

**CHAPTER – 5****ANNUAL REVENUE REQUIREMENT FOR FY20-FY22****5.0 Annual Revenue Requirement (ARR) for FY20-FY22****BESCOM's Application:**

BESCOM in its application dated 30<sup>th</sup> November, 2018, has sought approval of the Commission for the ARR for the fifth control period of FY20-22 and the revision of retail supply tariff for FY20. The summary of the proposed ARR for FY20-22 is as follows:

**TABLE – 5.1****Proposed ARR for FY20-22 – BESCOM's Submissions.**

Amount in Rs. Crores				
Sl. No	Particulars	FY20	FY21	FY22
1	Energy at Generating Bus : MU	34,091.83	35,491.68	37,009.64
2	Transmission Losses in %	3.190%	3.170%	3.150%
3	Energy at Interface in MU	33,004.30	34,366.60	35,843.84
4	Distribution Losses in %	12.40%	12.30%	12.20%
5	<b>Sales in MU</b>			
	Sales to other than IP & BJ/KJ	22,031.99	23,079.74	24,231.12
	Sales to BJ/KJ	219.43	219.43	219.43
	Sales to IP	6,660.34	6,840.34	7,020.34
	<b>Total Sales</b>	<b>28,911.76</b>	<b>30,139.51</b>	<b>31,470.89</b>
6	<b>Revenue at existing tariff in Rs. Crores</b>			
	Revenue from tariff and Misc. Charges	18,130.47	18,867.78	19,675.01
	Tariff Subsidy to BJ/KJ	149.21	149.21	149.21
	Tariff Subsidy to IP	2,464.33	2,530.93	2,597.53
	<b>Total Existing Revenue including Miscellaneous Revenue</b>	<b>20,744.01</b>	<b>21,547.92</b>	<b>22,421.75</b>
	<b>Expenditure in Rs. Crores</b>			
7	Power Purchase Cost	18,375.93	19,921.37	20,896.06
	Transmission charges of KPTCL	1,740.00	1,920.00	2,100.00
	SLDC Charges	18.60	18.60	18.60

Sl. No	Particulars	FY20	FY21	FY22
	<b>Power Purchase Cost including cost of transmission</b>	<b>20,134.53</b>	<b>21,859.97</b>	<b>23,014.66</b>
8	Employee Cost	1424.57	1596.67	1773.84
	Repairs & Maintenance	112.47	126.05	140.04
	Admin & General Expenses	337.40	378.16	420.12
	<b>Total O&amp;M Expenses</b>	<b>18,74.44</b>	<b>2,100.88</b>	<b>2,334.00</b>
9	Depreciation	626.17	693.33	743.22
<b>10</b>	<b>Interest &amp; Finance charges</b>			
11	Interest on Loans	452.55	623.94	731.50
12	Interest on Working capital	417.29	438.34	460.26
13	Interest on belated payment on PP Cost	0.00	0.00	0.00
14	Interest on consumer deposits	289.99	310.24	330.49
15	Other Interest & Finance charges	20.00	20.00	20.00
16	<b>Less: interest &amp; other expenses capitalised</b>	<b>-99.75</b>	<b>-104.74</b>	<b>-109.97</b>
	<b>Total Interest &amp; Finance charges</b>	<b>1080.08</b>	<b>1287.78</b>	<b>1432.28</b>
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 with MAT	232.18	293.59	364.52
20	Funds towards Consumer Relations/Consumer Education	1.00	1.00	1.00
21	Other Income	-270.58	-282.19	-267.66
	<b>ARR</b>	<b>23,677.82</b>	<b>25,954.36</b>	<b>27,622.02</b>
<b>22</b>	<b>Surplus/Deficit for the year</b>	<b>-29,33.81</b>	<b>-4,406.44</b>	<b>-5,200.27</b>
23	Surplus for FY18 carried forward	1.57	0.00	0.00
	<b>Net ARR</b>	<b>23,676.25</b>	<b>25,954.36</b>	<b>27,622.02</b>

The BESCOM has requested the Commission to approve the Annual Revenue Requirement of Rs.23676.25 Crores for FY20 including the surplus of Rs.1.57 Crores of FY18, Rs.25954.36 Crores for FY21 and Rs.27622.02 Crores for FY22. Considering the estimated revenue of Rs.20744.01 Crores from sale of power to the consumers at the existing retail supply tariff, BESCOM has projected the revenue gap of Rs.2932.24 Crores for FY20, Rs.4406.44 Crores

for FY21 and Rs.5200.27 Crores for FY22. In order to bridge the revenue gap of Rs.2932.24 Crores for FY20, the BESCOM has proposed average increase in retail supply tariff by 101 paise per unit in respect of all the categories of consumers including BJ/KJ and IP set consumers for FY20.

### **5.1 Annual Performance Review for FY18 and FY19:**

As discussed in the preceding chapter of this Order, the Commission has carried out the Annual Performance Review for FY18 based on the audited accounts and other documents furnished by BESCOM. Accordingly, the **revenue surplus of Rs.392.46 Crores of FY18** is carried forward to the ARR of FY20.

As regards APR for FY19, it is noted that the audited accounts for FY19 are yet to be finalized. Hence, the Commission decides to take up the APR of FY19, while taking up the revision of ARR / Retail Tariff, if any, for FY21.

### **5.2 Annual Revenue Requirement for FY20-22:**

#### **5.2.1 Capital Expenditure for FY20-22:**

##### **BESCOM Proposal:**

The BESCOM, in its Tariff application, has proposed capex for FY20 to FY24. The BESCOM has stated that, the capex for FY20 to FY24 may have deviations in the coming years, due to technology up-gradation, Innovations, Statutory adherence, System compulsion etc. and any change in the proposal, that may happen in due course, will be submitted to the Commission, for approval.

The BESCOM has stated that, capital investment has increased from FY16 onwards due to technology upgradation and taking up several projects approved by the Government of India/Karnataka. These programmes essentially involve significant capital investment relating to infrastructure improvement, feeder separation programmes, village and household electrification etc.

The need to extend and expand networks is driven by increase in electricity demand. Bengaluru is the most densely populated and expensive part of the State. BESCOM faces additional operational challenges from the urban environment wherein the urban customers are typically more sensitive to power cuts, requiring BESCOM to attend to maintenance work at the weekends rather than during the week days. BESCOM also has to deal with congestion under pavements and roads due to road widening, metro works, White topping of roads, etc., which increases the complexity. BESCOM also regularly has to put equipment into small spaces and often under the ground to minimize land usage. This leads to higher costs to install and maintain equipment. BESCOM is aware of its responsibility to ensure that its electricity network is fit for the purpose and comparable to other urban cities in terms of resilience, quality of supply, and the ability to deliver new connections.

In order to ensure this, BESCOM has proposed Capital Investment plan to the tune of Rs. 11,029 Crores towards strategic investment, including capex for the Model sub-divisions, Model villages from FY20 to FY24, as shown below:

**TABLE-5.2**  
**BESCOM's Proposed Capex for the Period FY20-24**

(Amount in Rs. Crores)

Sl. No.	Particular of the works under Major/ Minor heads	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24
1	Ganga kalyana Works	82.81	80.00	80.00	80.00	80.00
2	Service connection works	60.77	66.85	73.54	75.00	77.00
3	Water Works	21.52	23.67	26.04	28.00	30.00
4	11 KV Evacuation line	182.17	185.00	190.00	195.00	200.00
5	Providing Additional DTC's /Enhancement of DTCs	75.16	77.00	80.00	82.00	84.00
6	Strengthening of HT network including OH/UG cable, Covered conductor and AB cable	253.42	258.75	260.00	262.00	265.00
7	Strengthening of LT network including OH/UG cable, Covered conductor and AB cable	195.32	197.00	200.00	205.00	210.00
8	SDP Progress	30.00	30.00	30.00	30.00	30.00
9	Local planning, Safety works, Emergency / Calamity Works	85.27	93.80	95.00	97.00	100.00
<b>A</b>	<b>E&amp;I Total</b>	<b>986.45</b>	<b>1012.07</b>	<b>1034.58</b>	<b>1054.00</b>	<b>1076.00</b>

Sl. No.	Particular of the works under Major/ Minor heads	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24
10	Smart grid & EV	41.78	45.96	50.00	50.00	50.00
11	NJY	50.00	25.00	0.00	0.00	0.00
12	DDUGJY	165.00	90.75	82.50	0.00	0.00
13	IPDS	275.00	151.25	137.50	0.00	0.00
14	Civil	110.00	100.00	100.00	100.00	100.00
15	IT initiative	75.64	77.00	80.00	80.00	80.00
16	Meters and Commercial (with relevant accessories)	247.83	250.00	200.00	200.00	200.00
17	DSM	96.03	100.00	100.00	100.00	100.00
18	UNIP	100.00	80.00	60.00	60.00	60.00
19	HVDS	121.00	61.00	0.00	0.00	0.00
20	Erection of distribution transformer centers using 11 meters Spun poles	49.39	0.00	0.00	0.00	0.00
21	Model Sub division	580.44	290.22	0.00	0.00	0.00
22	Technology Innovative Center	25.07	27.58	30.34	33.37	36.71
23	Corporate reserve fund	50.00	50.00	50.00	50.00	50.00
24	Auto reclosure and sectionalizer	50.00	0.00	0.00	0.00	0.00
25	Model Village	50.00	10.00	0.00	0.00	0.00
26	Smart city	100.00	80.00	0.00	0.00	0.00
<b>B</b>	<b>Projects Total</b>	<b>2,187.19</b>	<b>1,438.76</b>	<b>890.34</b>	<b>673.37</b>	<b>676.71</b>
<b>C</b>	<b>Grand Total (A+B)</b>	<b>3,173.64</b>	<b>2,450.83</b>	<b>1,924.92</b>	<b>1,727.37</b>	<b>1,752.71</b>

### Commission's Analysis and decision:

It is noted from the above Table that, the BESCOM has proposed a capex of Rs.3173.64 Crores, Rs. 2450.83 Crores and Rs.1924.92 Crores for FY20, FY21 and FY22 respectively.

The Commission in its preliminary observations, had directed BESCOM to provide necessary justification for each of the works in terms of its purpose, requirement, physical progress, cost and timelines of completion along with the Number of works proposed to be taken in each of the year for the Control Period.

In response, BESCOM has stated that, with a view to meet the increasing demand and improve reliability index in power supply for the future load growth, BESCOM is proposing the anticipated expenditure for the next three financial years as indicated in the MYT application, which is based on the requirement of field offices. Since the projects are spread over for a

period of two to four years from the date of issue of Detailed Work Award (DWA) Letter of Intent (LOI), the progress will be achieved in a phased manner. Further, BESCOM is implementing various new technologies to enhance the overall performance both financially and technically. If any new technology is to be adopted in BESCOM, initial studies, proto-type development, outcome analysis etc. needs to be carried out in a phased manner and depending upon the need, the capex proposals will be enhanced year on year. Hence, BESCOM is unable to ascertain the actual budget required for the subsequent Financial Years.

Further, as part of technological upgradation of the its infrastructure, BESCOM has requested to accord approval for implementation of Conversion of HT/LT Overhead (OH) lines into Underground(UG)/Aerial Bunched (AB) cable in the jurisdiction of Bangalore Metropolitan Area Zone (BMAZ). This expenditure is proposed to be incurred by re-appropriation of the capex already proposed for FY20 to ensure that there is no additional tariff impact on the end consumers. The Commission, after obtaining necessary clarifications from the BESCOM, has communicated in 'principle approval' for taking up the proposed works of Conversion of HT/LT Overhead (OH) lines into Underground(UG)/Aerial Bunched (AB) cable in the BMAZ area, subject to the limiting of actual expenditure towards these works within the amount approved / to be approved for FY20 onwards. The BESCOM has been directed to incur the capex with reference to the DPRs to be approved by their Board, duly prioritizing the works considering the cost benefit ratio.

BESCOM has also proposed huge capex under 11Kv evacuation lines, strengthening of HT/LT network by OH/UG cable, covered conductors and AB Cables, meters and commercial for FY20 to FY22.

The Commission notes that BESCOM has not furnished the details for the capex proposal made under different heads of work for the FY20 to FY22. The Commission further notes that BESCOM has proposed huge capex in respect of Civil works of Rs.110 Crores for FY20, Rs. 100 Crores each for FY21 and FY22, in respect of DSM works Rs.96.03 Crores for FY20, Rs.100 Crores

each for FY21 and FY22, and in respect of Model Sub-division Rs.580.44 Crores for FY20 and Rs.290.23 Crores for FY21.

