CHAPTER – 5

REVISED ANNUAL REVENUE REQUIREMENT FOR FY18

5.0 Revised Annual Revenue Requirement (ARR) for FY18

BESCOM's Application:

BESCOM in its application dated 30th November, 2016, has sought approval of the Commission for the revised ARR for FY18. The summary of the proposed revised ARR for FY18 is as follows:

TABLE – 5.1

Revised ARR for FY18-BESCOM's Submission

Amount in Rs. Crores

Sl. No.	Particulars	FY18
1	Energy at Gen Bus in MU	31270.90
2	Transmission Losses in %	3.37%
3	Energy at Interface in MU	30217.10
4	Distribution Losses in %	12.75%
	Sales in MU	
5	Sales to other than IP & BJ/KJ	19457.73
6	Sales to BJ/KJ	68.87
7	Sales to IP	6837.80
8	**Total Sales**	**26364.40**
	Revenue at existing tariff in Rs Crs	
9	Revenue from Tariff and Misc. Charges	13016.45
10	Tariff Subsidy from BJ/KJ	41.04
11	Tariff Subsidy from IP	1955.61
12	**Total Existing Revenue**	**15013.10**
	Expenditure in Rs Crs	
13	Power Purchase Cost	12249.11
14	Transmission charges of KPTCL	1622.58
15	SLDC Charges	13.20
16	**Power Purchase Cost including cost of transmission**	**13884.89**
17	Employee Cost	1103.78
18	Repairs & Maintenance	104.41
19	Admin & General Expenses	283.40
20	**Total O&M Expenses**	**1491.59**
21	Depreciation	374.34
22	**Interest & Finance charges**	
23	Interest on Capital Loans	351.43
24	Interest on Working capital	380.83

25	Interest on belated payment on PP Cost	0.00
26	Interest on consumer deposits	291.02
27	Other Interest & Finance charges	10.19
28	Less interest & other expenses capitalised	82.00
29	**Total Interest & Finance charges**	**951.47**
30	Other Debits	0.00
31	Net Prior Period Debit/Credit	0.00
32	Return on Equity	114.73
33	Funds towards Consumer Relations/Consumer Education	1.00
34	Provision for contribution to Pension & Gratuity Trust (Government Liability)	729.37
35	Other Income	55.82
	ARR	**17491.57**
	Deficit for the year	(2478.47)
36	Deficit for FY16 carried forward	(1424.40)
	Net ARR	**18915.97**

The BESCOM has requested the Commission to approve the revised Annual Revenue Requirement of Rs.18915.97 Crores for FY18. Considering the estimated revenue of Rs. 15013.10 Crores based on the existing retail supply tariff, BESCOM has projected a revenue gap of Rs. 3902.87 Crores for FY18 including the carried forward gap of revenue of Rs.1424.40 Crores of FY16. In order to bridge this gap in revenue, BESCOM, in its application has proposed increase in retail supply tariff by 148 paise per unit in respect of all the categories of consumers including BJ/KJ and IP set consumers for FY18.

Subsequently, BESCOM in its petition dated 16th February, 2017 has filed amendments to its tariff proposals without affecting the ARR for FY18. The same has been dealt with in Chapetr-6 of this Order.

5.1 Annual Performance Review for FY16:

As discussed in the preceding chapter of this Order, the Commission has carried out the Annual Performance Review for FY16 based on the audited accounts furnished by BESCOM. Accordingly, a deficit of Rs.692.42 Crores of FY16 is carried forward into the ARR of FY18.

5.2 Revised Annual Revenue Requirement for FY18:

The item-wise expenditure proposed by BESCOM and approved by the Commission for FY18 is discussed in this Chapter as follows:

5.2.1 Capital Investments for FY18:

BESCOM's submission:

BESCOM has projected a capital expenditure of Rs.967.30 Crores without deviating from its earlier MYT proposal submitted for FY18. The category wise capital investment plan proposed by BESCOM is as under:

Table -5.2

Capital Investment for FY18 - BESCOM's Submission

Amount in Rs. Crores

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	29.60
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	2.00
15	IPDS	100.00
16	DDUGJY	100.00
17	HVDS	100.00
18	NJY Phase-3	250.00
19	DSM	64.97
Total		**967.30**

Commission's analysis and decisions:

In its MYT application for the 4th control period, the BESCOM had stated that, the capex of Rs.967.30 proposed for FY18 would undergo revision in view of possible additions depending on the requirement. Further, BESCOM had requested for additional capex of Rs.3251.48 Crores in the middle of FY17. Against this proposal, the Commission had permitted the BESCOM to invest a total capex upto Rs.2000 crores for FY17. BESCOM has not furnished the status of capital expenditure for FY17, while seeking capex of Rs.967.30 Crores for FY18. This indicates that, BESCOM has not put in any effort to plan the capital investment in line with the "**Capital Expenditure Guidelines for ESCOMs"** issued by the Commission. This would lead to BESCOM spending on capex in an unplanned manner in each financial year.

The Commission has observed that, the capital expenditure by BESCOM is exceeding the approved amount by a huge margin consistently over the last four years. However, BESCOM has not made any effort to streamline and plan its capex to ensure that, it does not exceed the planned capex. Therefore, BESCOM needs to plan and project its capex commensurate with:

a) The network strengthening and expansion required /requirement,
b) Improvement of power supply reliability,
c) The target date for completion of each of the project,
d) loss reduction trajectory.

Further, BESCOM should strictly follow the **"Capital Expenditure Guidelines for ESCOMs"** in which the capital investment planning process and prioritization and post-commissioning analysis to be adopted by the ESCOMs are elaborated. The Commission has been directing the ESCOMs to conduct energy audit by listing out high loss making 11kV feeders and take up strengthening works to reduce losses. Prioritization of such projects has to be taken up for execution, based on payback period and benefit to cost ratio. BESCOM has failed to establish that it has moved in this direction.

BESCOM should prepare a realistic plan of its capex program based on the load forecast and network expansion plan as per the "Capital Expenditure Guidelines for ESCOMs" issued by the Commission, duly prioritizing the works. It is not desirable to approach the Commission in the middle of the year seeking additional/higher capex. Any additional capex required shall be met only through re-appropriation of approved amounts for the prioritized category within the overall capex.

With the above observations, the Commission decides to consider the capex of Rs.967.30 Crores as proposed by BESCOM for FY18.

5.2.2 Sales Forecast for FY18:

A. Sales & No. of Installations other than BJ/KJ and IP sets:

1. The BESCOM in its Tariff application has stated that the number of installations for FY18 has been estimated by doubling the half year number of consumers for FY17 and considering one year CAGR with the following deviations:

    I. For LT4(a))-IP sets, 20,000 additions in installations is considered for FY18; and

    II. Wherever the CAGR is negative or exorbitant, FY17 numbers are retained.

2. Further, the BESCOM has stated that, the sales for FY18 have been estimated considering the following:

    a) The sales for FY17 is estimated considering a certain percentage over sales in first half of the year;

    b) IP set sales is estimated considering specific consumption of 8037/IP/annum;

    c) BJ/KJ sales for FY17 is not doubled as, a part of sales is considered under LT2a.

B. The Commission's observations on sales forecast for FY18 and the replies furnished by BESCOM thereon are as follows:

i) LT (1) – BJ/KJ category:

a. It was observed that, BESCOM has retained the BJ/KJ sales at the half-year level of 66.35 MU for FY17, in spite of indicating additions in the number of installations during second half of FY17. The BESCOM shall explain the reasons for the same.

The BESCOM in its replies has stated that it has envisaged addition of 60345 installations under RGGVY during XII plan, which is added to LT-1 category resulting in the increase in the number of installations, while for the estimation of energy sales any installation consuming more than 18 units/month is considered under LT-2a category.

BESCOM earlier had not clearly indicated as to how many installations would consume more than 18 units /month, against the envisaged addition of 60345 numbers. Subsequently, in its replies dated 16.01.2017, BESCOM has furnished the breakup of number of installations under BJ/KJ consuming upto 18 units/month/installation and those consuming above 18 units/installation/month. Since the number of installations as on 30.11.2016 was greater than the year-end break-up figures furnished by BESCOM, the Commission has retained the number of installations as on 30.11.2016 for FY17 and has worked out the sales to this category based on specific consumption of FY16. For FY18, the break-up of number of installations is considered as submitted by BESCOM in its replies dated 16.01.2017. Further, considering the recent announcement of the State Government in the Budget for FY17-18 to increase the consumption cap for BJ/KJ installations to 40 units /installation /month, suitable addition has been made to the estimated consumption under this category.

b. The BESCOM was directed to furnish the breakup of installations consuming less than or equal to 18 units and also above 18 units for the 2015-16 and estimates for FY17 to FY18. BESCOM has furnished the above details in its replies dated 16.01.2017.

ii) In the case of LT2(b), LT 4(c), HT-2a, HT 2(b), HT3(a) and HT4, it was pointed out that, the number of installations as on 30.09.2016 compared to 31.03.2016 has reduced [Ref page 71 of the filing]. Therefore, BESCOM was directed to explain the reasons for such reduction, especially in the case of HT installations, during the first half of FY17, as to whether some of the installations have been surrendered. BESCOM was directed to furnish the category-wise opening balance of number of installations as on 31.03.2016, installations added during the FY17 as on 30.11.2016 and installations surrendered during FY17/as on 30.11.2016.

