

CHAPTER - 3

ANNUAL REVENUE REQUIREMENT FOR FY20-22

3.0 Annual Revenue Requirement for FY20-22:

The Hukeri Rural Electric Co-operative Society (HRECS), in its application dated 27th November, 2018, has sought approval of ARR for FY20 to FY22 and retail supply tariff for FY20. The summary of the proposed revised ARR for FY20-22 is as follows:

TABLE – 3.1
Revised ARR for FY20-HRECS's Submission

Particulars	Amount in Rs. Lakhs		
	As per filing		
	FY20	FY21	FY22
Power Purchase in MU (Including AEQUS SEZ)	-	-	-
Energy @ IF Point including AEQUS SEZ in MU	396.22	433.99	479.43
Sales to other than IP & BJ/KJ in MU	112.47	132.46	158.76
Sales to BJ/KJ in MU	4.06	4.27	4.87
Sales to IP in MU	222.39	234.53	246.58
Total Sales	338.92	371.26	410.21
Distribution Loss in %	14.46%	14.45%	14.44%
Revenue from Sale of power and Miscellaneous charges:			
Revenue from Sale to other than IP & BJ/KJ	7395.65	8664.4	10340.05
Revenue from Sale to BJ/KJ	257.41	270.62	284.50
Revenue from Sale to IP	13,454.40	14,189.33	14917.88
Total Revenue	21107.45	23124.35	25542.43
Expenditure:			
Power Purchase Cost	19,806.92	22,378.33	25669.19
Employee Expenses	896.31	994.90	1103.72
R&M Expenses	283.63	297.81	312.70
A&G Expenses	121.64	127.73	134.14
Total O&M Expenses	1301.58	1420.44	1550.56
Depreciation	171.14	179.03	188.74
Interest & Financing Charges:			
Interest on Loan Capital	55.95	54.20	53.49

Particulars	As per filing		
	FY20	FY21	FY22
Interest on Working Capital	415.13	454.62	500.74
Interest on Consumer Deposit	90.80	96.08	101.36
Less: Expenses Capitalized	-0.00	-0.00	-0.00
Other Debits/Extraordinary Items	0.00	0.00	0.00
Net Prior Period Credit	0.00	0.00	0.00
RoE	158.07	165.97	174.27
Taxes	0.00	0.00	0.00
Other Income	-343.49	-343.57	-343.65
ARR	21656.10	24405.10	27894.70
Deficit of FY18 carried forward	1782.41	0.00	0.00
Total ARR	23438.51	24405.10	27894.70
Gap in Revenue for FY20	2331.06	-1280.75	-2352.27

The HRECS has requested the Commission to approve the Annual Revenue Requirement of Rs. 23,438.51 lakhs for FY20 including the carry forward gap in revenue of Rs. 1,782.41 lakhs for FY18 and Rs. 24,405.10 Lakhs and Rs. 27,894.70 lakhs for FY21 and FY22 respectively. Considering the revenue realization of Rs. 21,107.45 lakhs at the existing tariff, the overall gap in revenue for FY20 is projected at Rs. 2,331.06 lakhs. The HRECS has claimed increase in retail supply tariff by 113 paise per unit, for all the category of consumers, as against the actual per unit deficit of 69 paise.

3.1 Annual Revenue Requirement for FY18 & FY19:

As discussed in the preceding Chapter of this Order, the Commission, as per the provision of the MYT Regulations, has carried out the Annual Performance Review for FY18 based on the audited accounts furnished by the HRECS. Pursuant to the same, revenue deficit of Rs.1595.24 lakhs shall have to be carried forward to the revised ARR of FY20.

Since the audited financial statements for the year FY19 are yet to be finalized and furnished by the HRECS, the Commission decides to take up the APR of FY19 during revision of ARR / Tariff for FY21.

3.1.1. Capital expenditure of HRECS for FY20-22:**HRECS Proposal:****Proposed Capex of FY20 to FY22:**

The HRECS has proposed capex of Rs.1515.60 Lakhs, Rs.634.78 Lakhs and Rs.717.39 Lakhs for FY20, FY21 and FY22 respectively. The works proposed for the control period are as follows:

- a) E & I Works
- b) Service Connection
- c) Govt. of India sponsored schemes Deena Dayal Upadya Gram Jyothi Yojane (DDUGVY) and Saubhagya Scheme.

The breakup of expenditure proposed for various categories of works for the control period as shown below:

TABLE-3.2
Proposed Capex for the Control Period FY20-22

Sl. No	Particulars	Amount in Rs in Lakhs		
		Amount FY20	Amount FY21	Amount FY22
1	H.T Lines			
	11 KV Lines	103.96	127.95	138.61
2	L.T Lines			
	3 Phase 4 Wire	32.81	40.10	47.39
	1 Phase 3 Wire	34.12	40.51	49.04
	1 Phase 2 Wire	38.10	41.91	47.62
3	Transformer Centers:			
	100 KVA Transform Center	25.27	33.70	37.91
	63/50 KVA Transform Center	55.96	69.13	79.00
	25 KVA Transform Center	21.34	26.08	27.26
	Others (10 & 15 KVA)	-	-	-
4	Service connection:			
	Agriculture -LT	44.46	46.74	49.11
	Industrial -LT	5.67	6.06	6.48
	Domestic	34.37	35.45	36.56
	Commercial	2.91	3.00	3.11
	Sub-total	398.97	470.63	522.09
5	SAUBHAGYA Scheme:			
	11 KV Line	58.64	74.64	90.63
	100 KVA Transform Center	37.91	42.12	46.34
	LT Line 3 Ph.4 Wire	40.10	47.39	58.33
	Sub-total	136.65	164.15	195.30

