

KERALA STATE ELECTRICITY REGULATORY COMMISSION**THIRUVANANTHAPURAM****Application No :OA 8/2019**

Present: **Shri. R. Preman Dinaraj, Chairman**
Shri.K.Vikraman Nair, Member

In the matter of **Determination of ARR & ERC of M/s Cochin Special Economic Zone Authority (CSEZA) for the Control Period 2018-19 to 2021-22**

Applicant: **M/s Cochin Special Economic Zone Authority (CSEZA)**

Order Dated 02-12-2019

1. M/s Cochin Special Economic Zone Authority is a Special Economic Zone under the Ministry of Commerce and Industry, Government of India. The Cochin Special Economic Zone Authority (CSEZA) constituted under the SEZ Act 2005 is the developer of the Zone providing infrastructure and other related services to the Zone. The Zone comprises 105 acres of land in Kakkanad, Kochi.
2. The Commission had notified the KSERC (Terms and Conditions for Determination of Tariff) Regulations (hereinafter referred to as Tariff Regulations, 2018) on 26-10-2018. As per Regulation 10(1) of the said regulations, every distribution business/licensee shall file, on or before the thirty first day of October 2018, the petition for approval of Aggregate Revenue Requirement and determination of tariff for each year of the Control Period. The licensee filed the petition for the approval ARR & ERC for the control period from 2018-19 to 2021-22 as per the Tariff Regulation 2018 in the Multi Year Tariff Framework. A comparison of the ARR-ERC for the control period and the previous year as per the forms submitted in the petition is shown below.

Table – 1
Comparative Statement of ARR & ERC

Particulars	Previous Years			Control Period Estimates			
	2016-17	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
	Actual (Rs. Lakh)	Trued Up (Rs. Lakh)	Actual (Rs. Lakh)	Projection (Rs. Lakh)	Projection (Rs. Lakh)	Projection (Rs. Lakh)	Projection (Rs. Lakh)
Revenue from sale of power	3405.92	3405.92	3557.82	3511.10	3578.25	3641.48	3641.48
Other income	128.68	128.68	112.76	112.13	111.43	120.95	128.79
Total income	3534.60	3534.60	3670.58	3623.23	3689.68	3762.43	3770.27

Power Purchase Cost	3371.04	3370.80	3375.74	3419.90	3430.87	3481.69	3485.49
R&M Expenses	2.70	6.41	9.70	11.96	10.11	8.45	8.59
Employee cost	143.60	155.35	135.65	149.22	164.14	172.34	180.96
A&G Expenses	53.41	24.74	21.83	27.38	26.97	28.08	29.30
Depreciation	71.89	68.27	89.94	76.94	93.08	106.13	112.43
Return on equity	114.03	21.83	21.57	37.79	36.23	41.80	39.09
Total Expenditure	3756.67	3647.43	3654.23	3723.18	3761.39	3838.50	3855.87
Revenue Surplus (+)/Deficit(-)	(-)222.07	(-)112.83	(+)16.35	(-)99.95	(-)71.71	(-)76.07	(-)85.60

3. The licensee in the petition has projected **revenue gap** for each year of the control period. The Commission vide letter dated 27-02-2019 sought clarifications on the petition. The licensee vide letter dated 08-03-2019 submitted the clarification sought by the Commission. Considering the clarifications the petition was admitted as OA8/2019.

Hearing on the Matter

4. The public hearing on the application for the approval of ARR& ERC for the control period 2018-19 to 2021-22 was conducted at the Conference Hall, office of the CSEZA on 03-04-2019. The licensee was represented by Sri. D.V.Swamy, Development Commissioner, Sri. Saju.K.Surendran, Dy. Development Commissioner, Sri. K.C.Ramakrishnan, Secretary, CSEZA, Sri.K.C.Seetharaman, Chartered Accountant, Sri. Krishna Varma, Consultant, CSEZA and other officers of the licensee. Sri.K.C.Seetharaman presented the details of the application and responded to the queries of the Commission. The main points submitted in the petition are briefed below.

- CSEZA stated that the projections for each year of the control period are based on the actual status as on October 2018.
- For the year 2018-19, the proposed sale is 55.48 MU. The sales projected for the subsequent years of the control period is 56.32 MU for 2019-20 & 57.36 MU for 2020-21 & 2021-22. CSEZA has assumed 1.5% increase in sale to arrive at the sale for the year 2019-20 and 1.83% for the year 2020-21. The licensee has estimated a distribution loss reduction target from 1.84% in 2018-19 to 1.73% in 2021-22.
- O&M includes controllable expenses like Employee cost, R&M Expenses & A&G Expenses. The total O&M expenses projected is lower than the ceiling norms approved by the Commission
- The employee cost projected for the control period is lower than the ceiling norms approved by the Commission. The major claim under employee cost is the charges of the O&M agency. CSEZA has projected a 10% increase for 2018-19 & 2019-20 and a 5% increase for 2020-21 & 2021-22.

- The R&M Expenses projected by the licensee for each year of the control period is higher than the ceiling norms which is decreasing year after year.
 - The licensee has projected the A&G expenses higher than the normative amount approved by the Commission for the year 2018-19, whereas the expenses is lower for the subsequent years of the control period. The licensee has stated that the amount projected is exclusively for power distribution business. The A&G Expenses proposed includes rent, rates and taxes, telephone, postage, audit charge, stationery, internet, statutory, professional charges and license fee.
 - The licensee has proposed a capital investment of Rs.338.01 lakh for the control period which includes the cost of Rs.230.00 lakh for the supply installation Testing & Commissioning of new 400 kWp Grid Tied Solar Plant. It was informed that CSEZA has decided to revise the proposal with 600 kWp Grid Tied Solar Plant and the details shall be submitted before the Commission.
 - Depreciation has been claimed under the straight line method as per the schedule prescribed in the Tariff Regulations 2018 considering the capital expenditure for each year of the control period.
 - The licensee has claimed Return on net fixed assets as a rate of 3%.
 - The revenue for the control period is projected considering only a minor increase in the number of consumers and the sales at the prevailing tariff rates. The Non Tariff Income proposed includes interest on investments, fixed and call deposits and bank balances, interest on advances, miscellaneous receipts, commission for collection of electricity duty and meter/service line rentals.
5. Sri. A.R.Satheesh, representing Cochin Export Processing Zone Industrial Association (CEPZIA) submitted their comments on the ARR&ERC petition filed by CSEZA. The major point submitted was with regard to the over billing the consumers due to the wrong computation reporting of the distribution loss due to metering error. He prayed that the Commission may issue direction to CSEZA to pay back the excess amount collected during 2008 to 2014 due to metering error.
- The other points submitted are abstracted below.
- Allow the O&M expenses, Depreciation, RoE based on the Tariff Regulations, 2018
 - Introduce power factor incentive to the licensee or to introduce kVAh billing.

- Requested the Commission to intervene and allow SEZ to source Open Access power through Energy Exchange or short term/ medium term market.
 - Fix the distribution loss target with a minimum reduction of 10% for the level approved by the Commission, based on the lowest monthly value achieved in 2018-19.
 - To determine separate RST for all the licensees rather than uniform RST across the state.
6. Sri. K.K.Pillai, President of CEPZIA pointed out that reliable power without interruptions may be provided to the consumers of CSEZA. It was requested that the maintenance works of the distribution system may be done during holidays than opting the same to be done on working days.
7. Sri. Bipin Shankar, Deputy Chief Engineer TRAC and Sri. Ajith Kumar.G, DAO, TRAC represented KSEB Ltd. Sri.Bipin Shankar presented the counter statement/comments of KSEB Ltd. and stated that the written remarks on the application will be submitted subsequently. The major points presented by KSEB Ltd are abstracted below.
- The projection made in increase in sales is meager and the same does not seem realistic.
 - With regard to the O&M expenses, it was submitted that the norms approved by the Commission in the Tariff Regulations, 2018 are on the higher side when compared to the projections made by the licensee. It was stated that same may be considered while approving the ARR & ERC for the control period.
 - The other income is seen reducing for the control period which may be analysed in detail prior to the approval of the ARR & ERC for the control period.
 - It was also submitted that, as CSEZA is formed with the grant from Government of India, the proposal for allowing depreciation is to be reconsidered.
 - Prior approval of capital expenditure is required as per the regulations.
8. The Commission during the hearing sought clarifications on the petition and directed the licensee to submit the following:
- The copy of the report submitted by the Kerala State Productivity Council on the study conducted for reduction of distribution loss.