The BESCOM, while furnishing the sub-division-wise details of HT installations, from March-2016 to November-2016, has stated that, BESCOM has noticed a reduction in the number of HT-installations.

The Commission observes that the details of installations, as on 31.03.2016, the addition to the installations during the FY17 as on 30.11.2016 and the installations surrendered during the FY17 as sought by the Commission is not furnished.

The BESCOM was informed that considering one-year growth rate for estimation would not reflect the underlying trend. Therefore, the BESCOM was advised to reconsider adopting CAGR, based on three to five years' data, for estimating the number of installations and sales. Further, it was noted that the growth rates considered for estimating the number of installations for all the categories, except LT-6 water supply, is lower as compared to the normal growth rates. For categories where there is a positive growth rate, the BESCOM has considered zero growth and hence the BESCOM was directed to furnish reasons for the same.

It is stated by the BESCOM that, as the projected year is very close, one-year CAGR is considered and that a negative growth rate is replaced by zero growth rate. Further, it is stated that the CAGR is a useful measure over multiple time period and not for one year.

The Commission reiterates that adoption of one-year growth rate for estimation of the number of installations and sales would not reflect the underlying trend. The approach of the Commission in estimating the number of installations and sales for the FY18 is discussed in the subsequent paragraphs.

C. The observations of the Commission on growth rates considered for FY18 and replies furnished by BESCOM are as follows:

i) The growth rate considered for LT2 (b) is lower considering the previous year's growth rate of 4.34% and the CAGR being in the range of 7.33% to 8.24%. The BESCOM shall furnish the reasons for the same. The BESCOM has stated that the LT-2b sales is only 0.26% of total LT-sales.

The Commission reiterates its observations and its approach is discussed in the subsequent paragraphs, as under

ii) The BESCOM shall analyze and furnish the reasons for negative growth in the FY16 in respect of LT-6 Water Supply (WS), LT-6 Street Light (SL), HT-2a, HT-2b and HT-4 categories.

The BESCOM has informed that the negative growth rate in HT-2a and HT-2b is due to the consumers going in for open access and the reasons for the negative growth in other categories are being looked into.

The Commission, taking note of the replies, is of the view that such an analysis to find out the reasons for the negative growth would help the BESCOM to evolve better sales strategies.

iii) The reasons for abnormal growth in the FY16, in the case of HT-3 category, shall be furnished. The BESCOM has replied that the same is being looked into.

To validate the sales, the Commission had requested, category-wise information (No. of Installations and the sales in MU), in a prescribed format. The BESCOM has furnished the above information.

3. The Commission's approach for estimating the number of installations and energy sales for the Financial Year FY18:

The methodology adopted by the Commission to estimate the number of installations and sales to categories other than BJ/KJ and IP sets is discussed as below:

i) No. of Installations:

While estimating the number of installations (excluding BJ/KJ and IP), the following approach is adopted:

a. The base year number of installations for the FY17 is modified duly validating the revised estimate furnished by the BESCOM in the current filing and the data available, as on 30.11.2016. The Commission has validated both the number of installations and energy sales to various category of consumers, considering the actuals as on as on 30.11.2016, and has estimated the number of installations and energy sales for the remaining period, reasonably, keeping in view the number of installations and energy sales as on 31.03.2016 as well. Accordingly, the base year estimation has been revised, which has an impact on the estimates on number of installations and sales for FY18.

b. Wherever the number of installations estimated by the BESCOM for the FY18 is within the range of the estimates based on the CAGR for the period FY11 – FY16 and for the period FY13 - FY16, the BESCOM's estimates are retained.

c. Wherever the number of installations estimated by the BESCOM for the FY18 is lower than the estimates based on the CAGRs for the period FY11 – FY16 and for the period FY13 - FY16, the estimates based on the lower of the CAGRs are considered.

d. Wherever the number of installations estimated by the BESCOM for the FY18 is higher than the estimates based on the CAGRs for the period FY11 – FY16 and for the period FY13 - FY16, the estimates based on the higher of the CAGRs are considered.

e. For LT4 (b), the number of installations are worked out on the basis of five year CAGR, as the number proposed by the BESCOM is far below the actual figures for FY-16.

f. For LT4(c), LT-7, HT-2(c) and HT-5 categories, the estimates of the BESCOM are retained, as the growth rate for these categories is not consistent.

Based on the above approach, the total number of installations (excluding BJ/KJ and IP) estimated and approved by the Commission for FY18 is 9611811 as against 9541400 proposed by the BESCOM.

ii) Energy Sales:

A. For categories other than BJ/KJ and IP sets, generally the sales are being estimated based on the following approach:

a. The base year sales for FY17 as estimated by BESCOM are validated duly considering the actual sales up to November, 2016 and modified suitably as stated earlier.

b. Wherever the sales estimated by the BESCOM for the FY18 is within the range of the estimates based on the CAGRs for the period FY11 – FY16 and for the period FY13 - FY16, the estimates of BESCOM are retained.

c. Wherever the sales estimated by the BESCOM for the FY18 is lower than the estimates based on the CAGRs for the period

FY11 – FY16 and for the period FY13- FY16, the estimates based on the lower of the CAGRs are considered.

d. Wherever sales estimated by the BESCOM for FY18 is higher than the estimates based on the CAGRs for the period FY11 – FY16 and for the period FY13 - FY16, the estimates based on the higher of the CAGRs are considered.

e. For LT4(b) and LT -6 public lighting, the sales are worked out based on the specific consumption of FY16.

f. For LT4(c), LT-7, HT-2(c) and HT-5 categories, BESCOM's estimates are retained, as the growth rate for these categories is not consistent.

g. In respect of HT2(a) category, the sales estimate based on the analysis of open access impact is considered. It may be noted that based on the methodology indicated at paras b, c and d above, the sales growth would be negative, in spite of positive growth in the number of installations. Further, it is observed that the sales for FY17 has been underestimated by the BESCOM, which has an impact on the estimates made by the BESCOM for FY18. Therefore, the sales estimate based on the analysis of open access impact is considered as reasonable for FY18.

h. For HT2(b) category, the sales estimate based on the CAGR for the period FY11 to FY16 is considered. It may be noted that based on the methodology specified at paras b, c and d above, the sales growth would be negative, in spite of positive growth in the number of installations. Further, based on the OA transaction impact analysis, the sales growth would be high if the recent trends are kept in view. Therefore, CAGR for the period FY11 to FY16 is considered as reasonable.

i. In respect of HT-3 category sales, the BESCOM's estimate for FY18 is not reasonable as the BESCOM's estimate of 10.46 MU is far below the consumption of 53.01 MU for FY16, despite increase in the number of installations. Therefore, the Commission has estimated the sales based on the specific consumption of FY16.

Based on the above approach, the sales (excluding BJ/KJ and IP) estimated and approved by the Commission for FY18 is 19820.85 MU as against 19383.97 MU proposed by the BESCOM.

B. Sales to BJ/KJ and IP sets:

a) Sales to BJ/KJ installations:

The electricity consumption to this category up to 18 units per installation per month hitherto was being subsidized by the Government of Karnataka and any installation under this category consuming more than 18 units per month was billed under relevant LT 2(a) category. However, the Government of Karnataka in its Budget for 2017-18 has announced that it would extend the subsidy to BJ/KJ installations consuming upto 40 units per installation per month. Hence, the Commission has reckoned the above and has worked out the subsidy accordingly.