5	SAUBHAGYA Scheme:			
	Electrification of Households Service Connections to HHS	306.16	0.00	0.00
	New 11KV Line for DTC	14.66	0.00	0.00
	LT 1Phase 3 Wire	591.05	0.00	0.00
	LT 3 Phase 4 Wire	12.16	0.00	0.00
	New Transformer Center 25KVA	35.56	0.00	0.00
	Fixing od Sign Board under Saubhagya Scheme	20.39	0.00	
	Sub-total	979.98	0.00	0.00
	Total Capex	1515.60	634.78	717.39

HRECS in its filing has stated that, interest on the loan for the proposed Capex requirement is factored. Loan to the capex investment programme is considered at 60% of the total proposed capex and balance 40% is proposed under grants from Government of India / Karnataka. Capital works programme has been proposed taking into consideration the capital grants from the Govt. of India to carry out DDUGJY, SAUBHAGYA Scheme and other works which are mainly enhances distribution network and improve the quality of service to the consumers. HRECS in its filing has stated that, for the inclusion of proposed capital works program under SAUBHAGYA scheme amounting to Rs.979.98 lakhs covered with capital grants from GOI, the proposed capex for FY20 is on the higher side.

Commission's analysis and decision:

The Commission has considered, HRECS's submission for the control period FY20-FY22. The HRECS's previous years' achievement of capex is shown in the table below:

Amount in Rs. Crores					
Particulars	FY14	FY15	FY16	FY17	FY18
Capital investment filed	6.56	5.94	7.35	3.47	9.90
Capex approved by the Commission	6.56	5.94	5.57	3.47	9.90
Actual capital investment incurred as per audited accounts*	4.47	13.54	15.40	4.91	6.93
Percentage achievement	68.12%	227.79%	276.47%	141.79%	70.06%
*without considering capital investment disallowed under prudence check					

From the above table it is seen that while during FY15 to FY17 HERCS has exceeded the approved capex, whereas in FY14 and FY18 it has not achieved the approved

capex. It shows that the HERCS is not properly planning its capex and has not implemented the Guidelines issued by the Commission in the matter.

The Commission directs HRECS to maintain the physical progress 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 directs HRECS 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 HRECS to put sincere 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 and
6. Bring programs for the awareness among the people on usage and conservation of energy.
7. Improve the sales to metered category.
8. Improve the Power factor of the IP set loads by installing switched capacitors of suitable capacity to the secondary of the transformers.

The Commission, with the above directions, and based on the previous year's achievements and the break up capex furnished by the HRECS, recognizes the capex proposal of HRECS at Rs. 1000.00 lakhs, Rs.317.00 lakhs and Rs.359.00 lakhs for FY20, FY21 and FY22 respectively, subject to prudence check.

3.1.2. Sales Forecast:

A. Sales- other than IP sets:

1. HRECS in its filing had stated that the sales estimates for FY19 is based on the actual sales data for the period from April' 18 to September' 18 and the estimates for the period from October' 18 to March' 19 is made on the basis of CAGR of later six months of FY14 to FY18.
2. Further, HRECS has stated that for FY-20 to FY-22, the number of installations and energy sales is worked out considering the CAGR for the period FY15 to FY19 for categories other than BJ/KJ and IP sets, excluding negative CAGR and abnormal growth rates.
3. The Commission's Preliminary observations, replies furnished by HRECS and the Commission's view thereon are discussed below:

- a. HRECS had estimated the sales for second half of FY19, by applying CAGR, which is not correct, as CAGR is an annual growth rate. HRECS 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 prorata basis.

HRECs has stated that it has considered CAGR of later six months of FY14 to FY18 and has submitted that any decision taken by the Commission will be abided.

While, the Commission reiterates its stand, the approach of the Commission is discussed in the subsequent paragraphs.

- b. HRECS while computing the CAGR had included the FY19 data also, which itself is an estimated figure. Therefore, HRECS was advised to consider the actual data available upto FY18 for estimating the CAGR to arrive at the actual growth rates.

HRECs has stated that it has considered six months' available data of FY19 and has estimated the sales for remaining period based on CAGR of later six months of FY14 to FY18

While, the Commission reiterates its stand, the approach of the Commission is discussed in the subsequent paragraphs.

- c. The growth rates considered in respect of LT-3, LT 5 and LT-6 SL installations is higher and for HT-2a, it is lower as compared to the normal growth rates based on CAGR. The HRECS was directed to reconsider revising the estimates relating to these categories.

HRECs has submitted that growth rates proposed are realistic and based on CAGR.

- d. The energy sales growth considered for LT-2a, LT-3, LT-6WS installations is lower and in the case of LT-6 SL, HT-1, HT-2a and HT-2c installations, it is higher as compared to the normal growth rates. Further in the case of LT-7, HT-2b and HT-2c, in spite of the number of installations remaining same, the energy sales are increasing and in the case of HT-3, it is decreasing. HRECS was directed to reconsider revising the estimates to these categories.

HRECs has submitted that growth rates proposed are realistic and based on CAGR.

The Commission has noted the above replies of HRECs on growth rates and the approach of the Commission is discussed in the subsequent paragraphs.

- e. To validate the sales, the Commission had requested category-wise information in the specified format regarding the number of installations as well as energy sales.

HRECS, in their replies, has furnished the above data.

4. The Commission's approach for estimating the number of installations and sales for the FY20-22 for categories excluding BJ/KJ and IP sets is discussed below:

1) No. of Installations:

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

- a. The base year number of installations for FY19 is retained as proposed by HRECs.
- b. Wherever the number of installations estimated by the HRECs for the FY20 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 HRECs are retained.

- c. Wherever the number of installations estimated by the HRECs 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 HRECs 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-4b, LT -4c, LT-7 and HT2C categories, the estimates of HRECS are retained as the growth rate is inconsistent.
- 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 less than 40 units /month and IP) estimated by the Commission for the for FY20, FY21 and FY22 are 89103,91768 and 94519 installations respectively.