- Steps initiated by CSEZA based on the report to reduce distribution loss.
 - The revised need based capital investment proposal.
 - Revised detailed project report on the Grid Tied Solar Plant.
9. The Commission directed the licensee to furnish the reply on the counter statement of KSEB Ltd and the details called for by the Commission, on or before 29-04-2019. The licensee vide letter dated 13-05-2019 submitted the details sought by the Commission.

Analysis and decision of the Commission

10. The Commission considered the application for approval of ARR & ERC for the Control Period 2018-19 to 2021-22, the additional clarifications and submissions furnished by the licensee along with the comments of KSEB Ltd. The analysis and decisions of the Commission on the application for approval of ARR & ERC for the Control Period 2018-19 to 2021-22 are detailed below.
11. **No. of Consumers & Sale of power:** -As per Regulation 10 (8) of Tariff Regulations 2018, the applicant/distribution licensee shall develop the forecast of expected revenue from existing charges based on the estimates of contract demand and quantum of electricity to be supplied to the consumers and to be wheeled on behalf of the users of the distribution system for each financial year of the control period. Further, Regulation 71 provides as follows:
- 71.Sales forecast.** –(1) The distribution business/licensee shall submit, along with the petition for approval of Aggregate Revenue Requirement and determination of tariff, a forecast of expected demand and sale of electricity to different categories of consumers and to each consumption slab within each tariff category, in its area of supply for the Control Period.*
- (2) Sale of electricity, if any, to electricity traders or other distribution licensees shall be separately indicated.*
- (3)The Commission shall examine the forecasts for its reasonableness based on the growth in number of consumers and consumption per consumer, the demand of electricity in the preceding financial years, anticipated growth in the succeeding financial years and any other factor, which the Commission may consider relevant and approve forecast of sale of electricity to the consumers with such modifications as deemed appropriate.*
12. The comparison of the actual number of consumers and the sales and the projections for the control period is as shown below.

Table – 2
Number of Consumers for the control period

Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
LT Consumers	121	126	127	132	132	132
HT Consumers	32	28	29	29	29	29
TOTAL	153	154	156	161	161	161

13. The category wise split up of the number of consumers and the energy sale is tabulated hereunder.

Table – 3
Split Up of the number of consumers and Sales projections

Particulars	Number of consumers				Sale (MU)			
	2018-19	2019-20	2020-21	2021-22	2018-19	2019-20	2020-21	2021-22
LT-IV(A) Industry	60	60	60	60	6.34	6.44	6.56	6.56
LT-IV(B) IT & IT Enabled Service	33	38	38	38	2.40	2.44	2.48	2.48
LT-VI General (A)	1	1	1	1	0.005	0.005	0.005	0.005
LT-VI General (B)	2	2	2	2	0.02	0.02	0.02	0.02
LT VI General (C)	4	4	4	4	0.01	0.01	0.01	0.01
LT-VI General(D)	1	1	1	1	0.0007	0.0007	0.0008	0.0008
LT-VI General (F)	12	12	12	12	0.27	0.27	2.75	2.75
LT-VII(A)	13	13	13	13	0.26	0.27	2.71	2.71
LT-VIII B Metered Streetlights	1	1	1	1	0.03	0.03	0.04	0.04
LT Sub Total (A)	127	132	132	132	9.34	9.48	9.66	9.66
HT-I Industrial (A)	26	26	26	26	39.34	39.94	40.67	40.67
HT-I Industrial (B)	2	2	2	2	5.47	5.55	5.66	5.66
HT-III(B) Agricultural	1	1	1	1	1.33	1.35	1.38	1.38
HT Sub Total (B)	29	29	29	29	46.15	46.84	47.70	47.70
TOTAL (A+B)	156	161	161	161	55.48	56.32	57.36	57.36

14. The licensee has submitted that the projection for 2018-19 is considering the average energy sales from April 2018 to October 2018. As per the details furnished in the petition, about 85% of the sale of power is to HT consumers and the major consumption is by the HT-I A Industrial category. Summary of the energy sales projection is as shown below:

Table – 4
Category wise Energy sales for the control period

Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
LT Consumers	7.52	8.16	9.34	9.48	9.66	9.66
HT Consumers	47.68	47.23	46.15	46.84	47.70	47.70
TOTAL	55.20	55.39	55.48	56.32	57.36	57.36

15. The licensee for the control period has projected only a minor increase in the sales to the consumer categories. CSEZA has assumed 1.5% increase in sale for the year 2019-20 and 1.83% for the year 2020-21. Thereafter no increase in sales is considered.
16. The Commission has examined the projections of the Licensee. The sales shows that the sales growth is minimal and is hovering about 55 MU from 2016-17 to 2018-19. The licensee is expecting an increase in number of consumers in 2018-19 mainly in LT category. The sales projections during the control period are less than 2%. Considering the past sales and the limited increase in number of consumers, the sales projections of the licensee is reasonable. Accordingly, the Commission approves the sales projections of the licensee for the control period.
17. **Energy requirement & Distribution Loss:** As per Regulation 72, the licensee is to provide voltage level distribution loss and distribution loss trajectory for the control period with supporting studies along with the application. The Commission has to approve the target level of losses based on the opening level of losses, the figures filed by licensee and other relevant factors. The licensee proposes to reduce the distribution loss year after year of the control period are tabulated hereunder.

Table-5
Distribution loss and energy input projected for the control period

Year	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
	Actual	Actual	Projected	Projected	Projected	Projected
Energy sales (MU)	55.20	55.39	55.48	56.32	57.36	57.36
Internal solar power generation(MU)	-	0.51	0.92	1.22	1.51	1.51
Energy purchase from KSEB Ltd(MU)	56.08	55.74	55.60	56.13	56.86	56.83
Total Energy Requirement (MU)	56.08	56.25	56.52	57.34	58.37	58.37
Distribution loss (MU)	0.88	0.86	1.04	1.02	1.01	1.01
Distribution loss (%)	1.56%	1.54%	1.84%	1.78%	1.73%	1.73%
Distribution loss reduction (-)/increase(+) proposed		(-)0.02	(+)0.30	(-)0.06	(-)0.03	0.00

18. The licensee projected a distribution loss of 1.84% for the year 2018-19 and 1.73% for the last two years of the control period. The Commission while truing up the accounts for the year 2016-17 had approved a distribution loss of 1.50% as approved in the order on ARR & ERC for the control period 2015-16 to 2017-18. The actual distribution loss for 2016-17 and 2017-18 is 1.56% and 1.54% respectively. However, the projections of the licensee for the control period is higher than the actual achieved for the previous years.
19. The Commission had directed the licensee to conduct energy audit studies for the better understanding of the system losses and for managing the distribution loss. The licensee has stated that energy audit study was conducted by an external agency. The

Commission during the hearing had directed to furnish the details of the report and the measures taken by the licensee for addressing the issues raised in the report. In compliance with the directions, the licensee had furnished the report of energy audit study and the compliance report.

20. In the Report, it was mentioned that the actual total losses during the study period is 1.71%, of which technical losses is 1.36% and the balance is commercial losses. The commercial loss is reported as the metering errors for one HT consumers, 23 LT consumers and solar meters installed solar PV system, which leads to 0.6% commercial loss. The licensee in its compliance report dated 13-5-2019 had stated that action has been initiated to correct the reported HT and LT meters, which will be completed within two months. In such case, the commercial losses can be reduced considerably. In this context, the Commission notes that the metering issues reported in the licensee area are not new. In an earlier occasion, metering errors were reported in the energy audit study and accordingly, directions were given to the licensee for corrective steps. Even after such incidence, the licensee has not taken effective steps for continuous monitoring and analysis of the data for reduction in commercial losses. The Commission notes that the licensee has outsourced the entire O&M activities and large pool of human resources is available with the licensee. Accordingly, the Commission hereby directs that the licensee shall install a system for monitoring and analyzing the losses on a continuous basis.

21. Based on the above observation, the Commission is of the view that the distribution loss trajectory for the control period shall be as shown below:

Table-6
Approved distribution loss for the control period

Particulars	2018-19	2019-20	2020-21	2021-22
Distribution loss proposed (%)	1.84	1.78	1.73	1.73
Distribution loss approved (%)	1.45	1.40	1.38	1.36

22. **Energy requirement and power purchase cost:** The licensee has proposed a minor increase in the energy requirement. The details are shown below.

