity to an extent of Rs.340.96 Crs. from FY-2005 to FY-2012. Further, Rs.248.10 Crs are disbursed towards share deposits from FY-13 to FY-16. Hence, as per the Appellate judgment vide appeal No. 192/2013, **equity used for creation of capital assets** and eligible for return.

Commission is allowing return on equity, considering the opening balance of equity, whereas BESCO is requesting for the closing balance of equity. It is also pleaded before the Commission that equity employed during the year should also earn returns. For the difference of interpretations, it is settle law **that if two interpretations are possible then the interpretation which is beneficial to the subject should be accepted.**

### **Disallowance on ATE Appeal No. 46/2014:**

In accordance with the Order of the Hon'ble ATE in Appeal No.46 of 2014 dated 17th September, 2014 an amount of Rs.100 Crores is deducted as recapitalized consumer security deposit as network.

In earlier chapter, i.e., truing up of FY-16, it is elaborately briefed that Rs.85.97 Crs. of consumer meter security deposit was capitalized instead of Rs. 100/- Crs. as considered by the Commission. Further, Commission kind attention is drawn for the Annual Account of BESCO for the year 2011-2012, 2012-13 and 2013-14 vide Note No.20 'Other Income ' head. Amount received from the Government of Karnataka under tripartite agreement was credited to other income instead of

reducing the receivable from the Government of Karnataka. Since the amount is credited to other income, BESCO requested the Commission to credit this amount against the capitalized consumer security deposit and balance to be considered for reduction in the equity.

On the above said grounds, modified return on equity for FY-18 is tabulated as under:

**Table 4.39**

<b>(Rs. In Crore)</b>	
<b>Particulars</b>	<b>FY 18</b>
Opening Balance of Paid Up Share Capital	546.915
Share Deposit	248.10
Less Recapitalized Security Deposit (85.97-31.16)	(54.81)
Total Equity	740.20
<b>ROE at 15.5%</b>	<b>114.73</b>

#### **4.7 Other Income:**

Commission considered Rs.218.00 Crs. of other income, considering 5% escalation of the actuals of FY-15.

Commission is aware of the fact that BESCO net worth is eroded and it is under debt trap and the working capital borrowing (Short term) are increasing year on year. Major portion of other income is from incentive for prompt payment of power purchase cost. Previous 3 years short term borrowing is as under:

**Table 4.40**

<b>(Rs. In Crore)</b>		
<b>Financial Year</b>	<b>Working capital borrowings</b>	<b>% of increase</b>
2013	1298.36	
2014	2018.83	55%
2015	2819.98	40%
2016	3674.54	30%

With this deteriorated financial position, maintaining prompt payment of power purchase cost is not possible and earning incentive on this count is very bleak and getting 5% escalated incentive in future years based on the previous years is impossible. Hence, BESCO proposed modification on the other come for FY-18, ignoring the incentives from prompt payment of power purchase cost and considering 5% escalation in other income based on FY-16 actual other income.

Table 4.41

(Rs. In Crore)

Actual other income for FY-16	167.20
Less: prompt payment incentive	116.78
Other income excluding incentive	50.42
<b>Proposed other income for FY-18 at 5% escalation</b>	<b>55.82</b>

**4.7.1.Fund towards Consumer Relations / Consumer Education:**

Commission approved funds towards consumer relations/consumer education to an extent of Rs.1 Cr for FY-18. BESCO is not proposing any modification on this expenditure.

**4.7.2.Contribution towards Pension & Gratuity:**

As per the Additional Chief Secretary, Energy Department of GoK letter dated 16.09.2016, ESCOMs are directed assume and account the shortfall in Pension contribution as a special case and one time measure in the Annual Accounts of FY2016. Further, KPTCL in its letter dated 16.09.2016 has directed ESCOMs to make provision for liability in the Annual Accounts for FY 2016-17 and arrange to fund the same to KEPGT as a special case and one time measure. The total amount proposed by BESCO as worked out by the P & G Trust to be claimed through tariff is Rs. 729.37 Cr. (Arrears of Rs. 599.29Cr and Rs. 130.08 Cr. for FY 17). Since, the tariff for FY-17 has already been determined, an expenditure of Rs.729.37 Crs. is added to the ARR of FY-18.

