

**KERALA STATE ELECTRICITY REGULATORY COMMISSION
THIRUVANANTHAPURAM**

Petition No :OA 25/2019

**Present: Shri. R. Preman Dinaraj, Chairman
Shri.S.Venugopal, Member**

**In the matter of Application filed by M/s Technopark for the approval of
ARR& ERC for the control period 2018-19 to 2021-22**

Applicant: M/s Technopark

Order Dated 24-03-2020

1. M/s Technopark, Thiruvananthapuram, is a deemed distribution licensee for distribution of electricity in the Technopark campus. The license for distribution was originally given by Government of Kerala as per Government Order No. G.O.(P) No.19/99/PD dated 12-7-1999. The Technopark has four phases: Phase I, which is the existing park (156 Acres). Phase II (86 acres) is leased out to M/s.Infosys and M/s.UST Global. Phase III extending over 93 acres of land, also a SEZ, is adjacent to phase I. Phase IV is the Technocity (450 acres). Technopark, Kollam (44 acres) is also part of its expansion.
2. The Commission has issued the Kerala State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2018 vide notification No. 2076/F&T/2017/KSERC on 05-10-2018. Regulation 10 mandates that

(1) Every generating business/company or transmission business/licensee or distribution business/licensee or State Load Despatch Centre shall file, on or before the thirty first day of October 2018, the following petitions for the Control Period:

- a) Petition for approval of Aggregate Revenue Requirement and determination of tariff for each year of the Control Period.*
- b) Petition for truing up of Aggregate Revenue Requirement for the financial years till 2016-17:*

Provided that the truing up for the respective financial years shall be carried out under the relevant Regulations applicable to the respective years.

Provided further that every generating business/company or transmission business/licensee or distribution business/licensee or State Load Despatch Centre shall on or before the first day of January, 2019 file the petition for Truing up of Aggregate Revenue Requirement for the financial year 2017-18 and shall file on or before the Thirtieth day of November of every subsequent financial years during the Control Period, the petition for Truing up of Aggregate Revenue Requirement for the financial years subsequent to 2017-18.

3. Technopark vide letter Ref No:ETPK/KSERC/2018-19/985 dated 24th October, 2018 requested the Commission to grant extension of time for filing ARR-ERC petition for the financial year 2018-19 due to the following reasons.
 - *“The external consultants engaged for regulatory affairs had ceased rendering their services.*
 - *The Terms and conditions for determination of Tariff Regulations 2018 was published by Hon’ble Commission on 08th October 2018. Since the technical/financial data is required for the period from 2018-19 to 2021-22, we need some more time to prepare the details for submission of ARR.*
 - *The truing up application up to FY 2015-16 is submitted and additional time is needed for the preparation and submission of truing up petition for FY 2016-17.”*
4. Considering the above, Technopark requested time extension till 20th December 2018 for submission of ARR-ERC application for the control period and truing up application for FY 2016-17. The Commission after duly considering the request granted time till 30-11-2018. The licensee has filed the petition for the approval of ARR & ERC for the control period only on 06-06-2019 which was filed after a delay of 187 days. The licensee has also filed petition for condonation of delay in which the reasons for delay in filing of petition for ARR-ERC are explained. The reasons are summarised below.
 - Consultant appointed for the preparation of ARR-ERC had ceased rendering their services.
 - Lack of in-house expertise in preparation of ARR-ERC under multi-year tariff framework.
 - Time consumed in finding and appointing a new consultant and non-responsiveness by the consultant.
 - Increase in the volume of data for the preparation of ARR-ERC.
 - Unexpected errors and the time taken to correct the same.
 - Time constraints due to other projects and O&M activities which had to be handled in parallel.

5. Considering the above, the licensee requested the Commission to condone the delay and to process the application for approval of ARR-ERC for control period 2018-19 to 2020-21. The Commission examined the report of the licensee for the delay in filing the petition. It is pertinent to note that the Regulations provide for time limit in filing the petition. The licensee has explained the internal issues such as lack of expertise, completion of the projects undertaken by Technopark and absence of the service of the consultant are the reasons for the delay. However the Commission is of the view that such reasons are not tenable or for the delay. However ***considering the inabilities explained by the licensee, the Commission as a special case condones the delay and admitted the petition as OA 25/2019.***
6. The licensee has filed the petition on ARR & ERC for the control period, as per the Tariff Regulation 2018 in the Multi Year Tariff Framework. A summary of the ARR-ERC projections contained in the Petition and previous year actual amounts are as shown below:

Table – 1
Comparative Statement of ARR & ERC for the control period

Particulars	As per the ARR petition		Projections			
	2016-17 (Rs. Lakh)	2017-18 (Rs. Lakh)	2018-19 (Rs. Lakh)	2019-20 (Rs. Lakh)	2020-21 (Rs. Lakh)	2021-22 (Rs. Lakh)
Power purchase Cost	4975.52	5334.03	5448.23	5676.89	5728.54	6106.81
Employee Expenses	18.14	27.51	27.44	31.43	32.95	34.55
Administration & General Expenses	227.33	159.97	159.80	130.76	112.41	118.19
Repair & Maintenance Expenses	330.69	315.83	335.34	191.72	201.00	210.73
Depreciation	281.00	271.60	268.42	272.60	273.15	252.52
Interest and finance charges	146.14	119.73	79.31	64.11	58.02	52.51
Interest on Working Capital	62.63	63.59	63.77	65.32	66.16	72.11
Interest on consumer security deposits	70.42	77.74	81.29	85.35	89.62	94.10
Return on /Net Fixed Assets	120.76	123.05	114.90	108.48	106.79	98.71
Aggregate Revenue Requirement	6232.62	6493.04	6578.48	6626.67	6668.63	7040.22
Revenue from sale power	5593.41	6200.55	6252.87	6434.21	6490.57	7016.12
Non-tariff Income	70.68	89.63	66.61	72.47	75.59	83.13
Total Income	5664.09	6290.18	6319.48	6506.68	6566.16	7099.25
Revenue Surplus/ Gap	-568.54	-202.87	-259.02	-119.98	-102.48	+59.02

7. The licensee has proposed a decreasing trend in the revenue gap for each year of the control period.

Hearing on the Matter

8. The hearing on the petition was conducted on 21-11-2019 at the Malabar Hall, Park Centre, Technopark Campus, Thiruvananthapuram. The applicant M/s Technopark was represented by Sri.Sasi P.M, Chief Executive Officer, Smt. Jayanthi. L, Chief Finance Officer, Sri.Madhavan Praveen, Dy.General Manager and other officers of the licensee. Sri. Anfal, Dy. Manager, Electrical and Sri. Viswanathan, Assistant Manager Finance presented the details of the petition for the approval of ARR& ERC for the control period 2018-19 to 2021-22 and gave clarifications on the queries of the Commission. The main points submitted in the petition are mentioned below.

- The licensee has proposed revenue gaps for the first three years of the control period. For the year 2021-22, the licensee has proposed revenue surplus. The projections made by the licensee for each year of the control period are based on the pre-revised tariff.
- The number of consumers is projected to increase during the years of the control period ie. from 863 in 2018-19 to 1022 in 2021-22. For the year 2018-19, the proposed sale is 86.54 MU. The sales projected for the subsequent years of the control period are 89.24 MU for 2019-20, 90.91 MU for 2020-21 & 96.67 MU for the year 2021-22. The major sale of the licensee is to the HT category.
- The licensee has estimated a distribution loss of 1.89% for 2018-19 which will increase to 2.57% in 2019-20. For the subsequent years, the distribution loss is proposed to be reduced to 2.38% in 2020-21 and further to 2.14% in 2021-22.
- For the year 2018-19, the proposed energy requirement is 88.21 MU. The energy requirement projected for the subsequent years of the control period is 91.59 MU for 2019-20, 93.14 MU for 2020-21 & 98.79 MU for the year 2021-22.
- The power purchase cost for each year of the control period is estimated at the pre-revised tariff. Technopark agreed to submit the same as per the revised tariff. The licensee has also included the cost to meet the renewable purchase obligation for the control period. The licensee has stated that the cost is estimated at the floor price of Rs.1000/REC fixed by IEX.

- Technopark has proposed the O&M expenses higher than the normative amount fixed by the Commission.
- The employee cost for the control period is based on the cost apportioned for the employees engaged on contract basis against sanctioned posts. The licensee also mentioned that no outsourced labour costs are included as part of the employee cost.
- The A& G Expenses proposed, includes telephone, postage, audit charge, conveyance, electricity charges, licensee fee etc. The licensee has also included electricity duty payable to the Government under Section 3(1) as part of A&G expenses. For the year 2018-19, the licensee has booked towards the Security arrangements whereas the same is not proposed for the subsequent years of the control period.
- Repair and maintenance cost proposed for the control period is significantly high compared to normative amount. The licensee has stated that R&M of electrical installations in the Technopark campuses is the major component of the repair and maintenance expenses which includes the cost of manpower deployed for the operation, repair and maintenance which is outsourced through experienced agencies in the sector.
- The licensee sought capital investment proposal which includes 200kWp Grid Connected Solar Power Plant, 110kV Air Insulated Substation for Technocity, 50kWp Roof Top Grid Connected Solar Power Plant, HT panels at 110kV Substation, SITC of DG sets, Augmentation of existing power transmission system of KSEBL, CCMS street lighting for Technopark Phase-III campus, SITC of LED street lighting system at Technocity etc.
- The licensee has estimated depreciation in the straight line method as per the Tariff Regulations, 2018. The licensee has projected depreciation for each year of the control period including the capital expenditure for each year of the control period.
- The licensee has booked interest on actual loans for the control period. It was stated that the loan component for electricity distribution portion is apportioned from the total loan taken for infrastructure development. The licensee has also proposed for interest on security deposits. The interest on working capital which was proposed in the petition was not claimed during the hearing. The licensee clarified that the same has been revised and no interest on working capital is proposed for the control period.