Table-7
Energy requirement and power purchase cost

Year	Energy Requirement (Lakh Units)	Power purchase cost (Rs.lakh)	Average Power purchase cost (Rs/unit)
2018-19	55.60	3419.90	6.15
2019-20	56.13	3430.87	6.11
2020-21	56.86	3481.69	6.12
2021-22	53.83	3485.49	6.13

23. Based on the approved distribution loss, the power purchase requirement approved is as shown below:

Table-8
Approved energy requirement for the control period

Year	2018-19	2019-20	2020-21	2021-22
Energy sales (MU)	55.48	56.32	57.36	57.36
Approved distribution loss	1.45%	1.40%	1.38%	1.36%
Energy Requirement (MU)	56.30	57.12	58.16	58.15
Internal solar power generation (MU)	0.92	1.22	1.51	1.51
Energy purchase from KSEB Ltd (MU)	55.38	55.90	56.65	56.64

24. The Commission vide order dated 08-07-2019 in OA No.15/2018 has revised the BST applicable to M/s.Cochin Special Economic Zone Authority as shown below.

Energy Charge (Rs. per unit)	Pre revised Tariff	5.40
	Revised/Existing Tariff	5.60
Demand Charge (Rs. kVA per month)	Pre revised Tariff	300.00
	Revised/Existing Tariff	340.00

25. Based on the revised tariff, the licensee submitted the revised power purchase cost for each year of the control period is shown below.

Table-9
Projected Power purchase cost as per revised tariff

Particulars	2018-19	2019-20	2020-21	2021-22
	Projected	Projected	Projected	Projected
Energy purchase (MU)	55.60	56.13	56.86	56.83
Maximum Demand (kVA)	128124	128880	131400	132600
Contract Demand(kVA)	120000	120000	120000	120000
Excess Demand(kVA)	8124	8880	11400	12600
Demand Charge (Rs.kVA)	300	300/340	340	340
Demand Charges (Rs in Lakh)	396.56	439.96	466.14	472.26
Energy Charge (Rs/kWh)	5.40	5.40/5.60	5.60	5.60
Energy Charges (Rs in Lakh)	3002.55	3115.24	3184.16	3182.48
Fuel surcharge	20.76	-	-	-
Total (Rs in Lakh)	3419.89	3555.20	3650.30	3654.74

26. The Commission has examined projections of the power purchase by the licensee. The licensee has projected an increase in maximum demand for the control period and also included excess demand charges. However, the licensee has furnished an initialed PPA for enhancing the contract demand by 3MVA from KSEB Ltd. In this situation, there may not be any excess demand charges from now on. The licensee

has also included fuel surcharge amount as part of the power purchase and also as part of the revenue from sale of power. Since the same is a contra entry, it is excluded from the power purchase cost. Based on the revised BST, the approved power purchase cost is as shown below:

Table-10
Approved power purchase for the control period

Particulars	2018-19	2019-20	2020-21	2021-22
Energy purchase (MU)	55.38	55.90	56.65	56.64
Maximum Demand (kVA)	128124	128880	131400	132600
Demand Charge (Rs.kVA)	300	300/340	340	340
Demand Charges (Rs in Lakh)	384.37	421.97	446.76	450.84
Energy Charge (Rs/kWh)	5.40	5.40/5.60	5.60	5.60
Energy Charges (Rs in Lakh)	2,990.52	3,102.43	3,172.40	3,171.84
Total (Rs in Lakh)	3,374.89	3,524.40	3,619.16	3,622.68

27. O&M Expenses: Operation & maintenance includes controllable expenses like Employee cost, Repair & Maintenance Expenses and Administrative & General Expenses. The Commission as per Regulation 79(2) of the Tariff Regulations, 2018 has approved the operation & maintenance cost of Cochin Special Economic Zone for the control period. The licensee has projected the Operation and maintenance expenses as shown below.

Table-11
Comparison of Normative O&M Expenses & O&M Expenses projected

Particulars	2018-19		2019-20		2020-21		2021-22	
	Projection (Rs.lakh)	Norms (Rs.lakh)	Projection (Rs.lakh)	Norms (Rs.lakh)	Projection (Rs.lakh)	Norms (Rs.lakh)	Projection (Rs.lakh)	Norms (Rs.lakh)
Employee cost	149.22	192.18	164.14	201.49	172.34	211.24	180.96	221.46
R&M Expenses	11.96		10.11		8.45		8.59	
A&G Expenses	27.38		26.97		28.08		29.30	
Total	188.56	192.18	201.22	201.49	208.87	211.24	218.85	221.46

28. The licensee has projected the total O&M expenses slightly higher than the normative amount approved by the Commission in the Tariff Regulations 2018. Based on the projections made by the licensee, the per unit O&M cost is tabulated hereunder.

Table-12
Per unit O&M cost based on projections

Sl.No	Particulars	2018-19	2019-20	2020-21	2021-22
1	Total Sales (MU)	55.48	56.32	57.36	57.36
2	Projected Employee cost (Rs.lakh)	149.22	164.14	172.34	180.96
3	Projected R&M Expenses (Rs.lakh)	11.96	10.11	8.48	8.59
4	Projected A&G Expenses (Rs.lakh)	27.38	26.97	28.08	29.30
5	Projected O&M Expenses (Rs.lakh)	188.56	201.22	208.87	218.85
6	Per unit Employee cost - Rs/unit (2/1)	0.27	0.29	0.30	0.32
7	Per unit R&M Expenses - Rs/unit (3/1)	0.02	0.02	0.01	0.01
8	Per unit A&G Expenses - Rs/unit (4/1)	0.05	0.05	0.05	0.05
9	Per unit O&M Expenses - Rs/unit (5/1)	0.34	0.36	0.36	0.38

29. The per unit O&M expense proposed seems reasonable. The detailed analysis of each head under operation and maintenance expense projected by the licensee for each year of the control period is conducted below.

30. **Employee cost:** The licensee has projected an increase in the employee cost for each year of the control period. As per the split up of the employee cost submitted by the licensee, the major claim is for the charges of the O&M agency. The split up of the projection is tabulated hereunder.

Table-13
Comparison of the actual and projected Employee cost

Particulars	Actual		Projection			
	2016-17 (Rs.lakh)	2017-18 (Rs.lakh)	2018-19 (Rs.lakh)	2019-20 (Rs.lakh)	2020-21 (Rs.lakh)	2021-22 (Rs.lakh)
Employee Expenses	17.50	19.25	21.18	23.29	24.46	25.68
Charges to O & M Agency	126.10	116.40	128.04	140.84	147.89	155.28
Total Employee Cost	143.60	135.65	149.22	164.14	172.34	180.96
% Increase			10.00%	10.00%	5.00%	5.00%

The licensee has projected a 10% for 2018-19 & 2019-20 and a 5% increase for 2020-21 & 2021-22. The licensee has furnished the details of the apportionment of employee cost for the control period in the clarifications dated 08-03-2019. As per the details, the licensee has apportioned 60% of the total employee expenses for distribution business. The licensee has escalated the employee expenses and the O&M charges at a rate of 10% for 2018-19 & 2019-20 and a 5% increase for 2020-21 & 2021-22.

31. **R&M Expenses:** The R&M Expenses projected by the licensee for each year of the control period showing an increase in the expense for the year 2018-19 & 2019-20 where as a decrease in the future years. The licensee has projected the repair and maintenance cost for the control period as shown below.

Table-14
Comparison of the actual and projected R&M Expenses

Particulars	2017-18 Actual (Rs.lakh)	2018-19 Projected (Rs.lakh)	2019-20 Projected (Rs.lakh)	2020-21 Projected (Rs.lakh)	2021-22 Projected (Rs.lakh)
R&M Expenses	9.70	11.96	10.11	8.45	8.59

32. The licensee as per clarifications dated 08-03-2019 has submitted split up of the proposed R&M for the control period.

