CHAPTER – 5

ANNUAL REVENUE REQUIREMENT FOR FY20-22

5.0 Annual Revenue Requirement (ARR) for FY20—FY22 - CESC's Filing:

CESC in its application dated 30th 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 FY-20. The summary of the proposed ARR for FY20-22 is as follows:

TABLE – 5.1

Proposed ARR for FY20-22

Amount in Rs. Crores

Sl. No	Particulars	FY20	FY21	FY22
1	Energy at Generating Bus in MU	7,496.12	7,779.60	8,088.33
2	Transmission Losses in %	3.19	3.17	3.15
3	Energy at Interface in MU	7,256.99	7,532.99	7,833.55
4	Distribution Losses in %	12.70	12.65	12.60
	Sales in MU			
6	Sales to other than IP & BJ/KJ	3,663.97	3,857.70	4071.43
7	Sales to BJ/KJ	142.57	155.78	170.21
8	Sales to IP sets	2,528.81	2,566.58	2,604.92
	Total Sales	**6,335.35**	**6,580.06**	**6,846.56**
	Revenue at existing tariff in Rs. Crores			
9	Revenue from tariff and Misc. Charges	2,718.80	2,828.32	2,970.16
10	Tariff Subsidy to BJ/KJ	92.98	101.60	111.01
11	Tariff Subsidy to IP Sets	1,386.25	1,406.95	1,427.97
	Total Existing Revenue including Miscellaneous Revenue	**4,198.03**	**4,336.87**	**4,509.14**
	Expenditure in Rs. Crores			
12	Power Purchase Cost	2,977.09	3,125.16	3,257.12
.13	Transmission charges of KPTCL	470.16	552.72	656.16
14	SLDC Charges	2.34	2.78	3.52
15	**Power Purchase Cost including cost of transmission**	**3,449.59**	**3,680.66**	**3,916.80**
16	Employee Cost	560.60	550.39	602.81
17	Repairs & Maintenance	60.78	66.86	73.23
18	Admin & General Expenses	101.18	111.30	121.90
19	**Total O&M Expenses**	**722.56**	**728.55**	**797.94**
20	Depreciation	195.03	230.96	267.86
	Interest & Finance charges			
21	Interest on Loans	175.19	202.43	234.34

Sl. No	Particulars	FY20	FY21	FY22
22	Interest on Working capital	58.33	61.09	65.03
23	Interest on belated payment on PP Cost	0.00	0.00	0.00
24	Interest on consumer deposits	42.38	46.62	51.28
25	Other Interest & Finance charges	0.00	0.00	0.00
26	**Less:** interest & other expenses capitalised	-6.75	-5.50	-7.00
27	**Total Interest & Finance charges**	**269.15**	**304.64**	**343.65**
28	Other Debits	15.66	16.66	17.66
29	Net Prior Period Debit/Credit	2.00	2.00	2.00
30	Return on Equity	0.00	0.00	0.00
31	Funds towards Consumer Relations/Consumer Education	0.00	0.00	0.00
32	Other Income	-48.23	-50.65	-53.18
33	**ARR**	**4,605.76**	**4,912.83**	**5,292.74**
34	Deficit for FY18 carried forward	223.03	-	-
35	**Net ARR**	**4,828.79**	**4,912.83**	**5,292.74**

CESC has requested the Commission to approve the Annual Revenue Requirement of Rs. 4828.79 Crores for FY20 including the deficit of FY18 of Rs.223.03 Crores, Rs. 4912.83 Crores for FY21 and Rs. 5292.74 Crores for FY22. Considering the estimated revenue from sale of power to the consumers and miscellaneous revenue at the existing retail supply tariff of Rs.4198.03 Crores, CESC has projected the revenue gap of Rs. 630.75 Crores for FY20. In order to bridge the revenue gap of Rs.630.75 Crores for FY20, the CESC has proposed the average increase in retail supply tariff by 100 paise per unit in respect of all category of consumers including BJ/KJ and IP set consumers for FY20.

5.1 Annual Performance Review for FY18 & 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 relevant records furnished by CESC. Accordingly, a deficit of Rs.207.62 Crores of FY18, is required to be 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 Investments for FY20-22:

CESC Proposal:

The CESC has proposed capex of Rs.761.92 Crores, Rs.835.5 Crores, Rs.812.25 Crores, Rs.778.25 Crores and 784.25 crores for FY20, FY21, FY22, FY23 and FY24 respectively. Some of the important works proposed for the control period are as follows:

a) E & I Works;
b) IPDS/DDUGJY;
c) Replacement of Faulty distribution transformers;
d) Service connection;
e) Metering Programme;
f) Energization of IP sets;
g) Model Villages/Model sub division
h) Civil Engineering Works;

The details of capex under various heads proposed for FY20 to FY24 are shown in the following Table:

Table-5.2

CESC's Capex Proposal for FY20 to FY24

Amount in Rs. Crores

Sl. No.	Schemes	F Y20	FY21	FY22	FY23	FY24
1	Extension & improvement	155.00	160.00	165.00	165.00	165.00
2	IPDS	30.00	20.00	0.00	0.00	0.00
3	DDUGJY	75.00	70.00	0.00	0.00	0.00
4	Replacement of failed Transformers	5.00	5.00	5.00	5.00	5.00
5	Service Connections(WS,IP SET,NEW CONNECTION)	140.00	150.00	160.00	165.00	170.00
6	TSP - Energisation of IP sets	2.50	2.50	2.75	2.75	2.75
7	SCP - Energisation of IP sets	8.00	9.00	9.50	9.50	9.50

Sl. No.	Schemes	F Y20	FY21	FY22	FY23	FY24
8	Gangakalyana Works- Energisation of IP sets	84.00	93.00	105.00	105.00	105.00
9	Tools & Plants	6.00	7.00	8.00	8.00	8.00
10	Civil Engineering Works	12.00	13.00	14.00	14.00	14.00
11	Providing Meters to DTC, BJ/KJ, Street Light for replacement of electromechanical meters, providing modems to meters for communication	15.00	16.00	18.00	19.00	20.00
12	IT Initiatives	20.00	25.00	30.00	35.00	35.00
13	5 model villages in each MLA/MP constituency	70.00	0.00	0.00	0.00	0.00
14	Model Sub-division	112.00	100.00	80.00	0.00	0.00
15	DSM Activities (AGDSM and others)	10.00	15.00	15.00	0.00	0.00
16	New Project(Any central or State Govt. Programmes)	17.42	150.00	200.00	250.00	250.00
	Total	**761.92**	**835.5**	**812.25**	**778.25**	**784.25**

The Scheme-wise investment Programme for FY20, FY-21 FY22, FY23 and FY24, is as given below:

1. **E and I Works:** CESC has planned to continue various new works under System improvement work (E&I head). It is proposed to install additional transformers and also capacity enhancement works. Provision is made for New link lines to be constructed for evacuation of power from New sub-stations as well as to reduce the LT ratio.

   CESC is having a vast forest area with all kinds of wild life habitations. CESC has planned to continue various improvements works in forest border area in the coming years. These works will be taken up as per the guidelines issued by Honorable High court of Karnataka in the WP no. 14029 of 2008. For all the above works a budget of Rs. 155, 160, 165, 165, 165 crores are made for FY20, FY21, FY22, FY23 and FY24 respectively.

2. **IPDS:** The GoI has introduced the Integrated Power Development Scheme in urban areas. In CESC, 33 towns are included under this scheme. The work is awarded and DPR amount is Rs.170.00 crores. These works are under progress. Hence a Budget provision of Rs.30 crores for FY20 and Rs 20 crores for FY21 is made as project will be at completing stage in these years and provision is made for bill payment.

3. **DDUGJY:** Under Deen Dayal Upadhyaya Grameena Jyothi Yojana (DDUGJY) improvement works will be taken up in rural areas of five districts in CESC jurisdiction. These Works are under progress. Hence a Budget provision of Rs.75 Crs. for FY-20 and Rs 70 Crs. for FY21 is made as project will be at completing stage in these years and provision is made for bill payment.

4. **Replacement of failed Transformers:** Budget provision of Rs.5 crores has been made for FY20, FY21, FY22, FY23 and FY24 for replacement of failed and to be scraped transformers.

5. **Service Connection Works:** The Budget provision is made for Drinking Water supply works, Providing Infrastructure to IP set other than Gangakalyana works and New service connection works. Budget provision of Rs. 140 Crores, 150 Crores, 160 Crores, 165 Crores and 170 Crores are made for FY20, FY21, FY22, FY23 and FY24 respectively.

6 &7. **TSP/SCP:** Budget provision of Rs. 10.5 Cr, 11.5 Cr 12.25 Cr, 12.25 Cr and 12.25 Cr are made for FY-20, FY-21 FY-22, FY-23 and FY-24 respectively under the Tribal Sub-Plan and Special Component Program works.