- RoE is proposed at the rate of three percent on the net fixed assets at the beginning of the financial year.
 - Technopark has also estimated the revenue from sale of power for the years of the control period at the pre-revised tariff. Technopark stated that the same as per the revised tariff shall be submitted.
 - The non-tariff income comes mainly from the interest on the security deposits with KSEBL and Revenue from late payment surcharge. The licensee has stated that a 5% increment is proposed for the Interest on security deposits with KSEBL and Miscellaneous receipts.
9. Sri Suresh.A, EE, TRAC and Sri.Manoj.G, AEE, represented KSEB Ltd. Sri.Manoj.G presented the counter statement/comments of KSEB Ltd. and submitted the written remarks. The major points presented by KSEB Ltd are abstracted below.
- a. Though the licensee is having multiple area of supply, the licensee has submitted only a combined ARR & ERC petition.
 - b. The employee cost claimed is less than norms for FY 2018-19 and as per norms for the rest of the control period.
 - c. The R&M claimed for first year of control period (2018-19) is higher than the norms approved. The Commission may direct the licensee to limit the R&M as per norms approved by the Commission.
 - d. The A&G expenses claimed for each year of the control period is more than the norms approved by the Commission. The major expense claimed under A&G expenses is the expense for security arrangements and electricity duty under section 3(1). KSEB Ltd submitted that the Commission may take a uniform approach regarding Section 3(1) duty.
 - e. KSEB Ltd pointed out that all claims on account of controllable factors, may be limited to the normative expenses and the actual expenditure can be claimed in the true up petition only in case of uncontrollable factors.
 - f. With regard to the proposed capital investments, the investments are made for providing better quality service to the consumers of the licensee which when included in the ARR will indirectly affect the consumers of the respondent KSEB Ltd through downward BST revision and upward RST revision. KSEB Ltd submitted that the Commission may fix a ceiling of such infrastructural development investments made by the licensee.

- g. With regard to the proposed interest and finance charges, most of the capital investments are funded through grant from State Government. Hence the claim for interest and finance charges may be declined.
- h. Depreciation for assets may be allowed only after due consideration of the vintage of the assets as most of the assets were created during 1998.
- i. It was also submitted that only reasonable RoE as per KSERC (Terms and Conditions for Determination of Tariff) Regulations, 2018 may be allowed based on the approval of the capital investments

10. The licensee during the hearing mentioned that they propose to revise certain projections considering the latest actual figures and tariff order of the Commission. The Commission directed the licensee to submit the revised projections along with reasons for the revision along with the clarifications sought. It was also directed to furnish the detailed asset addition from 2012-13 onwards for approval at the earliest. The Commission also directed the licensee to submit the same and the reply on the counter statement submitted by KSEB Ltd. within two weeks

11. The licensee vide letter No.ETPK/KSERC/2019-20/33 dated 01-01-2020 submitted the details and the reply on the counter statement submitted by KSEB Ltd. The reply to the comments of KSEB Ltd is briefed below.

- With regard to the comment on submission of combined ARR&ERC petition than submitting area wise details, it was submitted that the licensee had furnished the phase wise details as per formats given in the Tariff regulations. The Power sales, Power purchase and related matters contribute to about 85% of expenses / income. However, the other expenses such as Interest costs, O&M etc are provided for the whole distribution business since accounts are maintained for the whole business. Since the Commission has been benchmarking costs and determining Bulk Tariff for the whole business, there is no additional benefit in segregating the phase wise expenses and segregation of expenses.
- On the comment on the employee cost claimed being less than norms for 2018-19 the licensee submitted that the employee costs for 2018-19 was estimated and the same is revised based on actual amount incurred.

- Regarding the comment on the claim of high repair and maintenance cost, the licensee submitted that the norms fixed by the Commission is not enough as the expansion of business, network facilities, additional manpower, spares etc for operation and maintenance were not fully considered while fixing norms. It was also submitted that, the new business area Technocity at Pallippuram (Phase - 4) is also to be included while fixing the norms.
- Against the comment of KSEB Ltd regarding not to pass on the section 3 duty, the licensee submitted that the duty under section 3 of the Kerala Electricity Duty Act may be allowed as the amount is huge and has a heavy impact on the return
- The licensee also stated that only genuine expenses essential for running the distribution business are claimed and the norms for operation and maintenance are not sufficient to carryout the business. Hence the norms may be relaxed in such cases and allow the genuine expenses based on past data as well as expenses required for new areas which are not included.
- With regard to the comment to fix a ceiling of such infrastructural development investments made by the licensee, the licensee stated that the Capital Investments required for distributing electricity to the consumers and ensuring quality & reliability of supply is the obligatory as per statutes. The capital investments in distribution business depend on the business expansion, market conditions and Government policies. Therefore, limits cannot be imposed for investments in advance. It was also mentioned that the Commission may approve the capital investments after the due prudence check as per the Regulation.
- The licensee also clarified that no interest or financial charges are claimed on investment grant provided by the State Government.
- In reply to the comment on allowing depreciation considering the vintage of the assets, the licensee submitted that an asset register is maintained as per the statutes in force and vintage aspect of assets is also considered.
- With regard to the comment that RoE can be allowed only after the approval of the capital investments, it was stated that a separate submission will be made for obtaining approval for the capital investments.