2) Sales:

For categories other than BJ/KJ and IP sets, generally the sales are estimated considering the following approach:

- a. The base year sales for FY19, as estimated by HRECS, are validated duly considering the actual sales up to November, 2018 and modified suitably.
- b. Wherever the sales estimated by HRECS for the FY20 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 HRECS are retained.

- c. Wherever the sales estimated by HRECS for the FY20 is lower than the estimates based on the CAGRs for the period FY13 – FY18 and for the period FY15 - FY18, the estimate based on the lower of the CAGRs are considered.
- d. Wherever sales estimated by HRECS for the FY20 is higher than the estimates based on the CAGRs for the period FY13 – FY18 and for the period FY15 - FY18, the estimate based on the higher of the CAGRs are considered.
- e. In respect of LT-7 and HT-3 the sales estimate of HRECS is retained due to inconsistency in growth rates.
- f. In respect of LT-4b, the sales are retained at FY18 level, as there is no additions to the number of installations during the control period.
- g. In respect of LT-4c, the sales are retained at FY19 level, as there is negative growth in FY18.

Based on the above approach, the sales (Excluding BJ/KJ consuming less than 40 units /month and IP) estimated by the Commission for the for FY20, FY21 and FY22 are 746.91 lakh units, 794.02 lakh units and 842.57 lakh units respectively.

5. Sales to BJ/KJ and IP Sets:

i) Sales to BJ/ KJ:

The break-up of sales to BJ/KJ installations as filed by HRECS for FY18 is as indicated in the following Table:

Particulars	No. of Installations	Consumption in Lakh units	Specific consumption per installation per month (kWh)
Installations consuming less than or equal to 40 units	11989	32.97	22.92
Installations consuming more than 40 units and billed under LT2(a)	463	4.51	81.17

Considering the above specific consumption and considering the number of installations as proposed by HRECS, the sales approved for the control period for BJ/KJ is as indicated below:

Particulars	Lakhs Units		
	FY20	FY21	FY22
Installations consuming less than or equal to 40 units	34.25	34.25	34.25
Installations consuming more than 40 units and billed under LT2(a)	6.25	12.82	17.85

The number of installations consuming less than or equal to 40 units is restricted to the total number of BJ/KJ installations as on 30.11.2018, as there is no specific GoK policy.

ii) IP set sales projections for ARR of FY20, FY21 and FY22

- a) The Commission, in its Tariff Order dated 11th April, 2017, had approved specific consumption of IP sets as 7,341 units / installation / annum for the FY18. Hukeri RECS, in the D2 format of tariff filing, reported the actual consumption by 27,347 number of IP set installations as 194.19 MU. However, considering the data submitted, the actual sales to IP set installations works out to 189.84 MU (as detailed in APR section). Based on the actual calculations of sales to IP sets, the Commission has approved the specific consumption as 7,141.80 units / installation / annum, for the FY18, by considering the mid-year installations of 26,582 numbers.
- b) The actual sales to IP sets for FY19, till November 2018, as reported by Hukeri RECS in its tariff filing is 124.53 MU and the number of installations are 28,070. The actual consumption per IP per month works out to 553.96 units / IP / month. As per the approved specific consumption for FY19 in the Tariff Order 2018 dated 14th May 2018, the consumption per IP per month works out to 610.75 units / IP / month. The actual monthly average consumption is less than the approved average consumption per month.
- c) It is observed that 723 number of installations are added from 1st April 2018 to September 2018 i.e., in a span of eight months. Considering, approximately, the same number of installations will be serviced in the next six months, the projected number of IP installations for FY19 is 28,853.
- d) The Commission notes that, from FY16 onwards, the increase in actual number of consumers every year is around 1,500. Based on the actual number of

installations added during first six months of FY19, projecting an addition of approximately 1,500 number of installations, every year from FY20 to FY22 would be appropriate. Thus, the projected number of consumers for FY20, FY21 and FY22 are 30,353, 31,853 and 33,353 respectively. Since the difference between the projections made using this analogy and the projections made by the Hukeri RECS is meagre, the Commission decides to consider the projections made by Hukeri RECS and hence the projected number of consumers for FY20, FY21 and FY22 are 30,542, 32,100 and 33,737 respectively.

- e) Based on the estimated number of installations and by considering the revised specific consumption for FY18 and the mid-year number of installations, sales are estimated for FY20. Hukeri RECS has considered a growth rate of 5.16% based on the CAGR and projected the consumptions for FY21 and FY22. The Commission, by considering the same growth rate as reckoned above, the sale for FY21 & FY22 are determined. The sales determined with this analogy for FY22 is more than the sales projections made and submitted by Hukeri RECS. Hence, the Commission retains the sales projected by Hukeri RECS for FY22 and the details of sales to IP set consumers are as indicated below:

Particulars	FY20		FY21		FY22	
	As filed by the Hukeri RECS	As approved by the Commission	As filed by the Hukeri RECS	As approved by the Commission	As filed by the Hukeri RECS	As approved by the Commission
No. of Installations	30,542	30,542	32,100	32,100	33,737	33,737
Mid-year number of Installations	-	29,698	-	31,230	-	32,801
Specific consumption in units/installation/annum	-	7,141.81	-	7,510.33	-	7,517.45
Sales in MU	222.39	212.09	234.53	234.54	246.58	246.58

- f) Accordingly, the Commission decides to approve 212.09, 234.54 and 246.58 MU as energy sales to IP-sets, respectively for the FY20, FY21 and FY22. The number of installations approved for FY20, FY21 and FY22 are 30,542, 32,100 and 33,737 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 Hukeri RECS shall therefore,

regulate the number of hours of power supply to exclusive agricultural feeders accordingly.