Considering the specific consumption and the number of installations, for FY16, for installations consuming upto 18 units and above 18 units as per the actual data furnished by BESCOM, the total sales estimated for this category for FY18 works out to 130.37 MU. Considering the total number of BJ/KJ installations of 785408 for FY18 as proposed by BESCOM, the specific consumption works out to 13.83 units per installation per month which is less than 40 units per installation per month announced by the Government for the purpose of subsidy. Thus, the entire consumption of 130.37 MU is considered for the purpose of estimating the subsidy for this category. However, the BESCOM while claiming the subsidy shall consider only such installations which consume up to 40 units per installation per month and any installation under this category consuming more than 40 units shall be billed under the relevant LT 2(a) category.

b) IP set sales projections for ARR of FY18

The Commission, in its Tariff Order dated 30th March, 2016, had approved specific consumption of IP sets as 8,037 units / installation / annum for the control period FY17 to FY19. However, based on the actual data of sales to IP sets as reported by the BESCOM in its Tariff application, the Commission had approved the specific consumption as 7,795 units/installation/annum, for the FY16.

Further, the IP sales reported as per Format D-2 is 6,189.80 MU as against the approved sales of 5,625.26 MU, for FY16, that is an increase of 564.54 MU. However, the BESCOM in its subsequent communication dated 30th January, 2017, to the Commission has submitted the revised sales of IP sets, based on the specific consumption arrived at from the meter readings of segregated agricultural feeders, as 5,777.77 MU, for FY16. This indicates an increase in sales to an extent of 152.51 MU which can be partly attributed to servicing of a large number of IP sets under Regularization Scheme. It is noted that the BESCOM has already segregated substantial number of feeders under NJY as exclusive agricultural feeders and rural feeders, which means that power supply to IP sets could be regulated resulting in reduction in the agricultural consumption during the FY16.

The specific consumption works out to 7,324 units/installation/annum on the basis of the revised sales quantum of 5,777.77 MU reported by the BESCOM for FY16. It is observed that the specific consumption of 7,324 units/installation/annum for FY16 is less than the approved specific consumption of 7,795 units / installation /annum by 471 units /installation/annum. Hence, it is appropriate to consider the specific consumption of 7,324 units/installation/annum for the ARR of FY18 also, considering the fact that this specific consumption is arrived at on the basis of metered consumption in respect of agricultural feeders segregated under NJY. **In view of this, the Commission decides to approve the specific consumption of 7,324 units/installation /annum for the ARR of FY18.**

Further, it is noted that the BESCOM has estimated the number of IP-set installations as 8,50,790, as against the estimated number of installations of 8,40,790 for FY17 i.e. an increase of 20,000, for the FY18 in the current Tariff filing. In view of this, the Commission has considered the number of IP-sets as submitted by the BESCOM for the FY18 without any modifications. Hence, based on the estimated number of installations for the FY17 and the FY18 as reported by the BESCOM, the mid-year number of installations is determined and the sales to IP-set consumers are indicated as below:

TABLE-5.3

Mid-Year No. of IP set Installations & IP set Consumption

Particulars	As filed by the BESCOM		As approved by the Commission
	FY17	FY18	FY18
No of installations	8,30,790	8,50,790	8,50,790
Mid-Year no. of installations		8,40,790	8,40,790
Specific consumption in units/installation/annum		8,133	7,324
Sales in MU		**6,837.80**	**6,157.95**

Accordingly, the Commission approves 6,157.95 MU as energy sales to IP-sets as against the BESCOM's projections of 6,837.80 MU, for the FY18. The number of installations approved for FY18 is 8,50,790. This approved IP set consumption for FY18 is with the assumption that the Government of Karnataka would release full subsidy to cover the approved quantum of IP-sales. However, if there is any reduction in the subsidy allocation by the GoK, the quantum of sales to IP sets of 10 HP and below, shall be proportionately regulated.

During the course of Public hearing held by the Commission, the representatives of certain Farmers' Association have suggested that the Government may consider paying the subsidy directly to the farmers against their IP Set consumption. They have also expressed that meters could be installed to their IP Sets, by the ESCOMs to whom energy charges would be paid by the farmers.

The Commission is of the view that implementing the suggestion of direct remittance of subsidy to the farmers would encourage metering of the IP Sets enabling proper accounting of energy and also facilitate accurate computation of losses in the distribution system. The Commission notes that the Government of Karnataka would have to formulate suitable policy in the matter.

Further, the Commission notes that the BESCOM was directed to take up GPS survey of IP sets in order to identify the defunct/dried up/not-in-use installations in the field and to take necessary action to arrive at the correct number of IP sets by deducting such IP sets from its account, on the basis of GPS survey report. The BESCOM has reported that it has completed GPS survey of 60 per cent of the feeders and has identified around 1.53 lakhs installations as not-in-use and around 1.23 lakhs as unauthorized installations during the survey undertaken in FY13. As considerable time has lapsed after such partial survey, the BESCOM has sought time up to April 2017 to revalidate the same and also to complete the survey of remaining installations, to enable it to arrive at correct number of dried up/defunct/not-in-use wells, so as to take further action to deduct such IP-set installations, from its accounts.

In this regard, the BESCOM is directed to complete the GPS survey of IP-sets within the targeted time as requested by it and submit compliance thereon to the Commission. In view of pendency of the GPS survey of IP-sets, the number of installations estimated for FY17 as

well as for FY18 are subject to change based on the full GPS survey. As mentioned above, the Commission, in the absence of survey reports, has considered the estimated number of installations for FY17 and FY18 as reported by the BESCOM for the present. However, on completion of the GPS survey, the BESCOM shall arrive at the correct number of IP-sets existing in the field duly deducting from its account the number of dried up/defunct/not-in-use wells based on the GPS survey results. Therefore, any variation in sales due to change in number of installations in the FY18 would be trued up during the Annual Performance Review, for the FY18.

Further, it is noted that the BESCOM has already segregated 704 agriculture feeders from rural loads under NJY phase1, 2 & 3 and segregation work of remaining feeders' under phase 3, is in progress. After complete segregation, the energy consumed by the IP-sets could be more accurately measured at the 11 KV feeder level at the sub-stations after allowing for distribution system losses in 11 KV lines, distribution transformers and LT lines.

Hence, the Commission reiterates its direction that the BESCOM shall report to the Commission, the overall IP-set consumption on the basis of the specific consumption arrived at from the consumption data of energy meters in respect of agriculture feeders segregated under NJY only, every month, regularly, as per the following format:

TABLE-5.4

Format for furnishing IP sets Consumption

Month	Name of Sub-division	No. of Segregated Agricultural Feeders in the subdivision	Monthly Consumption in MU as recorded in all the agricultural feeders at the substations pertaining to the sub-division	Distribution loss(11kV line, DTCs,& LT line) Plus sales to other consumers if any, in MU (losses in all the agricultural feeders only to be considered)	Net consumption duly deducting the Distribution loss (11kV line, DTCs &LT line) & any other loads if any	No. of IP sets (total-dried up) connected to the agricultural feeders in the subdivision			Average consumption of IP sets/ month (specific cons in units /IP/month)	Total no of IP sets(total-dried up) in the subdivision (as per DCB)			Total sales of IP sets in MU
						Beginning of the Month	Serviced during Month	Mid-Month		Beginning of the Month	Serviced during Month	Mid-Month	
1	2	3	4	5	6=(4-5)	7 a	7 b	7c = (7a+7b)/ 2	8=6/7c	9 a	9 b	9c = (9a+ 9b)/2	10=8*9 c
April to March	Subdivision-1 Subdivision-2 Subdivision....												

Note:

(1) If the agricultural feeders are not yet segregated under NJY in any sub-division, then the specific consumption of the division / circle / zone / company (where NJY is taken up) shall be considered to compute the IP consumption of such sub-division.

(2) No. of dried up IP-set installations shall be deducted from the accounts, while arriving at the month-wise and subdivision-wise specific consumption and total sales.