Table-15
Split Up of projected R&M Expenses

Description of works for 2018-19	Rs lakh
Servicing of 2 nos of OLTC and Oil filtration in 12.5 MVA Power Transformers at CSEZ 110 KV substation	2.81
Rectification of Oil leakage on Transformer at Plot No.30 & near SDF 16 in Ring2 feeder	0.24
Replacement of battery bank at 110 KV substation	1.19
Maintenance and modification of existing Prepaid metering System	2.96
Relay testing of Protection relays at CSEZ 110 KV substation	1.14
Distribution Loss study in 110KV /11 KV /440 V CSEZ power distribution Net work by M/s.Kerala State Productivity Counsel	3.60
Total Amount	11.96

Description of works for 2019-20	Rs lakh
Filtration of transformer oil in 8 Nos Distribution Transformers of capacity upto 1250 KVA	0.50
Purchasing of Alstom Trip supervision relay, Schineder PM 210 Powerlogic digital meter, Siemens relays (7SJ62 & 7UT61)	4.00
Procurement of 25 Nos SMPS used in Scheider make Energy meter	0.50
Refilling of fire extinguishers in 110 KV Substation	0.15
Rectification of Oil leakage on 500 KVA WTP transformer and on PRV (Pressure Release Valve) in explosion Vent of power Transformer No.2 at 110 KV Substation	0.42
Testing of relays in 110 KV Substation	1.14
Purchasing of Silicagel air breather	0.02
Supply, Installation, testing and Commissioning of 4 Pole, 800 A ACB with microprocessor Release in existing LT Panel, plot No. 34	1.80
Replace the cable end termination box in 3 Nos. 500 KVA Transformers, Ring	1.50
Purchasing of Silica gel	0.07
Total Amount	10.11

Description of works for 2020-21	Rs lakh
Refilling of fire extinguishers in 110 KV Substation	0.20
Filtration of transformer oil in 2 Nos 12.5 MVA power Transformers	1.25
Replacement of old HT LBs Panel and LT panel in Plot No. 34	4.00
Replacement of old 500 KVA Transformer in Water Treatment Plant.	2.00
Replace the cable end termination box in 630 KVA Transformer, Plot No.34	1.00
Total Amount	8.45

Description of works for 2021-22	Rs lakh
Repainting of transformer, panel boards etc	5.00
Supply, Installation, testing and Commissioning of 5 Nos 4 Pole, 250 A in existing LT Panel,SDF-16	1.10
Refilling of fire extinguishers in 110 KV Substation	0.25
Relay testing of Protection relays at CSEZ 110 KV substation	1.14
Filtration of transformer oil in 8 Nos Distribution Transformers of capacity upto 1250 KVA	0.50
Procurement of 25 Nos SMPS used in Scheider make Energy meter	0.50
Purchasing of Silica gel	0.10
Total Amount	8.59

33. The licensee in the write up has stated that one time emergency R&M works if any during the control period may be allowed during the truing up process. The licensee shall submit all data to substantiate the one time emergency R&M works if any while truing up the accounts for the relevant years of the control period while shall be considered if prudent.

34. **A&G Expenses:** The licensee has projected the administrative and general expense expenses for the years of the control period as tabulated below.

Table-16
Comparison of the actual and projected A&G Expenses

Particulars	2017-18	2018-19	2019-20	2020-21	2021-22
	(Rs lakh)	(Rs lakh)	(Rs lakh)	(Rs lakh)	(Rs lakh)
	Actual	Projection			
Rent Rates & Taxes	10.04	10.04	10.04	11.04	12.15
Telephone & Postage, etc.	-	0.02	0.02	0.02	0.02
Insurance	1.69	1.77	1.86	1.95	2.05
VSAT, Internet and related charges	3.22	3.68	4.67	4.67	4.67
Travelling expense	0.03	0.15	0.15	0.15	0.15
Electricity charges	0.19	0.20	0.20	0.20	0.20
Water charges					
Printing & Stationery	0.15	0.15	0.15	0.15	0.15
Training Expense	-	0.50	0.50	0.50	0.50
MYT Filing charges (KSERC Fee)	-	1.48	-	-	-
Truing Up Fee to KSERC	0.35	0.35	0.35	0.35	0.35
Inspection Fee	0.35	0.37	0.37	0.37	0.37
Charges for monitoring pre-paid metering system	4.95	6.60	6.60	6.60	6.60
Professional Charges		1.00	1.00	1.00	1.00
Gross A&G Expenses	21.83	27.38	26.97	28.08	29.30

35. The major expenses book under the head are Rent Rates & Taxes, Charges for monitoring pre-paid metering system and VSAT, Internet and related charges. The licensee has stated that no apportionment has been made in the A&G expenses for

the control period. The amount projected is the expenses exclusively for power distribution system. The projection made for the control period is higher than the actual expense in the previous year.

36. **O&M Expenses Approved:** The Commission has fixed the normative O&M expense in the Tariff Regulations, 2018. As per the Regulation 79(2) of the Tariff Regulations, 2018 all components of O&M expenses are controllable expenses and as per regulation 14 (2), the aggregate loss on account of controllable factors shall be borne by the distribution licensee and shall not be passed on to the consumer in any manner. Accordingly Commission is of the considered view that the O&M expense is to be approved only in line with Regulation 79(2). The approved O&M expense for the control period is shown below.

Table-17
O&M Approved for the control period

Year	Rs.lakh
2018-19	192.18
2019-20	201.22
2020-21	211.24
2021-22	221.46

37. **Capital Investment proposed for the Control period:** The licensee has proposed a capital investment for the control period as summarized below.

Table-18
Capital Investment proposed for the Control period

Year	Estimated Amount Rs lakh
2018-19	24.97
2019-20	377.36
2020-21	14.69
2021-22	14.15
Total Investment for the control period	431.17

38. **The licensee in the petition has stated that the capital investment projected for the control period is proposed to be funded through the accumulated surplus held by the licensee. As per the order on the truing up of accounts for 2016-17, the licensee holds an accumulated surplus of Rs. 1208.88 Lakh.** The summary of the proposed capital works, estimated cost and the expected date of completion of work is tabulated below.

Table-19
Summary of the Capital Investment proposed for the Control period

2018-19		
Name of Work	Estimate (Rs. Lakh)	Expected Date of Completion
Purchasing of 15 Nos 3G /4G modem for the Web enabled Pre-paid Metering System.	2.27	10.06.2018
Construction of Fencing around 110 KV Sub-Station	3.30	12.09.2018
Construction of Aluminium fabrication works for operator cabin room at 110 KV Substation control room	1.25	25.10.2018
Supply Installation testing and commissioning of 2 Nos Air Conditioners at 110 KV Substation	0.78	25.10.2018
Purchasing of 3 Nos Earth rod for the use of 110 KV substation	0.15	01.01.2019
Purchasing of 5 kVA inverter with Battery for 110 KV Substation	1.25	01.02.2019
Purchasing of 10 Nos Energy Meter for Power Distribution System	2.44	01.02.2019
Construction of Store Room in 110 KV Substation	9.60	15.03.2019
Purchasing of 25 Nos 3G /4G modem for the Web enabled Pre-paid Metering System	3.93	01.03.2019
Grand Total	24.97	

2019-20		
Name of Work	Estimate (Rs. Lakh)	Expected Date of Completion
Purchase of 1 No. Megger Unit	0.30	15.04.2019
Purchase of Computer Peripherals & Office Equipment's	2.65	30.04.2019
Replacement of Existing Isolator type HT Panel in SDF 16 (one incoming & 6 no's outgoing feeders) with IP 67 Indoor VCB Type HT Panel	27.00	30.05.2019
Replacing of 30 V, 40 Ah battery bank for 1250 KVA transformer No.2 at SDF-17	0.45	12.06.2019
Supply installation Testing & Commissioning of new 650 kWp Grid Tied Solar Plant	329.16	30.11.2019
Supply, Installation, testing and Commissioning of 2 Nos 110kV, 31.5kA, 800A triple pole, centre post rotating, horizontal double break isolator without earth switch in 110 KV Substation Yard in Metering side.	9.30	14.08.2019
Supply, Installation, testing and Commissioning of RTU in 110 KV Substation for obtaining open access consent.	4.50	31.08.2019
Purchasing of 25 Nos 3G /4G modem for the Web enabled Pre-paid Metering System	4.00	15.12.2019
Grand Total	377.36	

2020-21		
Name of Work	Estimate (Rs. Lakh)	Expected Date of Completion
Purchasing of 10 Nos Energy Meter for Power Distribution System	2.44	01.05.2021
Purchasing of 1 No. 11/ 0.415 KV 500 KVA trolley mounted type unitised Transformer as spare in Power distribution system.	8.00	16.07.2020
Purchasing of 25 Nos 3G /4G modem for the Web enabled Pre-paid Metering System	4.25	15.12.2020
Grand Total	14.69	

2021-22		
Name of Work	Estimate (Rs. Lakh)	Expected Date of Completion
Replacing of 30 V, 40 Ah battery bank for control system of 1250 KVA No1 transformer at SDF-17.	0.45	10.04.2021
Replacing of 30 V, 40 Ah battery bank for control system of 1250 KVA distribution Transformer at SDF-43	0.45	10.04.2021
Purchasing of 10 Nos Energy Meter for Power Distribution System	3.00	10.08.2021
Purchasing of 25 Nos 3G /4G modem for the Web enabled Pre-paid Metering System	4.25	10.10.2021
Supply of 2 Nos 110 KV.800 A triple pole Isolators as spare in 110 KV substation	6.00	10.12.2021
Grand Total	14.15	

39. The licensee has furnished explanation for the need and necessity of the each item of the proposed capital expenditure for the control period in the clarifications dated 08-03-2019. The licensee has estimated the cost of investments based on the quotations received from the suppliers. However it is not clear from the documents that the rates are based competitive quotations.