- g) The Commission had directed the Hukeri RECS to take up GPS survey of all IP-sets for identifying the dried up / not-in-use installations in the field and to take further necessary action to arrive at correct number of IP-sets by deducting such IP-sets from its account, on the basis of GPS survey results. It is noted from the replies to the preliminary observations, that the Hukeri RECS has taken up the above work. In this regard, the Hukeri RECS has submitted that it has completed the GPS survey in all the nine sections. The vendor has submitted the report of six sections and the report in respect of three sections is pending. Hence, the Hukeri RECS has stated that, the full report in this regard will be submitted to the Commission by 20.01.2019. The Commission, directs Hukeri RECS to complete the survey at the earliest and submit the details of total number of IP sets existing, defunct / dried up etc.
- h) The Hukeri RECS is directed to complete the GPS survey of IP-sets at the earliest and compliance thereon shall be submitted to the Commission, immediately thereafter. In view of the GPS survey of IP-sets not completed by the Hukeri RECS, the number of installations and sales estimated for FY19 and onwards are subject to change, based on the GPS survey. Accordingly, on completion of the GPS survey, the Hukeri RECS shall arrive at correct number of IP-sets, duly deducting from its account the number of defunct / dried up wells based on the GPS survey results. Therefore, on account of this, any variation in sales due to change in the number of installations in the FY19 would be trued up during the Annual Performance Review, for FY19. 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.
- i) Further, the Commission notes that the Hukeri RECS has already segregated seventeen feeders under NJY. Consequent to this, the energy consumed by the IP-sets can 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.

- j) As per the data submitted by the Hukeri RECS, the Commission notes that the applicant has submitted the assessment of IP sets based on the meter reading data of only five feeders instead of seventeen feeders. HRECS in its preliminary observations submitted that, readings of fifteen EIP feeders will be made available from December, 2018 and in respect of two feeders from April, 2019 onwards, without furnishing any proper reasons. In this regard, the Commission directs the Hukeri RECS to take immediate measures to rectify the whatever issues that are lying with the EIP feeder's meters and furnish the data as per the format given in the previous tariff orders for accurate assessment without fail.
- k) Hence, the Commission directs the Hukeri RECS to report the overall IP-set consumption on the basis of the specific consumption arrived at, from the consumption recorded in the energy meters of exclusive agricultural feeders segregated under NJY, clearly indicating the energy input to the feeders on the basis of energy meters reading data (initial reading-final reading* multiplying constant) and also deducting the not-in-use installations in the field, as per the GPS survey, to the Commission, on or before 25th of every month, regularly, as per the prescribed format.

Based on the above discussions, the category wise approved sales for HRECS is indicated in the following Table:

Tariff Categories	(Lakh units)		
	KERC FY20 EST	KERC FY21 EST	KERC FY22 EST
BJ/KJ less than or equal to 40 units	34.25	34.25	34.25
BJ/KJ -more than 40 units	6.25	12.82	17.85
Domestic (All Electric home & domestic lighting)	288.51	300.04	312.04
Private professional institutions	2.21	2.57	2.99
Commercial and Non-residential	78.50	83.72	89.29
Irrigation pump sets including 4b & 4c	2121.35	2345.85	2466.25
LT Industry	64.96	69.52	74.40
Public water supply	53.89	54.39	54.89
Public lighting	22.82	23.15	23.48
Temporary supply	0.80	0.92	1.06
LT TOTAL	2673.54	2927.23	3076.49
HT - 1 Public Water Supply	86.63	96.59	107.69
HT - 2(a) Industrial Noncommercial and Non industrial including railways	111.40	119.45	128.08
HT 2(b) Commercial	6.61	6.76	6.92

Tariff Categories	KERC FY20 EST	KERC FY21 EST	KERC FY22 EST
HT2c	4.78	5.09	5.41
HT 3 Irrigation & Agricultural farms, list includes societies etc.	19.10	18.56	18.03
HT 4 Private residential apartments	0.00	0.00	0.00
HT Total	228.53	246.45	266.13
Total (LT + HT)	2902.07	3173.67	3342.62

Hence, the Commission approves 2902.07 lakh units, 3173.67 lakh units and 3342.62 lakh units as the sales for FY20, FY 21 and FY 22 respectively, excluding sales to AEQUS.

3.1.3 Distribution Losses for FY20-22:

As per the audited accounts for FY18, the HRECS has reported distribution losses of 14.48% as against an approved loss level of 14.50%, which is less by 0.02% than the approved losses. HRECS in its filing has proposed to achieve the following loss levels during FY20-22:

TABLE – 3.3
Projected Distribution Losses for FY20-22
HRECS's Submission

Particulars	Figures in % Losses		
	FY20	FY21	FY22
Projected Distribution losses	14.46	14.45	14.44

The Commission in its preliminary observations had noted that, considering the Hukeri RECS efforts in achieving the actual distribution loss of 15.12% for FY16, 14.93% for FY17 and 14.48% for FY18, the projected losses with the meagre reduction of 0.01% in each of the year for FY19-22, even with the proposed substantial amount of capex of Rs.11.13 Crores for FY19 and Rs.15.16 Crores, Rs.6.35 Crores and Rs.7.17 Crores for FY20-22 is insignificant.

The HRECS, in its replies has submitted that, with vast LT lines catering to rural areas, it is difficult for HRECS to reduce distribution losses drastically, but can only contain the losses. Further, HRECS submitted that the distribution loss as reported by them is comparable with any efficient ESCOM. HRECS submitted that with increase in energy sales and expansion of distribution network, losses would go up. However, capital expenditure proposed for FY20 to FY22 would help to contain the distribution losses if not reducing the loss.

The Commission notes that the Hukeri RECS has proposed only 0.01% reduction in losses per year during the control period. As HRECS is operating in a considerably smaller geographical area, it is possible to reduce the losses further downwards. Considering the substantial investments proposed in improvement of its distribution system and also feeder segregation works under NJY scheme, mere reduction in losses by 0.01% proposed by HRECS is not agreeable. HRECS is directed to initiate the process of energy accounting and energy auditing at distribution transformer and feeder levels for identification of loss pockets and reduce the current level of losses by taking suitable remedial measures and submit an action plan in this regard.