Based on the above discussions, the category wise approved number of installations and sales for the year FY 18 vis-à-vis the estimates made by BESCOM is indicated as follows:

TABLE-5.5

BESCOM's Approved Sales

Category	FY18		FY18	
	Number of Installations		Energy Sales	
	BESCOM's estimate	Approved	BESCOM's estimate	Approved
	No.	No.	MU	MU
LT-2a	7503214	7531435	6945.64	6966.38
LT-2b	10991	11791	46.96	49.07
LT-3	1020584	1050594	1998.94	2000.85
LT-4 (b)	497	989	2.36	4.60
LT-4 (c)	1461	1461	4.9	4.90
LT-5	195150	204043	1187.24	1187.24
LT-6-WS	74479	73529	448.19	453.97

LT-6-PL	62360	63907	353.24	391.17
LT-7	658436	658436	158.63	158.63
HT-1	218	232	738.04	738.04
HT-2 (a)	6140	6808	4409.04	4663.23
HT-2 (b)	5565	6209	2613.05	2666.85
HT2C	651	651	272.01	272.01
HT-3(a)& (b)	34	43	10.46	72.84
HT-4	256	316	118.91	114.7
HT-5	1364	1364	76.36	76.36
Sub-Total other than BJ/KJ & IP sets	**9541400**	**9611811**	**19383.97**	**19820.85**
LT-1 BJ/KJ	785408	785408	142.65	130.37
LT4 (a)IP Sets	850790	850790	6837.8	6157.95
Sub Total BJ/KJ & IP sets	**1636198**	**1636198**	**6980.45**	**6288.31**
Total	**11177598**	**11248009**	**26364.42**	**26109.16**

5.2.3 Distribution Losses for FY18:

BESCOM's Submission:

As per the audited accounts for FY16, the BESCOM has reported distribution losses of 12.03% as against an approved loss level of 13.40%. However, as discussed in the previous chapter of this Order, based on the revised consumption of IP Sets, the distribution losses for FY16 is 13.51%. The Commission in its Tariff Order dated 30th March, 2016 had fixed the target level of losses for FY18 at 12.75%. BESCOM in its application has proposed to retain the loss levels of 12.75% for FY18.

Commission's Analysis and Decisions:

The performance of BESCOM in achieving the loss targets set by the Commission in the past six years is as follows:

TABLE – 5.6

Approved & Actual Distribution Losses-FY11 to FY16

Figures in % Losses

Particulars	FY11	FY12	FY13	FY14	FY15	FY16
Approved Distribution losses	14.75	14.50	14.00	13.80	13.60	13.40
Actual distribution losses	14.48	14.46	14.20	13.89	14.78*	13.51*

***Actual losses for FY15 are reported as 13.53%. As per Commission's APR the losses for FY15 is 14.78% after validation of sales.**

***Actual losses for FY16 are reported as 12.03%. As per Commission's APR the losses for FY16 is 13.51% after validation of sales.**

BESCOM having declared to have already achieved distribution loss level of 12.03% in FY16, has projected a higher loss level of 12.75% for FY18. The distribution loss projections indicated by the BESCOM shows an increase from the existing reported loss level. The Commission has allowed the capex as proposed by BESCOM and substantial capital expenditure is consistently being incurred by the BESCOM in strengthening its distribution network with the aim to reduce the loss levels. Investments in improvements of the existing distribution system would enable the BESCOM to reduce the distribution losses besides increasing the reliability and quality of power supply to end consumers.

Contrary to the objectives of such investments, the loss levels proposed by BESCOM are at a higher level as compared to the actual loss levels declared to have been achieved in FY16. The increased distribution losses projected by BESCOM for FY18 is not acceptable, because as reported by it, BESCOM has already achieved distribution losses of 12.03% in FY16 itself. Hence, the Commission, in its preliminary observations had stressed on the need of further reduction in the distribution loss levels proposed by the BESCOM, for FY18, duly considering the past and the present capex. However, the BESCOM has not proposed any changes to its proposed loss levels.

Based on the achievements made by BESCOM in the reduction of distribution loss during the previous years and the revised loss levels for FY16 besides considering the capex incurred so far along with the proposed capex for FY18, the Commission decides to fix the following distribution loss targets for FY18:

TABLE – 5.7
Approved Distribution Losses for FY18

Figures in % Losses

Particulars	FY18
Upper limit	13.00
Average	**12.50**
Lower limit	12.00

5.2.4 Power Purchase for FY18

BESCOM's Submission:

BESCOM has submitted the power purchase requirement along with its cost including the transmission charges and SLDC charges, in D-1 Format. BESCOM has sought approval of the Commission for purchase of power to an extent of 31271MU at a Cost of Rs. 13884.89 Crores for the FY18, which includes transmission charges and SLDC charges

The cost of power purchase has been considered by the BESCOM as per the norms defined in the contracts (PPAs)/Regulations and based on the Tariff indicated by the KPCL, for its Stations. In respect of Central Generating Stations, DVC Stations and UPCL Stations, the cost is considered as per the tariff determined by CERC. The details of source-wise energy and cost is indicated below:

Table-5.8

Power Purchase Cost as filed by BESCOM for FY18

Source of Power	Power Purchase Cost as filed by BESCOM		
	Energy in MU	Cost in Rs. Crs	Cost Per Unit in Rupees
KPCL Hydel Energy	3612.54	381.37	1.06
KPCL Thermal Energy	9262.47	4023.73	4.34
CGS Energy	9708.70	3451.57	3.56

IPP	3566.26	1512.17	4.24
NCE	4468.63	1927.53	4.31
Other State Hydel	14.74	25.63	17.38
Short Term/Medium term	637.66	286.947	4.50
KPTCL Transmission charges		1640.78	
PGCIL Charges		633.50	
POSOCO Charges		1.66	
Total	31271.00	13884.89	4.44

Commission's analysis and decisions:

The energy requirement of the ESCOMs, including BESCOM is being met by Karnataka Power Corporation Limited (KPCL) Generating Stations, Central Generating Stations (CGS), Major Independent Power Producers (IPPs) and Minor Independent Power Producers (RE sources) through long term Power Purchase Agreements.

The Commission has considered the availability of energy as furnished by KPCL for its generation and by SRPC/CEA in respect of Central Generating Stations (CGS). The availability of CGS stations is based on the share of Karnataka, as notified by MoP from time to time. However, the availability of energy from CGS thermal Generating units has been considered duly limiting the quantum of energy as per the requirement of ESCOMs, to meet the sales target on the basis of merit Order dispatch.

The energy availability for FY18 from the upcoming thermal projects of 750MW unit No. 3 of Bellary Thermal Power Station (BTPS), 2X800 MW units of Yeramaras Thermal Power Station (YTPS) and 1X800MW of Kudagi plant of NTPC, has not been considered by the BESCOM, since these units are under trial Operation and are yet to stabilize. The Commission has decided to consider the energy availability from these units in line with the LGBR furnished by the NTPC for the 1X800 MW unit of Kudagi Power Plant for the FY18. However, the energy has been considered from these units by limiting the quantum of energy as per the requirement of ESCOMs, to meet the sales target on the basis of merit order despatch. It is expected that any surplus energy available from tied up sources of energy would be traded by the

ESCOMs through PCKL on commercial principles. Similarly, any requirement over and above the quantum approved in this Tariff Order shall be procured from the tied up sources only.

While approving the cost of power purchase, the Commission has determined the quantum of power from various sources in accordance with the principles of merit order schedule and despatch based on the ranking of all approved sources of supply, according to the merit order of the variable cost.

After a detailed analysis of the rates claimed by the BESCOM, the Commission has arrived at the power purchase cost to be allowed in the ARR for the FY18.

The fixed charges and the variable charges for the Central Generating Stations, UPCL Stations and the DVC Stations are reckoned based on the Tariff determined by the CERC and the CERC norms. The transmission charges payable to PGCIL are arrived at with 5% annual escalation on the base figure for FY16.

The fixed charges and the variable charges for the State owned Thermal and Hydel Power Stations are based on the tariff approved by the Commission and the norms in the PPAs wherever the tariff is regulated as per the PPAs. In respect of upcoming new stations only variable charge has been considered.

The variable costs of thermal stations and UPCL are considered based on the recent power purchase bills passed by the BESCOM duly keeping in view the substantial increase in the fuel costs. This is subject to adjustment in the FAC exercise/Annual Performance Review of FY18.

The ESCOM-wise share of the quantum of power from different sources of generation is as per the allocation given by the Government of Karnataka.