40. The proposed Capital Investments for 2018-19 are the following:

- The licensee proposes to purchase a total of 40 Nos 3G /4G modem for the Web enabled Pre-paid Metering System in two stages. The licensee has stated that the purchase of the modems is to improve the data communication speed.
- The licensee proposes construction of Fencing around 110 KV Sub-Station at a cost of Rs.3.30 lakh in order to ensure safety and to restrict unauthorized entry.
- The licensee also proposes to purchase 10 Nos Energy Meter for Power Distribution System at a cost of Rs.2.44 lakh. As per the details, the 10 meters are spare meters to cover meter failure and to ensure new service connections to be given in time.
- CSEZA also proposes the construction of Store Room in 110 KV Substation at a cost of Rs.9.60 lakh

- The licensee also proposed items such as Aluminium fabrication works for operator cabin room at 110 KV Substation control room, Supply Installation testing and commissioning of 2 Nos Air Conditioners at 110 KV Substation, Purchasing of 3 Nos Earth rod for the use of 110 KV substation and Purchasing of 5 kVA inverter with Battery for 110 KV Substation.

41. For the year 2019-20 the licensee has proposed for a total capital investment of Rs.377.36 lakh which are briefed below:

- The major capital addition proposed by the licensee is the 650kWp Grid Tied Solar Plant proposed for the year 2019-20 to meet the RPO Obligation.
- The licensee also proposes Replacement of Existing Isolator type HT Panel in SDF 16 (one incoming & 6 no's outgoing feeders) with IP 67 Indoor VCB Type HT Panel at an estimated cost of Rs.27.00 lakh. The licensee has stated that the existing isolators panel is old and the replacement of the same is to ensure safety and to avoid electrical fire hazard.
- Supply, Installation, testing and Commissioning of 2 Nos 110kV, 31.5kA, 800A triple pole, centre post rotating, horizontal double break isolator without earth switch in 110 KV Substation Yard in Metering side at a cost of Rs.9.30 lakh for providing uninterrupted supply of power to the consumers of CSEZA.
- The other proposed investments are purchase of 1 No. Megger Unit, Replacing battery bank for 1250 KVA transformer, Purchase of Computer Peripherals & Office Equipments
- Licensee has proposed to purchase additional 25 Nos 3G /4G modem for the Web enabled Pre-paid Metering System (40 numbers have been proposed in 2018-19).
- The licensee also proposed Supply, Installation, testing and Commissioning of RTU in 110 KV Substation for obtaining open access at a cost of Rs.4.00 lakh.

42. The Capital Investments for 2020-21 are the as shown below;

- The licensee proposes to purchase 10 Nos Energy Meter for Power Distribution System at a cost of Rs.2.44 lakh. As per the details, the 10 meters are spare meters to cover meter failure and to ensure new service connections to be given in time.
- The licensee proposes to purchase 1 No. 11/ 0.415 KV 500 KVA trolley mounted type unitised Transformer as a spare at a cost of Rs.8.00 lakh.
- For the year 2020-21 also the licensee has proposed to purchase further 25 Nos 3G /4G modem for the Web enabled Pre-paid Metering System (2018-19-40 nos, 2019-20 - 25 nos).

43. The Capital Investments for 2021-22 are the as shown below;

- For the year 2021-22 also the licensee has proposed to purchase 25 Nos 3G /4G modem for the Web enabled Pre-paid Metering System.
- The licensee also proposes to 10 Nos Energy Meter for Power Distribution System
- It is also proposed to replace the battery bank for control system of 1250 KVA of transformer.
- Supply of 2 Nos 110 KV.800 A triple pole Isolators as spare in 110 KV substation at a cost of Rs.8.00 lakh.

44. The Commission had conducted a separate hearing on the proposed capital expenditure on 17-06-2019 at the Office of the Commission. Representatives of the licensee and KSEB Ltd had participated in the hearing. The Commission has sought clarifications on the many items and also directed to furnish detailed rationale and cost estimates based on open tenders for approval. The licensee had furnished the reply on 13-8-2019. Considering the details submitted, the Commission in the order **on OP 43/2019 dated 02-12-2019 has approved the capital investments for the control period.**

Asset additions during the year 2017-18

45. The licensee during the year 2017-18 has made an asset addition of Rs.630.46 lakh. The Commission has sought clarifications on the same. As per letter dated 08-03-2019 has submitted the details of the actual capital additions made in 2017-18 as tabulated below.

Table-20
Capital Additions during 2017-18

Particulars	Rs.lakh
Ring main units	114.17
Office Equipments	7.49
636 kWp Grid connected roof top solar PV plant	508.80
Total	630.46

46. It is to be noted that the Commission vide order dated 18-07-2016 in RP1/2016 had approved an amount of Rs.177.00 lakh for installation of RMUs in three phases during the MYT control period 2015-16 to 2017-18 as proposed by the licensee. The licensee in its letter dated 08-03-2019 has stated that they had implemented the work in one phase. The licensee stated that the actual cost for the RMUs was only Rs.114.18 lakh which was capitalized on 28-03-2018. With regard to the office equipments, the

Commission had approved Rs.7.50 lakh for office equipments. The Commission approves the actual expenses incurred.

47. With regard to the 636 kWp Grid connected roof top solar PV plant, the licensee has stated that no approval was granted by the Commission. In the hearing dated 17-6-2019, the Commission has directed the licensee to furnish the copy of the orders issued by MNRE on the cost of Roof top solar for 2017-18 and to furnish the details of selection of EPC contractor by M/s PEC limited and the basis of contract price of Rs.508.08 lakh. The Commission has also directed the licensee to avail the achievement linked incentive of Rs.119.25 lakh from MNRE.
48. The licensee has stated in their reply dated 08-03-2019 and 13-08-2019 had stated that they had installed the 636 kWp solar plant on priority basis as per the direction from the Ministry of Commerce. The licensee has stated that they expect an incentive from the Ministry @Rs.16250/kWp totaling to Rs.103.35 lakh for 636 kWp. According to the licensee the balance cost of investment is met from the surplus available with the licensee. The licensee has stated that the work was completed and capitalized on 25-08-2017.
49. The Commission considered the details furnished by the licensee for the year 2017-18. As per the details furnished by the licensee, the licensee has incurred the expenses from the Regulatory surplus available with them. The Commission has already granted approval for the items other than roof top solar project in the Order dated 18-7-2016. Regarding the 636 kWp solar plant, the Commission has considered the matter in the hearing dated 17-6-2019 and directed the licensee to furnish the EPC details and also the clarification regarding the incentive available from MNRE.
50. As per the details furnished, the licensee had executed the work through M/s PEC, which is a Central PSU approved by MNRE for execution of projects under Department of Commerce, for the bench mark cost approved by MNRE for the year @ 7.5 crore per MW excluding tax. The details furnished by the licensee shows that, the tax exemptions and other incentives are not yet availed by the licensee. Thus, the licensee had executed the work as mandated by MNRE and Ministry of Commerce. Hence the Commission is of the view that execution of work as per the benchmark cost can be considered for including in the GFA. The incentive etc., to be available is to be treated as grants for creation of assets. The Commission notes that the licensee is yet to avail the concessions available. Accordingly the Commission approves Rs.405.45 lakh for the installation of the 636 kWp solar PV.