8. **Gangakalyana works:** Under this Energisation of IP sets registered under Gangakalyana Scheme are covered. Budget provision of Rs. 84 Cr, 93 Crores, 105 Crores, 105 Crores and 105 Crores are made for FY-20, FY-21 FY-22, FY-23 and FY-24 respectively.

9. **Tools & Plants:** Under this, Budget provision is made for providing safety T&P equipment to all Linemen for carrying out works efficiently and makes the work accident free. Hence it is proposed to provide the same, wherever required and also to replace the existing old and faulty safety devices.

10. **Civil Engineering works:** CESC has planned to have own accommodation for all offices in a phased manner. It is proposed to construct approximately 30 numbers of new buildings for section/subdivision/division offices. Further, the Sanitary system in many colonies needs to be improved. Hence for civil engineering works, a Budget provision of Rs. 12 Crs., 13 Crs., 14 Crs.,14 Crs., and 14 Crs., has been made for FY-20, FY-21 FY-22, FY-23 and FY-24 respectively.

11. **Metering programme:** Budget provision has been made for Providing Meters to DTC, BJ/KJ, Street Light for replacement of electromechanical meters, providing modems to meters for communication.

12. **IT initiatives:** IT initiatives like MMS/FMS//DTLMS/ data center etc., are being implemented as a tool to improve the system operations and management as a whole. It is necessary to provide computers to all offices up to grass root level. Hence a Budget provision of Rs. 20 Crs., 25 Crs., 30 Crs., 35 Crs., and 35 Crs., are made for FY-20, FY-21 FY-22, FY-23 and FY-24 respectively for new IT programmes.

13. **GOK Budget announcement "BELAKU GRAMA" works**: As per the GOK budget announcement "BELAKU GRAMA" works, it has been directed to take up 5 villages in rural area from each of the Legislative constituency and one village per MLA constituency for each MP for taking up various improvement works including additional DTC works, Re-conductoring etc. (As per the GOK: EN 70 VSC 2017 Bengaluru Dated: 24.05.2017). DPR is prepared for an amount of 58.63 Crores and tendering is under progress. Hence budget provision of Rs 70 Crores is made for FY 20.

14. **Model Sub-division works:** It is planned to convert Overhead distribution system to UG Cable system in Mysuru City area under Model Subdivision project. These

works are under progress. It is planned to take up the works of Rs. 100 Crores in each financial year. Hence a Budget provision of Rs. 112 Crores, 100 Crores and

Rs. 80 Crores is made for FY20, FY21 and FY22 respectively, which includes payment of bills.

15. **DSM Activities (AGDSM works):** It is proposed to take up a pilot project in smart Grid area in CESC jurisdiction for replacement of old pump sets by Energy efficient pump sets during 2019and a provision of Rs 5.00 Cr is made for FY19. And also budget allocations of Rs. 10 Cr, 15 Crores and 15 Crores, are made for upcoming new projects under this category of works for FY20, FY21 and FY22, respectively.

16. **New Project (Any central or State Govt. Programmes):** CESC has made budget provision for New Projects coming up in future, based on the following:

    - New schemes or projects that may be envisaged by the Central Govt. or State Govt. for betterment of public life through quality power supply.
    - Works which involves increasing the aesthetic value of cities coming under its jurisdiction.
    - Smart cities concepts, UG cable concepts even at small taluk level in future.

Commission's analysis and decision:

The Commission has considered, CESC's submission for the control period FY20-FY22. In the preliminary observations, in addition, CESC was directed to provide the physical progress, cost and timelines of completion along with the number of works to be taken in each of the year for FY20 to FY-22. The CESC has not submitted the same.

The CESC's previous years' achievement of capex is shown in the following Table:

TABLE-5.3

Approved and Actual Capex incurred –CESC, Mysore

Amount in Rs. Crores

Approved and Actual Capex incurred –CESC, Mysore						
Particulars	**FY13**	**FY14**	**FY15**	**FY16**	**FY17**	**FY18**
Capital investment filed	560.00	575.50	455.00	669.00	762.00	889.00
Capital investment approved by the Commission	560.00	575.50	455.00	317.00	707.00	889.00
Actual capital investment incurred as per audited accounts *	195.87	321.75	318.83	488.52	467.64	535.00
Percentage of actual capital investment to the approved capital investment	**34.98%**	**55.91%**	**70.07%**	**154.11%**	**66.14%**	**60.18%**
***without considering capital investment disallowed due to prudence check**						

It is seen from the above that CESC has never achieved the targeted capex in any of the years.

Keeping in view the actual achievement and the targeted capex for the next control period, the Commission recognizes the capex of CESC at Rs 700 Crores, Rs 650 Crores and Rs 650 Crores for FY20, FY21 and FY22 respectively, subject to prudence check and the following directions:

The Commission directs CESC to maintain the physical as well as financial progress in respect of the works carried out under Capex indicating timelines of completion, cost to benefit ratio, etc. These details shall be furnished to the Commission as and when Commission directs.

The Commission also directs CESC, Mysore to take concrete measures to complete and capitalize the works in the prescribed time schedule, so that, its benefits are being passed on to the consumers effectively and capitalize the works proposed as far as possible during each financial year.

The Commission directs the CESC, Mysore to put its best efforts towards achieving the following objectives of the proposed schemes under capex on due priority:

1. Reducing distribution losses.
2. Reducing the HT:LT Ratio.
3. Reduce Transformer failures.
4. Segregate the loads in the feeders.
5. Reduce Power theft.
6. Bring programs for the awareness among the people on usage and conservation of energy.
7. Improve the sales to metered category and
8. Improve the Power factor of the IP set loads by installing switched capacitors of suitable capacity to the secondary of the transformers.

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

5.2.2 Sales for the Control Period FY20-FY22:

A. Sales- Other Than IP Sets:

CESC Proposal:

CESC in its filing has estimated sales for FY20, FY21 and FY22 as 6,335.35 MU, 6,580.06 MU and 6,846.52 MU, respectively.

I. CESC's Approach:

CESC in its filing has stated that as per the KERC Load Forecasting Regulations, it has made projections upto 2023-24 and for the current control period the forecast upto 2021-22 would be relevant. It is stated that the estimates are based on CAGR for the period FY 15 to FY 18, CAGR for the period FY 13 to FY 18 and trend analysis of 10-year data (linear & logarithmic trends). Wherever, there is negative growth, CESC has adopted 1% growth rate as a conservative estimate.

It is also stated that comparison has been made with forecast reports of 19th EPS, PRDC report and Feedback Infra report and that the projections as per above reports are not considered, as they are way off the mark. Further, it is submitted that based on half-year data, the FY19 estimates have been revised.

The observations of the Commission on sales forecast (other than IP –sets) for the control period are as follows:

a. The Commission observed that CESC has estimated the sales for second half of FY19, by applying CAGR. The Commission opined that CESC should have computed the same considering the growth rate during the second half of the year of FY18 over FY17 or should have computed the same on pro-rata basis.

   CESC has not responded in the matter.

b. LT (1) – BJ/KJ category:

   The Commission has observed that even though the number of installations was retained at FY19 level at 493733, the quantum of sales has been increased every year during the control period. Hence, CESC shall clarify the increase in sales without corresponding increase in the number of installations.

   CESC has submitted that the proposed energy sales of 142.57MU, 155.78MU, 170.21 MU for FY20, FY21 and FY22 respectively, considering a CAGR of 9.27% over FY19 energy sales value.

   The Commission notes that the CAGR, which is based on previous years' data, depends upon the growth in number of BJ/KJ installations in those years. However, during the control period, since no additions is envisaged in the number of installations, the CAGR based on previous growth rate cannot be adopted. The approach of the Commission in estimating the sales to BJ/KJ installations is discussed in subsequent paragraphs.

c. The growth rate considered for the number of installations for HT-1 is on the lower side and for HT-4, it is higher, when compared to the CAGR.

CESC has stated that the above does not pertain to CESC.

The Commission notes that, the 5-year CAGR is 12.81% & 3- year CAGR is 8.77% for HT-1 and hence 8.33% considered by CESC is lower.

Similarly, in case of HT-4, the 5-year CAGR is negative, whereas CESC has considered 6.67%.

d. The sales growth rate considered for LT-6 WS is higher, keeping in view the growth rate of installations of 7.56% proposed by CESC.

CESC has not responded in the matter.

e. CESC has considered a positive growth rate for sales to HT-2a and HT-4 categories, stating that it has considered a conservative growth rate of 1%, even though the CAGR and previous year growth rate is negative.
CESC has not responded in the matter.

f. For HT2(a) category, CESC should have computed the growth rates considering the total energy sold to this category including OA/wheeling and should have estimated the sales considering the ratio of energy sold by CESC in FY18 to the total sales of FY18 including OA/wheeling sales.