The Source-wise approved power purchase quantum for the State (of all ESCOMs) and its cost are as under:

TABLE-5.9

Approved Power Purchase Quantum & Cost- For the State

Source of Power	Power Purchase		
	Energy (MU)	Amount in Rs. Crores	Cost/Unit in Rupees.
KPCL Thermal Energy	16071.68	6963.89	4.33
CGS Energy	20542.91	7283.67	3.55
IPP	6712.00	3288.88	4.90
KPCL Hydel Energy	11668.46	926.33	0.79
OTHER HYDRO	119.37	49.54	4.15
NCE	7165.41	2980.86	4.16
NTPC Bundled power	582.21	258.46	4.44
Power purchase from Co gen	1300.00	451.10	3.47
Short term Power Purchase	1120.00	467.04	4.17
Short term Purchase from MSEDCL	294.00	106.43	3.62
TRANSMISSION CHARGES			
PGCIL CHARGES		1066.00	
KPTCL CHARGES		2753.70	
SLDC		24.77	
POSOCO CHARGES		3.48	
TOTAL INCLUDING TRANSMISSION & SLDC CHARGES	**65576.04**	**26624.15**	**4.06**

The Source wise approved Power Purchase quantum and cost of BESCOM is as under:

TABLE-5.10

Approved Power Purchase Cost of BESCOM for FY18

Source of Power	Power Purchase Cost as filed by BESCOM			Power Purchase Cost as approved by the Commission		
	Energy in MU	Cost in Rs Cr	Per Unit Cost in RS	Energy in MU	Cost in Rs Cr	Per Unit Cost in RS
KPCL Hydel Energy	3612.54	381.37	1.06	2833.31	316.57	1.12
KPCL Thermal Energy	9262.47	4023.73	4.34	9180.34	3980.56	4.34
CGS Energy	9708.70	3451.57	3.56	9698.31	3438.63	3.55
UPCL	3566.26	1512.17	4.24	3855.76	1889.32	4.9
Renewable Energy	4468.63	1927.53	4.31	3933.88	1594.87	4.05
Other State Hydel	14.74	25.63	17.38	56.36	23.39	4.15
Short Term/Medium term	637.66	286.947	4.50	1321.73	499.95	
PGCIL Charges		633.49			520.23	
KPTCL Charges		1640.78			1347.80	
SLDC & POSOCO Charges		1.66			12.99	
Total	**31271.00**	**13884.89**	**4.44**	**30879.69**	**13624.31**	**4.41**

The details of station-wise / Source-wise power purchased quantum & cost for the State and BESCOM are shown in Annexure-I & Annexure-II respectively.

5.2.5 RPO target for FY18:

1. The Commission had directed the BESCOM to submit the estimates for complying with solar and non-solar RPO for 2017-18, including cost implication for purchasing RECs, if any.

   The BESCOM in its replies has stated that as per the data furnished in D1-Format, it would be able to meet the RPO target for FY18.

2. Further, the Commission had directed BESCOM to furnish certain details, with respect to the renewable energy purchase estimates made for the FY18. The BESCOM in its replies has furnished the following details:

TABLE-5.11
Anticipated Capacity Addition of RE Sources in FY18

Source	Capacity under PPA in MW as on 30.11.2016	Anticipated capacity addition under PPA during the remaining period of FY17 in MW	Anticipated capacity addition under PPA during FY18 in MW
Wind	1120.75	78	27.79
Mini-hydel	158.65	0	0
Co-generation	0	0	0
Biomass	59.50	0	0
Waste to Energy	156.00	0	0
Solar	0	0	638.70

3. The contribution of Solar Power should be computed duly considering the present status of the Solar projects for which the BESCOM has entered into PPA. Hence, the Commission had requested BESCOM to furnish certain data on solar power projects. The BESCOM has furnished the details as under:

TABLE-5.12

Anticipated Energy from RE Sources in FY18

Type of Solar Plant	Capacity in MWp	Estimated Energy contribution and cost for FY17		Estimated Energy contribution and cost for FY18	
		Qty (MU)	Cost (Rs. Crs)	Qty (MU)	Cost (Rs. Crs)
Solar Rooftop plants of < 500KW	12.74	20.12	9.61	20.12	9.61
Solar Rooftop plants of >500KW	18.99	29.98	14.33	29.98	14.33
1-3 MW Projects allotted to Farmers by KREDL.	162	0	0	269.63	94.37
20 MW Projects Taluk wise issued by KREDL.	536	0	0	892.12	312.24
Other MW scale projects	0	0	0	0	0
Total	729.73	50.10	23.94	1211.85	430.55

Note:
1. **15 MW of SRTPV which are under progress not accounted.**
2. **50% of energy is assumed to be exported under net-metering under SRTPV already commissioned @ Rs.9.56/unit.**

Commission's observations on BESCOM's RPO Submissions:

Regarding Non-Solar RPO, the Commission notes that:

a. As per D-1 Format, the non-solar renewable energy is estimated as 2718.32.
b. BESCOM has considered addition of wind projects to the extent of 106 MW by 2017-18, which should generate around 250 MU at 27% CUF, whereas BESCOM has considered only 56 MU as per the D-1 Format.
c. With the estimated energy of 31,271 MU for FY18 and considering the excess solar energy of 1359.42, BESCOM, as per its filing, is likely to achieve Non-solar RPO of 13.04% as against target of 12% for FY18.

As far as solar RPO is concerned, the Commission notes that:

a. As per D-1 Format, the solar renewable energy is estimated as 1750.31 MU.
b. With the estimated energy of 31271 MU for FY18, the BESCOM is likely to meet solar RPO of 5.59% against target of 1.25% for FY18.

c. In its replies to the preliminary observations, BESCOM has estimated solar energy as 1211.85 MU, which is not in tune with the data furnished in D-1 Format. Considering 1211.85 MU, BESCOM would meet solar RPO of 3.87%.

Commission's Analysis:

The Commission has approved power purchase quantum of 30879.69 MU for FY18. The Non-solar RPO target at 12% would be 3705.56 MU. The Commission has approved purchase of 3339.56 MU from non-solar RE sources. Thus, BESCOM would be able to procure 3339.56 MU as against an estimated RPO of 3705.56 MU, resulting in shortfall of 366.00 MU, which could be met by the anticipated surplus solar energy of 581.68 MU, as discussed earlier in this Chapter. Therefore, the need for purchasing RECs may not arise.

However, in case there is a shortfall based on the actuals, BESCOM may purchase RECs at the market rates, which would be considered by the Commission in the APR of FY18.

The Commission has approved power purchase quantum of 30879.69 MU for FY18. The Solar RPO target at 1.25 % would be 386.00 MU. The Commission has approved purchase of 967.68 MU of Solar energy. Thus, BESCOM would exceed the solar RPO by 581.68 MU, which shall be utilized to meet the shortfall in non-solar RPO. In case, there is any need to buy Solar RECs to fully meet the solar RPO, the cost thereon would be factored in the APR of FY18.

5.2.6 O & M Expenses for FY18:

BESCOM's Proposal:

The BESCOM, in its application, has considered the actual O&M expenses of Rs.1183.70 Crores which includes actual plus additional employee cost of Rs.30.27 Crores on account of recruitment of 2426 employees during FY16 and factored inflation index of 7.24%, three year CAGR of 6.25% for FY17 and 5.78% for FY18, for computing the consumer growth index for projecting O&M expenses of Rs.1491.59 Crores for FY18 as detailed below:

TABLE-5.13

Normative O & M Expenses for FY18- BESCOM's submission

Sl.No.	Particulars	FY-16	FY-17	FY-18
1	Inflation index in%		7.24	7.24
2	Consumer Growth Index in %		6.25	5.78
3	BESCOM efficiency in %		1.00	1.00
4	Base year O&M Cost in Rs.Crs.	1183.70		
6	**O&M expenses t-year= 0&M (t-1)*(1+WII+CGI-X) (Rs.Crs)**		**1331.54**	**1491.59**

Based on the normative O&M expenses, the breakup of projected O & M expenses, as furnished by the BESCOM, for the FY18, is as follows:

TABLE – 5.14

Revised O&M Expenses for FY18- BESCOM's Proposal

Amount in Rs. Crores

Sl. No.	Particulars	FY18
1	Employee cost	1103.78
2	Other Expenses (Administrative and General expenses)	283.40
3	Repairs and Maintenance expenses	104.41
	Total O & M Expenses	**1491.59**

Commission's analysis &decision:

The Commission, in its MYT Order dated 30th March, 2016, while deciding the ARR for each year of the control period FY17-19, had approved, an O&M expenses, of Rs. 1510.01 Crores for FY 18 based on the actual expenses, including contribution to P & G, as per the audited accounts for FY15, as follows:

TABLE-5.15

Approved O&M Expenses for FY18 as per Tariff Order dated 30th March, 2016

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

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 BESCOM has claimed additional O&M expenses of Rs.30.27 Crores for FY16 owing to recruitment of employees during FY16. Further, it is stated that additional employees would be recruited in FY17 and the financial impact will be Rs.35 Crores for FY18. However, in the Format D6 (a) of the application, BESCOM had indicated the same number of employees working for the period FY16 to FY18. Therefore, the Commission in its preliminary observations had sought details of the employees working in each year of the control period along with the cost implications.

The BESCOM, in its replies, has stated that, the officers and employees working in the BESCOM are employed by KPTCL and their retirement is published annually and hence factoring the employee cost due to recruitment and retirements is a difficult task. Accordingly, BESCOM has not furnished the financial implication for FY18.