Asset Additions approved for the control period

51. The items approved for the control period as per the order dated 02-12-2019 is as shown below:

Table-21
Summary of the Capital Investment approved for the Control period

2018-19	
Name of Work	(Rs. Lakh)
Supply of 3G GPRS Modem for web enabled energy monitoring system	2.10
Construction of Aluminum fabrication works for operator cabin room at 110 KV Substation control room	1.25
Supply Installation testing and commissioning of 2 Nos Air Conditioners at 110 KV Substation	0.78
Purchasing of 3 Nos Earth rod for the use of 110 KV substation	0.15
Purchasing of 5 kVA inverter with Battery for 110 KV Substation	1.25
Construction of Store Room in 110 KV Substation	9.60
Supply of 3G GPRS Modem (Model No.F2414 Four Faith Make for web enabled energy monitoring system	3.50
Grand Total	18.63

2019-20	
Name of Work	(Rs. Lakh)
Purchase of 1 No. Megger Unit	0.30
Replacement of Existing Isolator type HT Panel in SDF 16 (one incoming & 6 no's outgoing feeders) with IP 67 Indoor VCB Type HT Panel	27.00
Replacing of 30 V, 40 Ah battery bank for 1250 KVA transformer No.2 at SDF-17	0.45
Supply installation Testing & Commissioning of new 650 kWp Grid Tied Solar Plant	292.50
Supply, Installation, testing and Commissioning of 2 Nos 110kV, 31.5kA, 800A triple pole, centre post rotating, horizontal double break isolator without earth switch in 110 KV Substation Yard in Metering side.	9.30
Grand Total	329.55

2020-21	
Name of Work	(Rs. Lakh)
Purchasing of 1 No. 11/ 0.415 KV 500 KVA trolley mounted type unitised Transformer as spare in Power distribution system.	8.00
Grand Total	8.00

2021-22	
Name of Work	(Rs. Lakh)
Replacing of 30 V, 40 Ah battery bank for control system of 1250 KVA No1 transformer at SDF-17.	0.45
Replacing of 30 V, 40 Ah battery bank for control system of 1250 KVA distribution Transformer at SDF-43	0.45
Supply of 2 Nos 110 KV.800 A triple pole Isolators as spare in 110 KV substation	6.00
Grand Total	6.90

52. Regarding source of funding of assets, the licensee has stated that the surplus fund available with the licensee is to be used for procurement. Since the proposed capital assets are established using the regulatory surplus already available with the licensee, the licensee is not eligible for depreciation and other financing costs.

53. **Interest and Finance Charges:-**As the Government of India has met the entire investment on the infrastructure for the power distribution in CSEZA, the licensee has not claimed any interest and finance charges for the control period.

54. **Depreciation:** - The licensee in the petition has claimed depreciation for the control period in the straight line method as per the Tariff Regulations 2018. The licensee has projected depreciation considering the capital expenditure for each year of the control period. The Commission while truing up the accounts for 2016-17 had approved an amount of Rs.68.27 lakh after duly considering the assets till 2016-17. The licensee proposed the depreciation for the control period in the petition as shown below.

Table 22
Depreciation proposed for the control period

Particulars	Rate	2018-19			2019-20		
		GFA at the beginning	Asset Addition	Depreciation	GFA at the beginning	Asset Addition	Depreciation
Distribution lines	5.28%	496.79		7.93	496.79		8.29
11KV RMU	5.28%	114.17		6.03	114.17		6.03
Plant & machinery(11KV RMU)	5.28%	9.84		0.52	9.84		0.52
HT Panel (Isolator Type)	5.28%					27.00	1.20
Megger Unit						0.30	0.02
Switchgears, Control gear & Protection	5.28%	510.09		15.70	510.09		15.70
Earth Rod	5.28%		0.15	0.00	0.15		0.01
Batteries	5.28%		1.25	0.01	1.25		0.07
110kV, 31.5kA, 800A triple pole, centre post rotating, horizontal double break isolator						9.30	0.31
RTU	5.28%					4.50	0.14
Store Room	5.28%		9.60	0.02	9.60		0.51
Fencing	5.28%		3.30	0.10	3.30		0.17
Control Room(AC)	5.28%		0.78	0.02	0.78		0.04
Operator cabin Room	5.28%		1.25	0.03	1.25		0.07
LT Distribution system	5.28%	15.56		0.82	15.56		0.82
Transformers	5.28%	3.50		0.18	3.50		0.18
Switchgears, Control gear & Protection	5.28%	1.35		0.07	1.35		0.07
Battery	5.28%					0.45	
Communication equipment	6.33%	54.41		3.44	54.41		3.44
Meters	5.28%	164.75		6.67	164.75		11.90
Energy Meter	5.28%		2.44	0.02	2.44		0.13

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Furniture & fixtures	6.33%	0.44		0.03	0.44		0.03
Office Equipments	6.33%	8.88		0.56	8.88		0.56
Computer Peripherals and office equipments	6.33%					2.65	0.15
New software for prepaid metering	15.00%	33.43		5.01	33.43		5.01
Modem	15.00%		6.19	0.11	6.19	4.00	1.11
Solar PV Plant	5.83%	508.80		29.66	508.80		29.66
400 kWp Solar PV						236.00	6.94
Total		1922.02	24.96	76.94	1946.99	284.20	93.08

Particulars	Rate	2020-21			2021-22		
		GFA at the beginning	Asset Addition	Depreciation	GFA at the beginning	Asset Addition	Depreciation
Distribution lines	5.28%	496.79		8.30	496.79		8.30
11KV RMU	5.28%	114.17		6.03	114.17		6.03
Plant & machinery(11KV RMU)	5.28%	9.84		0.52	9.84		0.52
HT Panel (Isolator Type)	5.28%	27.00		1.43	27.00		1.43
Megger Unit		0.30		0.02	0.30		0.02
Switchgears, Control gear & Protection	5.28%	510.09		15.70	510.09		15.70
Earth Rod	5.28%	0.15		0.01	0.15		0.01
Batteries	5.28%	1.25		0.07	1.25		0.07
110kV, 31.5kA, 800A triple pole, centre post rotating, horizontal double break isolator		9.30		0.49	9.30	6.00	0.59
RTU	5.28%	4.50		0.24	4.50		0.24
Store Room	5.28%	9.60		0.51	9.60		0.51
Fencing	5.28%	3.30		0.17	3.30		0.17
Control Room(AC)	5.28%	0.78		0.04	0.78		0.04
Operator cabin Room	5.28%	1.25		0.07	1.25		0.07
LT Distribution system	5.28%	15.56		0.82	15.56		0.82
Transformers	5.28%	3.50		0.18	3.50		0.18
USS transformer	5.28%		8.00	0.30	8.00		0.42
Switchgears, Control gear & Protection	5.28%	1.35		0.07	1.35		0.07
Battery	5.28%	0.45		0.02	0.45	0.90	0.07
Communication equipment	6.33%	54.41		3.44	54.41		3.44
Meters	5.28%	164.75		16.65	164.75		21.73
Energy Meter	5.28%	2.44	2.44	0.16	4.87	3.00	0.36
Furniture & fixtures	6.33%	0.44		0.03	0.44		0.03
Office Equipments	6.33%	8.88		0.56	8.88		0.56
Computer Peripherals and office equipments	6.33%	2.65		0.17	2.65		0.17
New software for prepaid metering	15.00%	33.43		5.01	33.43		5.01
Modem	15.00%	10.19	4.25	1.72	14.44	4.25	2.47
Solar PV Plant	5.83%	508.80		29.66	508.80		29.66
400 kWp Solar PV	5.83%	236.00		13.76	236.00		13.76
Total		2231.19	14.69	106.13	2245.87		112.43

55. During the year 2017-18, the licensee has made an asset addition of Rs.630.46 lakh as mentioned above. For the 636 kWp Solar PV plant, the Commission has not granted any approval. The licensee has claimed depreciation for the assets created in 2017-18. The licensee has also claimed depreciation for the capital investments proposed for the control period. As per the details submitted by the licensee, the capital additions are financed from the accumulated regulatory surplus of the licensee. Since the assets are financed from the accumulated regulatory surplus of the licensee, no depreciation is allowed on the same. The licensee shall make appropriate entries in the fixed asset register of the distribution business as and when the assets are completed and capitalized.

56. The addition of assets approved by the Commission for the control period is shown in has been examined in Table 21 above. Accordingly the depreciation approved item wise for each year of the control period is given below.