Hence, considering the actual loss levels in FY18 and the capex made so far and proposed capex for FY20-22, the Commission decides to fix the distribution loss level targets for FY20-22 as follows:

TABLE -3.4
Approved Distribution Losses for FY 20-22

Particulars	Figures in % Losses		
	FY20	FY21	FY22
Upper limit	14.25	14.00	13.75
Average	14.00	13.75	13.50
Lower limit	13.75	13.50	13.25

3.1.4 Power Purchase:

Hukeri RECS in its filing has proposed to purchase 396.22 MU, 433.99 MU and 479.43 MU at its interface points from HESCOM at the cost of Rs. 19,806.92 lakhs, 22,378.33 lakhs and 25,669.19 lakhs respectively for FY20, FY21 and FY22.

As per the data furnished in Format D-19, the HRECS has indicated the energy at interface points at 110/11kV and 33/11kV for the control period FY20-22. Since, the supply at 33/11kV is met by distribution system of HESCOM, the HRECS is required to bear the losses of handling the energy received at 33 kV. HESCOM in its application has projected the distribution losses at 33 kV level at 2.52%, 2.46% and 2.31% respectively for FY20-22. The Commission has considered the same percentage on the estimated energy to be received at 33kV to allowed the energy at IF points and power purchase to HRECS for FY20-22 are as follows:

TABLE-3.5**Allowable Energy at IF points and Power Purchase for FY20-22**

Particulars	FY20	FY21	FY22
Total Energy at IF of HRECS in MU by considering the energy loss at 33kV of HESCOM including energy sales to AEQUS SEZ.	363.40	398.16	418.98
Approved Transmission Losses of KPTCL	3.162%	3.132%	3.102%
Approved power purchase for HRECS in MU including AEQUS SEZ energy in MU	375.27	411.04	432.39

The actual losses at 33kV level are already accounted along with the distribution loss computation of the HESCOM. However, the energy loss estimated at 33kV level of HESCOM is considered to cater to the requirement of the HRECS only for the purpose of payment of power purchase charges.

Based on the weighted average cost of power supply inclusive of transmission charges as approved for the HESCOM for FY20-22, the Commission decides to allow power purchase cost of HRECS for FY20-22 as follows:

TABLE-3.6**Approved Power Purchase for FY20-22**

Particulars	FY20	FY21	FY22
Approved power purchase quantum in MU including AEQUS SEZ	375.27	411.04	432.39
Approved rate of power purchase of HESCOM in Rs/Unit	4.1712	4.8198	4.8992
Trading margin in Re. per unit	0.05	0.05	0.05
Approved rate of power purchase from HESCOM in Rs. per Unit including trading margin	4.2212	4.8698	4.9492
Approved Power Purchase Cost in Rs. Lakhs	15840.90	20016.83	21399.85

Since, the cost of power purchase indicated above is inclusive of transmission charges, the Commission has not allowed transmission charges payable to KPTCL separately. Since the energy supplied to the Hukeri RECS by the HESCOM is measured and billed at interface points of the Hukeri RECS, the HRECS shall pay the power purchase cost at Rs.4.3591 Paise per unit, Rs.5.0273 Paise per unit and Rs.5.1076 Paise per unit for the energy purchased at interface points for FY20, FY21 and FY22 respectively.

3.1.5 O & M Expenses:

HRECS, in its application submitted that, it has estimated the O&M expenses for FY20, FY21 and FY22 by considering O&M expenses Rs.1093.30 as per audited accounts of FY18 as the base year O&M expenses. HRECS has considered WPI data as available from Ministry of Commerce & Industry, GoI and CPI data as available from Labour Bureau, GOI, for 14 years from 2005 to 2018 in the ratio 80:20, for arriving at an inflation rate of 6.1409% for projecting the O&M expenses for FY20, FY21 and FY22.

Further, HRECS has determined normative O&M expenses for FY20, FY21 and FY22 based on the following assumptions:

- a) The actual O&M expenses incurred for FY18 as per audited accounts as the base year O&M expense adjusted with required increase;
- b) Three years' compounded annual growth rate (CAGR) of FY19 of the number of installations considering the actual number of installations as per audited accounts up to FY18 and as projected for FY20, FY21 and FY22 with CAGR of 3.06, 3.25 and 3.32 respectively
- c) The weighted inflation index (WII) at 6.1409 as computed above.
- d) Efficiency factor at 0.50% as considered in the earlier control periods.

Further, HRECS submitted that, the salaries of the employees of Hukeri RECS are to be paid at par with HESCOM employees. Revision of pay scale have been effected in HESCOM with effect from 1st April, 2010 and 1st April, 2017. The revision of pay has to be given to the Hukeri RECS's employees on the same line. HRECS has requested the Commission to allow the effect of the revision of pay to employees as and when it is incurring as an additional employees cost. Further, HRECS has submitted that the estimated O&M expenses includes the payment towards staff welfare expenses such as Employee Provident Fund, Group Gratuity and Group insurance, for FY20-22.

HRECS has proposed O & M expenses for FY20-22 as follows:

TABLE – 3.7
O&M Expenses for FY20-22 –HRECS's Proposal

Sl. No.	Particulars	Amount in Rs. lakhs			
		FY19	FY20	FY21	FY22
1	No of installation	-	132272	136683	141277
2	CGI based on 3 year CAGR in %	-	3.06%	3.25%	3.32%
3	Weighted Inflation Rate in %	-	6.1409%	6.1409%	6.1409%
4	Base year O&M cost (Based on actuals of FY18, Rs.1093.30 lakhs).	1192.95	-	-	-
	O&M Expenses proposed		1301.59	1420.44	1550.55

Commission's analysis and decisions:

The Commission, as per the provisions of MYT Regulations has computed the O & M expenses for the control period FY20-22 duly considering the actual O & M expenses of FY18 as per the audited accounts (the latest available data as per the audited accounts), to arrive at the O & M expenses for base year i.e. FY19. The actual O& M expenses incurred for FY18 is Rs.1093.30 lakhs. Considering the Wholesale Price Index (WPI) as per the data available from the Ministry of Commerce & Industry, Government of India and Consumer Price Index (CPI) as per the data available from the Labour Bureau, Government of India and adopting the methodology followed by CERC with CPI and WPI in a ratio of 80: 20, the allowable annual escalation inflation rate for FY20 is computed as follows:

TABLE – 3.8
Computation of Inflation Index for FY20

Year	WPI	CPI	Composite Series	$Y_t/Y_{t-1}=R_t$	$\ln R_t$	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

Year	WPI	CPI	Composite Series	Yt/Y1=Rt	Ln Rt	Year (t-1)	Product [(t-1)* (LnRt)]
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							3036.00
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:

- The actual O & M expenses incurred as per audited accounts for FY18 to arrive at the base year O&M expenses for FY19.
- The three year compounded annual growth rate (CAGR) of the number of installations considering the actual number of installations as per audited accounts upto FY18 and as projected by the Commission for FY19 to FY22.
- The weighted inflation index (WII) at 8.276% as computed above.
- Efficiency factor at 0.50% as considered in the earlier control periods.

The above said parameters are computed duly considering the same methodology as being followed in the earlier tariff orders of the Commission.

Accordingly, the normative O & M expenses for FY20-22 are worked out in the following Table:

TABLE – 3.9
Approved O & M expenses for FY20-22

Particulars	Amount in Rs. lakhs			
	FY19	FY20	FY21	FY22
No. of Installations	-	132099	136322	140710
CGI based on 3 Year CAGR in %	-	3.20%	3.23%	3.20%
Weighted Inflation Index in %	-	8.2760%	8.2760%	8.2760%
Base Year O&M Cost(FY18 as per actuals)	1211.79	-	-	-
O&M Index= O&M (t-1)*(1+WII+CGI-X)	-	1344.83	1492.84	1656.65
Allowable O&M expenses	-	1334.83	1492.84	1656.65

Thus, the Commission decides to approve the O&M expenses of Rs1334.83 lakhs for FY20, Rs. 1492.84 lakhs for FY21 and Rs1656.65 lakhs for FY22.

3.1.6 Depreciation:

HRECS in its filing has claimed depreciation for the control period FY20-22 as follows:

TABLE- 3.10
Depreciation for FY20-22 – HRECS Proposal

Particulars	Amount in Rs. lakhs		
	FY20	FY21	FY22
Buildings	0.94	0.94	0.94
Civil	0.01	0.01	0.01
Plant & Machinery	59.46	62.29	65.23
Line, Cable Network including plant/Machinery	235.19	247.85	262.31
Vehicles	2.56	2.56	2.56
Furniture	0.57	0.57	0.57
Office Equipment	0.07	0.07	0.07
Total	298.81	314.29	331.69
Less: Depreciation on Contribution	127.67	135.26	142.95
Net Depreciation	171.41	179.03	188.74

Commission's analysis and decisions:

In accordance with the provisions of the MYT Regulations, the Commission has determined the depreciation for FY 20-22 considering the following:

- The actual rate of depreciation of category wise assets is determined considering the depreciation and gross block of opening and closing balance of fixed assets as per the audited accounts for FY18.
- This actual rate of depreciation is considered to gross block of average of opening and closing balance of fixed assets projections as approved by the Commission for FY20 to FY22.
- 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 by HRECS for FY20-22.

Accordingly, the depreciation for FY20-22 are as follows:

TABLE – 3.11
Approved Depreciation for FY20-22

Particulars	Amount in Rs. lakhs		
	FY20	FY21	FY22
Buildings	1.01	1.08	1.11
Civil	1.55	1.57	1.57
Other Civil	0.01	0.01	0.01
Plant & Machinery	104.89	115.21	121.42
Line, Cable Network including plant/Machinery	161.76	173.25	180.25
Vehicles	2.55	2.55	2.55
Furniture	0.61	0.63	0.65
Office Equipment	4.46	4.54	4.63
Total	276.84	298.84	312.20
Less: Depreciation on Contribution	-127.67	-135.26	-142.95
Allowable Net Depreciation	149.17	163.58	169.25

Thus, the Commission decides to approve the net depreciation of Rs149.17 lakhs for FY20, Rs.163.58 lakhs for FY21 and Rs. 169.25 lakhs for FY22.

3.1.7 Interest & Finance Charges:

a) Interest on Capital Loans:

The HRECS in its filing has claimed an amount of Rs.55.95 lakhs for FY20, Rs.54.20 lakhs for FY21 and Rs. 53.49 Lakhs for FY22, towards interest on loan capital at the interest rate of 11.75% from REC Limited, for the existing loans and at 13.00% for the new capital loans from B.D.C.C Bank.

Commission's analysis and decisions:

The Commission takes note of the existing loans as per the audited accounts and the proposed new capital loans for carrying out the capex for FY20-22. The Commission further notes that, the present interest rates by commercial banks and financial institutions are charged mainly on the basis of Marginal Cost of fund based Lending Rates (MCLR). These rates are comparatively lower than the base rates considered earlier. Further, in view of the changing economic scenario, it is observed that there is a considerable reduction in the MCLR and also downward trend is evident in the interest rates. Hence, in such a situation, the Commission is of the view that, the Hukeri RECS being the Society can avail Capital loans at competitive

interest rates from the Commercial Banks/ Financial Institutions. The Commission notes that, the present SBI MCLR rate for capital loans with a tenure of 3 years is 8.50%. Considering the present MCLR, the Commission decides to allow an interest rate of 11.00% for the new Capital loans. However, the interest liability on existing loan balances from REC are computed at the prevailing rate of 11.75% as per the audited accounts of FY18.