CESC has submitted that the sales on open access and wheeling differ every month. CESC added that the percentage of energy consumed by these consumers in respect to their total energy consumption also differs every month. Thus, it is not possible to project the data regarding the energy consumed on Open access/wheeling transactions by the deemed Open access consumers.

The Commission has noted the above replies of CESC and the approach of the Commission is discussed in subsequent paragraphs.

II. Commission's approach for estimating the number of installations and sales for Control Period FY20-22

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 sales to various categories considering the actuals as on 30th 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 number of installations and sales for the control period

b. Wherever the number of installations estimated by the CESC 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 CESC are retained.

c. Wherever the number of installations estimated by the CESC 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 the number of installations estimated by CESC for the FY 20 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 and HT-5 categories, the estimates of CESC are retained.

f. The number of installation for HT-4 is retained at the FY19 level as the CAGR is negative.

g. The Growth rate considered for FY20 is retained for the estimates for FY 21and FY 22 also.

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

No. of installations

FY20		FY21		FY22	
Filed	**Approved**	**Filed**	**Approved**	**Filed**	**Approved**
24,72,631	24,10,032	25,80,660	25,16,509	26,93,705	26,28,048

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 CESC is validated duly considering the actual sale up to November, 2018 and modified suitably as stated earlier.

b. Wherever the sale estimated by the CESC, 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 CESC are considered.

c. Wherever the sales estimated by the CESC 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 CESC for FY 20 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. For LT-7 and HT-5, the proposal of CESC is retained.

f. The sales for LT-4b and LT-4c for FY20 is estimated based on the specific consumption of FY19.

g. The sales for HT-4 is retained at FY19 level as there are no additions to the number of installations.

h. For HT-2a, CESC estimate is retained for FY20, as based on OA analysis, the estimates are too low.

i. The Growth rate considered for FY20 is retained for the estimates for FY 21and FY 22 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 table given below:

Million Units

FY20		FY21		FY22	
Filed	Approved	Filed	Approved	Filed	Approved
3,688.00	3,633.20	3,884.35	3,880.88	4,100.90	4,152.83

Sales to BJ/KJ:

The break-up of sales to BJ/KJ installations as filed in the APR by CESC 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/instl./month	4,43,394	92.23	17.33
Installations consuming more than 40 units/instl./month and billed under LT2(a)	52,330	29.60	47.14

The Commission notes that, the specific consumption works out to 17.33 units /installation/month for BJ/KJ installations consuming less than or equal to 40 units per month and 47.14 units /installation/month for BJ/KJ installations consuming more than 40 units per month.

Since, the CESC has not proposed any additional installations during the control period, as there is no GoK policy, 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 CESC and the sales is worked out as per the above specific consumption for the control period as indicated below:

TABLE-5.4
Break Up of BJ/KJ Installations

Million Units

Particulars	FY20	FY21	FY22
Installations consuming less than or equal 40 units/instl./month	97.45	97.50	97.55
Installations consuming more than 40 units/instl./month and billed under LT2(a)	14.28	14.14	14.00

B. IP set sales projections for ARR FY20-22:

a) The Commission, in its Tariff Order dated 11th April, 2017, had approved specific consumption of IP sets as 6,728 units / installation / annum for the FY18. However, based on the revised data of sales to IP sets as reported by the CESC Mysore in its Tariff application, the Commission had approved the specific consumption as 7,293 units / installation / annum, for the FY18 by considering the mid-year installations of 3,48,301 numbers.

b) The actual sales to IP sets for FY19, till September 2018, as reported by CESC, Mysore, in its tariff filing is 1236.56 MU and the number of installations are 3,66,691. The actual consumption per IP per month works out to 562.03 units / IP / month. As per the approved specific consumption for FY19, the consumption per IP per month works out to 653 units / IP / month. The actual monthly average consumption is less than the approved average consumption per month.

c) As it can be seen from FY16 onwards, that the increase in actual number of consumers every years is only around 20,000. Whereas, it is noted that the CESC has estimated the number of IP-set installations as 3,90,338 for the FY19 based on the 3 year CAGR of 6.45%. This shows an addition of 31,317 numbers, which is huge compared to the previous years. It is observed that 7,670 number of installations are added from 1st April 2018 to September 2018 i.e., in a span of six months. Considering, approximately, the same number of installations that may be serviced in the next six months, the number of IP installations for FY19, is projected as 3,74,361 numbers.

d) Considering, approximately the same number of installations are added during FY20 to FY22, the projected number of consumers for FY20, FY21 and FY22 are 3,89,701, 4,05,041 and 4,20,381 respectively.

e) CESC Mysore, in its tariff filing has submitted that, it has projected the sales for October 2018 to March 2019 and for FY20 to FY22 by considering the 5-year sales growth of 1.49%. It could be observed that forecast of sales to IP installations is made based on 5-year CAGR and the number of installations is forecasted on the basis of 3 year CAGR. The Commission decides to consider the average consumption per month for FY19 for the period April 2018 to September 2018 i.e., 562.04 units / IP / month which works out to 6,744.43 units / IP / 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.

f) The sales determined with this analogy for FY20 to FY22 is more than the sales projections made and submitted by CESC Mysore. CESC has segregated substantial number of exclusive agricultural feeders during FY19 and has provided energy meters to such feeders which give realistic consumption by IP sets. While assessing the consumption by IP sets with the readings of the energy meters provided to these feeders it is seen that the consumption has reduced as compared to previous years approved consumption.

g) Hence, commission decides to retain the sales projected by CESC for FY20 to FY22. The details of sales to IP set consumers are as follows:

TABLE.5.5

Approved IP Set Sales for FY20- FY22

Particulars	FY20		FY21		FY22	
	As filed by the CESC	As approved by the Commission	As filed by the CESC	As approved by the Commission	As filed by the CESC	As approved by the Commission
No. of Installations	4,15,511	3,89,701	4,42,306	4,05,041	4,70,830	4,20,381
Mid-year number of Installations		3,82,031		3,97,371		4,12,711
Specific consumption in units/installation/annum		6,619.38		6,458.90		6,311.73
Sales in MU	2,528.81	2,528.81	2,566.58	2,566.58	2,604.92	2,604.92

Accordingly, the Commission approves 2,528.81, 2,566.58 and 2,604.92 MU as energy sales to IP sets for the FY20, FY21 and FY22 respectively. The number of installations approved for FY20, FY21 and FY22 are 3,89,701, 4,05,041 and 4,20,381 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 CESC Mysore shall therefore, regulate the number of hours of power supply to exclusive agricultural feeders accordingly:

h) It is noted that the CESC has already segregated 563 agriculture feeders from rural loads under NJY phase1&2. Therefore, energy consumed by the IP-sets could be more accurately measured at the 11 KV feeder level at the sub-stations, after allowing for distribution system losses in 11 KV lines, distribution transformers and LT lines, calculated considering the actual single line diagrams.

i) Hence, the Commission reiterates its directive that the CESC shall report the total IP-set consumption on the basis of specific consumption arrived at from the consumption data from energy meters at the substations in respect of exclusive 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.

Based on the above discussions, the category wise approved number of installations for the control period vis-à-vis the estimates made by the CESC is indicated in the following Table:

TABLE-5.6

Category-wise approved number of installations

No of Installations

	Category	CESC FY20	CESC FY21	CESC FY22	KERC FY20	KERC FY21	KERC FY22
LT-1 (a)	Bhagya Jyoti < =40 units	4,68,484	4,68,736	4,68,986	4,68,484	4,68,736	4,68,986
LT-1 (a)	Bhagya Jyoti>40	25,249	24,997	24,747	25,249	24,997	24,747
LT-2a	Domestic AEH	20,08,277	20,89,236	21,73,458	19,59,833	20,39,400	21,22,197
LT-2b	Pvt. Institutions	3,405	3,576	3,756	3,282	3,447	3,621
LT-3	Commercial - Applicable to areas coming under VPs	2,72,263	2,89,268	3,07,336	2,60,860	2,77,153	2,94,464
LT-4 (a)	IP sets - Less than 10 HP - General	4,15,511	4,42,306	4,70,830	3,89,701	4,05,041	4,20,381
LT-4 (b)	Irrigation Pump sets - More than 10 HP	218	221	225	217	221	225
LT-4 (c)	Private Horticulture Nurseries, Coffee & Tea Plantations	10,232	11,372	12,639	9,946	11,218	12,654
LT-5	Lt Industries	45,499	47,932	50,494	43,970	46,320	48,796
LT-6	Water Supply	31,345	33,716	36,266	30,836	33,717	36,867
LT-6	Street Lights	24,920	25,992	271,10	24,618	25,677	26,781
LT-7	Temporary Power Supply	48797	51768	54919	48797	51768	54918
	LT Total	**33,54,200**	**34,89,120**	**36,30,766**	**32,65,793**	**33,87,695**	**35,14,637**
HT-1	HT Water Supply	182	198	216	183	199	217
HT-2 (a)	HT Industries	1075	1129	1186	1075	1130	1188
HT-2 (b)	HT Commercial	691	724	759	691	725	760
HT-2(c)		309	334	361	309	347	389
HT-3(a) & (b)	HT Irrigation & LI Societies	106	112	118	105	110	116