BESCOM has furnished the break-up of source of funding for the capex for FY20 to FY22 as follows:

**TABLE-5.3**  
**Funding of Proposed Capex- BESCOM Proposal**

(Amount in Rs. Crores)

Source of fund	FY20	FY21	FY22
Capital grants from Gol/GoK	448.65	318.80	297.90
Internal resources	515.08	402.94	307.48
Borrowings	1,201.86	940.19	717.45
<b>TOTAL</b>	<b>2,165.58</b>	<b>1,661.93</b>	<b>1,322.83</b>
Proposed capex with borrowings, own fund/internal resources	1,716.94	1,343.00	1,025.00
Capital grants/Investment by Gol/GoK	448.64	318.80	297.93
<b>Proposed Expected Capex by BESCOM</b>	<b>2,165.58</b>	<b>1,661.93</b>	<b>1,322.83</b>

The Commission notes that the capex proposed by the BESCOM is on the higher side when compared with the capex achievements made in completion of the works, during the previous years.

The BESCOM's previous years' achievement of capex vis-à-vis the approved capex is shown in the following table:

**TABLE-5.4**  
**BESCOM's Capex achievements for the previous Years**

(Amount in Rs. Crores)

Approved and Actual Capex incurred - BESCOM						
Particulars	FY13	FY14	FY15	FY16	FY17	FY18
Capital investment filed	510.00	848.00	2,199.00	2,050.00	2,000.00	3,272.00
Capital investment approved by the Commission	510.00	848.00	763.00	627.00	2,000.00	3,272.00
Actual capital investment incurred as per audited accounts*	851.00	1,052.35	1,727.75	1,374.31	1,615.92	1,979.01
Percentage of actual capital investment to the approved capital investment	167%	124%	226%	219%	81%	60%

\*without considering capital investment disallowed under prudence check.

Considering the actual capex as indicated above, the Commission notes that the average capex for the last four years is within Rs.1700 Crores and the capex proposed for the next five years appears to be on the higher side.

Based on the previous years' achievements and the projected works to be undertaken as per the Gol/ GoK schemes, to be partly met by the capital grants and the available internal resources, the Commission recognizes the expected capital expenditure proposal of BESCOM of Rs.2165.58 Crores, Rs.1661.93 Crores and Rs.1322.83 Crores for FY20, FY21 and FY22 respectively. However, to avoid front-loading of the elements like Interest on Loans and depreciation on the capex, in the retail supply tariff, the Commission decides to recognize capex of Rs. 1800 Crores, Rs.1400 Crores and Rs.1200 Crores, for FY20, FY21 and for FY22 respectively subject to prudence check. Considering BESCOM's projected availability of capital grants from Gol / GoK and the internal resources by BESCOM, for the execution of capex, the Commission considers Rs.900 Crores, Rs.700 Crores and Rs. 600 Crores for the purpose of ARR, as capital borrowings for FY20, FY21 and FY22 respectively.

The Commission also directs BESCOM to carry out the capital works as proposed, without seeking any additional capex during the middle of the relevant year by making suitable re-appropriation within the capex amount approved by the Commission.

While incurring the capex, BESCOM shall:

- i) monitor the physical progress as well as financial progress in respect of the works carried out under Capex ensuring adherence to set timelines of completion, cost to benefit ratio, etc.
- ii) take concrete measures to complete and capitalize the works like DAS and such other works, which are pending since many years so that, the benefits envisaged are realized and passed on to the consumers effectively;
- iii) follow the guidelines of capital expenditure and not submit any ad hoc capex proposals.



- iv) identify the high loss Sub-Divisions/Divisions and prioritize its capex specifically to reduce the distribution loss, improve the reliability of the distribution system and improve the voltage regulations. The Commission notes that, even after BESCOM investing huge amounts on capital works in the last five years, its achievement in respect of distribution loss reduction is not satisfactory;
- v) prepare a detailed perspective plan by conducting 11 kV feeder-wise and DTC-wise load flow studies to ascertain the present and projected loads on the feeders and to arrive at least cost, techno-economically feasible improvement method for:
1. Reducing distribution losses.
  2. Reducing the HT:LT Ratio.
  3. Reduce Transformer failures.
  4. Segregation the loads in the feeders.
  5. Reduction in Power theft.
  6. Bringing programs for the awareness among the people on usage and conservation of energy.
  7. Improving the sales to metered category and
  8. Improving the Power factor of the IP set loads by installing switched capacitors of suitable capacity to the secondary of the transformers.

Further, BESCOM is directed to comply with the directives regarding implementation of HVDS works.

### **5.2.2 BESCOM Sales for the Control Period FY20-22:**

#### **A. Sales to categories other than IP sets:**

##### **i. Category-wise estimation of number of installations and sales by BESCOM for the control period:**

BESCOM in its filing has estimated sales of 28911.76MU for FY20, 28911.76MU for FY21, and 31470.89MU for FY22.

**BESCOM's Approach:****i) Category-wise estimates of number of installations for FY20-22:**

The number of installations for the control period FY20-22, has been computed by BESCOM, on the following basis:

- a. Estimating the number of consumers for FY19, by adding the difference of consumers between September, 2018 and March, 2019, to the total consumers upto September,2018;
- b. Applying three-year growth rate on revised estimates of FY19, with a deviation in HT-4 category. For HT-4 category, the BESCOM has considered one-year CAGR, as three-year CAGR is negative;
- c. For, BJ/KJ, the number of installations as on September,2018, are retained for FY19 to FY22.
- d. For IP sets i.e., LT4a, 25,000 installations are added each year of the control period, considering the estimated additions in FY19;

**ii) Category-wise estimates of energy sales for FY20-22:**

The energy sales for the control period FY20-22, has been computed by BESCOM, by:

- a. Estimating sales for FY19, by doubling the half-yearly sales of FY19;
- b. Applying growth rate as per empirical formula with following modifications to certain categories:
  - For LT4b, sales are retained at FY19 level, as the growth rate is negative;
  - For HT-2b & HT-4, sales are retained at FY19 level, as the growth rate is zero/negative, as per empirical formula;
  - HT-3b –one-year growth rate is considered
  - For BJ/KJ the sales are retained at FY19 level, as no new schemes are announced by GoK.
  - For IP sets, specific consumption of 7200 units/IP/annum is considered.

The preliminary observations on sales forecast made by the Commission, for the control period, the replies furnished by BESCOM and the observations of the Commission are discussed in the following paragraphs:

**iii) Energy Sales- Other than IP sets:**

**a) Inconsistency in total number of HT installations:**

The Commission had noted that the total number of installations in respect of HT-category, for FY20 should be 17,345 and for FY22 it should be 20,333.

The BESCOM, has stated that the total number of installations for HT category is 17343 and 20235 for FY20 and FY22 respectively, which is due to rounding off of decimals.

The Commission notes that for HT category, adding the individual category-wise numbers, the total would be 17345 and 20333 for FY20 and FY22 respectively.

**b) Energy Sales forecast for the control period FY20-22:**

i) The Commission had directed the BESCOM to furnish the formula considered for estimating the sales forecast for the control period.

In accordance with the direction of the Commission, the BESCOM submitted that the Statistical empirical formula considered is PERT Chart Formula:  $(O + 4M + P)/6$  for making more accurate estimates.

Where, 'P' being the most pessimistic case; when everything goes wrong

'O' being the most optimistic case; Where everything goes right

'M' being the most likely case; given normal problems and opportunities

The minima and maxima and average of all the CAGR years are worked out - minima is considered as pessimistic and maxima is

considered as optimistic, the average of the rest is considered as most likely.

$$\text{Formula} = \frac{(\text{Maximum CAGR} + \text{Minimum CAGR} + 4 \times \text{Average CAGR})}{6}$$

The Commission notes that the PERT chart formula is normally used for evaluating the tendency in project activity estimation, where there is large uncertainty. Further, BESCOM has adopted the above formula for CAGRs, which is not in order, as it amounts to working out average of averages.

ii) **LT (1) – BJ/KJ category:**

a. The Commission had observed that the BESCOM has not considered any additions to the number of installations in this category, stating that there is no new scheme announced by GoK. The Commission had directed BESCOM to revise the number of installations for the Control period FY20-FY22, considering the additions in FY19.

The BESCOM in its reply has submitted that 1064 installations have been added during FY19 and that BESCOM is retaining BJ/KJ installations at 844643 for FY19, FY20, FY21 and FY22.

The approach of the Commission in estimating the number of installation is discussed under sales to BJ/KJ.

b. The Commission had directed the BESCOM to compute the BJ/KJ sales for FY19 to FY22, based on the specific consumption of FY18, instead of doubling the FY19 half-year consumption.

c. The BESCOM has submitted that the BJ/KJ sales for FY19 (upto September, 2018) is 109.72 MU and the number of installations up to September, 2018 is 844643. Hence, the average BJ/KJ consumption per installation per month works out to 22 units. This specific consumption as per the half yearly data for FY19 is considered for computing the BJ/KJ sales for FY19 to FY22.

d. The Commission notes that specific consumption based on half year data does not reflect the annual specific consumption, as the consumption pattern varies from month to month.

e. The Commission had directed the BESCOM to furnish, the estimates of breakup for installations consuming less than or equal to 40 units / month and above 40 units/month for FY-19 to FY22, which is furnished.

iii) The Commission had observed that in the case of LT-4b category, even though the number of installations is retained at FY18 level, for FY19 to FY22, the sales have increased to 1.93 MU from 0.95 MU. The Commission had directed the BESCOM to furnish reasons for the same.

BESCOM has stated that as there is a reduction in the number of installations, the number of installations as on 31<sup>st</sup> March, 2018 is retained. BESCOM has submitted that the energy sale of LT4b for FY18 and FY19 (up to September 2018) is 0.95MU and 0.96MU respectively. BESCOM added that since the half yearly sales for FY19(September 2018) has reached the FY18 sales, LT4b sales for FY19 is estimated as 1.93MU and the same is retained for FY20, FY21 and FY22.

The Commission has worked out the sales to this category based on the specific consumption of FY18 and has retained the same for all the years of the control period, as there are no likely additions to the number of installations.

iv) The Commission had noted that in the case of HT-1, HT-2(a)(i) and HT-3(b) categories, even though the number of installations for FY19 is retained at FY18 level, the sales for FY19, is not retained at FY18 level.

BESCOM submitted that for HT1, HT2a(i) and HT3(b) categories, the number of installations as on 31<sup>st</sup> March, 2018 and 30<sup>th</sup> September,

2018 are the same. Hence, the number of installations for FY19 is retained at FY18 level. As regards energy sales, it can be seen that the half yearly sales for FY19(September 2018) has crossed the half year growth of FY18 sales. Hence, doubling of the half yearly sales has been carried out.

The Commission has worked out the sales for HT category, considering the growth rate for the last quarter of the previous year, on pro-rata basis and also the impact of open access.

- v) The Commission had noted that the sales for HT-2(b)(i) and 2(b)(ii) and HT-4 categories, is retained at FY19 level in spite of increase in the number of installations during the control period.

BESCOM has stated that one-year growth of FY18 over FY17 showed a negative growth rate. Hence, sales of FY19 is retained for FY20, FY21 and FY22 despite increase in the number of installations.

- vi) The Commission had noted that the growth rate considered by BESCOM for LT-2b, LT-3, LT-5, LT-6 Street Lights, HT-1, HT-2a and HT-2b, is lower as compared with the normal growth rates and is higher for HT-3 and HT-4 categories.

BESCOM has stated that it has computed one-year growth rate and CAGR based growth rate from one year to five years' data for estimating the no. of installations. BESCOM submitted that three-year growth rate is more realistic for estimating sales for 5th control period. Hence, BESCOM has considered the same after incorporating necessary corrections.

- vii) The Commission had noted that the growth rate considered for HT-2a & HT-3, is higher as compared with the normal growth rates and is lower for HT-2c.

BESCOM has submitted that it has estimated the sales of HT2c, HT2a and HT3 for the fifth control period based on empirical formula, as

stated in chapter 4 of the Tariff Petition along with a few modifications for projecting the sales.

- viii) The Commission, in its preliminary observations, had stated that sales estimate based on the analysis of open access impact should be considered for HT2(a) category. Hence, the Commission opined that BESCOM should compute the growth rates considering the total energy sold to this category including OA/wheeling and should estimate the sales considering the ratio of energy sold by BESCOM in FY18 to the total sales of FY18 including OA/wheeling sales.

The BESCOM submitted that there is a year-on-year increase in the Open Access/wheeling sales for HT2(a) category. BESCOM added that if these sales are considered, then demand against the same must also be considered. This will increase the revenue from sale of power which is practically not possible. Hence, BESCOM stated that it has not considered the OA/wheeling sales for FY19 and for the fifth control period.

The Commission has noted the replies furnished above and the approach of the Commission is discussed in the following paragraphs.