12. The Commission in its order dated 08-07-2019 in OA 15/2018 had revised the Retail supply Tariff (RST) applicable to the consumers across the state and the Bulk Supply Tariff (BST) applicable to the licensees. The licensee in the clarifications dated 01-01-2020 has submitted it had revised the ARR & ERC considering the revised tariff and the projections are also revised based on the actual ARR&ERC for the year 2018-19. The licensee has revised the components of ARR & ERC except depreciation, interest and finance charges & RoE. The revised projections for the control period are tabulated below.

Table – 2
Summary of the Projected ARR&ERC based on Revised Tariff

Particulars	Revised Projections			
	2018-19 (Rs. Lakh)	2019-20 (Rs. Lakh)	2020-21 (Rs. Lakh)	2021-22 (Rs. Lakh)
Power purchase Cost	5451.92	6155.69	6598.58	7264.59
Employee Expenses	33.10	35.25	37.83	37.83
Administration & General Expenses	196.98	208.14	168.95	152.47
Repair & Maintenance Expenses	410.13	454.97	510.39	552.25
Depreciation	268.42	272.60	273.15	252.52
Interest and finance charges	79.31	64.11	58.02	52.51
Interest on Working Capital	0.00	0.00	0.00	0.00
Interest on consumer security deposits	81.29	82.98	84.64	86.33
Return on Equity /Net Fixed Assets	114.90	108.48	106.79	98.71
Aggregate Revenue Requirement	6636.05	7382.22	7838.35	8497.21
Revenue from sale power	6360.81	7070.11	7466.51	8179.97
Non-tariff Income	98.39	81.94	85.53	89.31
Total Income	6495.20	7152.05	7552.04	8269.28
Revenue Surplus/ Gap	-176.85	-230.17	-286.31	-227.93

13. As per the revised petition, the revenue gap of the licensee has increased compared to the initial submission.

Analysis and decision of the Commission

14. The Commission considered the petition 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:

15. **No. of Consumers and 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.*

16. The licensee has submitted the detailed category wise split up of the number of consumers and sales for the control period. Technopark phase-I campus is the fully developed campus of Technopark. The maximum number of consumers of Technopark is in phase-I campus. Technopark phase-II&III campus and Technopark Kollam campus is under development stage. The projection of the number of consumers at various campuses of Technopark is tabulated below.

Table – 3
Projection of the Number of consumers &Energy sales

Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
	Actual			Estimate	Projected	Projected
Technopark Phase-I	523	550	575	569	613	637
Technopark Phase-II & III	210	229	239	243	260	293
Technopark Kollam	54	55	55	56	69	79
Technocity campus	0	0	0	0	9	12
Total	587	834	869	868	951	1021

17. As per the details submitted, the licensee has not proposed any major increase for 2019-20, whereas has proposed increase in the consumer strength for the future years of the control period. The licensee has also proposed increase in the sales for the years of the control period. The details of the phase wise sales proposed for the years of the control period is tabulated below.

Table – 4
Projection of the Phase wise Energy sales

Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
	Actual	Actual	Actual	Projected	Projected	Projected
Phase I (Lakh units)	620.94	607.55	599.50	635.21	660.14	705.11
Phase II & III (Lakh units)	212.60	239.51	264.08	295.87	303.63	336.87
Phase V Kollam (Lakh units)	5.72	4.74	4.83	5.38	6.87	8.87
Technocity(Lakh units)	0.00	0.00	0.00	0.00	19.05	42.33
Total Sales (Lakh units)	839.26	851.80	868.41	936.46	989.69	1093.19
% increase over previous year		1.49%	1.95%	7.84%	5.68%	10.46%

18. Compared to the previous years, the licensee has proposed for an increase in the sales for the years of the control period. In phase I campus, the actual sale for 2018-19 is lower than the previous year whereas has proposed for an increase in the sales. With regard to phase II campus, there is a consistent increase in the sales compared to the previous years. The licensee has also projected an increase in the sales in Kollam campus. Sales is projected for the Technocity campus as the phase is expected to be functional from 2020-21. The major sale of the licensee is to the LT IV B & HT I category of consumers.
19. The Commission had gone through the projections in detail. It is seen that the projections made by the licensee is not consistent manner and the increase between the years are having wide variations. ***The Commission has considered the proposed increase in the number of consumers, area of licensee and the increase in the sales in the new campuses and approves the sales as proposed by the licensee.***
20. **Distribution Loss & Energy requirement:** As per Regulation 72, the licensee is to provide voltage level distribution loss and distribution loss trajectory for the control period with necessary supporting studies. The distribution licensee shall also propose the loss reduction targets for each financial year of the control period along with the distribution loss levels. The Commission approves the target level of losses based on the opening level of losses, the figures filed by licensee and other relevant factors.
21. The licensee has proposed an increase in the energy requirement to cater to the proposed increase in the sale for the control period. Based on the petition, the proposed Distribution Loss is as shown below.