In the absence of supporting data for claiming additional employee cost due to proposed addition of employees for FY18, the Commission is of the view that such expenses could be factored and considered only when they are actually incurred by the distribution licensee. Further, as decided in the MYT Order dated 30th March, 2016, the Commission will look into the issue of revision of pay scale, at the time of approving the APR for FY18 when the actual impact of revision of pay scales is reported by BESCOM, as per its audited accounts.

In view of the above discussion, the Commission has computed the O & M expenses for FY18, duly considering the actual O & M expenses of FY16 as per the audited accounts (being the latest data available as per the audited accounts) to arrive at the O & M expenses for the base year i.e. FY16. The actual O& M expenses inclusive of contribution to P&G Trust for FY16 is Rs.1167.38 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, the allowable annual escalation rate for FY18 is 7.71%.

For the purpose of determining the normative O & M expenses for FY18, the Commission has considered the following:

a) The actual O & M expenses incurred as per the audited accounts inclusive of contribution to the Pension and Gratuity Trust to determine the O & M expenses for the base year FY16.

b) The three year compounded annual growth rate (CAGR) of the number of installations considering the actual number of installations as per the audited accounts upto FY16 and as projected by the Commission for FY17 and FY18.

c) The weighted inflation index (WII) at 7.71%.

d) Efficiency factor at 1% as considered in the MYT Order.

The above parameters have been computed duly considering the same methodology as is being followed in the earlier Tariff Orders of the Commission and the relevant Orders of this Commission on various Review Petitions.

Accordingly, the normative O & M expenses for FY18 are as follows:

TABLE – 5.16

Approved O & M expenses for FY18

Particulars	FY16	FY17	FY18
No. of Installations		10654404	11248009
CGI based on 3 Year CAGR		6.28%	6.00%
Inflation index		7.71%	7.71%
Base Year O&M expenses (as per actuals of FY16)-Rs .Crs	1167.38		
Total allowable O&M Expenses-Rs. Crs			**1486.60**

Since, the base year data includes the O & M expenses inclusive of contribution to the P & G Trust, the Commission has not considered allowing separately the contribution to the P & G Trust.

Thus, the Commission decides to approve O&M expenses of Rs.1486.60 Crores for FY18.

5.2.7 Depreciation:

BESCOM's Proposal:

The BESCOM, in its application has claimed depreciation of Rs.374.34 Crores for FY18 on the projected gross fixed assets without considering the cost of retirement of assets during the respective years. After deducting an amount of Rs.144.50 Crores of deprecation on assets created out of grants and consumer contribution, the net depreciation claimed by BESCOM is as detailed below:

TABLE – 5.17

Depreciation-FY18- BESCOM's Submission

Amount in Rs. Crores

Particulars	FY18
Buildings	3.93
Civil	0.21
Other Civil	0.09
Plant & M/c	120.14
Line, Cable Network	391.42
Vehicles	1.17
Furniture	0.86
Office Equipment's	1.02
Sub Total	**518.84**
Depreciation Withdrawn AS12	144.50
Total	**374.34**

Commission's analysis and decision:

The Commission, in accordance with the provisions of the MYT Regulations and amendments issued thereon, has determined the depreciation for FY18 considering the following:

a) The actual rate of depreciation of category-wise assets has been determined considering the depreciation and gross block of opening and closing balance of fixed assets, as per the audited accounts for FY16.

b) The actual rate of depreciation, so arrived at, is considered, to allow the depreciation on the gross block of opening and closing balances of fixed assets projected by BESCOM, in its application for FY18 and factoring the actual cost of retirement of assets as per the audited accounts for FY16 and projection thereon for FY17 and FY18.

c) The depreciation on account of assets created out of consumers contribution / grants are considered (deducted), based on the opening and closing balance of such assets duly considering the addition of assets as proposed by the BESCOM, at the weighted average rate of depreciation as per actuals in FY16.

Accordingly, the depreciation for FY18 is arrived at as follows:

TABLE – 5.18

Approved Depreciation for FY18

Amount in Rs. Crores

Particulars	FY18
Buildings	4.94
Civil	0.23
Other Civil	0.06
Plant & M/c	146.77
Line, Cable Network	385.26
Vehicles	1.35
Furniture	0.71
Office Equipment's	0.80
Sub Total	**540.11**
Depreciation Withdrawn AS12	166.35
Total	**373.76**

Thus, the Commission decides to approve an amount of Rs.373.76 Crores towards depreciation for FY18.

5.2.8 Interest on Capital Loans:

BESCOM's proposal:

BESCOM in its application has stated that, during FY16 majority of the Capital Loans have been availed from Rural Electric Corporations (REC) at the interest rates in the range of 11.50% to 12.50%. Based on the loan balances, the interest on the capital loan for FY18 is estimated at Rs.351.43 Crores. In projecting the interest on capital loan, BESCOM has considered the average rate of Interest of 7.77% on existing loans and 11.75% for the new loans. The weighted average rate of interest claimed by BESCOM is 8.41% for FY18.

The BESCOM has requested to approve interest on capital loans for FY18 as follows:

TABLE – 5.19

Interest on Capital Loan– BESCOM's Proposal

Amount in Rs. Crores

Particulars	FY18
Opening Balance of Capital Loans	3695.07
Less Repayments	382.68
Total Loan at the end of the year	3312.39
Average Loan for the year	3503.73
Interest on existing loans @ 7.77%	272.24
Add: New Loans	674.00
Interest on New Loan @ 11.75%	79.20
Total Interest on Capital Loans	351.43
Weighted Average rate of interest	8.41%

Commission's analysis and decision:

Based on the approved capex, the requirement of new capital loan is Rs.674.00 Crores for FY18. Further, the Commission has considered the repayment of loan as proposed by the BESCOM at Rs.382.68 Crores for FY18.

As per the audited accounts and as per the APR of FY16, the BESCOM had incurred interest on capital loan at a weighted average rate of interest of 8.82% p.a. This rate of interest is considered for the existing loan balances for which interest has to be factored during FY17. Further, for the year FY18, the weighted average rate of interest of the preceding year has been considered on the existing loan balances. The Commission has considered new loans, in compliance of the debt equity ratio of 70:30 as per the MYT Regulations.

The Commission notes that, the present interest rates by commercial banks and financial institutions are charged mainly on the basis of Marginal Cost of fund based Lending Rates (MCLR). These rates are comparatively lower than the base rates considered earlier. Further, in view of the changing economic situation, it is observed that there is considerable reductions in the MCLR and also downward trend is evident in the interest rates. Hence, in such a situation, the Commission is of the view that, the ESCOMs can avail Capital loans at competitive interest rates which would be less than the proposed rates of BESCOM. The Commission notes that, the present SBI MCLR rate for capital loans with a tenure of 3 years is 8.15%. Considering the present MCLR, the Commission decides to allow an interest rate of 11.00% for FY18 for new Capital loans. It shall be noted that, the rate of interest now considered by the Commission on the new capital loans is subject to review during APR.

Accordingly, the approved interest on loans for FY18 is as follows:

TABLE – 5.20

Approved Interest on Loans for FY18

Amount in Rs. Crores

Particulars	FY18
Opening Balance long term loans	**3706.54**
Add new Loans	674.00
Less: Repayments	382.68
Total loan at the end of the year	3997.86
Average Loan	**3852.20**
Weighted average rate of interest in %	9.21%
Interest on long term loans	**354.81**

Thus, the Commission decides to approve interest of Rs.354.81 Crores on Capital loans for FY18.

5.2.9 Interest on Working Capital:

BESCOM's proposal:

The BESCOM has claimed interest on working capital, based on the norms prescribed in the MYT Regulations, and considering the rate of interest as per the short term prime lending rate by SBI, at 14.05% p.a. The interest on working capital, computed by BESCOM, is as follows:

TABLE – 5.21

Interest on Working Capital – BESCOM's Submission

Amount in Rs. Crores

Particulars	FY18
1/12th Operation and Maintenance expenses	123.97
1% of Gross fixed assets at the beginning of the year	101.82
2 months Receivables	2484.76
Estimated Working Capital	2710.55
Rate of Interest	14.05%
Interest on working capital	**380.83**

Commission's analysis and decision:

The Commission in its MYT Order dated 30th March, 2016 while deciding the ARR for each year of the control period FY17-19, had approved Interest on working capital of Rs. 323.77 Crores for FY18.