**c) Commission's approach for estimating the number of installations and energy sales for Control Period FY20-22:**

**1) No. of Installations:**

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

- a. The Commission has validated both the number of installations and energy sales to various categories considering the actuals as on 30<sup>th</sup> November, 2018 and has estimated the number of installations and sales for the remaining period reasonably. Accordingly, the base year estimation has been revised which has an impact on the estimates on the number of installations and sales for the control period

- b. Wherever the number of installations estimated by the BESCOM for the FY 20 is within the range of the estimates based on the CAGR for the period FY13–FY18 and for the period FY15 - FY18, the estimates of the BESCOM are retained.
- c. Wherever the number of installations estimated by the BESCOM for the FY20 is lower than the estimates based on the CAGRs for the period FY13–FY18 and for the period FY15-FY18, the estimates based on the lower of the CAGRs for the period FY13–FY18 and for the period FY15-FY18 are considered.
- d. Wherever the number of installations estimated by BESCOM for the FY20 is higher than the estimates based on the CAGRs for the period FY13–FY18 and for the period FY15-FY18, the estimates based on the higher of the CAGRs for the period FY13–FY18 and for the period FY15-FY18 are considered.
- e. For LT-7, HT-2(a) and HT-5 categories, the estimates of BESCOM are retained.
- f. The Growth rate considered for FY20 is retained for the estimates for FY 21 and FY 22 also.

**Based on the above approach, the total number of installations (excluding BJ/KJ consuming  $\leq$  40units/month and IP installations) estimated by the Commission for the control period is indicated in the table below:**

**Approved Number of installations**

FY20		FY21		FY22	
Filed	Approved	Filed	Approved	Filed	Approved
1,06,12,881	1,06,72,073	1,11,92,639	1,13,19,535	1,18,08,563	1,20,10,078



**2) Energy Sales:**

- (i) For categories other than BJ/KJ and IP sets, generally the sales are being estimated, considering the following approach:
  - a. The base year sale for FY19 as estimated by the BESCOM has been validated, duly considering the actual sale upto November, 2018 and modified suitably as stated earlier.
  - b. Wherever the sale estimated by the BESCOM, for the for FY 20, is within the range of the estimates based on the CAGR for the period FY13–FY18 and for the period FY15-FY18, the estimates of the BESCOM are considered.
  - c. Wherever the sales estimated by the BESCOM for the FY 20 is lower than the estimates based on the CAGRs for the period FY13–FY18 and for the period FY15-FY18, the estimates based on the lower of the CAGRs for the period FY13–FY18 and for the period FY15-FY18 are considered.
  - d. Wherever sale estimated by BESCOM for FY20 is higher than the estimates based on the CAGRs for the period FY13–FY18 and for the period FY15-FY18, the estimates based on the higher CAGRs for the period FY13–FY18 and for the period FY15-FY18 are considered.
  - e. LT-4b sales is retained at FY19 level, as there is no growth in the number of installations and is based on specific consumption of FY18.
  - f. For LT-7, HT-2(a) and HT-5, the proposal of BESCOM is retained.
  - g. For HT 2 (b), the sales are estimated by giving 25% weightage for the estimates based on the open access impact.
  - h. The Growth rate considered for FY20 is retained for the estimates for FY21 and FY22 also.

**Based on the above approach, the sales (excluding BJ/KJ consuming ≤ 40units/month and IP sales) estimated by the Commission, for the control period, is indicated in the following table:**

**Approved Energy Sales**

in Million Units					
FY20		FY21		FY22	
As Filed	As Approved	As Filed	As Approved	As Filed	As Approved
22,086.86	22,095.34	23,134.59	23,209.66	24,285.96	24,423.22

**(ii) Sales to BJ/KJ:**

The break-up of sales to BJ/KJ installations considered for FY18 is as indicated below:

Particulars	No. of Installations	Consumption in MU	Specific consumption per installation per month (kWh)
Installations consuming less than or equal to 40 units	8,00,022	137.73	14.35
Installations consuming more than 40 units and billed under LT2(a)	43,557	45.98	87.85

The Commission notes that, the specific consumption works out to 14.35 units /installation/month for BJ/KJ installations consuming less than or equal to 40 units per month and 87.85 units /installation/month for BJ/KJ installations consuming more than 40 units per month.

Since, the BESCOM has not proposed any additional installations during the control period, as there is no GoK policy to extend the benefit of free power to any new BJ/KJ installation, the number of BJ/KJ installations consuming less than or equal to 40 units per month and more than 40 units per month is retained as proposed by BESCOM and the sales is worked out as per the above specific consumption for the control period as indicated in the following Table:

Particulars	Million Units		
	FY20	FY21	FY22
Installations consuming less than or equal to 40 units	137.90	137.90	137.90
Installations consuming more than 40 units and billed under LT2(a)	45.98	45.98	45.98

**(iii) Sales to IP sets- projections for ARR FY 20-22:**

- a) The Commission, in its Tariff Order dated 30<sup>th</sup> 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 revised data of sales to IP sets as reported by the BESCOM in its Tariff application, the Commission had approved the specific consumption as 7,341 units / installation / annum, for the FY18 by considering the mid-year installations of 8,56,729 numbers.
- b) The actual sales to IP sets for FY19, till September 2018, as reported by BESCOM, in its tariff filing is 2894.09 MU and the number of installations is 8,86,138. The actual consumption per IP set per month works out to 544 units / IP set / month. As per the approved specific consumption for FY19, the consumption per IP set per month works out to 670 units / IP set/ month. The actual monthly average consumption is less than the approved average consumption per month. BESCOM has informed that the reduction in IP set consumption during FY19 can be attributable to good monsoon during the period.
- c) It is observed that 13,909 number of installations are added from 1<sup>st</sup> April, 2018 to September, 2018 i.e., in a span of six months. Considering, approximately, the same number of installations likely to be serviced in the next six months, the number of IP installations for FY19 could be projected as 9,00,047 numbers.
- d) It can be seen from FY16 onwards, that the increase in the actual number of consumers every year is around 30,000. But, based on the actual number of installations added during first six months of FY19,

BESCOM is proposing to project an addition of approximately 25,000 number of installations, every year from FY20 to FY22. Considering the proposal made by BESCOM, the projected number of consumers for FY20, FY21 and FY22 are 925047, 950047 and 975047 respectively.

- e) BESCOM, in its tariff filing has submitted that, since the prediction of monsoon for FY20 to FY22 is difficult, it has considered an increase of 10% in monthly average consumption over the consumption for FY19 for estimating the sales for FY20 to FY22. Average consumption per month for FY19 considered by the Commission for BESCOM is 550 units/ IP set / month. 10% increase over this value for one year works out to 7,260 units / IP set / Annum. Based on the estimated number of installations for FY19 and FY20 to FY22 as reckoned above, the mid-year number of installations are determined and the sales to IP set consumers are as indicated below;

**Table 5.5**  
**Computation of IP sets Consumption**

Particulars	FY20		FY21		FY22	
	As filed by the BESCOM	As approved by the Commission	As filed by the BESCOM	As approved by the Commission	As filed by the BESCOM	As approved by the Commission
No. of Installations	9,25,047	9,25,047	9,50,047	9,50,047	9,75,047	9,75,047
Mid-year number of Installations	-	9,12,547	-	9,37,547	-	9,62,547
Specific consumption in units/installation/annum	7,299	7,260	7,296	7,260	7,294	7,260
<b>Sales in MU</b>	<b>6,660.34</b>	<b>6,625.09</b>	<b>6,840.34</b>	<b>6,806.59</b>	<b>7,020.34</b>	<b>6,988.09</b>

- f) Accordingly, the Commission approves 6,625.09 MU, 6,806.59 MU and 6,988.09 MU as the energy sales to IP-sets as against the BESCOM's projections of 6,660.34 MU, 6,840.34 MU and 7,020.34 MU, respectively for the FY20, FY21 and FY22. The number of installations approved for FY20, FY21 and FY22 are 9,25,047 MU, 9,50,047 MU and 9,75,047 MU respectively. This approved IP set consumption for FY20, FY21 and FY22 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. The BESCOM shall therefore, regulate the number of hours of power supply to exclusive agricultural feeders accordingly.**

- g) The BESCOM has taken up GPS survey of IP-sets to identify the defunct / dried up installations in the field and to arrive at the correct number of IP-sets by deducting such IP-sets from its account, on the basis of GPS survey results. In this regard, the BESCOM has submitted that it has completed the GPS survey of around 8.05 lakh IP sets i.e., around 92.58% as on 1<sup>st</sup> December, 2018. Out of which, it has identified 32,197 number of IP sets as defunct and seasonally active. It is noted that, BESCOM had reported that 7.91 lakh IP sets were surveyed during FY18. Looking into the facts reported by BESCOM, progress in the GPS survey of IP set installations is very slow during FY18 to FY19. The Commission, directs BESCOM to complete the survey at the earliest and submit the details of total number of IP sets existing, defunct / dried up etc.
- h) The BESCOM needs to further inspect the remaining number of IP sets reported by it as seasonally active, in order to detect the defunct wells in the field by revalidating the same. Accordingly, the BESCOM shall consider the GPS survey results to arrive at the net number of installations for FY19 onwards. In this regard, the Commission directs the BESCOM to complete the GPS survey of IP-sets and compliance thereon shall be submitted to the Commission. Considering that the, GPS survey of IP-sets is not completed fully, the number of installations estimated for FY19 as well as for FY20, FY21 and FY22 are subject to changes based on the GPS survey results. Accordingly, on completion of the GPS survey, the BESCOM shall arrive at the correct number of IP-sets in the field after duly deducting from its account the number of dried up / defunct wells based on the GPS survey results. Thereafter, any variation in the sales due to change in the number of installations would be trued up during the Annual Performance Review for the FY20, FY21 and FY22. It shall be noted that in case BESCOM to complete the GPS Survey by the end of FY19, the commission would be constrained to estimate the number of defunct IP set installations.

- i) It is noted that the BESCOM has already segregated agriculture feeders from rural loads. Thus, the energy consumed by the IP sets could be more accurately measured at the 11 kV feeder level at the sub-stations in respect of segregated feeders after allowing for distribution system losses in 11 kV line, distribution transformers and LT lines. BESCOM while assessing the IP set consumption based on the meter reading data of the segregated agricultural feeders, is not considering the actual distribution losses in the feeders. Instead, it is applying the uniform distribution losses for all the feeders. This method will not reflect the accurate assessment of sales to IP installations. Hence, the Commission reiterates that the BESCOM shall report the total IP-set consumption only on the basis of data from energy meters in respect of agriculture feeders segregated under NJY only, to the Commission, every month regularly, by working out the actual distribution losses in each of the feeders and applying the specific losses, as per the format prescribed in the previous tariff orders of the Commission. On failure of BESCOM to do so, the Commission will reject any other data furnished and calculate the consumption based on other verifiable factors.

**Based on the above discussions, the category wise approved number of installations for the control period vis-à-vis the estimates made by the BESCOM is indicated below:**

**TABLE – 5.6**  
**Category wise approved number of installations**

	Category	Proposed by BESCOM			No. of Installations Approved by Commission		
		FY20	FY21	FY22	FY20	FY21	FY22
LT-1 (a)	Bhagya Jyoti < =40 units	8,01,031	8,01,031	8,01,031	8,01,031	8,01,031	8,01,031
LT-1 (a)	Bhagya Jyoti>40	43,612	43,612	43,612	43,612	43,612	43,612
LT-2a	Domestic AEH	82,47,926	86,56,622	90,85,568	82,88,928	87,45,610	92,27,454
LT-2b	Pvt. Institutions	12,268	12,539	12,816	12,526	13,129	13,761
LT-3	Commercial -	11,46,477	12,03,354	12,63,052	11,60,253	12,32,446	13,09,132
LT-4 (a)	IP sets - Less than 10 HP - General	9,25,047	9,50,047	9,75,047	9,25,047	9,50,047	9,75,047
LT-4 (b)	Irrigation Pump sets - More than 10 HP	454	454	454	454	454	454
LT-4 (c)	Private Horticulture Nurseries, Coffee & Tea Plantations	1,720	1,804	1,893	1,753	1,860	1,974
LT-5	Lt Industries	21,6365	22,3670	23,1223	2,19,815	2,30,450	2,41,599
LT-6	Water Supply	86,416	94,021	1,02,297	86,416	94,022	1,02,298