	Category	CESC FY20	CESC FY21	CESC FY22	KERC FY20	KERC FY21	KERC FY22
HT-4	Res. Apartments - Applicable to Mangalore Municipal Corporation Area	16	18	19	15	14	14
HT-5	Temporary	47	67	96	46	66	94
HT Total		**2,426**	**2,582**	**2,755**	**2,424**	**2,591**	**2,778**
Grand Total		**33,56,626**	**34,91,702**	**36,33,521**	**32,68,217**	**33,90,286**	**35,17,415**
	***Categories other than IP sets and BJ/KJ consuming less than or equal to 40 units/mth./instl.**	**24,72,631**	**25,80,660**	**26,93,705**	**24,10,032**	**25,16,509**	**26,28,048**
	IP sets and BJ/KJ consuming less than or equal to 40 units/mth./instl.	**8,83,995**	**9,11,042**	**9,39,816**	**8,58,185**	**8,73,777**	**8,89,367**

The approved category-wise sales are as indicated in the following Table:

TABLE-5.7
Category wise approved energy sales

Million Units

	Category	Proposed by CESC			Approved by Commission		
		FY20	**FY21**	**FY22**	**FY20**	**FY21**	**FY22**
LT-1 (a)	Bhagya Jyoti < =40 units	113.40	123.90	135.38	97.45	97.50	97.55
LT-1 (a)	Bhagya Jyoti>40	29.17	31.88	34.83	14.28	14.14	14.00
LT-2a	Domestic AEH	1,086.60	1,150.50	1,218.14	1,051.66	1,113.50	1,178.97
LT-2b	Pvt. Institutions	11.14	12.34	13.67	11.03	12.22	13.53
LT-3	Commercial - Applicable to areas coming under VPs	321.95	339.85	358.76	317.61	338.72	361.24
LT-4 (a)	IP sets - Less than 10 HP - General	2,528.81	2,566.58	2,604.92	2,528.81	2,566.58	2,604.92
LT-4 (b)	Irrigation Pump sets - More than 10 HP	0.69	0.71	0.73	0.77	0.78	0.80
LT-4 (c)	Private Horticulture Nurseries, Coffee & Tea Plantations	19.60	22.25	25.26	25.32	28.56	32.21
LT-5	Lt Industries	147.08	149.09	151.13	147.08	149.09	151.12
LT-6	Water Supply	317.75	377.73	449.03	292.79	348.06	413.76
LT-6	Street Lights	128.09	137.88	148.43	125.61	135.21	145.55
LT-7	Temporary Power Supply	19.50	21.74	24.25	19.50	21.94	24.69
	LT Total	**4,723.78**	**4,934.45**	**5,164.53**	**4,631.90**	**4,826.29**	**5,038.34**
HT-1	HT Water Supply	446.21	449.11	452.02	446.21	449.30	452.40
HT-2 (a)	HT Industries	875.34	884.09	892.93	875.34	937.89	1004.91
HT-2 (b)	HT Commercial	140.50	145.94	151.58	136.85	142.14	147.64

	Category	Proposed by CESC			Approved by Commission		
		FY20	FY21	FY22	FY20	FY21	FY22
HT-2(c)		62.95	69.76	77.31	59.23	65.63	72.73
HT-3(a) & (b)	HT Irrigation & LI Societies	74.31	84.13	95.26	102.90	116.50	131.90
HT-4	Res. Apartments - Applicable to Mangalore Municipal Corporation Area	4.32	4.37	4.41	4.23	4.23	4.23
HT-5	Temporary	2.80	2.98	3.16	2.80	2.97	3.15
	Auxiliary Consumption	5.13	5.24	5.35	5.13	5.24	5.35
HT Total		**1611.56**	**1,645.62**	**1682.02**	**1632.69**	**1723.90**	**1822.32**
Grand Total		**6,335.34**	**6,580.07**	**6,846.55**	**6,264.59**	**6,550.20**	**6,860.66**
	***Categories other than IP sets and BJ/KJ consuming less than or equal to 40 units/month./instln. (including Auxiliary Consumption)**	**3693.13**	**3889.59**	**4106.25**	**3638.33**	**3886.12**	**4158.19**
	IP sets and BJ/KJ consuming less than or equal to 40 units/month./instln.	**2,642.21**	**2,690.48**	**2,740.30**	**2,626.26**	**2,664.08**	**2,702.47**

5.2.3 Distribution Losses for FY20-22:

CESC's Submission:

CESC in its application has reported distribution loss of 13.20% for FY18 as against an approved loss level of 13.00%. The Commission in its Tariff Order dated 14th May, 2018 had fixed the target level of loss for FY19 at 12.75%. CESC in its filing has proposed to achieve the following loss levels during FY20-22:

TABLE – 5.8

Projected Distribution Loss-FY20-22 – CESC's Submission

Figures in %

Particulars	FY20	FY21	FY22
Projected Distribution loss	12.70	12.65	12.60

Commission's Analysis and Decisions:

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

TABLE – 5.9

Approved & Actual Distribution Loss FY14 to FY19

Figures in %

Particulars	FY14	FY15	FY16	FY17	FY18	FY19
Approved Distribution loss	15.50	15.00	14.50	13.25	13.00	12.75
Actual distribution loss	14.73	13.88	13.60	13.10	13.20	-

The Commission notes that, in the preceding years of FY17 & 18, the distribution loss has decreased by 0.40 percentage point (in the first two years of the control period FY17-19). Overall in the past five years (with base year as FY14), CESC has been able to achieve distribution loss reduction of 1.53% percentage point.

The distribution loss projections indicated by the CESC shows reduction from the existing levels of loss of 13.20% in FY18 to 12.60% in FY22. It is observed that, the Commission has been allowing capital expenditure as incurred by the CESC and has also allowed substantial capex for the ensuing control period. The majority of the capex like HVDS, E&I works, NJY, DTC metering, RAPDRP should enable CESC not only to strengthen its infrastructure but also reduce the distribution losses.

The loss reduction of 0.05% in each year of the control period as proposed by CESC is meager as compared to present actual loss levels.

Hence, in view of such substantial investment, the loss reduction proposed for the control period by CESC is meager, as compared to the current loss levels. In the light of the above discussion and based on the achievement made by the CESC 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 FY20-22

Figures in % Losses

Particulars	FY20	FY21	FY22
Upper limit	12.95	12.75	12.55
Average	**12.70**	**12.50**	**12.30**
Lower limit	12.45	12.25	12.05

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

CESC's submission:

The CESC 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 CESC

Particulars	As filed by CESC		
	FY 20	FY21	FY22
Sales (MU)	6,335.35	6,580.06	6,846.52
Distribution losses (%)	12.70	12.65	12.60
Energy at IF point (MU)	7,256.99	7,532.99	7,833.55
Transmission Losses (%)	3.19	3.17	3.15
Energy Required to meet the sales of CESC (MU)	**7,496.12**	**7,779.60**	**8,088.33**

5.2.5 Sources of Power:

CESC's submission;

CESC 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 being 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 Jurala 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 the CESC 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 Cr	Per unit Cost	Energy in MU	Cost in Rs Cr	Per unit Cost	Energy in MU	Cost in Rs Cr	Per unit Cost in Rs.
KPCL Hydel Energy	2,346.36	179.83	0.76	2,346.36	183.03	0.78	2,346.36	186.80	0.79
KPCL Thermal Energy	1,182.78	730.73	6.17	1,262.13	805.10	6.37	1,419.19	879.40	6.19
CGS Energy	2,261.11	1,060.02	4.68	2,400.87	1,101.74	4.59	2,677.84	1,213.96	4.53
UPCL	163.86	120.06	7.32	163.86	121.26	7.40	187.04	130.63	6.98
Renewable Energy:	1,371.08	550.84	4.01	1,431.79	568.53	3.97	1,373.79	543.95	3.95
Other State Hydel	12.66	7.02	5.54	12.66	7.02	5.54	12.66	7.02	5.54
PGCIL & POSOCO Charges	-	249.20	-	-	254.18	-	-	256.67	-
KPTCL Transmission & SLDC	-	473.54	-	-	556.54	-	-	660.72	-
Other sources	158.27	78.36	4.95	161.93	83.26	5.14	71.45	37.64	5.26
TOTAL	**7,496.12**	**3,449.59**	**4.60**	**7,779.60**	**3,680.66**	**4.73**	**8,088.33**	**3,916.80**	**4.84**