The Commission has been computing the interest on working capital as per the norms specified under the MYT Regulations, which consists of one month's O & M expenses, 1% of opening GFA and two months' revenue. Further, the claims of BESCOM based on prime lending rate of SBI no more exists. The Banks / Financial institutions have switched over from PLR to base rate and now from base rate to MCLR. At present these financial entities are offering new loans only on MCLR basis, whereas BESCOM is still insisting applicability of SBI PLR rates for allowing interest on working capital. BESCOM has not considered the amended provisions of the MYT Regulations. As discussed earlier, the MCLR for loans with tenure of one year is 8.00%. Therefore, the Commission decides to considers interest on working capital at 11% p.a. for FY18.

Accordingly, the approved interest on working capital for FY18 is as follows:

TABLE – 5.22

Approved Interest on Working Capital for FY18

Amount in Rs. Crores

Particulars	FY 18
One-twelfth of the amount of O&M Expenses	123.88
Opening Gross Fixed Assets (GFA)	9992.43
Stores, materials and supplies 1% of Opening balance of GFA	99.92
One-sixth of the Revenue	2610.02
Total Working Capital	2833.82
Rate of Interest (% p.a.)	11.00%
Interest on Working Capital	**311.72**

Thus, the Commission hereby approves interest on working capital of Rs.311.72 Crores for FY18.

5.2.10 Interest on Consumers' Security Deposit:

BESCOM's proposal:

The BESCOM in its application has claimed interest on consumers' security deposit of Rs.291.02 Crores for FY18 duly considering the addition of deposits for each year of the control period FY18 based on Bank rate of 7.75 per cent. The interest on consumers' security deposit projected for FY18 is as follows:

TABLE – 5.23

Interest on Consumer Security Deposits- BESCOM's Submission

Amount in Rs. Crores

Particulars	FY18
Average Consumer Security Deposit	3755.08
Rate of Interest	7.75%
Interest on consumer security deposit	291.02

Commission's analysis and decision:

In accordance with the KERC (Interest on Security Deposit) Regulations, 2005, the interest rate on consumers' security deposit to be allowed is the bank rate prevailing on the 1st of April of the financial year for which interest is due. As per Reserve Bank of India Notification dated 4th October, 2016, the applicable bank rate is 6.75%. The Commission has considered the same, for computation of interest on consumers' security deposits for FY18.

The Commission has considered the consumers' security deposits as per the audited accounts of FY16 for onward projection for FY18. Also, the Commission is considering the average of the opening and closing balances of consumers' deposits of the relevant year. The interest on consumers' deposits, approved for FY18 is as follows:

TABLE – 5.24

Approved Interest on Consumers' Security Deposits for FY18

Amount in Rs. Crores

Particulars	FY18
Opening balance of consumers' security deposits	3623.25
Proposed addition of deposits during FY18	400.00
Closing balance of consumers' security deposits	4023.35
Average Consumers' Security Deposits for FY18	3823.35
Bank rate to be allowed as per Regulations	6.75%
Approved Interest on average Consumers' Security Deposit	**258.08**

Thus, the Commission decides to approve interest on consumers' security deposits of Rs.258.08 for FY18.

5.2.11 Other Interest and Finance Charges:

The BESCOM has claimed an amount of Rs.10.19 Crores towards other interest and finance charges for FY18. Considering, the expenditure on this item in the earlier years, the Commission decides to allow an amount of Rs.10.19 Crores towards interest and finance charges for FY18.

5.2.12 Interest and other expenses Capitalized:

The BESCOM has claimed an amount of Rs.82.00 Crores towards capitalization of interest and other expenses during FY18. Considering, the capital expenditure incurred and the expenses capitalized in the previous years, the Commission decides to allow capitalization of interest and other expenses of Rs.82.00 Crores, as proposed by BESCOM for FY18.

The abstract of approved interest and finance charges for FY18 are as follows:

TABLE – 5.25
Approved Interest and finance charges for FY18

Amount in Rs. Crores

Particulars	FY18
Interest on Loan Capital	354.81
Interest on Working Capital	311.72
Interest on Consumers Security Deposit	258.08
Other Interest & Finance Charges	10.19
Less Interest & other expenses capitalized	(82.00)
Total Interest & Finance Charges	**852.80**

5.2.13 Return on Equity:

BESCOM's proposal:

The BESCOM in its application has claimed Return on Equity of Rs. 114.73 Crores for FY18 based on the opening balance of Share Capital, Share deposit and recapitalized amount of security deposit. BESCOM has not considered the accumulated surplus/ deficit under Reserves and Surplus account. BESCOM has stated that the accumulated deficit is not to be considered in computation of return on equity as any loss in the distribution business will be compensated in the future years while carrying out Annual Performance Review and that the equity will be restored. The Return on Equity claimed by BESCOM is as detailed below:

TABLE-5.26

Return on Equity- BESCOM Submission

Amount in Rs. Crores

Particulars	FY18
Opening balance of share capital	546.91
Share deposit	248.10
Less recapitalized security deposits	(54.81)
Total Equity	740.20
Return on Equity @ 15.50%	**114.73**

Commission's analysis and decision:

The Commission has considered the actual amount of share capital, share deposits and reserves & surplus as per the audited accounts for FY16 for arriving at the allowable equity base for the control period FY18.

The Commission, in accordance with the provisions of the MYT Regulations, and amendment thereon, has considered 15.5% of Return on Equity duly grossed up with the applicable Minimum Alternate Tax (MAT) of 21.342%. This works out to 19.706% per annum. Further, as per the decision of the Commission in the Review Petition No.6/2013 and Review Petition No. 5/2014, and the amended provisions of the MYT Regulations, the Return on Equity is to be computed based on the opening balances of share capital, share deposits and accumulated balance of deficit under reserves and surplus account. Further, an amount of Rs.100.00 Crores of recapitalized consumer security deposit as net-worth is considered as per the orders of the Hon'ble Appellate Tribunal for Electricity in Appeal No.46/2014. Accordingly, the claims of BESCOM on admissibility of ROE without considering the accumulated deficit amount in computation of equity is not provided for.

Further, in compliance with the Orders of the Hon'ble ATE in Appeal No.46/2014, wherein it is directed to indicate the opening and closing balances of gross fixed assets along with break-up of equity and loan component in the Tariff Order henceforth, the details of GFA, debt and equity (net-worth) for FY18 are indicated as follows:

TABLE – 5.27

Status of Debt Equity Ratio for FY18

Amount in Rs. Crores

Year	Particulars	GFA	Debt	Equity (Net-worth)	Normative Debt @ 70% of GFA	Normative Equity @ 30% of GFA	%age of actual debt on GFA	%age of actual equity on GFA
FY18	Opening Balance	9992.43	3706.54	389.22				
	Closing Balance	10579.43	3997.86	449.55	7405.60	3173.83	37.79%	4.25%

From the above table it is seen that the actual amounts of debt & equity are within the normative levels with reference to the closing balances of GFA for FY18. Further, the Commission would review the same during the Annual Performance Review, for FY18, based on the actual data, as per the audited accounts.

Accordingly, the Return on Equity that could be approved for FY18, works out as follows:

TABLE – 5.28

Approved Return on Equity for FY18

Amount in Rs. Crores

Particulars	FY18
Opening Balance of Paid Up Share Capital	546.915
Share Deposit	259.34
Reserves and Surplus	(317.03)
Less Recapitalised Security Deposit	(100.00)
Total Equity	**389.22**
Approved Return on Equity with MAT	**76.70**

Thus, the Commission decides to approve Return on Equity of Rs.76.70 Crores, for FY18.

5.2.14 Other Income:

BESCOM's proposal:

BESCOM has claimed an amount of Rs.55.82 Crores as other income for the FY18. BESCOM has proposed this amount considering the 5% increase over the actual other income earned in FY16 excluding incentives on prompt payment of power purchase bills.

Commission's analysis and decision:

The other income received by the BESCOM mainly includes income from miscellaneous recoveries, interest on bank deposits, rent from staff quarters and sale of scrap, profit on sale of stores besides incentives for timely payment of power purchase bills. The actual 'other income' as per the audited accounts for FY16 is Rs.167.20 Crores. The Commission notes that, the BESCOM, in its projection of other income for the control period has not included estimated incentives likely to be earned on account of timely payment of power purchase bills.

On the basis of other income earned by the BESCOM in the past three years and considering a nominal escalation of 5% p.a, **the Commission decides to approve other income of Rs.192.84 Crores for FY18.**

5.2.15 Fund towards Consumer Relations / Consumer Education:

The Commission has been allowing an amount of Rs.1.00 Crore per year for meeting the expenses towards consumer relations / consumer education. This amount is earmarked to conduct consumer awareness and grievance redressal meetings periodically and institutionalize a mechanism for addressing common problems of the consumers. The Commission has already issued guidelines for consumer education and grievance redressal activities.