	Category	Proposed by BESCOM			Approved by Commission		
		FY20	FY21	FY22	FY20	FY21	FY22
LT-6	Street Lights	66,313	68,038	69,808	66,982	69,418	71,943
LT-7	Temporary Power Supply	7,73,985	8,69,858	9,77,607	7,73,985	8,69,859	9,77,607
	<b>LT Total</b>	<b>1,23,21,614</b>	<b>1,29,25,050</b>	<b>1,35,64,408</b>	<b>1,23,80,802</b>	<b>1,30,51,938</b>	<b>1,37,65,911</b>
HT-1	HT Water Supply	251	266	283	256	279	303
HT-2 (a)	HT Industries	7,324	7,609	7,904	7,324	7,610	7,907
HT-2 (b)	HT Commercial	7,035	7,373	7,729	7,035	7,375	7,731
HT-2(c)		847	951	1,066	847	951	1,069
HT-3(a) & (b)	HT Irrigation & LI Societies	61	70	81	59	68	78
HT-4	Res. Apartments - Applicable to Mangalore Municipal Corporation Area	231	237	244	231	231	232
HT-5	Temporary	1,596	2,161	2,926	1,597	2,161	2,925
	<b>HT Total</b>	<b>17,345</b>	<b>18,667</b>	<b>20,233</b>	<b>17,349</b>	<b>18,675</b>	<b>20,245</b>
	<b>Grand Total</b>	<b>1,23,38,959</b>	<b>1,29,43,717</b>	<b>1,35,84,641</b>	<b>1,23,98,151</b>	<b>1,30,70,613</b>	<b>1,37,86,156</b>
	<b>Categories other than BJ/KJ consuming &lt;=40units/instln./month &amp; IP sets.</b>	<b>1,06,12,881</b>	<b>1,11,92,639</b>	<b>1,18,08,563</b>	<b>1,06,72,073</b>	<b>1,13,19,535</b>	<b>1,20,10,078</b>
	<b>BJ/KJ consuming &lt;=40units/instln./month &amp; IP sets.</b>	<b>1,72,6,078</b>	<b>1,75,1,078</b>	<b>1,77,6,078</b>	<b>1,72,6,078</b>	<b>1,75,1,078</b>	<b>1,77,6,078</b>

Accordingly, the category wise approved sales for the control period vis-à-vis the estimates made by the BESCOM are indicated below:

TABLE – 5.7

## Category wise approved energy sales

Category	Description of consumers	Proposed by BESCOM			Approved by Commission		
		FY20	FY21	FY22	FY20	FY21	FY22
LT-1 (a)	Bhagya Jyoti < =40 units	164.57	164.57	164.57	137.90	137.90	137.90
LT-1 (a)	Bhagya Jyoti >40 units	54.86	54.86	54.86	45.98	45.98	45.98
LT-2a	Domestic AEH	7,492.41	7,931.19	8,395.68	7,476.86	7,931.60	8,413.99
LT-2b	Pvt. Institutions	54.73	58.39	62.30	54.82	58.38	62.16
LT-3	Commercial	2,266.33	2,434.83	2,615.86	2,247.16	2,398.94	2,560.96
LT-4 (a)	IP sets - Less than 10 HP -	6,660.34	6,840.34	7,020.34	6,625.09	6,806.59	6,988.09
LT-4 (b)	Irrigation Pump sets - More than 10 HP	1.93	1.93	1.93	1.73	1.73	1.73
LT-4 (c)	Private Horticulture Nurseries, Coffee & Tea Plantations	4.74	4.78	4.83	4.54	4.55	4.57
LT-5	LT Industries	1,278.47	1,305.41	1,332.91	1,269.19	1,289.79	1,310.72
LT-6	Water Supply	1,352.55	1,619.08	1,938.12	1,352.55	1,604.16	1,902.57
LT-6	Street Lights	520.32	556.49	595.17	513.92	541.26	570.05
LT-7	Temporary Power Supply	141.02	143.42	145.85	141.02	143.42	145.85
	<b>LT Total</b>	<b>19,992.27</b>	<b>21,115.29</b>	<b>22,332.42</b>	<b>19,870.77</b>	<b>20,964.30</b>	<b>22,144.58</b>
HT-1	HT Water Supply	736.03	758.92	782.51	715.85	754.23	794.66
HT-2 (a)	HT Industries	4,866.56	4,891.27	4,916.11	4,866.56	4,891.28	4,916.14
HT-2 (b)	HT Commercial	2,742.29	2,742.29	2,742.29	2,819.19	2,898.23	2,979.49

Category	Description of consumers	Proposed by BESCOM			Approved by Commission		
		FY20	FY21	FY22	FY20	FY21	FY22
HT-2(c)		380.51	424.48	473.53	380.51	430.28	486.57
HT-3(a) & (b)	HT Irrigation & LI Societies	36.06	47.37	62.27	47.40	55.94	66.03
HT-4	Res. Apartments -	70.38	70.38	70.38	70.38	70.38	70.38
HT-5	Temporary	87.67	89.50	91.36	87.67	89.50	91.36
<b>HT Total</b>		<b>8,919.50</b>	<b>9,024.21</b>	<b>9,138.45</b>	<b>8,987.56</b>	<b>9,189.85</b>	<b>9,404.63</b>
<b>Grand Total</b>		<b>28,911.77</b>	<b>30,139.50</b>	<b>31,470.87</b>	<b>28,858.33</b>	<b>30,154.15</b>	<b>31,549.21</b>
<b>Categories other than BJ/KJ consuming &lt;=40units/instl./month &amp; IP sets.</b>		<b>22,086.86</b>	<b>23,134.59</b>	<b>24,285.96</b>	<b>22,095.34</b>	<b>23,209.66</b>	<b>24,423.22</b>
<b>BJ/KJ consuming &lt;=40units/instl./month &amp; IP sets.</b>		<b>6,824.91</b>	<b>7,004.91</b>	<b>7,184.91</b>	<b>6,762.99</b>	<b>6,944.49</b>	<b>7,125.99</b>

### 5.2.3 Distribution Losses for FY20-22:

#### BESCOM's Submission:

As per the audited accounts for FY18, the BESCOM has reported distribution loss of 13.17% as against an approved loss level of 12.50%, for which the Commission has imposed penalty as discussed in the previous chapter. The Commission in its Tariff Order dated 14<sup>th</sup>, May, 2018 had fixed the target level of loss for FY19 at 12.25%. BESCOM in its filing has proposed to achieve the following loss levels during FY20-22:

**TABLE – 5.8**  
**Projected Distribution Loss-FY20-22 – BESCOM's Submission**

Particulars	Figures in percentage		
	FY20	FY21	FY22
Projected Distribution loss	12.40	12.30	12.20

#### 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 – 5.9**  
**Approved & Actual Distribution Loss-FY13 to FY19**

Particulars	Figures in Percentage						
	FY13	FY14	FY15	FY16	FY17	FY18	FY19
Approved Distribution loss	14.00	13.80	13.60	13.40	13.25	12.50	12.25
Actual distribution loss	14.20	13.89	14.78	13.51	13.19	13.17	-



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

The Commission notes that, in FY17 & 18, the distribution loss has come down by 0.34 percentage point (in the first two years of the control period FY17-19). Overall, in the past five years (with base year as FY13), BESCOM has been able to achieve distribution loss reduction of 1.03% percentage point.

The distribution loss projections indicated by the BESCOM shows reduction from the existing reported losses of 13.17% in FY18 to 12.40% in FY20 and further reduction by 0.10% percentage point for each of the year in FY21 and FY22. It is observed that, the Commission has been allowing capital expenditure as incurred by the BESCOM and it has also allowed substantial capex for the ensuing control period for strengthening of its distribution network aimed at further reduction of loss levels. Most of the capex spent on the works like HVDS, E&I work, NJY, DTC metering, RAPDRP should enable the BESCOM, not only to strengthen its infrastructure for improved reliability and quality of power supply but also to reduce the distribution loss considerably.

Hence, in view of such substantial investment, the loss reduction proposed for the control period by BESCOM is meager, as compared to the current loss levels. In the light of the above discussion and based on the achievement made by the BESCOM in the reduction of losses during the previous years and the capex incurred so far along with the proposed capex for FY20-22, the Commission decides to fix the following distribution loss targets for FY20-22:

**TABLE – 5.10**  
**Approved Distribution Losses for FY 20-22**

Figures in Percentage

Particulars	FY20	FY21	FY22
Upper limit	12.50	12.25	12.00
<b>Average</b>	<b>12.25</b>	<b>12.00</b>	<b>11.75</b>
Lower limit	12.00	11.75	11.50

#### 5.2.4 Power Purchase for FY20-22

The ESCOMs in their Tariff applications, have submitted the D-1 statement indicating the requirement of power purchase for the control period. The consolidated statement showing the energy requirement, year-wise is shown hereunder:

**TABLE 5.11**  
**Requirement of Energy as filed by ESCOMs**

Distribution Utilities	Energy (MU)	Energy (MU)	Energy (MU)
	FY20	FY21	FY22
BESCOM	34,091.83	35,491.68	37,009.65
MESCOM	5,973.11	6,119.44	6,270.50
CESC	7,496.12	7,779.60	8,088.33
HESCOM	14,808.77	15,605.02	16,448.87
GESCOM	9,268.17	10,007.75	10,837.47

#### **BESCOM's submission:**

The BESCOM has submitted its power purchase requirement for the control period FY20 to FY22 based on the projected sales as follows:

**TABLE-5.12**  
**Energy Requirement as filed by BESCOM**

Particulars	FY20	FY21	FY22
Sales (MU)	28,912	30,140	31,471
Distribution losses (%)	12.40	12.30	12.20
Energy at IF point (MU)	33,004	34,367	35,844
Transmission Losses (%)	3.19	3.17	3.15
<b>Energy Required to meet the sales of BESCOM (MU)</b>	<b>34,091.83</b>	<b>35,491.68</b>	<b>37,009.64</b>

#### 5.2.5 Sources of Power:

#### **BESCOM's submission;**

BESCOM has furnished the sources of power available to meet the energy requirement of all the ESCOMs, for the control period FY20 to FY22. The

details of the sources of Power and the basis for the availability is indicated below:

- (i) From KPCL Hydel stations the power is procured as per Power Purchase Agreement dated: 22.05.2010, based on Tariff norms approved by the State Commission, vide Commission's Order dated: 03.08.2009.
- (ii) Availability of power from the Central Generating Stations (ex-Bus generation) is based on the details furnished by the Stations to the CEA for preparation of LGBR in respect of CGS Generating Stations.
- (iii) In respect of major IPPs (UPCL), RE and other sources such as Jurla Power & TB Dam Power, the availability is as per the contracted capacity.

The availability of energy and cost for FY 20 to FY22 as filed by BESCOM is shown in the following table.

**TABLE-5.13**  
**Availability of Energy and the Cost thereon for FY20 to FY22**

SOURCES	FINANCIAL YEAR 19-20			FINANCIAL YEAR 20-21			FINANCIAL YEAR 21-22		
	Energy in MU	Cost in Rs Crores.	Average cost Per unit Cost	Energy in MU	Cost in Rs Crores	Average cost Per unit Cost in Rs.	Energy in MU	Cost in Rs Crores	Average cost Per unit Cost in Rs.
KPCL Hydel Energy	744.56	99.25	1.28	744.56	102.23	1.37	744.56	102.23	1.37
KPCL Thermal Energy	9,959.16	6,330.64	4.30	10,644.16	7,333.18	6.89	11,632.90	7,943.45	6.83
CGS Energy	13,403.72	6,027.89	4.50	13,174.84	6,092.70	4.62	13,174.84	6,100.80	4.63
UPCL	3,214.60	1,867.11	5.81	3,264.60	1,958.89	6.00	3,387.06	2081.41	6.15
Renewable Energy:	6,750.33	2,915.29	4.33	7,644.06	3,207.50	4.33	8,050.83	3,330.59	4.14
Other State Hydel	19.46	8.96	3.77	19.46	10.8	5.55	19.46	10.80	5.55
PGCIL & POSOCO Charges	-	1,125.70	-	-	1,215.00	-	-	1,325.70	-
KPTCL Transmission & SLDC and PGCIL POSOCO Charges	-	1,740.00	-	-	1,920.00	-	-	2,100.00	-
Other Charges	-	19.68	-	-	19.68	-	-	19.68	-
<b>TOTAL</b>	<b>34,091.83</b>	<b>20,134.53</b>	<b>5.91</b>	<b>35,491.68</b>	<b>21,859.97</b>	<b>6.16</b>	<b>37,009.65</b>	<b>23,014.66</b>	<b>6.22</b>

• (As per D1 format)

## Commission's analysis and decisions

The energy requirement of the ESCOMs, including BESCOM, is being met by the following sources through long-term power purchase agreement:

1. Karnataka Power Corporation Limited (KPCL) Generating stations,
2. Central Generating Stations (CGS),
3. Major Independent Power Producers (IPPs) and
4. RE sources.

The contingent requirement to meet any deficit can be met through short-term purchases calling for bids and also purchases from the Power Exchange. Hence, to arrive at the available quantum of energy and power for the control period FY20 to FY22, the Commission has considered the availability as furnished by KPCL for KPCL Generating Stations and by SRPC/CERC/CEA for Central Government Stations (CGS). The availability of CGS stations is based on the share of Karnataka, as notified from time to time. In the case of RE sources, the actual generation capacity contracted by the ESCOMs, as indicated in D-1 Format, as per the PPAs executed by them, has been considered. The availability from the other sources such as Jurala Hydel Station and TB dam Power Stations of Telangana State is based on the share of the state in the installed capacity of the inter-state projects.

The availability as furnished by the KPCL in respect of Yelahanka Combined Cycle Power Plant (YCCPP), having a capacity of 350 MW respectively, has not been considered, as the said generating station is yet to be synchronized with the grid and the CoD is yet to be declared.