Table – 5
Proposed Distribution loss for the control period

Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
	Actual	Actual	Actual	Estimate	Projected	Projected
Energy Requirement Lakh units	868.05	868.33	882.13	953.09	1007.83	1113.16
Energy sales Lakh units	839.27	851.80	868.41	936.46	989.69	1093.19
Distribution loss Lakh units	28.78	16.53	13.72	16.63	18.14	19.97
Distribution loss (%)	3.32%	1.90%	1.56%	1.75%	1.79%	1.79%

22. The Commission, for the first control period had approved a distribution loss of 3.80%. There is gradual reduction in actual distribution losses reported by the licensee. The reduction in losses as per the details furnished by the licensee on account of conducting energy audit study and consequent measures taken for reduction in losses. As shown above, the licensee has projected a lower distribution loss targets compared to the previous approved level. As per the details submitted in the petition, the actual distribution loss for 2018-19 is 1.56%. The major distribution activity occurs in Phase I, II & III only. The licensee has also stated that the Technocity campus will be commissioned at 2020-21.
23. The licensee has submitted the phase wise details of the distribution loss. The phase wise distribution loss is tabulated hereunder.

Table – 6
Proposed Phase wise distribution loss for the control period

Phase I	2018-19	2019-20	2020-21	2021-22
	Actual	Projected	Projected	Projected
Energy Requirement Lakh units	609.21	646.69	672.18	717.96
Energy sales Lakh units	599.50	635.21	660.14	705.11
Distribution loss Lakh units	9.71	11.48	12.04	12.85
Distribution loss (%)	1.59	1.78	1.79	1.79

Phase II & III	2018-19	2019-20	2020-21	2021-22
	Actual	Projected	Projected	Projected
Energy Requirement Lakh units	267.35	300.92	309.20	343.05
Energy sales Lakh units	264.08	295.87	303.63	336.87
Distribution loss Lakh units	3.27	5.05	5.57	6.18
Distribution loss (%)	1.22	1.68	1.80	1.80

Phase V	2018-19	2019-20	2020-21	2021-22
	Actual	Projected	Projected	Projected
Energy Requirement Lakh units	5.38	5.49	7.01	9.03
Energy sales Lakh units	4.83	5.38	6.87	8.87
Distribution loss Lakh units	0.55	0.11	0.14	0.16
Distribution loss (%)	10.22	2.00	2.00	1.77

Technocity	2018-19	2019-20	2020-21	2021-22
	Actual	Projected	Projected	Projected
Energy Requirement Lakh units	0.00	0.00	19.45	43.11
Energy sales Lakh units	0.00	0.00	19.05	42.33
Distribution loss Lakh units	0.00	0.00	0.40	0.78
Distribution loss (%)	0.00	0.00	2.06	1.81

24. The licensee has not given detailed explanation of the proposed loss levels for the control period. In the case of Phase I to III the licensee states that the present loss levels may not be sustained in future and there may be slight increase in loss. In the case of phase V, the connection is converted and they expect the loss levels to be reduced.
25. Since, reduction in distribution loss is an important parameter which has a direct impact on power purchase cost and available energy for distribution; it is a criterion that the licensees should continuously strive to improve upon. The Commission had considered the phase wise distribution loss proposed for the control period. It is seen that the loss proposed for Phase I, Phase II & III are showing an increasing trend. As mentioned above, distribution loss is a controllable factor and reduction in distribution loss is an important parameter for improvement. Accordingly, the proposed increase in the distribution loss is not a prudent practice. The Kerala State Productivity Council had conducted energy audit in the license area. The licensee has taken up measures as suggested in the energy audit report and the losses has been reduced in the year 2018-19 compared to 2016-17 and 2017-18, as per the details furnished by the licensee.
26. With regard to Kollam and Technocity campuses, the energy sales are only a minor portion of the entire distribution business of the licensee. As per the details, the actual loss for the year 2018-19 at Kollam campus is 10.22%, whereas the licensee projected the loss to be reduced to 1.77 % in 2021-22. The reason stated for the reduction is that the licensee has shut down the substation at the campus as the load is significantly low. The licensee has also proposed a distribution loss at the Technocity which is expected to be commissioned at 2020-21. Considering the developments expected at Technocity, the Commission approves the loss as projected for the phases. Accordingly, the Commission sets the phase wise loss reduction targets as shown below.