Table-23
Depreciation for the control period

Particulars	Rate	2018-19			2019-20		
		Gross Fixed Assets at the beginning	Asset addition	Depreciation approved	Gross Fixed Assets at the beginning	Asset addition	Depreciation approved
Distribution Lines	5.28%	496.79	-	26.23	496.79	-	26.23
Distribution transformer	5.28%	3.50	-	0.18	3.50	-	0.18
Substations	5.28%	510.09	-	26.93	510.09	-	26.93
LT distribution system	5.28%	15.56	-	0.82	15.56	-	0.82
Switchgears, Control gear & Protection-	5.28%	1.35	-	0.07	1.35	-	0.07
Communication Equipment	6.33%	54.41	-	3.44	54.41	-	3.44
Metering Equipment	5.28%	164.75	-	8.70	164.75	-	8.70
Plant & Machinery	5.28%	9.84	-	0.52	9.84	-	0.52
Furniture & Fixtures	6.33%	0.44	-	0.03	0.44	-	0.03
Office Equipments	6.33%	1.38	-	0.09	1.38	-	0.09
New soft ware for prepaid metering	15.00%	33.43	-	5.01	33.43	-	5.01
Ring main units (RMU)		114.17	-	0.00	114.17	-	0.00
Office Equipments		7.49	-	0.00	7.49	-	0.00
636 kWp solar PV		508.80	-	0.00	508.80	-	0.00
Earth Rod		-	0.15	0.00	0.15	-	0.00
Batteries		-	1.25	0.00	1.25	-	0.00
Store Room		-	9.60	0.00	9.60	-	0.00
3G GPRS Modem		-	5.60	0.00	5.60	-	0.00
Control Room(AC)		-	0.78	0.00	0.78	-	0.00
Operator cabin Room		-	1.25	0.00	1.25	-	0.00
HT Panel (Isolator Type)		-	-	-	-	27.00	0.00

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Megger Unit		-	-	-	-	0.30	0.00
110kV, 31.5kA, 800A triple pole, centre post rotating, horizontal double break isolator		-	-	-	-	9.30	0.00
Battery		-	-	-	-	0.45	0.00
650 kWp Solar PV		-	-	-	-	292.50	0.00
Total		1922.02	18.63	72.03	1940.65	329.55	72.03

Particulars	Rate	2020-21			2021-22		
		Gross Fixed Assets at the beginning	Asset addition	Depreciation approved	Gross Fixed Assets at the beginning	Asset addition	Depreciation approved
Distribution Lines	5.28%	496.79	-	26.23	496.79	-	26.23
Distribution transformer	5.28%	3.50	-	0.18	3.50	-	0.18
Substations	5.28%	510.09	-	26.93	510.09	-	26.93
LT distribution system	5.28%	15.56	-	0.82	15.56	-	0.82
Switchgears, Control gear & Protection-	5.28%	1.35	-	0.07	1.35	-	0.07
Communication Equipment	6.33%	54.41	-	3.44	54.41	-	3.44
Metering Equipment	5.28%	164.75	-	8.70	164.75	-	8.70
Plant & Machinery	5.28%	9.84	-	0.52	9.84	-	0.52
Furniture & Fixtures	6.33%	0.44	-	0.03	0.44	-	0.03
Office Equipments	6.33%	1.38	-	0.09	1.38	-	0.09
New soft ware for prepaid metering	15.00%	33.43	-	5.01	33.43	-	5.01
Ring main units (RMU)		114.17	-	0.00	114.17	-	0.00
Office Equipments		7.49	-	0.00	7.49	-	0.00
636 kWp solar PV		508.80	-	0.00	508.80	-	0.00
Earth Rod		0.15	-	0.00	0.15	-	0.00
Batteries		1.25	-	0.00	1.25	-	0.00
Store Room		9.60	-	0.00	9.60	-	0.00
Fencing		3.30	-	0.00	3.30	-	0.00
Control Room(AC)		0.78	-	0.00	0.78	-	0.00
Operator cabin Room		1.25	-	0.00	1.25	-	0.00
HT Panel (Isolator Type)		27.00	-	0.00	27.00	-	0.00
Megger Unit		0.30	-	0.00	0.30	-	0.00
110kV, 31.5kA, 800A triple pole, centre post rotating, horizontal double break isolator		9.30	-	0.00	9.30	-	0.00
Battery		0.45	-	0.00	0.45	0.90	0.00
650 kWp Solar PV		292.50	-	0.00	329.16	-	0.00
500 KVA trolley mounted Transformer		-	8.00	0.00	8.00	-	0.00
Triple pole Isolators		-	-	-	-	6.00	0.00
Total		2270.20	8.00	72.03	2278.20	6.90	72.03

57. Accordingly, the depreciation approved for each year of the control period is shown below.

Table-24
Depreciation approved for the control period

Particulars	Depreciation proposed (Rs.lakh)	Depreciation Approved (Rs.lakh)
2018-19	76.94	72.03
2019-20	93.08	72.03
2020-21	106.13	72.03
2021-22	112.43	72.03

**Depreciation for new assets added from 2017-18 has not been considered since the same is proposed to be funded through accumulated surplus*

58. **Return on NFA:-** As per Regulation 28(2) of the Tariff Regulations 2018, if there is no equity invested in the business or equity invested in the regulated business of the distribution licensee is not clearly identifiable, return at the rate of three percent shall be allowed on the net fixed assets at the beginning of the financial year for such regulated business.

59. The licensee has claimed a return at the rate of three percent on the net fixed assets at the beginning of the financial year as shown below.

Table-25
RoNFA proposed for the control period

Particulars		2018-19	2019-20	2020-21	2021-22
NFA at the beginning of the year		1259.69	1207.71	1393.23	1302.97
Total return on NFA	3%	37.80	36.23	41.80	39.09

60. The Commission while truing up the accounts for the year 2016-17 had approved a return on net fixed assets of Rs.21.86 lakh. As per the details submitted the capital investments made by the licensee are by utilising the accumulated surplus of the distribution business. Thus the same does not qualify for returns. Accordingly, the Commission provisionally allows a return of Rs.21.86 lakh for each year of the control period.

61. **Total Expenses:** The total expenditure proposed by the licensee and the per unit expenditure is as shown below.

Table 26
Aggregate Revenue Requirement approved for the control period

Particulars	2018-19		2019-20	
	Projection (Rs. Lakh)	Approved (Rs. Lakh)	Projection (Rs. Lakh)	Approved (Rs. Lakh)
Power Purchase Cost	3419.90	3374.89	3430.87	3524.40
R&M Expenses	11.96	192.18	10.11	201.49
Employee cost	149.22		164.14	
A&G Expenses	27.38		26.97	
Depreciation	76.94	72.03	93.08	72.03
Interest and finance charges	-	-	-	-
Return on equity	37.80	21.86	36.23	21.86
Total Expenditure	3723.18	3660.96	3761.39	3819.78

Particulars	2020-21		2021-22	
	Projection (Rs. Lakh)	Approved (Rs. Lakh)	Projection (Rs. Lakh)	Approved (Rs. Lakh)
Power Purchase Cost	3481.69	3619.16	3485.49	3622.68
R&M Expenses	8.45	211.24	8.59	221.46
Employee cost	172.34		180.96	
A&G Expenses	28.08		29.30	
Depreciation	106.13	72.03	112.43	72.03
Interest and finance charges	-	-	-	-
Return on equity	41.80	21.86	39.09	21.86
Total Expenditure	3838.50	3924.29	3855.87	3938.03

62. **Total Revenue:** - The total revenue includes revenue from the sale and non tariff income claimed by the licensee.

63. **Revenue from Sale of Power:** The licensee for the control period has projected only a minor increase in the number of consumers and the sales. The major sale and revenue of CSEZA is from the HT Category among which HT I A industrial is the major part. The revenue from sale of power claimed by the licensee for each year of the control period is shown below.

Table-27
Revenue Projections for the control period

Year	Rs.lakh
2018-19	3511.10
2019-20	3578.25
2020-21	3641.48
2021-22	3641.48

64. The Commission vide order dated 08-07-2019 in OA No.15/2018 has revised the retail supply tariff applicable to consumers across the state. Based on the revised tariff, the licensee submitted the category wise revenue from sale of power for each year of the

control period. The revenue from sale of power projected as per the revised tariff is tabulated below.