The availability of BTPS unit 3 has been considered since it has been synchronized and supplying power to the grid. The quantum of energy is restricted to the requirement of ESCOMs and fuel expenses allowed in FY20. For FY21 and FY22, the availability of energy from this unit has been considered, as furnished by the KPCL, duly limiting the quantum of energy as per the requirement of ESCOMs, to meet the sales targets.

Based on the above availability criteria, the energy allowed for the State to achieve the sales target of the respective years, is given in the following Table:

**TABLE-5.14****ABSTRACT OF POWER PURCHASE APPROVED FOR ESCOMS FOR THE CONTROL PERIOD FY20 to FY22**

SOURCES	FINANCIAL YEAR 19-20			FINANCIAL YEAR 20-21			FINANCIAL YEAR 21-22		
	Energy in MU	Cost in Rs Cr	Average Cost per unit (Rs.)	Energy in MU	Cost in Rs Cr	Average Cost per unit (Rs.)	Energy in MU	Cost in Rs Cr	Average Cost per unit (Rs.)
KPCL Hydel Energy	10,439.74	985.81	0.94	11,008.67	1,079.85	0.98	1,0831.33	1,115.53	1.03
KPCL Thermal Energy	15,099.19	8,645.88	5.73	15,552.17	10,251.96	6.59	17,107.10	11,295.27	6.60
CGS Energy	21,567.71	8,474.65	3.93	22,214.74	9,063.64	4.08	24,439.19	10,086.79	
UPCL	4,352.26	2681.70	6.16	4648	2,911.12	6.26	4,800	30,96.02	6.45
Renewable Energy:	1,5445.47	6,385.55	4.13	16,504.81	6,741.06	4.08	17,250.17	6,965.40	4.04
Other State Hydel	108.64	60.30	5.55	111.90	65.22	5.83	117.96	72.53	6.15
Other Sources	3,892.55	1,513.43	3.89	3931.65	1531.76	3.89	2,646.59	929.07	3.51
PGCIL & POSOCO Charges	-	1,823.47	-	-	2,050.21	-	-	2,184.35	-
KPTCL Transmission & SLDC	-	3,524.65	-	-	3670.96	-	-	3939.78	-
<b>TOTAL</b>	<b>70,905.56</b>	<b>34,095.44</b>	<b>-</b>	<b>73,971.94</b>	<b>37,365.78</b>	<b>-</b>	<b>77,192.34</b>	<b>39,684.74</b>	<b>-</b>

**5.2.6 Power Purchase Cost & Transmission charges:****BESCOM's Submission**

BESCOM has submitted the Power Purchase requirement along with the cost including the transmission charges and SLDC charges, in the D-1 Format. The BESCOM has sought approval of the Commission for purchase of power to an extent of 34091.83 MU, 35491.68 MU and 37009.65 MU at a cost of Rs.20134.53 Rs.21859.97 and Rs.23014.66 for the control period years of FY20, FY21 and FY22 respectively.

As regards the cost of power, the BESCOM has submitted that, same is considered as per the norms defined in contracts (PPAs)/ Regulations and based on the tariff indicated by KPCL for its Stations and the tariff determined by the CERC in respect of Central Generating Stations, DVC Stations and UPCL stations.

### Commission's analysis and decisions

The Commission has arrived at the power purchase cost to be allowed in the ARR for the control period, after considering various aspects such as Sales, transmission and distribution losses, tariff rates claimed by the BESCOM.

The basis for computation of power purchase quantum for the control period FY20 to FY22 is indicated below:

1. Considering the approved sales and the allowable transmission and distribution losses, the requirement of Power for the BESCOM, for the control period FY20 to FY22, is worked out as under:

**TABLE-5.15**  
**Power Purchase requirement approved for the**  
**BESCOM for the Control period FY20 to FY22**

Particulars	FY 20	FY21	FY22
Sales (MU)	28,858.33	30,154.15	31,549.21
Approved Distribution losses (%)	12.25	12.00	11.75
Energy at IF point (MU)	32,886.99	34,266.08	35,749.81
Transmission Losses (%)	3.162	3.132	3.102
<b>Energy Required to meet the sales of BESCOM (MU)</b>	<b>33,960.827</b>	<b>35,373.993</b>	<b>36,894.273</b>

2. While approving the cost of power purchase, the Commission has arrived at the quantum of power from various sources in accordance with the principles of merit order schedule and dispatch, based on the ranking of all approved sources of supply according to the merit order of the variable cost.
3. The rates considered by the KPCL are based on the Commission's Order dated 03.08.2009 for hydel stations except for Shivasamudram, Shimsha, Munirabad & MGHE.

4. The variable costs of State thermal stations and UPCL, are considered based on the recent power purchase bills passed by the BESCOM duly considering the recent landed cost of fuel and other variable components. The Commission is yet to approve the tariff and the Power Purchase agreements in respect of the new KPCL thermal stations/ units and hence the rates now allowed are only provisional and subject to determination of tariff and approval the PPAs.
5. The fixed charges and the variable charges for the Central Generating Stations, UPCL Stations and the DVC Stations have been considered based on the Tariff determined by the CERC as per the CERC norms. 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 dispatch. 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/ approved sources only.
6. The variations, if any, in the costs allowed, will be considered during the FAC determination exercise / Annual Performance Review of FY20.
7. Based on the approved requirement of energy and the power allocation given by the Government of Karnataka, the Power Purchase quantum and costs thereon are approved in the ARR of BESCOM for the control period FY20 to FY22, as shown in Annexure- 1(i to iii) and 2 (i to iii).
8. The consolidated power purchase cost allowed by the Commission vis-a-vis the power purchase costs, as filed by the BESCOM for the control period FY20 to FY22 is shown in the following Table:

**TABLE-5.16****ABSTRACT OF POWER PURCHASE APPROVED FOR BESCOM  
FOR THE CONTROL PERIOD FY20 to FY22**

SOURCES	FINANCIAL YEAR 19-20			FINANCIAL YEAR 20-21			FINANCIAL YEAR 21-22		
	Energy in MU	Cost in Rs Crores	Average cost Per unit Cost in Rs.	Energy in MU	Cost in Rs Crores	Average cost Per unit Cost in Rs.	Energy in MU	Cost in Rs Crores	Average cost Per unit Cost in Rs.
KPCL Hydel Energy	766.29	83.21	1.09	2863.19	275.91	0.96	2599.52	267.73	1.03
KPCL Thermal Energy	10,028.07	5,736.14	5.72	9,763.34	6,397.36	6.55	10,533.85	6,833.40	6.49
CGS Energy	11,576.27	4,548.69	3.93	11,420.98	4,659.77	4.08	12,570.63	5,188.28	4.13
UPCL	2,932.93	1,807.16	6.16	2,389.62	1,496.66	6.26	2,468.95	1,592.48	6.45
Renewable Energy:	6,794.62	2,808.88	4.13	7,066.22	2,909.44	4.11	7,432.09	3,015.18	4.05
Other State Hydel	58.31	32.37	7.37	27.97	16.30	7.74	60.67	37.31	8.16
Others	1,804.34	701.52	3.88	1,842.66	719.62	3.90	1,228.56	431.61	3.51
PGCIL & POSOCO Charges	-	830.83	-	-	901.18	-	-	1,087.59	-
KPTCL Transmission & SLDC	-	1,751.62	-	-	1,834.13	-	-	1,958.82	-
<b>TOTAL</b>	<b>33,960.827</b>	<b>18,300.42</b>	<b>5.39</b>	<b>35,373.993</b>	<b>19,210.37</b>	<b>5.43</b>	<b>36,894.273</b>	<b>20,412.39</b>	<b>5.53</b>

The BESCOM shall regulate the quantum and cost of power as approved above by the Commission.

However, since the power purchase costs are uncontrollable, as per the MYT Regulations, any excess quantum or cost will be trued up in Annual Performance Review of the respective years.

**In the light of the above discussion, the Commission hereby approves power purchase quantum and costs as follows:**

**TABLE-5.17****Approved Power Purchase for FY20-22**

Year	Approved Quantum-MU	Approved Cost-Rs. Crores
FY20	33,960.827	18,300.42
FY21	35,373.993	19,210.37
FY22	36,894.273	20,412.39

**The breakup of source-wise availability and the cost thereon, is shown in Annexure-2 of this Order.**



### 5.2.7 RPO target for FY20-22:

#### a. Non-Solar RPO:

The Commission vide the KERC (Procurement of Energy from Renewable Sources) (Sixth Amendment) Regulations, 2018, has notified a Non-Solar RPO target of 12% for FY20, FY21 and FY22.

BESCOM has submitted that it will only be able to achieve non-solar RPO of 11.73%, 11.25% and 10.78% for FY20, FY21 and FY22, respectively as against target of 12%.

BESCOM shall take all necessary action to meet the above RPO targets. In case, there is any need to buy RECs to fully meet the RPO, the cost thereon would be factored in the APR of FY20.

#### b. Solar RPO:

The Commission vide the KERC (Procurement of Energy from Renewable Sources) (Sixth Amendment) Regulations, 2018, has notified a Solar RPO target of 7.25%, 8.50% and 10.50% for FY20, FY21 and FY22 respectively

BESCOM has proposed to achieve solar RPO of 8.52%, 10.75% and 11.42% as against the above targets.

The Commission, in its preliminary observations, had directed BESCOM to furnish the estimates for complying with solar and non-solar RPO for FY19-FY22, including cost implication for purchasing RECs, if any.

BESCOM has submitted that there will be surplus solar RPO of 334.68 MU and 524.90 MU after setting-off deficit of non-solar RPO by surplus solar RPO for FY20 and FY21 respectively.

The BESCOM has requested the Commission to permit carry such forward of the surplus solar RPO of FY20 and FY21, for setting off the deficit of non-solar RPO of FY22.

As the prevailing Regulations does not allow carry forward, BESCOM shall take all necessary action to meet the above RPO targets. In case, there is any need to buy RECs to fully meet the RPO, the cost thereon would be factored in the APR of FY20.

### 5.2.8 O & M Expenses for FY20-22:

#### BESCOM's Proposal:

The BESCOM, in its application, has requested the Commission to consider a Weighted Inflation Index (WII) of 7.75%, 7.09% and 6.11% for FY20, FY21 and FY22, respectively for computing the O&M expenses.

The BESCOM has submitted that WPI and CPI figures from 2006 to 2017 are considered as per the CERC notification and from 2018 to 2022 it is on six years moving average basis. BESCOM has stated that WII is calculated considering twelve years' data of CPI and WPI, in the ratio of 76:24, using the formula adopted by the CERC. Further, the BESCOM has considered three year CAGR (FY15 to FY18) of 5.99%, for computing the consumer growth index.

Based on the above indices and projected O & M expenses of Rs. 1662.64 Crores for the base year (FY19), by doubling the actual O&M expenses for the first six months during FY19, the BESCOM has sought the O & M expenses for FY 20-22 as detailed below:

**TABLE -5.18**

#### Inflation Considered by BESCOM for the Control Period

Sl. No.	Particulars	FY-19	FY-20	FY-21	FY-22
1	Inflation index in%	-	7.75	7.09	6.11
2	Consumer Growth Index in %	-	5.99	5.99	5.99
3	Efficiency Factor in %	-	1	1	1
4	Base year O&M Cost in Rs. Crores	1,662.64	-	-	-
5	<b>O&amp;M expenses t-year= O&amp;M (t-1)*(1+WII+CGI-X) (Rs. Crores)</b>	-	<b>1,874.44</b>	<b>2,100.88</b>	<b>2,334.00</b>

Further, the BESCOM has requested to allow the expenses that may arise out of new recruitments and second phase of reform process.

The BESCOM has submitted that the employee cost works out to 76% of the O&M cost, while R&M and A&G expenditure is apportioned at 6% and 18% respectively.

The Commission, in its preliminary observations, had sought the basis and calculation for arriving at the projected amounts of Rs.231.75 Crores, Rs.259.74 Crores and Rs.288.57 Crores for FY 20-22, towards terminal benefits under O&M expenses.

The BESCOM has submitted that the expenses towards terminal benefit for FY20 to FY22 are computed at the ratio of total expenditure for the previous years.

The breakup of projected O & M expenses, as furnished by the BESCOM, for the control period, is as follows:

**TABLE – 5.19**  
**O&M Expenses - BESCOM's Proposal**

Amount in Rs. Crores				
Sl. No.	Particulars	FY20	FY21	FY22
1	Employee cost	1,424.57	1,596.67	1,773.84
2	Administrative and General expenses	337.40	378.16	420.12
3	Repairs and Maintenance expenses	112.47	126.05	140.04
	<b>Total O &amp; M Expenses</b>	<b>1,874.44</b>	<b>2,100.89</b>	<b>2,334.00</b>

**Commission's analysis & decision:**

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 has noted the actual O&M expenses as per the audited accounts of BESCOM for FY18 and that the actual O&M expenses of Rs. 1498.40 Crores for FY18 also includes the amount of contribution towards P&G Trust and the amount on account of revision of pay along with the other employee cost, Repair & Maintenance expenses and A&G expenses. Hence, the Commission decides to consider the actual O&M expenses of Rs.1498.40 as per the audited accounts (all inclusive) for FY18 as the base

year data (being the latest data available as per the audited accounts), to arrive at the O&M expenses for the base year in FY19.