Table – 7
Approved phase wise distribution loss

Phase I	2018-19	2019-20	2020-21	2021-22
	Actual	Approved	Approved	Approved
Energy Requirement (lakh units)	609.21	645.34	670.53	716.07
Energy sales (lakh units)	599.5	635.21	660.14	705.11
Distribution loss (lakh units)	9.71	10.13	10.39	10.96
Distribution loss (%)	1.59	1.57	1.55%	1.53%

Phase II& III	2018-19	2019-20	2020-21	2021-22
	Actual	Approved	Approved	Approved
Energy Requirement (lakh units)	267.35	299.49	307.32	340.96
Energy sales (lakh units)	264.08	295.87	303.63	336.87
Distribution loss (lakh units)	3.27	3.62	3.69	4.09
Distribution loss (%)	1.22	1.21	1.20	1.20

Phase V	2018-19	2019-20	2020-21	2021-22
	Actual	Approved	Approved	Approved
Energy Requirement (lakh units)	5.38	5.49	7.00	9.03
Energy sales (lakh units)	4.83	5.38	6.87	8.87
Distribution loss (lakh units)	0.55	0.11	0.14	0.16
Distribution loss (%)	10.22	2.00	1.85%	1.77

Technocity	2018-19	2019-20	2020-21	2021-22
	Approved	Approved	Approved	Approved
Energy Requirement (lakh units)	0	0	19.45	43.11
Energy sales (lakh units)	0	0	19.05	42.33
Distribution loss (lakh units)	0	0	0.4	0.78
Distribution loss (%)	0	0	2.06	1.81

27. *The Commission directs the licensee to limit the distribution loss at the approved levels for each phase separately. Thus the overall distribution loss level would be as shown below.*

Table – 8
Approved Overall distribution loss and energy requirement

Technopark	2018-19	2019-20	2020-21	2021-22
	Approved	Approved	Approved	Approved
Energy Requirement (lakh units)	881.94	950.32	1,004.30	1,109.17
Energy sales (lakh units)	868.41	936.46	989.69	1,093.18
Distribution loss (lakh units)	13.53	13.86	14.62	15.99
Distribution loss (%)	1.53%	1.46%	1.46%	1.44%

28. **Power Purchase Cost:** - The licensee has proposed an increase in the power purchase cost for each year of the control period considering the increase in the sale of power and the number of consumers. The licensee has given phase-wise details of the power purchase cost for each year of the control period. The licensee has also included the cost of purchasing renewable energy certificates for each year of the control period as part of power purchase cost. The power purchase cost proposed for the control period is shown below.

Table – 9
Power purchase cost projected for the control period

Period	Energy requirement	Power Purchase Expenses	Cost of purchase of REC	Total Power Purchase Expenses
	Lakh Units	Rs Lakh	Rs Lakh	Rs Lakh
2018-19 (Actual)	882.12	5370.76	81.16	5451.92
2019-20 (Estimated)	953.09	6059.69	96.00	6155.69
2020-21 (Projected)	1007.83	6480.01	118.56	6598.58
2021-22 (Projected)	1113.16	7095.55	169.04	7264.59

29. The details of the projections made by the licensee excluding the cost of purchase of RECs are shown below.

Table –10
Power purchase cost excluding the cost of purchase of RECs

Period	Energy in Lakh Units	Demand charges	Energy Charges	Other Charges	Fuel Surcharge collected	Total Power Purchase Expenses
		Rs Lakh	Rs Lakh	Rs Lakh	Rs Lakh	Rs Lakh
2018-19 (Actual)	882.12	730.13	4590.07	14.78	35.78	5370.76
2019-20 (Estimated)	953.09	838.84	5183.69	37.16	-	6059.69
2020-21 (Projected)	1007.83	936.93	5543.08	0.00	-	6480.01
2021-22 (Projected)	1113.16	973.19	6122.36	0.00	-	7095.55

30. The licensee has stated that the excess demand charges due to the transmission line constraints in Technopark Phase-II&III campuses would be resolved by 2020-21 once the augmentation of existing power transmission system of KSEB Ltd for catering the additional power requirements of Technopark Campuses is completed.

31. As mentioned above, the licensee has also included the cost of purchase of REC as part of power purchase cost. The details submitted by the licensee are shown below.

Table –11
Details of the purchase of RE Certificates

Year	2018-19	2019-20	2020-21	2021-22
Sales (Units)	86841292	93645968	94992464	109319060
Solar RPO %	2.75%	4.00%	5.25%	6.75%
Solar RPO (Units)	2388136	3745839	4987104	7379037
RE Generation (Units)	337450	349524	404712	404712
Solar Banking (Units)	13328	1287720	1275456	1275456
RE Certificate Purchase (Nos)	2037	2109	3307	5699
REC Costs (Rs)	2037357	2108595	3306936	5698869
Non-Solar RPO %	7.00%	8.00%	9.00%	10.25%
Non-Solar RPO Units	6078890	7491677	8549322	11205204
Non solar REC Purchase	6079	7492	8549	11205
Non solar REC Costs	6078890	7491677	8549322	11205204
Total RE cost	8116248	9600272	11856258	16904072
Total Cost of REC (Rs.Lakh)	81.16	96.00	118.56	169.04

32. The Commission examined the proposed compliance of the RPO proposed by the licensee. The Commission notes that the licensee proposes to meet the renewable purchase obligation through the purchase of RE certificates. However no proposal is given for the purchase of energy. The Commission has put up on their website on 07-02-2020 the Kerala State Electricity Regulatory Commission (Renewable Energy and Net Metering) Regulations, 2020 and the same is in the process of being notified. The licensee has in the petition proposed the Quantum of purchase from Renewable Energy Sources as a percentage of total consumption as per the Regulations. Sub regulation 6 of regulation 4 of the Kerala State Electricity Regulatory Commission (Renewable Energy and Net Metering) Regulations, 2020, states that a distribution licensee which is engaged in bulk purchase of electricity from another licensee shall not have separate obligation if the seller licensee meets the renewable purchase obligation for the energy sold. The relevant portion of the said regulation is quoted hereunder.