Commission's analysis and decisions:

The energy requirement of the ESCOMs, including CESC, 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 Crs.	Per unit Cost	Energy in MU	Cost in Rs Crs.	Per unit Cost	Energy in MU	Cost in Rs Crs.	Per unit Cost in Rs.
KPCL Hydel Energy	10,439.74	985.81	0.94	11,008.67	1,079.85	0.98	10,831.33	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	1,1295.27	6.60
CGS Energy	21,567.71	8,474.65	3.93	22,214.74	9,063.64	4.08	24,439.19	1,0086.79	4.13
UPCL	4,352.26	2681.70	6.16	4648	2911.12	6.26	4800	3096.02	6.45
Renewable Energy:	15,445.47	6,385.55	4.13	16,504.81	6741.06	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	3,931.65	1,531.76	3.89	2646.59	929.07	3.51
PGCIL & POSOCO Charges	-	1,823.47	-	-	2,050.21	-	-	2,184.35	-
KPTCL Transmission & SLDC	-	3,524.65	-	-	3,670.96	-	-	3,939.78	-
TOTAL	**70,905.56**	**34,095.44**	**4.8085**	**73,971.94**	**37,365.78**	**5.0513**	**77,192.34**	**39,684.74**	**5.1410**

5.2.6 Power Purchase Cost & Transmission charges:

CESC's Submission

CESC has submitted the Power Purchase requirement along with the cost including the transmission charges and SLDC charges, in the D-1 Format. The CESC has sought approval of the Commission for purchase of power to an extent of 7,496.12MU, 7,779.60MU and 8,088.33 MU at a cost of Rs. 3,449.59 Crores, Rs. 3,680.66 Crores and Rs. 3,916.80 Crores for the control period years of FY20, FY21 and FY22 respectively.

As regards the cost of power, the CESC 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 CESC.

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 CESC, for the control period FY20 to FY22, is worked out as under:

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

Particulars	FY 20	FY21	FY22
Sales (MU)	6,264.59	6,550.20	6,860.66
Distribution losses (%)	12.70	12.50	12.30
Energy at IF point (MU)	7,175.93	7,485.94	7,822.87
Transmission Losses (%)	3.162	3.132	3.102
Energy Required to meet the sales of CESC (MU)	**7,410.246**	**7,727.983**	**8,073.307**

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 and also reckoned based on 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 CESC 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 CESC for the control period FY20 to FY22 is shown the following:

TABLE-5.16

ABSTRACT OF POWER PURCHASE APPROVED FOR CESC 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	Per unit Cost	Energy in MU	Cost in Rs Cr	Per unit Cost	Energy in MU	Cost in Rs Cr	Per unit Cost in Rs.
KPCL Hydel Energy	2,739.46	273.94	1.00	2,320.61	232.14	1.00	2,274.58	234.26	1.03
KPCL Thermal Energy	670.30	411.40	6.14	1,048.44	761.98	7.27	1,497.11	990.49	6.62
CGS Energy	1,908.74	750.01	3.93	2,054.35	838.18	4.08	2,264.36	934.57	4.13
UPCL	437.42	269.52	6.16	429.83	269.21	6.26	321.78	207.55	6.45
Renewable Energy:	1,196.33	536.33	4.48	1,401.92	601.18	4.28	1,398.34	600.99	4.29
Other State Hydel	9.61	5.34	5.56	24.62	14.35	5.83	10.93	6.72	6.15
Others	448.39	174.01	3.88	448.21	173.99	3.88	306.20	107.39	3.50
PGCIL & POSOCO Charges	-	206.06	-	-	150.58	-	-	142.13	-
KPTCL Transmission & SLDC	-	390.13	-	-	413.85	-	-	452.80	-
TOTAL	**7,410.246**	**3,016.74**	**4.071**	**7,727.983**	**3,455.46**	**4.47**	**8,073.307**	**3,676.91**	**4.554**

The CESC 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	7,410.246	3,016.74
FY21	7,727.983	3,455.46
FY22	8,073.307	3,676.91

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

5.2.7 Renewable Purchase Obligation (RPO) target for FY20-22:

a. Non-Solar RPO:

The Commission vide its KERC (Procurement of Energy from Renewable Sources) (Sixth Amendment) Regulations, 2015 has specified a non-solar RPO target of 12% for the fifth control period.

The Commission in its preliminary observations had directed CESC to furnish the estimates for complying with solar and non-solar RPO for FY 2018-19 to FY2021-22, including any cost implication for purchasing RECs, if any.

CESC has submitted that it will be able to achieve Solar –RPO targets and the non-solar RPO targets for FY19 to FY21, only after considering the excess solar energy available in that year. CESC further submitted that, for FY22, there might be a shortfall in achieving Non-solar RPO to an extent of 149.63 MU even after considering excess solar energy available after meeting Solar RPO. Hence, CESC has requested the Commission to allow carry forward of the excess solar energy of 170.23 MU available for meeting the Non-Solar RPO targets.

As the prevailing Regulations does not allow carry forward, CESC 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

As regards solar RPO compliance, CESC has submitted that it will be able to achieve the specified solar target of 7.25%, 8.50% and 10.50% for FY20, FY21 and FY22, respectively.

5.2.8 O & M Expenses for FY20-22:

CESC's Proposal:

The CESC in its application has requested the Commission to consider the projected O&M expenses based on:

a. Weighted inflation index of CPI and WPI at 7.50% for the control period.
b. Consumer growth index at 4.22%, 4.50% and 4.02% for FY20, FY21 & FY22 respectively.
c. Efficiency factor of 2.00% for the control period.
d. O&M cost increase proposed are 9.72% for FY20, 10.00% for FY21 and 9.52% for FY22.

Considering these indices, CESC has projected the R& M expenses, A&G expenses and employee cost for the control period as detailed below:

TABLE-5.18

O &M Expenses - CESC's Proposal

Amount in Rs. Crores

Sl. No.	Particulars	FY20	FY21	FY22
1	Employee cost	560.60	550.39	602.81
2	Administrative and General expenses	101.18	111.30	121.90
3	Repairs and Maintenance expenses	60.78	66.86	73.23
	Total O & M Expenses	**722.56**	**728.55**	**797.94**

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 operate these expenses within the approved values.

The Commission had observed that CESC in its filings of ARR for FY20-22 has claimed Rs.82.50 Crores, Rs.90.75 Crores and Rs.99.39 Crores respectively towards terminal benefits of contribution to P&G Trust under employee cost. The Commission directed CESC to furnish the computation sheet for the same along with the relevant Actuarial Valuation Report. Further, CESC was directed to furnish the computation sheet for O & M expenses.

CESC in their replies have furnished the KPTCL's and ESCOMs pension and gratuity Trust's Order copy in the matter. The calculation sheet for O & M expenses is also furnished.

The Commission has noted the actual O&M expenses of Rs.549.57 Crores as per the audited accounts of CESC for FY18. This amount, also includes the 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.549.57 Crores 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 projected O&M expenses for the base year in FY19. 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 on 3 year CAGR and inflation rate index based on the methodology followed by the CERC.

The Commission has computed the O & M expenses for FY20-22 duly considering the actual O & M expenses of FY18 as per the audited accounts (being the latest data available as per the audited accounts) to arrive at the O & M expenses for base year i.e. FY19. The actual O& M expenses for FY18 are Rs.549.57 Crores, including pay revision arrears and contribution to P & G trust. 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 – 5.19

Computation of Inflation Index for FY20-22

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
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							**8.2760**

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

a) The actual O & M expenses incurred as per the audited accounts for FY18 inclusive of contribution to the Pension and Gratuity Trust and pay revision arrears, to arrive at the base rate of O&M expenses for FY19.
b) The three year compounded annual growth rate (CAGR) of the number of installations considering the actual number of installations as per the audited accounts upto FY18 and as projected by the Commission for FY19-FY22, at 3.30%, 3.48% and 3.74% respectively for FY20-22.
c) The weighted inflation index (WII) at 8.276% as computed above.
d) Efficiency factor at 2% as considered in the earlier two control periods.

The above said parameters are computed duly considering the same methodology as followed in the earlier 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 due to any revision of pay scales should reflect in improved employee productivity and efficiency for the betterment of services to the consumers, 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. **Hence, the Commission expects that with the increase in the emoluments, the improved productivity of the employees would be reflected in terms of increased sales, reduction of losses and improved revenue collections**.