**4.8 Abstract of Approved and Modified ARR for FY-18 is shown in the table below:**

Table 4.42

(Rs. In Crore)

Sl.No	Particulars	Approved	Modified	Variation
1	Revenue from tariff and Misc. Charges		13,016.44	
2	Tariff Subsidy		1996.66	
	<b>Total Revenue</b>		<b>15013.10</b>	
	<b>Expenditure</b>			
3	Power Purchase Cost	11587.95	12249.11	661.16
4	Transmission charges of KPTCL	1622.58	1622.58	0.00
5	SLDC Charges	13.2	13.2	0.00

	<b>Total PPCost</b>	<b>13223.73</b>	<b>13884.89</b>	<b>661.16</b>
6	O&M Expenses	1510.01	1491.60	-18.41
7	Depreciation	300.2	374.36	74.16
8	Interest on Loans	319.09	351.43	32.34
9	Interest on Working capital	323.77	380.83	57.06
10	Interest on consumer deposits	280.7	291.02	10.32
11	Other Interest & Finance charges	10.19	10.19	0.00
13	Less: interest & other expenses capitalized	82	82	0.00
	<b>Interest &amp; Finance charges</b>	<b>851.75</b>	<b>951.47</b>	<b>99.72</b>
14	Funds towards Consumer Relations/Consumer	1	1	0.00
15	Other debits		0	0.00
16	Prior period credits		0	0.00
17	ROE	40.54	114.73	74.19
18	Income tax		0	0.00
19	P&G Trust		729.37	729.37
19	Other Income	213	55.82	-157.18
	<b>ARR</b>	<b>15714.23</b>	<b>17491.60</b>	<b>1777.37</b>
	GAP	0	2478.49	
	Sales	27853.46	26364.46	
	<b>Average cost of supply</b>	<b>5.64</b>	<b>6.63</b>	

**Segregation of ARR into Distribution and Retail Supply Business:**

The Consolidated ARR has been segregated into ARR for Distribution Business and ARR for Retail Supply Business based on BESCO's internal committee report.

**Segregation of Costs**

**Table 4.43**

**(Rs. In Crore)**

<b>Particulars</b>	<b>Distribution Business</b>	<b>Retail Supply Business</b>
Power purchase cost		100%
R&M Expenses	62%	38%
Employee Expenses	52%	48%
A&G Expenses	62%	38%
Depreciation	71%	29%
Interest & Finance Charges	16%	84%
Other Debits (incl. Prov for Bad debts)	53%	47%
Other (Misc.)-net prior period credit	19%	81%
Other Income	51%	49%
ROE	100%	

Accordingly, the following are the ARR for the Distribution Business and the Retail Supply Business:



**ARR for Distribution Business – FY18:****Table 4.44****(Rs. In Crore)**

<b>Sl. No.</b>	<b>Particulars</b>	<b>FY-18</b>
1	Power purchase cost inclusive of transmission charges and SLDC Charges	-
2	R&M Expenses	64.74
3	Employee Expenses	573.97
4	A&G Expenses	175.71
5	Depreciation	265.80
6	Interest & Finance Charges	165.36
7	Other Debits (incl. Prov for Bad debts)	-
8	Other (Misc.)-net prior period credit	-
10	Total	1,245.56
11	ROE	114.73
12	Other Income	28.47
13	Fund towards Consumer Relations / Consumer Education	
14	Regulatory asset and carrying cost/P&G trust	364.685
<b>15</b>	<b>NET ARR</b>	<b>1696.51</b>

**ARR for Retail Supply Business – FY18:****Table 4.45****(Rs. In Crore)**

<b>Sl. No.</b>	<b>Particulars</b>	<b>FY-18</b>
1	Power purchase cost inclusive of transmission charges and SLDC Charges	13884.89
2	R&M Expenses	39.68
3	Employee Expenses	529.81
4	A&G Expenses	107.69
5	Depreciation	108.56
6	Interest & Finance Charges	868.11
7	Other Debits (incl. Prov for Bad debts)	-
8	Other (Misc.)-net prior period credit	-
10	Total	15,557.04
11	ROE	-
12	Other Income	27.35
13	Fund towards Consumer Relations / Consumer Education	1
14	Regulatory asset and carrying cost/P&G trust	364.69
15	Less Expenses capitalized	82
16	Tax	-
<b>17</b>	<b>NET ARR</b>	<b>15795.09</b>

**Gap in Revenue for FY18:**

**Table 4.46**

**(Rs. In Crore)**

<b>Particulars</b>	<b>FY-18</b>
NET ARR	17491.60
Revenue from Sale of power	15013.10
Revenue Gap	2478.49