Regarding the BESCOM's claim for the consideration of weighted inflation index based on the twelve-year data in line with the methodology being followed by the CERC, with WPI and CPI in the ratio of 76:24 as its employee cost works out to 76% of the O&M cost and the Repairs and Maintenance expenses and A&G expenses at 24% and computation of inflation rate for FY19 to FY22 on six years moving average basis may not be correct. The Commission notes that, the O&M expenses computed by BESCOM in charging the WPI and CPI ratio without conducting any study and adopting the six years moving average for FY19 to FY22, may not represent the true inflation and it has not been adopted hitherto by the Commission in the earlier tariff orders. Thus, the Commission is not considering the same in allowing the O&M expenses for FY20-22.

The Commission as per the norms specified under the provisions of MYT Regulations, for computation of O&M expenses has considered the consumer growth rate (CPI) based 3 year CAGR and inflation rate index based on the methodology followed by the CERC. By 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 in line with the methodology followed by the Commission in its Tariff Order issued earlier the allowable annual escalation rate for FY20 is computed as follows:

**TABLE – 5.20**  
**Computation of Inflation Index for FY20**

Year	WPI	CPI	Composite Series	Yt/Y1=Rt	Ln Rt	Year (t-1)	Product [(t-1)* (LnRt)]
2006	70.2	122.9	112.36	-	-	-	-
2007	73.6	130.8	119.36	1.06	0.06	1	0.06
2008	80.0	141.7	129.36	1.15	0.14	2	0.28
2009	81.9	157.1	142.06	1.26	0.23	3	0.70

Year	WPI	CPI	Composite Series	Yt/Y1=Rt	Ln Rt	Year (t-1)	Product [(t-1)* (LnRt)]
2010	89.7	175.9	158.66	1.41	0.35	4	1.38
2011	98.2	191.5	172.84	1.54	0.43	5	2.15
2012	105.7	209.3	188.58	1.68	0.52	6	3.11
2013	111.1	232.2	207.98	1.85	0.62	7	4.31
2014	114.8	246.9	220.48	1.96	0.67	8	5.39
2015	110.3	261.4	231.20	2.06	0.72	9	6.49
2016	110.3	274.3	241.50	2.15	0.77	10	7.65
2017	114.1	281.2	247.78	2.21	0.79	11	8.70
A= Sum of the product column							40.23
B= 6 Times of A							241.40
C= (n-1)*n*(2n-1) where n= No of years of data=12							3,036.00
D=B/C							0.08
g(Exponential factor)= Exponential (D)-1							0.0828
e=Annual Escalation Rate (%)=g*100							<b>8.2760</b>

For the purpose of determining the normative O & M expenses for FY20-22, the Commission has considered the following:

- The actual O & M expenses incurred as per the audited accounts for FY18 inclusive of pay revision arrears and contribution to the Pension and Gratuity Trust to determine the O & M expenses for the base year FY19.
- 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 FY18 and as projected by the Commission for FY19.
- The weighted inflation index (WII) at 8.276% as computed above.
- Efficiency factor at 1% as considered in the earlier two control periods.

The above said parameters are computed duly considering the same methodology as was followed in the earlier Tariff Orders of the Commission and the relevant orders of the Commission on various Review Petitions.

Further, the Commission is of the view that extension of benefits under any revision of pay scales, should reflect in improved productivity and efficiency for the betterment of services rendered by the ESCOMs to its consumers in the State. As per the decisions of the Commission in similar situations in the earlier Tariff Orders, the distribution licensees are required to

justify any increase in pay scale with commensurate increase in real employee productivity.

Accordingly, the normative O & M expenses for FY20-22 are computed as follows:

**TABLE – 5.21**  
**Approved O & M expenses for FY20-22**

Particulars	FY 19	FY20	FY21	FY22
No. of Installations	-	1,23,98,151	1,30,70,613	1,37,86,156
CGI based on 3 Year CAGR	-	5.05%	5.14%	5.42%
Inflation index	-	8.276%	8.276%	8.276%
Base Year O&M Cost (As per actuals of FY18) in Rs. Crores	1,683.21	-	-	-
<b>Normative O&amp;M Index= O&amp;M (t-1)*(1+WII+CGI-X) Rs in Crores</b>	-	1,890.61	2,125.41	2,395.34
<b>Total allowable O&amp;M Expenses. Rs in Crores</b>	-	<b>1,890.61</b>	<b>2,125.41</b>	<b>2,395.34</b>

Since, the base year data of the O & M expenses is inclusive of contribution to the P & G Trust and pay revision amount, the Commission has not considered allowing contribution to the P & G Trust and additional employee cost on account of revision of pay separately.

**Thus, the Commission decides to approve O&M expenses of Rs. 1890.61 Crores for FY20, Rs. 2125.41 Crores for FY21 and Rs. 2395.34 Crores for FY22.**

### 5.2.9 Depreciation:

#### **BESCOM's Proposal:**

The BESCOM, in its filing has claimed an amount of Rs.626.17 Crores, Rs.693.33 Crores and Rs.743.22 Crores for FY20, FY21 and FY22 respectively towards the depreciation for the control period for FY20-22, as per the norms specified under the MYT Regulations based on the following assumptions:

- 1) Actual closing Gross Fixed Assets (GFA) as per the audited accounts of FY18.
- 2) Estimated Additions and Retirement of assets for FY19 and for FY20 to FY22 are based on the average for the past five years.

- 3) 75% of the capex envisaged during each year of the Control period is booked in that year and that 90% of the booked costs will be capitalized.
- 4) Capital work in progress at the end of previous year being categorized in the succeeding year of the Control period.
- 5) Depreciation rates as specified by the CERC is applied on 90% of the Closing Gross fixed Asset of each year of the control period.
- 6) Ministry of Corporate Affairs (MCA) has issued Indian Accounting Standards (IND AS), which is applicable to BESCOM from FY17 with comparative period of one year. In accordance with AS-20, Government grants/subsidies received from the government or other authorities towards capital expenditure as well as consumer's contribution to capital works, are treated initially under deferred income and taken to fixed assets based on commissioning of the assets and depreciation is charged in accordance with the class of assets it belongs to. The depreciation on such assets as per the Accounting Standard-12, has been withdrawn as at the end of each year for the control period.

Accordingly, BESCOM has claimed the depreciation for FY20-22 considering average depreciation rate of 5.28% as detailed below:

**TABLE – 5.22****Depreciation FY20-22 BESCOM's Submission**

Particulars	Amount in Rs. Crores		
	FY20	FY21	FY22
Opening Gross Fixed Asset (GFA)	14,028.89	16,304.92	18,092.21
Add: Additions during the year	2,142.21	1,654.31	1,299.32
Less: Retirement benefits	-230.17	-241.02	-249.44
Add. Consumer Contribution	364.00	374.00	384.00
Closing GFA	16,304.92	18,092.21	19,526.09
90% of GFA	14,674.43	16,282.99	17,573.48
Average Dep. Rate (In %)	5.28	5.28	5.28
Depreciation	774.81	859.74	927.88
Less: Depreciation withdrawn from Consumer contribution/subsidies plus withdrawal of depreciation	148.64	166.42	184.66
<b>Depreciation</b>	<b>626.17</b>	<b>693.33</b>	<b>743.22</b>

**Commission's analysis and decision:**

In accordance with the provisions of the MYT Regulations and amendments issued thereon, the Commission has determined the depreciation for FY20-22 considering the following:

- a) The actual rate of depreciation of category-wise assets has been determined considering the depreciation, gross block of opening and closing balances of fixed assets, as per the audited accounts for FY18.
- b) The actual rate of depreciation, so arrived at, is considered, to allow the depreciation on the gross block of average of opening and closing balance of fixed assets projections made on the approved capex and categorization of asset thereon by the Commission for FY19 to FY22.
- c) Considering the various works proposed to be carried out with substantial amount of GOI / GOK capital grants along with the consumer contribution and the assets likely to be created thereon, the depreciation on account of assets created out of consumers' contribution / grants are deducted based on the opening and closing balance of such assets duly considering the addition of assets as considered and projected by the Commission for FY 20-22, at the weighted average rate of depreciation as per actuals in FY18.

Accordingly, the depreciation for FY20-22 is arrived at as follows:

**TABLE – 5.23**  
**Approved Depreciation for FY20-22**

Particulars	Amount in Rs. Crores		
	FY20	FY21	FY22
Buildings	10.37	11.39	12.30
Civil	0.31	0.35	0.37
Other Civil	0.10	0.11	0.12
Plant & M/c	176.45	193.75	209.19
Line, Cable Network	520.80	574.38	620.15
Vehicles	1.66	1.83	1.97
Furniture	0.95	1.04	1.13
Office Equipment	0.82	0.90	0.97
Released Assets Re used	2.57	2.82	3.04
<b>Sub-Total</b>	<b>714.03</b>	<b>786.56</b>	<b>849.24</b>
Depreciation Withdrawn- AS12 Land & Rights	-178.51	-196.64	-212.31
<b>Total</b>	<b>535.52</b>	<b>589.92</b>	<b>636.93</b>



**Thus, the Commission decides to approve an amount of Rs. 535.52 Crores, Rs. 589.92 Crores and Rs. 636.93 Crores towards net depreciation for FY20, FY21 and FY22 respectively.**

#### **5.2.10 Interest on Loans:**

##### **BESCOM's proposal:**

BESCOM, in its application has claimed Rs.452.55 Crores for FY20, Rs. 623.74 Crores for FY 21 and Rs.731.50 Crores for FY22 as the Interest on capital loan computed on the basis of the following assumptions:

- a. Loan outstanding as on 31<sup>st</sup> March, 2018 as per the provisional accounts duly considering the rate of interest and terms of repayment.
- b. For FY19, loan existing as on 30<sup>th</sup> September, 2018 and the estimation for the next half year is considered for computation of interest.
- c. For financing of future capital cost of the projects, a Debt: Equity ratio of 70:30 is adopted as per the norms specified by the Commission, under Clause 3.7.1 of the MYT Regulations.

The Commission, in its preliminary observations, had observed that, the BESCOM has reckoned the opening and closing balance of long term loans, new borrowings and repayments thereon without reckoning the actual closing balance of loan as on 31.03.2018 as per the audited accounts for FY18. The Commission directed the BESCOM to furnish the such as bank-wise/financial institution-wise opening balance, receipt, repayment, interest rate, term of the loans, purpose of availing the loan, interest amount and the closing balances of the loan for projections made for FY19-22.

The Commission, in its preliminary observations, had also directed the BESCOM to furnish the details of the projections for FY20 to FY22 for both short-term loans and overdraft balance for FY18 separately. BESCOM has claimed the interest rate of 9.14% on the existing loan balances and 11.45% for new borrowings and the Commission has noted the replies thereon.

BESCOM in its application has given the following details of sources of fund to meet the capex envisaged for FY20-22: -

**Table :5.24**  
**Sources of fund to capex**

Particulars	Amount in Rs. Crores		
	FY20	FY21	FY22
Capex with GOI / GoK grant	448.65	318.80	297.90
Capex with Internal Reserves	515.08	402.94	307.48
New Borrowings	1201.86	940.19	717.45
Capital Expenditure likely to be incurred	2165.58	1661.93	1322.83

The BESCOM has requested to approve the interest on loan capital for FY20-22 as follows:

**Table :5.25**  
**Interest on Capital Loan – BESCOM's submissions**

Particulars	Amount in Rs. Crores		
	FY20	FY21	FY22
Opening balance of Capital Loan	4,737.00	5,400.00	5,672.00
New Borrowings	1,202.00	940.00	717.00
Repayments	-538.00	-668.00	-802.00
Closing Balance	5,401.00	5,672.00	5,588.00
Interest on existing loan	383.74	432.50	445.16
Interest on new loan borrowings	68.81	191.24	286.34
<b>Total Interest on Capital loan</b>	<b>452.55</b>	<b>623.74</b>	<b>731.50</b>

**Commission's analysis and decision:**

1. The Commission has noted the present loan portfolios of BESCOM and the new loans availed during the previous year towards approved capex as per the audited accounts.
2. The Commission also notes the loan proposals of the BESCOM and the replies to the Commission's preliminary observations. The Commission by reckoning the capital grants and internal reserves likely to be available for the execution of the approved capex as made out in pre-para, to avoid front loading of the interest on loan in the retail supply tariff to the consumers, decides to consider the requirement of loan capital of Rs.900 Crores, Rs.700 Crores and Rs.600 Crores for FY20, FY21 and FY22 respectively. Further, the Commission has considered the repayment of loan at Rs.349.97 Crores, Rs.389.97 Crores and Rs.429.97 Crores for FY20, FY21 and FY22 respectively.