The Commission decides to continue providing an amount of Rs.1.00 Crore for each year of the control period FY18, towards meeting the expenditure on consumer relations / consumer education.

The Commission directs BESCOM to furnish a detailed plan of action for utilization of this amount and also maintain a separate account of these funds and furnish the same at the time of APR.

5.3 Contribution towards Pension and Gratuity Trust

BESCOM in its application has claimed an amount of Rs.729.37 Crores towards the arrears of contribution to P&G Trust not released by the Government of Karnataka.

The Commission in its preliminary observations had informed BESCOM to furnish reasons /justifications for inclusion of this amount in the proposed ARR for FY18 to be recovered from the consumers as part of the retail supply tariff during FY18 in contravention of the Commission's decision in Tariff Order 2016.

In its replies to the Commission's preliminary observations, BESCOM has stated that it has included an amount of Rs. 729.37 Crores towards BESCOM portion of arrears of contribution to P&G Trust not released by the Government of Karnataka, in accordance to the instructions issued by the Energy Department, GoK vide Letter No. EN 26 PSR 2016/P3 dated 16.09.2016.

It is to be noted that, the Commission in its Order dated 30th March, 2016 has already dealt with this issue and had observed that,

a) *'As per Rule 4(13) of the Karnataka Electricity Reforms (Transfer of Undertakings of KPTCL and its Personnel to Electricity Distribution and Retail Supply Companies) Rules, 2002, notified by the Government on 31.05.2002, the State Government is liable for funding the pension and gratuity liability of existing pensioners as on the effective date of Second Transfer Scheme.*

b) *The Government, as per its order dated 19.12.2002, has adopted "pay as you go" approach to meet the pension and gratuity requirements of existing pensioners on the effective date of second transfer Scheme. With this arrangement, the GoK is liable to meet the pension and gratuity requirement of existing pensioners.'*

Thus, as per the provisions of the prevailing Rules and Government Orders issued thereon, the Commission had earlier decided that this liability cannot be passed on to the consumers, through tariff.

In spite of this Order of the Commission, BESCOM has claimed this liability (in the proposed ARR for FY18, whereas, the same should have been borne by the Government of Karnataka.

The Commission reiterates its earlier decision that, as per Rule 4(13) of the Karnataka Electricity Reforms (Transfer of Undertakings of KPTCL and its Personnel to Electricity Distribution and Retail Supply Companies) Rules, 2002, notified by the Government on 31.05.2002 and Government Order No. DE 15 PSR 2002 Dated 19.12.2002, the amount in question is liable to be borne only by the Government of Karnataka and cannot be passed on to the consumers, through tariff.

In view of the above, the Commission is unable to accept the claims of BESCOM to allow an amount of Rs.729.37 Crores being the State Government's liability towards arrears of contribution to P&G Trust in the ARR for FY18.

5.4 Abstract of Revised ARR for FY18:

In the light of the above analysis and decisions of the Commission, the following is the approved revised ARR for FY18:

TABLE – 5.29

Approved Revised ARR for FY18

Amount in Rs. Crores

Sl. No	Particulars	FY18		
		As Approved in the MYT Order	As per application filed on 30.11.2016	As Revised & Approved
	Revenue at existing tariff in Rs Crs			
1	Revenue from tariff and Miscellaneous Charges		13016.45	13821.23
2	Tariff Subsidy from BJ/KJ		41.04	77.70
3	Tariff Subsidy from IP		1955.61	1761.17
	Total Revenue at Existing Tariff		**15013.10**	**15660.10**
	Expenditure in Rs Crs			
4	Power Purchase Cost	11587.95	12249.11	12265.18
5	Transmission charges of KPTCL	1622.58	1622.58	1347.80
6	SLDC Charges	13.20	13.20	11.33
	Power Purchase Cost including cost of transmission	**13223.73**	**13884.89**	**13624.31**
7	Employee Cost		1103.78	
8	Repairs & Maintenance		104.41	
9	Admin & General Expenses		283.40	
	Total O&M Expenses	**1510.01**	**1491.59**	**1486.60**
10	Depreciation	300.20	374.34	373.76
	Interest & Finance charges			
11	Interest on Loans	319.09	351.43	354.81
12	Interest on Working capital	323.77	380.83	311.72
13	Interest on belated payment on PP Cost			
14	Interest on consumer deposits	280.70	291.02	258.08
15	Other Interest & Finance charges	10.19	10.19	10.19
16	Less interest & other expenses capitalised	82.00	82.00	82.00
	Total Interest & Finance charges	**851.75**	**951.47**	**852.80**
17	Other Debits	0.00	0.00	0.00
18	Net Prior Period Debit/Credit	0.00	0.00	0.00
19	Return on Equity	40.54	114.73	76.70
20	Funds towards Consumer Relations/Consumer Education	1.00	1.00	1.00
21	Other Income	213.00	55.82	192.84
22	Provision for contribution to P&G Trust (GoK Liability)		729.37	0.00
23	Disallowance of Interest and Depreciation on imprudent investments in FY16			0.56
24	**ARR**	**15714.23**	**17491.57**	**16221.77**
25	**Deficit for the year**	**0.00**	**-2478.47**	
26	Deficit for FY16 carried forward		-1424.40	-692.42
27	**Net ARR**	**15714.23**	**18915.97**	**16914.19**

5.5 Segregation of ARR into ARR for Distribution Business and ARR for Retail Supply Business:

BESCOM in its application has proposed the segregation of ARR into ARR for Distribution Business and ARR for Retail Supply Business at the same ratio as proposed in its MYT application for FY17-19. The Commission decides to continue the same ratio of segregation of ARR into ARR for distribution business and ARR for retail supply business as approved in its Tariff Order dated 30th March, 2016, as detailed below:

TABLE – 5.30
Approved Segregation of ARR – FY18

Particulars	Distribution Business	Retail Supply Business
O&M	56%	44%
Depreciation	88%	12%
Interest on Loans	100%	0%
Interest on Consumer Deposits	0%	100%
RoE	50%	50%
GFA	88%	12%
Non-Tariff Income	19%	81%

Accordingly, the following is the approved ARR for Distribution Business and Retail supply business:

TABLE – 5.31
APPROVED REVISED ARR FOR DISTRIBUTION BUSINESS – FY18
Amount in Rs. Crores

Sl. No	Particulars	FY18
1	R&M Expenses	
2	Employee Expenses	
3	A&G Expenses	832.50
4	Depreciation	328.91
	Interest & Finance Charges	
5	Interest on Loans	354.25
6	Interest on Working capital	37.40
7	Other Interest & Finance charges	10.19
8	Less interest & other expenses capitalised	82.00
9	Total	1481.24
10	Return on Equity	38.35
11	Other Income	36.64
12	NET ARR	1482.95

TABLE – 5.32

APPROVED ARR FOR RETAIL SUPPLY BUSINESS – FY18

Amount in Rs. Crores

Sl. No	Particulars	FY18
1	Power Purchase	12265.18
2	Transmission Charges	1359.13
3	R&M Expenses	
4	Employee Expenses	
5	A&G Expenses	654.11
6	Depreciation	44.85
	Interest & Finance Charges	
7	Interest on Loans	0.00
8	Interest on Working capital	274.32
9	Interest on consumer deposits	258.08
	Total	**14855.67**
10	ROE	38.35
11	Other Income	156.20
12	Fund towards Consumer Relations / Consumer Education	1.00
13	**NET ARR**	**14738.82**

5.6 Gap in Revenue for FY18:

As discussed above, the Commission decides to approve the revised Annual Revenue Requirement (ARR) of BESCOM for its operations in FY18 at Rs.16914.19 Crores as against BESCOM's application proposing the revised ARR of Rs.18915.97 Crores by including the revenue deficit of Rs.1424.40 Crores for FY16. The approved ARR includes an amount of Rs.692.42 Crores which is determined as the deficit in FY16 as discussed in Chapter-4. Based on the existing retail supply tariff, the total realization of revenue will be Rs.15660.10 Crores which is Rs.1254.09 Crores less than the projected revenue requirement for FY18.

The net ARR and the gap in revenue for FY18 are shown in the following table:

TABLE – 5.33
Revenue gap for FY18

Particulars	FY18
Net ARR including carry forward gap of FY16 (in Rs. Crores)	16914.19
Approved sales (in MU)	26109.16
Average cost of supply (in Rs./unit)	6.48
Revenue at existing tariff (in Rs. Crores)	15660.10
Gap in revenue (in Rs. Crores)	**(1254.09)**

The determination of revised retail supply tariff on the basis of the above approved ARR is detailed in the following Chapter.