Table-28
Revised Revenue Projections for the control period after tariff revision

Consumer Category	2018-19 (Projection)				2019-20 (Projection)			
	Number of consumers	Sale MU	Revenue from sale Rs.lakh	Average Tariff	Number of consumers	Sale MU	Revenue from sale Rs.lakh	Average Tariff
LT-IV(A) Industry	60	6.34	427.87	6.75	60	6.44	453.65	7.05
LT-IV(B) IT & IT Enabled Service	33	2.40	168.80	7.04	38	2.44	189.30	7.77
LT-VI General (A)	1	0.005	0.29	5.91	1	0.005	0.30	6.09
LT-VI General (B)	2	0.02	1.51	7.28	2	0.02	1.41	6.70
LT VI General (C)	4	0.01	1.13	13.63	4	0.01	1.23	14.68
LT-VI General(D)	1	0.0007	0.01	1.78	1	0.0007	0.01	2.45
LT-VI General (F)	12	0.27	25.74	9.66	12	0.27	26.53	9.81
LT-VII(A)	13	0.26	28.93	11.00	13	0.27	28.68	10.75
LT-VIII B Metered Streetlights	1	0.03	1.33	3.92	1	0.03	1.45	4.22
LT Sub Total (A)	127	9.34	655.62	7.02	132	9.48	702.60	7.41
HT-I Industrial (A)	26	39.34	2461.10	6.26	26	39.94	2629.06	6.58
HT-I Industrial (B)	2	5.47	345.55	6.32	2	5.55	357.65	6.44
HT-III(B) Agricultural	1	1.33	48.83	3.67	1	1.35	54.52	4.03
HT Sub Total (B)	29	46.15	2855.47	6.19	29	46.84	3041.23	6.49
TOTAL (A+B)	156	55.48	3511.10	6.33	161	56.32	3743.83	6.65

Particulars	2020-21 (Projection)				2021-22 (Projection)			
	Number of consumers	Sale (MU)	Revenue from sale Rs.lakh	Average Tariff	Number of consumers	Sale (MU)	Revenue from sale Rs.lakh	Average Tariff
LT-IV(A) Industry	60	6.56	467.18	7.13	60	6.56	467.18	7.13
LT-IV(B) IT & IT Enabled Service	38	2.48	226.06	9.11	38	2.48	226.06	9.11
LT-VI General (A)	1	0.005	0.31	6.16	1	0.005	0.31	6.16
LT-VI General (B)	2	0.02	1.44	6.70	2	0.02	1.44	6.70
LT VI General (C)	4	0.01	1.25	14.57	4	0.01	1.25	14.57
LT-VI General(D)	1	0.0008	0.02	2.66	1	0.0008	0.02	2.66
LT-VI General (F)	12	2.75	27.06	9.83	12	2.75	27.06	9.83
LT-VII(A)	13	2.71	29.28	10.78	13	2.71	29.28	10.78
LT-VIII B Metered Streetlights	1	0.04	1.51	4.32	1	0.04	1.51	4.32
LT Sub Total (A)	132	9.66	754.13	7.81	132	9.66	754.13	7.81
HT-I Industrial (A)	26	40.67	2708.71	6.66	26	40.67	2708.71	6.66
HT-I Industrial (B)	2	5.66	368.32	6.51	2	5.66	368.32	6.51
HT-III(B) Agricultural	1	1.38	56.69	4.12	1	1.38	56.69	4.12
HT Sub Total (B)	29	47.70	3133.72	6.57	29	47.70	3133.72	6.57
TOTAL (A+B)	161	57.36	3887.85	6.78	161	57.36	3887.85	6.78

65. It is seen that the revenue from sale of power for the year 2018-19 includes the amount of Rs.20.76 lakh includes the fuel adjustment charges. Since the same is a contra entry, it is excluded from the revenue from sale for the year 2018-19. Considering the revised estimates submitted by the licensee, the Commission approves the revenue from sale of power as proposed by the licensee. The approved revenue from sale of power is shown below.

Table-29
Approved Revenue from sale for the control period

Year	Rs.lakh
2018-19	3490.34
2019-20	3743.83
2020-21	3887.85
2021-22	3887.85

66. **Non-Tariff Income:** As per the details submitted, the non tariff income include interest on investments, fixed and call deposits and bank balances, interest on advances, miscellaneous receipts, commission for collection of electricity duty and meter/service line rentals. The split up the non -tariff income projected for the control period is tabulated below.

Table -30
Comparison of Non Tariff income (Rs Lakh)

Particulars	Actual		Projected			
	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Interest on investments, fixed deposits and bank balances.	110.09	83.34	90.01	90.71	97.96	105.80
Interest on advances	15.59	22.11	19.57	18.12	20.36	20.36
Miscellaneous Receipts	0.87	4.88	0.25	0.25	0.25	0.25
Commission for collection of electricity duty	1.22	1.51	1.36	1.38	1.41	1.41
Meter/service line rentals	0.91	0.92	0.94	0.97	0.97	0.97
Non Tariff income	128.68	112.76	112.13	111.43	120.95	128.79

67. The Commission had sought clarifications on the methodology adopted for projection of non-tariff income for the years of the control period. The licensee in the clarifications dated 08-03-2019 had submitted that the actual value of the fixed deposit interest received in 2017-18 has been considered as the basis and an increase of about 8% in the said amount has been estimated for every year. The licensee has

also mentioned that the investment on the solar plant has been considered while estimating the interest amount. As per the order on the truing up of accounts for the year 2016-17, the licensee has an accumulated surplus of Rs.1208.88 lakh. Considering the bank rate of 6.25% prevailing as on 01-04-2018 the interest on the surplus amounts to Rs.75.56 lakh. It is seen that the Interest on investments, fixed deposits and bank balances booked are higher. Considering the non tariff income, the Commission approves the non-tariff income as projected by the licensee.

68. **Revenue Surplus/Gap:** Based on the above, the revenue surplus/gap for the control period estimated by the licensee and that approved by the Commission are as follows.

Table 31
Revenue Surplus/ Gap, Projected by the licensee and
Approved by the Commission for the control period

Particulars	2018-19		2019-20	
	Projection (Rs. Lakh)	Approved (Rs. Lakh)	Projection (Rs. Lakh)	Approved (Rs. Lakh)
Power Purchase Cost	3419.90	3374.89	3430.87	3524.40
R&M Expenses	11.96	192.18	10.11	201.49
Employee cost	149.22		164.14	
A&G Expenses	27.38		26.97	
Depreciation	76.94	72.03	93.08	72.03
Interest and finance charges	-	-	-	-
Return on equity	37.80	21.86	36.23	21.86
Total Expenditure	3723.18	3660.96	3761.39	3819.78
Revenue from sale of power	3511.10	3490.34	3578.25	3743.83
Other income	112.13	112.13	111.43	111.43
Total income	3623.23	3602.47	3689.68	3855.26
Revenue Surplus (+)/ Gap (-)	(-)99.95	(-)58.49	(-)71.71	(+)35.48

Particulars	2020-21		2021-22	
	Projection (Rs. Lakh)	Approved (Rs. Lakh)	Projection (Rs. Lakh)	Approved (Rs. Lakh)
Power Purchase Cost	3481.69	3619.16	3485.49	3622.68
R&M Expenses	8.45	211.24	8.59	221.46
Employee cost	172.34		180.96	
A&G Expenses	28.08		29.30	
Depreciation	106.13	72.03	112.43	72.03
Interest and finance charges	-	-	-	-
Return on equity	41.80	21.86	39.09	21.86
Total Expenditure	3838.50	3924.29	3855.87	3938.03
Revenue from sale of power	3641.48	3887.85	3641.48	3887.85
Other income	120.95	120.95	128.79	128.79
Total income	3762.43	4008.80	3770.27	4016.64
Revenue Surplus (+)/ Gap (-)	(-)76.07	(+)84.51	(-)85.60	(+)78.61

Order of the Commission

69. The Commission considered the application for approval of ARR & ERC for the Control Period 2018-19 to 2021-22, the additional clarifications and submissions furnished by the licensee along with the comments of KSEB Ltd. Accordingly the approved ARR & ERC for the Control Period 2018-19 to 2021-22 are as shown below.

Particulars	2018-19 Approved (Rs. Lakh)	2019-20 Approved (Rs. Lakh)	2020-21 Approved (Rs. Lakh)	2021-22 Approved (Rs. Lakh)
Total income	3602.47	3855.26	4008.80	4016.64
Total Expenditure	3660.96	3819.78	3924.29	3938.03
Revenue Surplus (+)/ Gap (-)	(-)58.49	(+)35.48	(+)84.51	(+)78.61

Directives of the Commission

70. In view of the facts and reasons explained in earlier paragraphs, the Commission gives the following directives. The licensee shall,

- (i) Promote demand side management and energy efficiency measures within its area of license.
- (ii) Reduce the distribution loss to the limits as approved in the order
- (iii) The capital investments shall be done after following proper open tendering processes and after obtaining approval of the Commission.

Sd/-
K.Vikraman Nair
Member

Sd/-
Preman Dinaraj
Chairman

Approved for issue
Sd/-
G.Jyothichudan
Secretary