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

TABLE – 5.20

Approved O & M expenses for FY20-22

Particulars	FY19	FY20	FY21	FY22
No. of Installations		32,68,217	33,90,286	35,17,415
CGI based on 3 Year CAGR in %		3.30%	3.48%	3.74%
Inflation index in %		8.2760%	8.2760%	8.2760%
Base Year O&M expenses (projected as per actuals of FY18 of Rs.549.57 Crores) in Rs.Crores.	602.88			
O&M Index= 0&M (t-1)*(1+WII+CGI-X) Rs.in Crores.		660.61	725.05	797.64

Since, the base year data of O & M expense for FY19 also includes the contribution to the P & G Trust and pay revision arrears amount, the Commission has not considered allowing the same separately for the control period for FY20-22.

Thus, the Commission decides to approve O&M expenses of Rs.660.61. Crores for FY20, Rs.725.05 Crores for FY21 and Rs.797.64 Crores for FY22.

5.2.9 Depreciation:

CESC's Proposal:

The CESC in its filing has claimed an amount of Rs.195.03 Crores, Rs.230.96 Crores and Rs.267.88 Crores respectively, without giving the details of computation of the net depreciation for the control period for FY20-22. CESC has also considered and deducted the depreciation on assets created out of consumer contribution grants of Rs.51.01 Crores, Rs.56.66 Crores and 62.21 Crores for FY 20-22.

The CESC, in its application has claimed the depreciation for the control period as follows:

TABLE – 5.21
Depreciation-FY20-22- CESC's Proposal

Amount in Rs. Crores

Particulars	FY20	FY21	FY22
	Deprcn.	**Deprcn.**	**Deprcn.**
Land & Right	0.03	0.03	0.03
Buildings	4.51	5.27	6.05
Plant & Machinery	39.00	45.60	52.33
Line, Cable Network	199.82	233.59	268.07
Vehicles	0.61	0.71	0.81
Civil	0.21	0.24	0.28
Other Civil	0.06	0.07	0.08
Furniture	1.17	1.36	1.56
Office Equipment	0.64	0.75	0.86
Total	**246.04**	**287.62**	**330.07**
Less: Depreciation on assets created out of consumer contributions/ grants	-51.01	-56.66	-62.21
Net depreciation	**195.03**	**230.96**	**267.86**

Commission's analysis and decision:

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

a) The actual rate of depreciation of category wise assets is determined considering the depreciation and gross block of opening and closing balances of fixed assets as per the audited accounts for FY18.

b) This actual rate of depreciation is considered on gross block of average of opening and closing balance of fixed assets projections on the approved capex and categorization of assets thereon by the Commission for FY19 to FY22.

c) The depreciation on account of assets created out of consumers' contribution / grants are considered (deducted) based on the opening and closing balance of such assets duly considering the addition of assets as 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 as follows:

TABLE – 5.22

Approved Depreciation for FY20-22

Amount in Rs. Crores

Particulars	FY20	FY21	FY22
	Deprcn.	Deprcn.	Deprcn.
Buildings	3.43	3.74	4.08
Civil	0.23	0.28	0.35
Other Civil	0.07	0.10	0.12
Plant & Machinery	53.85	59.95	67.14
Line, Cable Network	171.10	194.76	215.76
Vehicles	0.19	0.23	0.29

Particulars	FY20	FY21	FY22
	Deprcn.	Deprcn.	Deprcn.
Furniture	2.60	2.82	3.06
Office Equipment	1.67	1.89	2.07
Intangible Assets	3.59	4.11	4.64
Total	**236.72**	**267.87**	**297.50**
Less: Depreciation on assets created out of grants/contribution	-71.02	-80.36	-89.25
Allowable net depreciation	**165.71**	**187.51**	**208.25**

Thus, the Commission decides to approve an amount of Rs.165.71Crores, Rs.187.51 Crores and Rs.208.25 Crores towards net depreciation for FY20, FY21 and FY21 respectively.

5.2.10 Interest on Capital Loans:

CESC's proposal:

CESC in its application has stated that, the Interest on capital loan for the control period have been computed based on the following assumptions:

- Funding of CAPEX is based on 80% from borrowings and 20% from internal resources.
- Interest on the existing loan balances are considered as per the terms and conditions of each loan.
- Interest rate in respect of the new loans are considered at 10.5% for REC/PFC loans. For other loans from commercial banks the interest rate considered is on the basis of the prevailing Base rate plus 1% to 1.75% spread.

CESC in its application has furnished means of sources of fund to meet the capex envisaged for FY20-22 as follows:

TABLE :5.23

Sources of fund to capex (Amount in Rs. Crores)

Particulars	FY20	FY21	FY22
Capex with GOI / GoK grant	298.06	307.75	250.75
Net Borrowings	463.86	527.75	561.50
Capital Expenditure likely to be incurred	761.92	835.50	812.25

Based on the above assumptions. CESC has requested to approve interest on capital loans for FY20-22 as follows:

TABLE – 5.24

Interest on Capital Loans– CESC's Proposal

Amount in Rs. Crores

Particulars	FY 20	FY 21	FY 22
Opening Balance of loans	1,546.67	1,788.20	2,099.03
Receipts-New Loans	463.86	527.75	561.50
Loan Repayment	-222.33	-216.92	-258.25
Closing Balance of loans	1,788.20	2,099.03	2,402.28
Interest on Capital loan	**175.19**	**202.43**	**234.34**

Commission's analysis and decision:

The Commission has noted the capex and capital loan proposals of the CESC for FY20-22. As discussed in the preceding paragraphs of this Chapter, considering the capex amount recognized by the Commission for the approval of ARR for the control period, the requirement of loan capital is Rs.350 Crores, Rs.300 Crores and Rs.300 Crores for FY20, FY21 and FY22 respectively. Further, the Commission has considered the repayment of loan at Rs.147.09 Crores, Rs.168.63 Crores and Rs.190.17 Crores for FY20, FY21 and FY22 respectively.

As per the audited accounts and as per the APR of FY18, the CESC had incurred interest on capital loan at a weighted average rate of interest of 10.53% per annum. This rate of interest is considered for the existing loan balances for which interest has to be factored during FY19. Further, the Commission for the years FY20 and FY22, the weighted average rate of interest of the preceding year has been considered on the existing loan balances. The Commission notes that while furnishing the source of fund to the capex, CESC has not reckoned the internal resources and the substantial amount of works to be executed under consumer contributions and grants. The Commission has considered the new loan capital duly factoring the availability of capital grants from GOI / GoK internal resources and consumer contributions on the proposed works as made out by CESC for FY20-22. **CESC in its filing has proposed capex achievement amount of Rs. 761.92 Crores for FY20, Rs. 835.50 Crores for FY21 and Rs. 812.25 Crores for FY22. As indicated in pre-para of this chapter, the Commission, in order to avoid the front loading of interest and depreciation on the capex in the retail supply tariff, decides to consider a reasonable capex of Rs.700 Crores, Rs.650 Crores and Rs.650 Crores for FY20, FY21 and FY22 respectively. As against this, after deducting cost of proposed works to be met with capital grants from GOI / GoK, internal resources, and the consumer contribution towards capital works, the balance of capital expenditure likely to be met by the CESC, by raising capital loan, the Commission decides to reckon Rs.350 crores, Rs.300 Crores and Rs.300 Crores as capital loan towards the approved capex for FY20-22 respectively. The Commission has considered new loans, in accordance with the debt equity ratio of 70:30 as per the MYT Regulations.**

The Commission notes the rate of interest on the new capital loans proposed by CESC for the Control Period FY20-22. As per the data furnished by the CESC, the weighted average interest on the average loans of both existing loan balance and new loan is proposed at a rate of 10.41% to 10.51% for FY20-22. The actual weighted average rates are 10.53% for FY18 and 10.61% for FY19. The Commission further notes that the present interest rate being charged by commercial banks and financial institutions are changed on the basis marginal cost of fund based Lending Rates (MCLR). These rates are comparatively lower than the bank rates considered earlier. Further in the current economic favorable scenario 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 CESC can avail capital loan at a competitive interest rate.

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 an 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 APR and revision of ARR of the relevant years of the control period.

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

TABLE – 5.25

Approved Interest on Capital Loans for FY20-22

Amount in Rs. Crores

Particulars	FY20	FY21	FY22
Opening Balance of Capital Loans	1,460.70	1,663.61	1,794.98
Add: New Loans borrowed	350.00	300.00	300.00
Less: Repayment of Loans	-147.09	-168.63	-190.17
Total loan at the end of the year	1,663.61	1,794.98	1,904.81
Average Loan	**1,562.15**	**1,729.29**	**1,849.89**
Interest Rate on existing loan in%	10.61%	10.65%	10.68%
Interest Rate on new loans in %	11.00%	11.00%	11.00%
Allowable Interest on long term loans	**166.37**	**184.69**	**198.05**
Weighted average rate of interest based on the allowable interest on long term loans in %	10.65%	10.68%	10.71%

Thus, the Commission decides to approve interest on capital loans of Rs166.37 Crores, Rs184.69 Crores and Rs198.05 Crores for FY20, FY21 and FY22 respectively.