The Commission, as discussed in the earlier paragraphs of this Chapter has approved capex of Rs. 1000 lakhs for FY20, Rs. 317 lakhs for FY21 and Rs. 359 lakhs for FY22. The Commission by considering the amount of capital grants available for the capital works proposed under Central / State Government Schemes and also the internal resources and the amount of consumer contribution to be receivable during relevant years, has decides to factor Rs.400 lakhs for FY20, Rs.100 lakhs for each year of FY21 & FY22 as the capital loan at the interest rate of 11% per annum. It shall be noted that, the amount of interest and the rate of interest now considered by the Commission on the capital loans for the control period is subject to review during the APR and revision of ARR for the relevant years of the control period.

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

TABLE – 3.12
Approved Interest on Capital Loans for FY20-22

Amount in Rs. Lakhs			
Particulars	FY20	FY21	FY22
Opening balance of capital loans	365.13	708.63	748.65
Add: new Loans	400.00	100.00	100.00
Less :Repayments	56.50	59.98	63.98
Total loan at the end of the year	708.63	748.65	784.67
Average Loan	536.88	728.64	766.66
Allowable interest	51.38	70.45	74.79
Weighted Average interest rate on the existing loan	8.72%	9.57%	9.67%
Interest Rate allowed on new loans in %	11.00%	11.00%	11.00%
Allowable Interest on Capital Loan	51.38	70.45	74.79

Thus, the Commission decides to approve the interest on capital loans of Rs 51.38 Lakhs for FY20, Rs.70.45 lakhs for FY21 and Rs.74.79 lakhs for FY22.

b) Interest on working Capital:

HRECS in its filing has claimed an amount of Rs.415.13 lakhs for FY20, Rs.454.62 lakhs for FY21 and Rs.500.74 lakhs for FY22, towards interest on working capital based on the norms under MYT Regulations.

The Commission has been computing the interest on working capital as per the norms specified in the MYT Regulations, which consists of one month's O & M expenses, 1% of opening GFA and two months' revenue. The Banks / Financial institutions have now switched over from PLR to base rate to MCLR. As discussed earlier, the MCLR for loans with tenure of one year is 8.55%. The Commission notes that, the Hukeri RECS has not availed any working capital loan during the preceding years. Therefore, the Commission by taking the downward trends in the internal rates as per the provisions of MYT Regulations, by the reckoning the present MCLR with a spread of basis points, decides to consider interest in working capital at 11.00% per annum for FY20-22.

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

TABLE – 3.13
Approved Interest on Working Capital loans for FY20-22

Particulars	Rs. Lakhs		
	FY 20	FY 21	FY 22
One-twelfth of the amount of O&M Exp.	112.07	124.40	138.05
Opening GFA as per Audited Accts	8623.82	9642.12	10067.12
Stores, materials and supplies 1% of Opening balance of GFA	86.24	96.42	100.67
One-sixth of the Revenue	2856.61	3222.36	3393.90
Total Working Capital	3054.91	3443.19	3632.63
Rate of Interest (% p.a.)	11.00%	11.00%	11.00%
Allowable Interest on Working Capital	336.04	378.75	399.59

Thus, the Commission decides to approve the interest on working capital of Rs. 336.04 Lakhs for FY20, Rs.378.75 lakhs for FY21 and Rs.399.59 lakhs for FY22.

c) Interest on Consumer Security Deposit:

The Hukeri RECS in its filing has claimed an amount of Rs.90.80 lakhs for FY20, Rs.96.08 lakhs for FY21 and Rs.101.36 lakhs for FY22, towards interest on consumer security deposits, at the bank rate of 6.25%.

In accordance with the KERC (Interest on Security Deposit) Regulations 2005, the interest rate to be allowed is the bank rate prevailing on the 1st of April of the financial year for which the 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 audited accounts of FY18 for further projection for FY19. Based on the additional security deposits collected during the previous years, the Commission decides to factor in Rs.80.00 lakhs as the additional security deposit likely to be collected during the Control period FY20-22. Thus the allowable interest on consumer deposits for FY20-22 are as follows:

TABLE – 3.14
Approved Interest on Consumer Security Deposits for FY20-22

Particulars	Amount in Rs. Lakhs		
	FY20	FY21	FY22
Opening Balance of Consumer Deposits as per Accounts	1497.29	1577.29	1657.29
Closing balance of Consumer Deposits	1577.29	1657.29	1737.29
Average of Consumer Deposits	1537.29	1617.29	1697.29
Allowable Rate of Interest	6.50%	6.50%	6.50%
Allowable Interest on Consumer Deposit	99.92	105.12	110.32

Thus, the Commission decides to approve the interest on consumer security deposits of Rs.99.92 lakhs, Rs.105.12 lakhs and Rs.110.32 lakhs for FY20, FY21 and FY22 respectively.

The abstract of the approved Interest and Finance charges is indicated in the following Table:

TABLE – 3.15
Approved Interest and finance charges for FY20-22

Particulars	Amount in Rs. Lakhs		
	FY20	FY21	FY22
Interest on Loan Capital	51.38	70.45	74.79
Interest on Working Capital	336.04	378.75	399.59
Interest on Consumers Deposit	99.92	105.12	110.32
Approved Interest & Finance Charges	487.34	554.32	584.70

3.1.8 Return on Equity:

The HRECS, has claimed an amount of Rs.158.07 lakhs for FY20, Rs.165.97 lakhs for FY21 and Rs.174.27 lakhs for FY22 towards Return on Equity (RoE) by considering the share capital grossed up with the corporate tax rate of 31.20%. The HRECS has also requested the Commission not to recognize the accumulated carry forward losses while computing the RoE and to consider the grossed fixed assets and debt equity, as provided under Regulation 3.6 and RoE as provided under Regulation 3.9 of the MYT Regulations.