3. As per the audited accounts and as per the APR for FY18, the BESCOM had incurred interest on capital loan at a weighted average rate of interest of 8.13% per annum. This rate of interest has been considered for the existing loan balances for which interest has to be factored during FY19. Further, the Commission has considered the new loans to be drawn during the years FY20 to FY22, duly factoring in the availability of capital grants from GOI / GoK and the internal resources on the proposed works as indicated by the BESCOM, in its filing.

**BESCOM, has proposed capex amount of Rs. 3173.64 Crores for FY20, Rs. 2450.83 Crores for FY21 and Rs. 1924.92 Crores for FY22. As against this, after deducting capital grants from GOI / GoK, the internal resources and consumer contributions towards capital works, the expenditure likely to be met by BESCOM by raising capital loan is Rs. 1,201.86 Crores, Rs.940.19 Crores and Rs.717.45 Crores for FY 20, FY21 and FY22, respectively. However, as discussed in the pre para, the Commission considers new loans of Rs.900 Crores, Rs. 700 Crores and Rs. 600 Crores for FY20, FY21 and FY22 respectively for the approved capex. The Commission has considered new loans, in accordance with the debt equity ratio of 70:30 as per the MYT Regulations.**

As per the data furnished by the BESCOM, the interest on new loans is proposed at a rate of 11.45%.

The Commission notes that, the interest rates proposed by BESCOM are comparatively on the higher side. BESCOM needs to adopt financial prudence measures so as to avail loans at comparatively lower interest rates and thereby reduce the interest burden on the consumers. The Commission further notes that the present interest rate being charged by the commercial banks and financial institutions is 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 the current favorable economic condition for investments, it is observed that there is a

downward trend in the MCLR and interest rates. Hence, in such a situation, the Commission is of the view that, the ESCOMs can avail capital loan at competitive rates, which would be relatively lesser than the interest rate proposed by the BESCOM.

The Commission notes that, the present SBI MCLR rate for capital loan with tenure of 3 years is 8.50%. Considering the present MCLR, the Commission decides to allow the interest rate of 11% for the control period FY 20-22 for new capital loan borrowings. It shall be noted that, the rate of interest now considered by the Commission on the new capital loans for the control period is subject to review during the APR and revision of ARR of the relevant years of the control period.

Accordingly, the approved interest on loans for FY20-22 are as follows:

**TABLE – 5.26**  
**Approved Interest on Loans for FY20-22**

Particulars	Amount in Rs. Crores		
	FY20	FY21	FY22
Opening Balance of Capital Loans	4,741.54	5,291.58	5,601.61
Add: New Loans borrowed	900.00	700.00	700.00
<b>Less:</b> Repayments of loan	-349.97	-389.97	-429.97
Total loan at the end of the year	5,291.58	5,601.61	5,871.64
<b>Average Loan</b>	<b>5,016.56</b>	<b>5,446.59</b>	<b>57,36.63</b>
Interest on long term loans	430.91	476.29	509.54
Weighted average rate of interest based on the actual interest paid on long term loans in %	8.59%	8.74%	8.88%
<b>Interest Rate allowed on the new loans in %</b>	<b>11.00%</b>	<b>11.00%</b>	<b>11.00%</b>
<b>Allowable Interest on Capital Loan</b>	<b>430.91</b>	<b>476.29</b>	<b>509.54</b>

Thus, the Commission decides to approve interest of Rs. 430.91 Crores, Rs.476.29 Crores and Rs. 509.54 Crores on long term capital loans for FY20, FY21 and FY22 respectively.

### 5.2.11 Interest on Working Capital:

#### BESCOM's proposal:

BESCOM has claimed the interest on working capital based on the norms prescribed in the MYT Regulations and considering the rate of interest at

11.45% p.a. based on RBI base rate as on November, 2018 plus 200 basis points. The interest on working capital computed by BESCOM is as follows:

**TABLE – 5.27**

**Interest on Working Capital – BESCOM's Submission**  
Amount in Rs. Crores

Particulars	FY20	FY21	FY22
1/12th Operation and Maintenance	156.20	175.07	194.50
1% of Gross fixed assets at the beginning of the year	140.29	163.05	180.92
2 months Receivables	3,348.00	3,490.00	3,644.00
Estimated Working Capital	3,644.47	3,828.28	4,019.75
Rate of Interest	11.45%	11.45%	11.45%
<b>Interest on working capital</b>	<b>417.29</b>	<b>438.34</b>	<b>460.26</b>

**Commission's analysis and decision:**

The Commission has been computing the interest working capital as per the norms specified under the MYT Regulations, which consist of one month's O&M expenses, 1% of Opening Balance of Gross Fixed Assets and two months' revenue.

The Commission notes that BESCOM has claimed the interest on working capital at a rate of 11.45%, on the basis of RBI base rate prevailing as on November, 2018 ranging between 8.85% to 9.45% plus 200 basis points. This system is no more existing now, for availing new loans.

The commercial banks and financial institutions are charging the interest rates mainly on the basis of MCLR declared from time to time. Hence, the Commission would consider MCLR, depending upon the tenure of the loan. The Commission notes that, BESCOM needs to take financial prudence measures while availing short term loans, so that the interest burden on its consumers is reduced. As per the audited accounts for FY18, BESCOM has availed the working capital loan at an interest rate of 8.15% to 10.25% from Commercial banks.

As discussed earlier, the MCLR for loan with a tenure of One year is 8.55%. Therefore, the Commission, considering the downward trend in the interest rates, and also considering the present MCLR with an appropriate spread of basis points and as per the provisions of the MYT Regulations, decides to consider interest on working capital at 11% per annum for FY20-22.

Accordingly, the approved interest on working capital for FY20-22 is as follows:

**TABLE – 5.28**  
**Approved Interest on Working Capital for FY20-22**  
Amount in Rs. Crores

Particulars	FY 20	FY 21	FY 22
One-twelfth of the amount of O&M Exp.	157.55	177.12	199.61
Opening GFA	13,299.23	14,744.23	16,064.23
Stores, materials and supplies- 1% of Opening balance of GFA	132.99	147.44	160.64
One-sixth of the Revenue	3,387.02	3,704.90	3,876.27
Total Working Capital	3,677.56	4,029.46	4,236.52
Rate of Interest (% p.a.)	11.00%	11.00%	11.00%
<b>Interest on Working Capital</b>	<b>404.53</b>	<b>443.24</b>	<b>466.02</b>

Thus, the Commission hereby approves interest on working capital of Rs. 404.53 Crores, Rs. 443.24 Crores and Rs. 466.02 Crores for the control period years FY20, FY21 and FY22 respectively.

#### 5.2.12 Interest on Consumer Deposit:

##### BESCOM's proposal:

BESCOM, in its application has, submitted that it has assumed that an average amount of Rs. 200 Crores will be collected in each year of the control period considering the average security deposit collected in the past three years. Further, BESCOM has considered a bank rate of 6.75 per cent per annum (prevailing as on November, 2018) for computing the interest on security deposit for the control period FY20-22.

The interest on consumer deposit projected for the control period is as follows:

**TABLE – 5.29**  
**Interest on Consumer Deposits – BESCOM's Submission**  
Amount in Rs. Crores

Particulars	FY20	FY21	FY22
Consumer Security Deposit	4,296.21	4,596.21	4,896.21
Rate of Interest	6.75%	6.75%	6.75%
Interest on consumer security deposit	289.99	310.24	330.49

**Commission's analysis and decision:**

In accordance with the KERC (Interest on Security Deposit) Regulations 2005, the rate of interest on consumer security deposits to be allowed is the Bank Rate prevailing on the 1<sup>st</sup> of April of the financial year for which interest is due. As per the Reserve Bank of India notification dated 7<sup>th</sup> February, 2019, the Bank Rate is 6.50%. This being the latest available bank rate, the Commission has considered the same, for computation of interest on consumer deposits for FY20-22.

The Commission has considered the consumer security deposits as per the audited accounts of FY18 and half yearly accounts of FY19 and noted the additional amount of deposit collected from the consumers during the previous years. Based on the additional security deposits collected during FY18, the Commission has decided to factor Rs.300 Crores as the additional security deposit likely to be collected for each of the year from FY20-22. Thus the interest on consumer deposits for FY20-22 are as follows:

**TABLE – 5.30**  
**Approved Interest on Consumer Security Deposits for FY20-22**

Particulars	Amount in Rs. Crores		
	FY20	FY21	FY22
Opening balance of consumer deposits	4,105.86	4,405.86	4,705.86
Additional deposit to be received during the year.	300.00	300.00	300.00
Closing balance of consumer deposits	4405.86	4705.86	5005.86
Average consumer security deposits	4,255.86	4,555.86	4,855.86
Rate of Interest at bank rate to be allowed as per Regulations	6.50%	6.50%	6.50%
<b>Allowable Interest on Consumer Security Deposit.</b>	<b>276.63</b>	<b>296.13</b>	<b>315.63</b>

**Thus, the Commission decides to approve interest on consumer security deposits at Rs. 276.63 Crores, Rs. 296.13 Crores and Rs. 315.63 Crores for FY20, FY21 and FY22 respectively.**

**5.2.13 Other Interest and Finance Charges:**

BESCOM in its filing has claimed the other interest and finance charges of Rs.20 Crores for each year for the control period FY20-22 without any justification. The Commission notes that the other interest and finance

charges incurred by the BESCOM as per the audited accounts for the previous years and the amount as approved in the APR of the relevant year.

**Considering the expenditure on this item in the earlier years, the Commission decides to allow an amount of Rs.4.00 Crores, towards interest and finance charges for each of the years during the control period FY22.**

#### 5.2.14 Interest and other expenses Capitalized:

BESCOM has claimed an amount of Rs.99.75 Crores, Rs.104.74 Crores and Rs.109.97 Crores towards capitalization of expenses during FY20, FY21 and FY22 respectively. Considering, the capital expenditure incurred and capitalized in the previous years, the Commission decides to allow capitalization of expenses as proposed by BESCOM for the control period FY20-22.

The abstract of approved interest and finance charges for FY20-22 are as follows:

**TABLE – 5.31**  
**Approved Interest and finance charges for FY20-22**

Amount in Rs. Crores			
Particulars	FY20	FY21	FY22
Interest on Loan Capital	430.91	476.29	509.54
Interest on Working Capital	404.53	443.24	466.02
Interest on Consumers Security Deposit	276.63	296.13	315.63
Other Interest & Finance Charges	4.00	4.00	4.00
<b>Less: Interest &amp; other expenses capitalized</b>	<b>-99.75</b>	<b>-104.74</b>	<b>-109.97</b>
<b>Total Interest &amp; Finance Charges</b>	<b>1,016.32</b>	<b>1,114.92</b>	<b>1,185.22</b>

#### 5.2.15 Return on Equity:

##### BESCOM's proposal:

BESCOM in its filing has submitted the projected opening and closing balances of Gross Fixed Assets (GFA) along with break-up of equity and



loan components. The details of GFA, debt and equity (net-worth) for FY20-22 are indicated as follows:

**TABLE – 5.32**  
**Status of Debt-Equity Ratio for FY20-22**

Amount in Rs. Crores								
Year	Particulars	GFA	Debt	Equity	Normative Debt @ 70% of GFA	Normative Equity @ 30% of GFA	%age of actual debt on GFA	%age of actual equity on GFA
FY20	Opening Balance	14,029.00	4,737.00	1,155.00	9,820.00	4,209.00	34%	8%
	Closing Balance	16,305.00	5,400.00	1,498.00	11,413.00	4,891.00	33%	9%
FY21	Opening Balance	16,305.00	5,400.00	1,498.00	11,413.00	4,891.00	33%	9%
	Closing Balance	18,092.00	5,672.00	1,894.00	12,665.00	5,428.00	31%	10%
FY22	Opening Balance	18,092.00	5,672.00	1,894.00	12,665.00	5,428.00	31%	10%
	Closing Balance	19,526.00	5,588.00	2,352.00	13,668.00	5,858.00	29%	12%

BESCOM has stated that the debt equity ratio is within the normative debt-equity ratio of 70:30 on the opening and closing balances of GFA for each year of the control period.

Further, BESCOM in its application has claimed RoE for the control period FY20-22 as detailed below:

**TABLE – 5.33**  
**Return on Equity for FY20-22 – BESCOM's Submission**

Amount in Rs. Crores			
Particulars	FY20	FY21	FY22
Opening balance of paid up share capital	546.91	546.91	546.91
Share deposit	820.42	984.42	1148.42
Average Equity addition during the year	164.00	164.00	164.00
Reserve and surplus	21.44	253.62	547.22
Less: Meter security deposit capitalized	-54.81	-54.81	-54.81
Total Equity	1,497.96	1,894.14	2,351.74
<b>Return on equity@15.5%</b>	<b>232.18</b>	<b>293.59</b>	<b>364.52</b>

**Commission's analysis and decision:**

The Commission has considered the actual amount of share capital, share deposits and the accumulated surplus / deficit under reserves and surplus account as per the audited accounts for FY18 and the additional equity amount received from the GoK during FY19 for arriving at the allowable equity base for the control period FY20-22.