5.2.11 Interest on Working Capital:

CESC's proposal:

CESC has submitted that it has calculated the interest on working capital on normative basis. CESC, in its replies to the Commission observations, has furnished the details of short term and overdraft proposed to be availed and interest rate and amount of interest thereon during FY20-22. CESC has claimed interest on working capital as follows:

TABLE – 5.26

Interest on Working Capital for FY 20-22

Amount in Rs. Crores

Particulars	FY20	FY21	FY22
Interest on Working Capital	58.33	61.09	65.03

Commission's analysis and decision:

As per the norms specified under the MYT Regulations, the Commission has computed the interest on working capital which consists of one-month O & M expenses, 1% of Opening GFA and two month's revenue.

The Commission notes that CESC has claimed the working capital interest rate at 8.15% to 12.785% per annum. The present interest rates charged by the commercial banks and financial institutions are 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, CESC needs to initiate financial prudence measures in availing working capital, so that the interest burden on its consumers is reduced. As discussed earlier, the present SBI MCLR for loan with tenure of One year is 8.55%. Therefore, the Commission by taking the downward trend in the internal rates as per the provisions of the MYT Regulations, by the reckoning the present MCLR with the spread of basis points decides to consider the interest in working capital at 11% per annum for FY20-22.

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

TABLE – 5.27
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.	55.05	60.42	66.47
Opening GFA	4216.30	4828.14	5410.44
Stores, materials and supplies - 1% of Opening balance of GFA	42.16	48.28	54.10
One-sixth of the Revenue	689.29	755.56	791.37
Total Working Capital	786.50	864.27	911.95
Rate of Interest (% p.a.)	11.00%	11.00%	11.00%
Interest on Working Capital	**86.51**	**95.07**	**100.31**

Thus, the Commission decides to approve the interest on working capital of Rs.86.51 Crores, Rs.95.07 Crores and Rs.100.31 Crores for FY20, FY21 and FY22 respectively.

5.2.12 Interest on Consumer Deposit:

CESC's proposal:

CESC in its filing and as per the replies to the Commission observations, has claimed interest on consumer security deposit at the Bank rate of 6.75% on the deposit amount of Rs.727.03 Crores, Rs.799.74 Crores and Rs.879.71 Crores for FY20-22 as follows:

TABLE – 5.28
Interest on Consumer Security Deposits for FY20-22- CESC's Proposal

Amount in Rs. Crores

Particulars	FY20	FY21	FY22
Interest on Consumer Security Deposit	42.38	46.62	51.28

Commission's analysis and decision:

The Commission in its preliminary observation on the filing CESC directed CESC to furnish the computation sheet for having claimed the interest on consumer deposit for FY18 to FY22., which is furnished.

In accordance with the provisions of the KERC (Interest on Security Deposit) Regulations 2005, the interest rate to be allowed on the Consumer Security

Deposits is the Bank Rate prevailing on the 1st of April of the financial year for which interest is due. As per Reserve Bank of India Notification dated 7th 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.45 Crores for each of the years of the control period as the additional security deposit likely to be collected for projected during the Control period FY20-22. Thus the interest on consumer deposits for FY20-22 is computed as follows:

TABLE – 5.29

Approved Interest on Consumer Security Deposits for FY20-22

Amount in Rs. Crores

Interest on consumer security deposits			
Particulars	**FY20**	**FY21**	**FY22**
Opening balance of consumer deposits	640.85	685.85	730.85
Growth Rate of deposits over previous year	45.00	45.00	45.00
Closing balance of consumer deposits	685.85	730.85	775.85
Average consumer deposit	663.35	708.35	753.35
Rate of Interest at bank rate to be allowed as per regulations	6.50%	6.50%	6.50%
Allowable Interest on Consumer Security Deposit	**43.12**	**46.04**	**48.97**

Thus, the Commission decides to approve interest on consumer deposits at Rs.43.12 Crores, Rs.46.04 Crores and Rs.48.97 Crores for FY20, FY21 and FY22 respectively.

5.2.13 Interest and other expenses Capitalised:

CESC has claimed an amount of Rs.6.75 Crores, Rs.5.50 Crores and Rs.7.00 Crores towards capitalization of interest and other expenses during FY20, FY21 & FY22 respectively.

Considering the capital expenditure incurred and amounts capitalized in the previous years, the Commission decides to allow capitalization of interest and other expenses, as proposed by CESC, for the control period FY20-22.

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

TABLE – 5.30

Approved Interest and finance charges for FY20-22

Amount in Rs. Crores

Particulars	FY20	FY21	FY22
Interest on Loan Capital	166.37	184.69	198.05
Interest on Working Capital	86.51	95.07	100.31
Interest on Consumers Deposit	43.12	46.04	48.97
Less: Interest & other expenses capitalised	-6.75	-5.50	-7.00
Total Interest & Finance Charges	**289.25**	**320.30**	**340.33**

5.2.14 Other Debits:

CESC in its application has claimed an amount of Rs.15.66 Crores, Rs.16.66 Crores and Rs.17.66 Crores towards other debits for FY20, FY21 & FY22 respectively.

The Commission, as per the provision of MYT Regulations, as amended, is not allowing the other debits as claimed by the CESC, as the same cannot be estimated beforehand. However, such expenses, as per the provision of MYT Regulations, would be considered as per the actual expenses as disclosed in the audited accounts, for the relevant years, at the time of APR.

5.2.15 Net Prior Period Credit / Charges:

CESC in its application has claimed net prior period credit/charges of Rs. 2.00 Crores each year for FY20, FY21 & FY22 respectively.

The Commission has not been considering the projections for net prior period credit / charges for the reason that, the same cannot be estimated beforehand. The Commission as per the provisions of the MYT Regulations and as amended, has not allowed the same in the ARR for the control period. However, such expenses would be considered as per the actual expenses disclosed in audited accounts for the relevant years, at the time of APR.

5.2.16 Return on Equity:

CESC's proposal:

CESC in its application has not claimed the Return on Equity for having estimated negative net-worth for the control period FY20-22.

Commission's analysis and decision:

The Commission has considered the actual amount of share capital, share deposits and the accumulated surplus / deficit under reserve & surplus the as per the audited accounts for FY18 and the additional equity support 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 amended provisions of the MYT Regulations, the Return on Equity is to be computed based on the opening balances of share capital, share deposits and the accumulated balances of surplus / deficit under reserves and surplus account. Further an amount of Rs.23.00 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.

The Commission, in compliance with the orders of the Hon'ble ATE in Appeal No.46/2014 wherein it is directed to indicate the opening and closing balances of gross fixed assets along with break-up of equity and loan component in the Tariff Order henceforth, the details of GFA, debt and equity (net worth) for FY20-22 are as follows:

TABLE – 5.31

Status of Debt Equity Ratio for FY20-22

Amount in Rs. Crores

Year	Particulars	GFA	Debt	Equity (Net worth)	Normative Debt @ 70% of GFA	Normative Equity @ 30% of GFA	%age of actual debt on GFA	%age of actual equity on GFA
FY20	Opening Balance	4,216.30	1,460.70	254.31	2,951.41	1,264.89	34.64	6.03
	Closing Balance	4,828.14	1,663.61	254.31	3,379.70	1,448.44	34.46	5.27
FY21	Opening Balance	4,828.14	1,663.61	254.31	3,379.70	1,448.44	34.46	5.27
	Closing Balance	5,410.44	1,794.98	254.31	3,787.31	1,623.13	33.18	4.70
FY22	Opening Balance	5,410.44	1,794.98	254.31	3,787.31	1,623.13	33.18	4.70
	Closing Balance	5,959.73	1,904.81	254.31	4,171.81	1,787.92	31.96	4.27

From the above table it is evident that the debt equity amounts lie within the normative debt equity ratio of 70:30 on the opening and closing balances of projected GFA for each year of the control period. Further, the Commission will review the same during the Annual Performance Review for each year based on the actual data as per the audited accounts.

Based on the above, the computation of allowable Return on Equity for FY20-22 are as follows:

TABLE – 5.32

Return on Equity for FY20-22

Amount in Rs. Crores

Particulars	FY20	FY21	FY22
OB - Paid Up Share Capital	720.84	720.84	720.84
OB - Share Deposit	167.53	167.53	167.53
OB - Reserves and Surplus	-611.06	-611.06	-611.06
Less: Recapitalized Security Deposit	-23.00	-23.00	-23.00
Total Equity	254.31	254.31	254.31
RoE at 15.5%	39.42	39.42	39.42
RoE at 15.5% Grossed up with applicable MAT (For FY20-22=19.7575%)	50.25	50.25	50.25

Thus, the Commission decides to approve Return on Equity grossed up with MAT at 21.5488% at Rs. 50.25 Crores for each year of the control period for FY20-22. This is subject to truing up as per the actual equity and tax paid for the relevant year as per the audited accounts for FY20-22.