“(4) Renewable Purchase Obligation (RPO) of the Distribution licensee-
Every distribution licensee shall meet the renewable energy obligation at the percentage specified.....

.....
.....

(6) A distribution licensee which is engaged in bulk purchase of electricity from another licensee shall not have separate obligation for purchase of

renewable energy if,-

- (i) the seller licensee meets the renewable purchase obligation for the energy sold to the licensee or
(ii) The licensee reimburses to the seller licensee the additional cost incurred as approved by the Commission by the seller licensee for the generation or purchase of renewable energy to meet the renewable purchase obligation of the licensee.”

33. Accordingly the Commission is of the view that the first instance the renewable purchase obligation of the licensee may be met through either direct purchase of renewable energy by the licensee or through the bulk supplier. The licensee is endeavored to take endeavor on these alternatives so as to ensure that the Renewable Purchase Obligation is fulfilled through purchase of renewable energy and the option of purchase of RE certificates shall be considered only as a last option. ***Thus the claim of cost of the purchase of renewable energy certificates is not considered at present.***

34. Based on the approved the distribution loss, the power purchase cost approved for the years of the control period is shown below.

Table – 12
Power purchase cost approved for the control period

		Unit	2018-19	2019-20	2020-21	2021-22
1	Phase 1	MVA	13.8523	14.4433	15.2250	16.2617
2	Phase II & III	MVA	5.8211	6.7183	6.8408	7.5892
3	Phase IV	MVA			0.6608	1.4650
4	Phase V	MVA	0.6047	0.0033	0.2383	0.3067
5=1+2+3+4	Total Billing Demand		20.2781	21.1650	22.9650	25.6225
6	Demand Charges	(Rs./kVA)	300.00	300/340	340.00	340.00
7=5*6*12	Demand charges	(Rs. Lakh)	730.01	836.78	936.97	1,045.40
8	Energy Purchase	(lakh units)	881.94	950.32	1,004.30	1,109.17
9	Energy charge	(Rs./kWh)	5.2	5.20/5.50	5.50	5.50
10=8*9	Energy charges	(Rs. Lakh)	4,586.09	5,151.78	5,523.67	6,100.41
11=7+10	Total Power purchase cost	(Rs. Lakh)	5,316.10	5,988.56	6,460.64	7,145.81

35. ***Thus, the total power purchase cost approved for the control period is Rs.5316.10 lakh, Rs.5988.56 lakh, Rs.6460.64 lakh and Rs.7145.81 lakh respectively for each year of the control period from 2018-19 to 2021-22.***

36. **O&M Expenses:** Operation & maintenance expenses includes controllable items like Employee cost, Repair & Maintenance Expenses & Administrative & General

Expenses. The Commission as per the Regulation 5 of the KSERC (Terms and conditions for Determination of Tariff) Regulations, 2018 has stated that the norms of operation specified under these Regulations are the ceiling norms. The Commission as per Regulation 79(3) of the KSERC (Terms and conditions for determination of tariff) Regulations, 2018 has approved the operation & maintenance cost of Technopark for the control period. A comparison of the projections made by the licensee and the normative amount approved by the Commission is shown below.

**Table –13
Comparison of the O&M expenses (Rs.lakh)**

Particulars	2018-19		2019-20		2020-21		2021-22	
	Projection	Norms	Projection	Norms	Projection	Norms	Projection	Norms
Employee Expenses	33.10	265.08	35.25	277.91	37.83	291.36	37.83	305.47
A&G Expenses	196.98		208.14		168.95		152.47	
R&M Expenses	410.13		454.97		510.39		552.25	
Total	640.21	265.08	698.36	277.91	717.17	291.36	742.54	305.47

37. The licensee, in the clarifications, has submitted that the projections on O&M expenses for the years 2019-20, 2020-21 & 2021-22 was revised based on the actual expenses in 2018-19. The revised estimates are significantly higher than the norms and higher than the initial submission and 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-14
Per unit O&M cost based on projections**