The Commission, in accordance with the provisions of the MYT Regulations, has considered 15.5% of Return on Equity duly grossed up with the applicable Minimum Alternate Tax (MAT) of 21.5488%. This works out to 19.7575% per annum. Further, as per the decision of the Commission in the Review Petition No.6/2013 and Review Petition 5/2014, and the Provisions of the MYT Regulations have been amended where in the Return on Equity is to be computed based on the opening balances of share capital, share deposits and the accumulated balances of surplus / deficit under reserves and surplus account. Further an amount of Rs.100 Crores of recapitalized consumer deposit as net worth is also considered as per the Orders of the Hon'ble ATE in Appeal No.46/2014. Also, the Commission by considering the actual profit / loss earned by BESCOM during the previous years as per the audited account, in order to avoid front-loading of the allowable RoE in the retail supply tariff has not carried forward the allowable RoE of each year from FY19 to FY22 as the additional equity infused during the year for computation of RoE for the subsequent year.

Further, in compliance with the Orders of the Hon'ble ATE in Appeal No.46/2014, wherein it was 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 FY20-22 are indicated as follows:

**TABLE – 5.34**  
**Status of Debt Equity Ratio for FY20-22**

Year	Particulars	GFA	Debt	Equity (Net-worth)	Normative Debt @ 70% of GFA	Normative Equity @ 30% of GFA	Amount in Rs. Crores	
							Percentage of actual debt on GFA	% of actual equity on GFA
FY20	Opening Balance	13,299.23	4,741.54	979.82	9,309.46	3,989.77	35.65	7.37
	Closing Balance	14,744.23	5,291.58	979.82	10,320.96	4,423.27	35.89	6.64
FY21	Opening Balance	14,744.23	5,291.58	979.82	10,320.96	4,423.27	35.89	6.64
	Closing Balance	16,064.23	5,601.61	979.82	11,244.96	4,819.27	34.87	6.10
FY22	Opening Balance	16,064.23	5,601.61	979.82	11,244.96	4,819.27	34.87	6.10
	Closing Balance	17,199.23	5,871.64	979.82	12,039.46	5,159.72	34.14	5.70

Accordingly, from the above, it is observed that the estimated amount of debt and equity are within the normative levels with reference to the opening and closing balance of GFA for FY20-22. Further, the Commission would review the same during the APR for FY20-22 based on the actual date as per the audited accounts of the respective years. The Return on Equity that could be approved for FY20-22, works out as follows:

**TABLE – 5.35**  
**Approved Return on Equity for FY20-22**

Particulars	Amount in Rs. Crores		
	FY20	FY21	FY22
OB: Paid Up Share Capital	546.92	546.92	546.92
OB: Share Deposit	738.69	738.69	738.69
OB: Accumulated surplus / deficit under Reserves and Surplus account	-205.79	-205.79	-205.79
<b>Less: Recapitalized Security Deposit</b>	<b>-100.00</b>	<b>-100.00</b>	<b>-100.00</b>
<b>Total opening balance of Equity</b>	<b>979.82</b>	<b>979.82</b>	<b>979.82</b>
RoE at 15.5% Grossed up with applicable MAT (MAT 21.5488%)	193.59	193.59	193.59
<b>Approved ROE with MAT</b>	<b>193.59</b>	<b>193.59</b>	<b>193.59</b>

**Thus, the Commission decides to approve Return on Equity of Rs.193.59 Crores grossed up with MAT at 21.5488% for each year of the control period FY20-22, subject to truing up as per the actual tax paid by the BESCOM for the relevant year during APR.**

#### 5.2.16 Tax:

The BESCOM, in its application, has requested the Commission to allow income tax as per actuals.

**Since, the RoE has been allowed by allowing a grossed up MAT of 21.5488%, the question of allowing Income Tax separately will not arise.**

#### 5.2.17 Other Income:

##### **BESCOM's proposal:**

BESCOM in its filing has claimed other income for the control period on the basis of the other income earned by BESCOM in the past three years and considering nominal escalation as detailed below:

**TABLE – 5.36  
Other Income - BESCOM's Proposal**

Particulars	Amount in Rs. Crores		
	FY20	FY21	FY22
Interest on Bank Deposits	6.73	6.73	6.73
Rental from Staff quarters	2.00	2.00	2.00
Value of materials found excess during physical verification	0.09	0.09	0.09
Rebate for collection of Electricity duty	4.40	4.55	4.71
Incentives received	155.94	164.87	155.65
Interest Subsidy under NEF Scheme	20.00	20.00	20.00
Miscellaneous recoveries	81.42	83.95	78.48
<b>Total</b>	<b>270.58</b>	<b>282.19</b>	<b>267.66</b>

##### **Commission's analysis and decision:**

The Commission notes that 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 rebate on collection of electricity duty besides incentives for timely payment of power purchase bills etc. The actual 'other income' earned by BESCOM as per the audited accounts for FY17 is Rs.210.94 Crores and for FY18 it is Rs.316.93 Crores.

Based on the other income earned by the BESCOM in the previous year, the Commission decides to consider the BESCOM's projected amount as the other income for the FY20 and FY21 and for FY22 at 5% increase over the amount for FY21.

Thus the, **Commission decides to approve other income of Rs. 270.58 Crores for FY20, Rs. 282.19 Crores for FY21 and Rs. 296.30 Crores for FY22.**

### 5.2.18 Fund towards Consumer Relations / Consumer Education:

The Commission has been allowing an amount of Rs.1.00 Crore per year 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 FY20-22, 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 Abstract of ARR for FY20-22:

In the light of the above analysis and decisions of the Commission, the following is the approved ARR for the control period FY20-22:

**TABLE – 5.37**  
**Approved ARR of BESCOM for FY20-22**

Amount in Rs. Crores

Sl. No	Particulars	FY20	FY21	FY22
1	Energy at Gen Bus in MU	33,960.83	35,373.99	36,894.27
2	Transmission Losses in %	3.162%	3.132%	3.102%
3	Energy at Interface in MU	32,886.99	34,266.08	35,749.81
4	Distribution Losses in %	12.25%	12.00%	11.75%
5	<b>Sales in MU</b>			
	Sales to other than IP & BJ/KJ	22,095.34	23,209.66	24,423.22

Sl. No	Particulars	FY20	FY21	FY22
	Sales to BJ/KJ	137.90	137.90	137.90
	Sales to IP	6,625.09	6,806.59	6,988.09
	<b>Total Sales</b>	<b>28,858.33</b>	<b>30,154.15</b>	<b>31,549.21</b>
6	<b>Revenue at existing tariff and Misc. Charges in Rs. Crs.</b>			
	Revenue from tariff and Misc Charges	17,777.04	-	-
	Tariff Subsidy to BJ/KJ	93.77	-	-
	Tariff Subsidy to IP	2451.28	-	-
	<b>Total Existing Revenue</b>	<b>20,322.09</b>	<b>0.00</b>	<b>0.00</b>
	<b>Expenditure in Rs. Crs.</b>	-	-	-
7	Power Purchase Cost	16,548.80	17,376.24	18,453.57
	Transmission charges of KPTCL	1,741.81	1,821.24	1,944.25
	SLDC Charges	9.81	12.89	14.57
	<b>Total Power Purchase Cost (Rs. in Crores)</b>	<b>18,300.42</b>	<b>19,210.37</b>	<b>20,412.39</b>
8	<b>Total O&amp;M Expenses (Rs. in Crores)</b>	<b>1,890.61</b>	<b>2,125.41</b>	<b>2,395.34</b>
9	<b>Depreciation (Rs. in Crores)</b>	535.52	589.92	636.93
10	<b>Interest &amp; Finance charges: (Rs. in Crores)</b>			
11	Interest on Loans	430.91	476.29	509.54
12	Interest on Working capital	404.53	443.24	466.02
13	Interest on belated payment on PP Cost	0.00	0.00	0.00
14	Interest on consumer deposits	276.63	296.13	315.63
15	Other Interest & Finance charges	4.00	4.00	4.00
16	Less: Net interest & other expenses capitalised	-99.75	-104.74	-109.97
	<b>Total Interest &amp; Finance charges</b>	<b>1,016.32</b>	<b>1,114.92</b>	<b>1,185.22</b>
17	Return on Equity with MAT	193.59	193.59	193.59
18	Funds towards Consumer Relations/Consumer Education	1.00	1.00	1.00
19	Other Income	-270.58	-282.19	-296.30
20	<b>ARR (Rs. in Crores)</b>	<b>21,666.88</b>	<b>22,953.02</b>	<b>24,528.17</b>
21	Surplus for FY18 carried forward	-392.46	0.00	0.00
22	<b>Net ARR (Rs. in Crores)</b>	<b>21,274.42</b>	<b>22,953.02</b>	<b>24,528.17</b>

#### 5.4 Segregation of ARR into ARR for Distribution Business and ARR for Retail Supply Business:

BESCOM in its application has proposed the following segregation of consolidated ARR into ARR for Distribution Business and ARR for Retail Supply Business based on its Internal Committee Report:

**TABLE – 5.38**  
**Segregation of ARR – BESCOM's Submission**

Particulars	Distribution Business	Retail Supply Business
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%	-

#### Commission's Analysis and Decisions:

BESCOM in its application has proposed the segregation of ARR into ARR for Distribution Business and ARR for Retail Supply Business based on its Internal Committee Report. The Commission notes that, BESCOM has proposed the same segregation as proposed in the previous control periods.

Since no new proposal with justification has been furnished by BESCOM, the Commission decides to continue with the existing ratio of segregation of ARR as detailed below:

**TABLE – 5.39**  
**Approved Segregation of ARR – FY20-22**

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%
Interest on working Capital	12%	88%

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

**TABLE – 5.40**  
**APPROVED REVISED ARR FOR DISTRIBUTION BUSINESS – FY20-22**

Amount in Rs. Crores

Sl. No	Particulars	FY20
1	R&M Expenses	
2	Employee Expenses	
3	A&G Expenses	1,058.74
4	Depreciation	471.26
	<b>Interest &amp; Finance Charges</b>	
5	Interest on Loans	430.91
6	Interest on Working capital	48.66
7	Interest on consumer deposits	0.00
8	Other Interest & Finance charges	4.00
9	Less: interest & other expenses capitalised	-99.75
	<b>Total</b>	<b>1,913.82</b>
10	RoE	96.79
11	Other Income	-51.41
	<b>NET ARR</b>	<b>1,959.20</b>

**TABLE – 5.41**

**APPROVED ARR FOR RETAIL SUPPLY BUSINESS – FY20-22**

Amount in Rs. Crores

Sl. No	Particulars	FY20
1	Power Purchase	16,548.80
2	Transmission Charges	1,751.62
3	R&M Expenses	
4	Employee Expenses	831.87
5	A&G Expenses	
6	Depreciation	64.26
	<b>Interest &amp; Finance Charges</b>	-
7	Interest on Loans	0.00
8	Interest on Working capital	355.87
9	Interest on consumer deposits	276.63
10	Other Interest & Finance charges	0.00
11	Less: interest & other expenses capitalised	0.00
	<b>Total</b>	<b>19,829.05</b>
12	ROE	96.79
13	Other Income	-219.17
14	Fund towards Consumer Relations / Consumer Education	1.00
	<b>NET ARR</b>	<b>19,707.68</b>



## 5.5 Gap in Revenue for FY20:

As discussed above, the Commission decides to approve Annual Revenue Requirement (ARR) of Rs. 21274.42 Crores as against BESCOM's proposal for approving ARR of Rs.23676.25 Crores for FY20. The approved ARR includes an amount of Rs. 392.46 Crores, which is determined as the surplus as per APR for FY18, as discussed in Chapter-4 of this Order.

Based on the existing retail supply tariff, the total revenue on the revised sales for FY20, will be Rs. 20322.09 Crores. Considering the approved ARR, there will be a revenue gap of Rs. 952.33 Crores, for FY20.

The Commission also decides to approve the Annual Revenue Requirement (ARR) of Rs.22953.02 Crores and Rs.24528.17 Crores, as against the BESCOM's proposal to approve an ARR of Rs.25954.36 Crores and Rs.27622.02 Crores for FY21 and FY22 respectively.

The net ARR and the gap in revenue for FY20 is shown in the following Table:

**TABLE – 5.42**  
**Revenue gap for FY20**

Particulars	FY20
Net ARR including carry forward gap of FY18 (in Rs. Crores)	21,274.42
Approved sales (in MU)	28,858.33
Average cost of supply for FY20 (in Rs./unit)	7.37
Revenue at existing tariff (in Rs. Crores)	20,322.09
<b>Gap in revenue for FY20 (in Rs. Crores)</b>	<b>952.33</b>

The details of revised retail supply tariff, on the basis of the above approved ARR, is discussed and approved in Chapter-6 of this Order.