5.2.17 Other Income:

CESC's proposal:

CESC has claimed other income for the control period by projecting 5% to15% increase over the previous year based on actuals as per audited accounts in FY18, for FY 20-22 as detailed below:

TABLE – 5.33

Other Income – CESC's Proposal

Amount in Rs. Crores

Particulars	FY20	FY21	FY22
Other Income	48.23	50.65	53.18

Commission's analysis and decision:

The Commission notes that the other income received by the CESC 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. The actual 'other income' earned by CESC as per the audited accounts for FY18 is Rs.45.68 Crores.

Based on the other income earned by the CESC in the previous year, the Commission decides to consider the CESC's projected amount as the other income for the control period FY 20-22.

Thus the, Commission decides to consider the other income of Rs. 48.23 Crores for FY20, Rs. 50.65 Crores for FY21 and Rs. 53.18 Crores for FY22.

5.2.18 Fund towards Consumer Relations / Consumer Education:

CESC in its application has not claimed the fund towards consumer relation education for the control period FY20-22.

The Commission has been allowing an amount of Rs.0.50 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.0.50 Crore for each year of the control period FY20-22 towards meeting the expenditure on consumer relations / consumer education.

The Commission directs CESC 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 – 5.34
Approved ARR for FY20-22

Amount in Rs. Crores

Sl. No	Particulars	FY20	FY21	FY22
		As Appd.	As Appd.	As Appd.
1	Energy @ Gen Bus in MU	7410.25	7727.98	8073.31
2	Transmission Losses in %	3.162%	3.132%	3.102%
3	Energy @ Interface in MU	7175.93	7485.94	7822.87
4	Distribution Losses in %	12.70%	12.50%	12.30%
5	**Sales in MU:**			
6	Sales to other than IP & BJ/KJ	3,638.33	3,886.12	4,158.19
7	Sales to BJ/KJ	97.45	97.50	97.55
8	Sales to IP	2,528.81	2,566.58	2,604.92
9	**Total Sales in MU**	**6,264.59**	**6,550.20**	**6,860.66**
10	**Revenue at existing tariff**			
11	Revenue from tariff and Misc. Charges	2682.78	-	-
12	Tariff Subsidy in BJ/KJ	62.08	-	-
13	Tariff Subsidy in IP	1390.85	-	-
14	**Total Existing Revenue**	**4135.71**	**-**	**-**
15	**Expenditure**			
16	Power Purchase Cost	2,626.61	3,041.61	3,224.11
17	Transmission charges of KPTCL	388.42	410.94	449.43
18	SLDC Charges	1.71	2.91	3.37
19	**Power Purchase Cost including cost of transmission & SLDC Charges**	**3,016.74**	**3,455.46**	**3,676.91**
20	Employee Cost			
21	Repairs & Maintenance			
22	Admin & General Expenses			
23	**Total O&M Expenses**	**660.61**	**725.05**	**797.64**
24	Depreciation	165.71	187.51	208.25
25	Interest & Finance charges:			
26	Interest on Capital Loans	166.37	184.69	198.05
27	Interest on Working capital loans	86.51	95.07	100.31
28	Interest on belated payment on PP Cost	0.00	0.00	0.00
29	Interest on consumer security deposits	43.12	46.04	48.97
30	Other Interest & Finance charges	0.00	0.00	0.00
31	Less: interest & other expenses capitalised	-6.75	-5.50	-7.00
32	**Net total Interest & Finance charges**	**289.25**	**320.30**	**340.33**
33	Other Debits	0.00	0.00	0.00
34	Net Prior Period Debit/Credit	0.00	0.00	0.00

Sl. No	Particulars	FY20	FY21	FY22
		As Appd.	As Appd.	As Appd.
35	Return on Equity with MAT	50.25	50.25	50.25
36	Funds towards Consumer Relations/Consumer Education	0.50	0.50	0.50
37	Other Income	-48.23	-50.65	-53.18
38	**ARR**	**4,134.82**	**4,688.42**	**5,020.70**
39	Deficit for FY18 carried forward	207.62	-	-
40	**Net ARR**	**4,342.44**	**4,688.42**	**5,020.70**

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

CESC in its application has proposed the same ratio as being adopted for the previous control period for segregation of consolidated ARR into ARR for Distribution Business and ARR for Retail Supply as follows:

TABLE – 5.35

Approved Segregation of ARR – FY20-22- CESC's Proposal

Particulars	Distribution Business	Retail Supply Business
Power Purchase	0%	100%
Repairs & Maintenance	91%	9%
Employee costs	49%	51%
A&G expenses	52%	48%
Depreciation	90%	10%
Interest and Finance charges	77%	23%
Other debits	24%	76%
Prior period expenses	32%	68%
RoE	75%	25%

Commission's Analysis and Decisions:

The Commission notes that CESC has retained the same ratio as being adopted for the previous control period for segregation of consolidated ARR into ARR for Distribution Business and ARR for Retail Supply and has not justified its proposal. In the absence of any justified proposal, the Commission decides to continue with the existing ratio of segregation of ARR as detailed in the following table:

TABLE – 5.36

Basis of Segregation of ARR – FY20-22

Particulars	Distribution Business	Retail Supply Business
Power Purchase	0%	100%
O&M	51%	49%
Depreciation	84%	16%
Interest on Loans	100%	0%
Interest on Consumer Deposits	0%	100%
RoE	75%	25%
GFA	84%	16%
Non-Tariff Income	2%	98%

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

TABLE – 5.37

APPROVED ARR FOR DISTRIBUTION BUSINESS – FY20

Amount in Rs. Crores

Sl. No	Particulars	FY20
1	R&M Expenses	336.91
2	Employee Expenses	
3	A&G Expenses	
4	Depreciation	139.19
5	Interest & Finance Charges	
6	Interest on Capital Loans	166.37
7	Interest on Working capital loans	8.50
8	Interest on consumer security deposits	0.00
9	Other Interest & Finance charges	0.00
10	Less: interest & other expenses capitalised	-6.75
11	**Total**	**644.22**
12	RoE	37.68
13	Less: Other Income	-0.96
	NET ARR	**680.94**

TABLE – 5.38

APPROVED ARR FOR RETAIL SUPPLY BUSINESS – FY20

Amount in Rs. Crores

Sl. No	Particulars	FY20
1	Power Purchase	3016.74
3	R&M Expenses	323.70
4	Employee Expenses	
5	A&G Expenses	
6	Depreciation	26.51
7	Interest & Finance Charges	0.00
8	Interest on Capital Loans	0.00
9	Interest on Working capital loans	78.01
10	Interest on consumer security deposits	43.12
11	Other Interest & Finance charges	0.00
12	Less: interest & other expenses capitalised	0.00
13	Other (Misc.)-net prior period credit	0.00
14	**Total**	**3488.09**
15	ROE	12.56
16	Other Income	-47.27
17	Fund towards Consumer Relations / Consumer Education	0.50
	NET ARR	**3,453.88**

5.5 Gap in Revenue for FY20:

As discussed above, the Commission decides to approve the Annual Revenue Requirement (ARR) of CESC for its operations in FY20 at Rs.4342.44 Crores as against CESC's application proposing an ARR of Rs. 4828.79 Crores. The approved ARR includes an amount of Rs. 207.62 Crores which is determined as the deficit as per APR for FY18 as discussed in Chapter-4.

Based on the existing retail supply tariff, the total revenue from sale of power will be Rs.4135.71 Crores, which will fall short of the approved ARR by Rs.206.73 Crores for FY20. This gap has to be recovered by revision of retail supply tariff in FY20. The Commission also decides the approve the Annual Revenue Requirement (ARR) of CESC at Rs.4688.42 Crores and Rs.5020.70 Crores as against the its proposal for approval of ARR of Rs.4912.83 Crores and Rs.5292.74 Crores for FY21 and FY22 respectively.

The approved net ARR, gap in revenue for FY20 and the average cost of supply for FY20 are shown the following table:

TABLE – 5.39

Revenue gap for FY20

Particulars	FY20
Net ARR including carry forward surplus of FY18 (Rs. Crores)	4,342.44
Approved sales (MU)	6264.59
Average cost of supply for FY20 (Rs./unit)	**6.93**
Revenue at existing tariff (Rs. Crores)	4,135.71
Gap in revenue for FY20 (Rs. Crores)	**206.73**

The determination of revised retail supply tariff on the basis of the above approved ARR is detailed in Chapter-6 of this Order.