The Commission, as per the provisions of the MYT Regulations, has considered the actual amount of share capital, share deposits and the accumulated profits/losses under reserves & surplus at the beginning of the year as per the audited accounts for FY18 for arriving at the allowable equity base for the control period FY20-22 as detailed below.

TABLE – 3.16
Allowable Return on Equity for FY20-22

Particulars	Amount in Rs. Lakhs		
	FY20	FY21	FY22
Opening balance of Share Capital	664.05	664.05	664.05
Opening balance of Share Deposit	0.00	0.00	0.00
OB of Carried forward Loss/Profit	-6132.22	-6132.22	-6132.22
Total Equity	-546.82	-546.82	-546.82
RoE	0.00	0.00	0.00
Approved by Commission	0.00	0.00	0.00

Since the net-worth of HRECS is negative for all the three years of the control period FY20-22, the Commission decides not to factor in any amount towards return on equity and Income tax, for the control period FY20-22.

3.1.9 Other Income

HRECS in its filing has considered an amount of Rs.343.49 lakhs for FY20, Rs.343.57 Lakhs for FY21 and Rs.343.65 Lakhs for FY22 respectively, towards other income. HRECS has factored in the amounts to be received towards the sale of power to AEQUS SEZ under revenue item.

The other income received by HRECS mainly includes income from rebate for collection of electricity duty, interest on bank deposits, rent from staff quarters and miscellaneous recoveries. The Commission notes that HRECS also receives income from sale of power to AEQUS SEZ which needs to be factored under other income, at the power purchase cost as approved by the Commission in approving the revenue requirement of AEQUS SEZ for the control period FY20-22.

Based on the average other income earned by HRECS in the previous years and considering the expected revenue from sale of power to AEQUS SEZ the Commission decides to approve the other income for the control periods, as follows:

TABLE – 3.17

Approved Other Income for FY20-22

Particulars	Amount in Rs. Lakhs		
	FY20	FY21	FY22
Other Income including the receipts for sale of power to AEQUS SEZ	1737.91	2177.55	2348.22

3.2 Abstract of Approved ARR for FY20-22:

An Abstract of the approved consolidated Revised Annual Revenue Requirement of the Hukeri RECS for FY20-22 is as follows:

TABLE – 3.18
Approved of ARR for FY20-22

Particulars	Amount in Rs. Lakhs		
	FY20	FY21	FY22
	Approved ARR	Approved ARR	Approved ARR
Power Purchase (MU) (Including AEQUS SEZ)	375.27	411.04	432.39
Energy @ IF Point including AEQUS SEZ in MU	363.40	398.16	418.98
Sales to other than IP & BJ/KJ in MU	74.69	79.40	84.26
Sales to BJ/KJ in MU	3.43	3.43	3.43
Sales to IP in MU	212.09	234.54	246.58
Total Sales in MU	290.21	317.37	334.26
Distribution Loss in %	14.00%	13.75%	13.50%
Revenue at existing tariff from sale of power and miscellaneous charges :	-	-	-
Revenue from Sale to other than IP & BJ/KJ	4067.83	-	-
Revenue from Sale to BJ/KJ	240.40	-	-
Revenue from Sale to IP	12,831.40	-	-
Total Revenue	17139.63	-	-
Expenditure			
Power Purchase Cost	15,840.90	20,016.83	21399.85
O&M Expenses	1344.83	1492.84	1656.65
Depreciation	149.17	163.58	169.25
Interest on Loan Capital	51.38	70.45	74.79
Interest on Working Capital	336.04	378.75	399.59
Interest on Consumer Deposit	99.92	105.12	110.32
Less: Expenses Capitalised	-0.00	-0.00	-0.00
Return on Equity	0.00	0.00	0.00
Taxes	0.00	0.00	0.00
Other Income including the receipts for sale of power to AEQUS SEZ	1737.91	2177.55	2348.22
ARR	16084.33	20050.02	21462.22
Surplus in Revenue for FY20	1055.30		
Deficit of FY18 carried forward	-1595.24	0.00	0.00
Total ARR for FY20	17679.57	20050.02	21462.22

Thus, the Commission decides to approve ARR of Rs. 17,679.57 lakhs for FY20, Rs. 20,050.02 lakhs for FY21 and Rs. 21,462.22 lakhs for FY22.

3.3 Average Cost of Supply for FY20:

Based on the approved ARR, the average cost of supply of the Hukeri RECS for FY20 is as follows:

TABLE – 3.19
Average Cost of Supply for FY20-22

Sl. No	Particulars	FY20	FY21	FY22
1	ARR in Rs. lakhs	17679.57	20050.02	21462.22
2	Approved Sales in MU	290.21	317.37	334.26
3	Average Cost of Supply (Rs. per unit)	6.092	6.317	6.421

3.4 Gap in Revenue for FY20:

As discussed above, the Commission decides to approve the Annual Revenue Requirement (ARR) of the Hukeri RECS for its operations in FY20 at Rs.17679.57 lakhs which includes an amount of Rs.1595.24 lakhs being the approved deficit of FY18, as against the HRECS's application proposing a ARR of Rs.23438.51 lakhs. Considering the estimated revenue for FY20 at the existing retail supply tariff, the total realisation of revenue will be Rs.17139.63 lakhs which results in the net deficit of Rs.539.94 lakhs for FY20.

The Commission decides to bridge this gap in revenue of Rs.539.94 lakhs for FY20, by revising the retail supply tariff to consumers of HRECS, as discussed in the subsequent Chapter of this Order.

3.5 Subsidy payable by GoK:

On the basis of the revised average cost and the revised CDT, the total subsidy payable by GoK, to HRECS for FY20 is as follows:

TABLE – 3.20
Subsidy Payable by GoK – FY20

Sl. No.	Particulars	Amount in Rs. Lakhs
1	Subsidy at average cost of supply on estimated sales to BJ/KJ during FY20	208.58
2	Subsidy at Commission determined tariff on estimated sales to IP sets during FY20	12725.40
	TOTAL	12933.98