Sl.No	Particulars	2018-19	2019-20	2020-21	2021-22
1	Total Sales (lakh units)	868.41	936.45	949.92	1093.19
2	Projected Employee cost (Rs.lakh)	33.10	35.25	37.83	37.83
3	Projected R&M Expenses (Rs.lakh)	410.13	454.97	510.39	552.25
4	Projected A&G Expenses (Rs.lakh)	196.98	208.14	168.95	152.47
5	Projected O&M Expenses (Rs.lakh)	640.21	698.36	717.17	742.54
6	Per unit Employee cost - Rs/unit (2/1)	0.04	0.04	0.04	0.03
7	Per unit R&M Expenses - Rs/unit (3/1)	0.47	0.49	0.54	0.51
8	Per unit A&G Expenses - Rs/unit (4/1)	0.23	0.22	0.18	0.14
9	Per unit O&M Expenses - Rs/unit (5/1)	0.74	0.75	0.75	0.68

38. The detailed analysis of each head under operation and maintenance expense projected by the licensee for each year of the control period is detailed below.
39. **Employee cost:** The licensee for the years of the control period had estimated the employee cost based on the actual employee cost incurred in the year 2018-19.

40. As per the petition, the major component of the employee cost is basic salary and dearness allowance. The details of the employees deployed and the apportionment of their cost as furnished by the licensee is as follows:

**Table –15
Details of Apportionment**

Designation	Posts	Apportionment %
Dy Gen Manager (Projects)	01	50%
Deputy Manager (Elec)	01	100%
Junior Electr Engineer from FY21	01	100%
Chief Finance Officer	01	25%
Asst Manager (Fin)	01	35%
Asst Fin Officer	01	25 %

41. *Since till date there are no specific criteria in the type of posts and its number/apportionment, as a first step the Commission accepts the above manpower and its apportionment for the control period.*

42. A comparison of the split up of the employee cost is shown below.

**Table –16
Details of Employee cost for the control period**

Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
	Audited (Rs. Lakh)	Actuals (Rs. Lakh)	Actual (Rs. Lakh)	Estimated (Rs. Lakh)	Projection (Rs. Lakh)	Projection (Rs. Lakh)
Basic Salary	8.47	6.98	15.32	25.01	26.54	26.54
Dearness Allowance	7.28	14.53	11.72	5.00	5.31	5.31
House Rent Allowance	0.14	0.31	0.49	0.69	0.65	0.65
Other Allowances (CCA)	0.02	0.05	0.33	0.40	1.36	1.36
Medical Reimbursement	0.00	1.96	0.00	0.00	0.00	0.00
Interim Relief / Wage Revision	0.72	0.70	0.00	0.00	0.00	0.00
Staff welfare expenses	1.37	0.00	0.00	0.00	0.00	0.00
Training Expenses	0.14	0.00	0.00	0.00	0.00	0.00
Provident Fund Contribution	0.00	2.20	3.64	3.64	3.97	3.97
Others : Arrears	0.00	0.78	1.60	0.51	0.00	0.00
Gross Employee Expenses	18.14	27.51	33.10	35.25	37.83	37.83
% Increase over previous year		51.65%	20.32%	6.50%	7.32%	0.00%

43. As mentioned, the major part of the employee expenses is salary and DA. However, the actual details furnished by the licensee from 2016-17 to 2018-19 shows considerable variation in the said components and there is no pattern in the

expenses. However, the projections given for 2019-20 to 2021-22, the licensee has considered the anticipated wage revision.

44. The licensee has stated that the cost for deploying a junior engineer is to be considered from the year 2020-21 when the Phase-4, Technocity become operational. Hence the licensee has requested that the same may be allowed as part of employee cost.
45. The licensee in the write up has also mentioned that the salaries and benefits to the employees are revised every five year and the next revision is due in the year 2021. The revision of salaries requires Government approval. Hence the projections based on the expected salary revision are not considered as it is difficult to estimate the figures at this time. ***The licensee is also directed that they shall submit complete details as and when the Salary is revised as per Government approval obtained along with the petitions for truing up of accounts for the respective years.***
46. The Commission has perused for consideration the details submitted by the licensee. Employee cost being a controllable expense, the Commission is of the considered view that the licensee is to take all earnest efforts to limit the number of employees as approved in Table 15 and limit the employee expense. ***However, as per the provisions of the Regulations 14(3) and Regulation 79(11) of the Tariff Regulations, 2018, reasonable expenses towards Pay revision, and increase in expenses due to addition of new area can be allowed separately under the O&M expenses at the time of truing up after prudence check. Hence, the licensee may furnish sufficient details during the truing up for claiming such expenses.***
47. ***There is considerable delay on the part of the licensee in complying with Regulatory filing etc., though the licensee has apportioned certain amount of man power for distribution operations. The Commission notes that within the overall framework, the manpower approved in Table 15 is sufficient to manage the regulatory affairs on a continuous basis, which is apparently not present now. The Commission directs the licensee to take steps to address the issue and avoid such delays in future.***

48. **A&G Expenses:** The A&G Expenses proposed for each year of the control period includes telephone, postage, audit charge, conveyance, electricity charges, licensee fee etc. The other major items booked under A&G expense are the Security arrangements and the electricity duty payable to the Government under Section 3(1) of the Kerala Electricity Duty Act 1963. The licensee has projected to reduce the A&G expense over the years of the control period. The split up of the projection is tabulated hereunder.

Table-17
Split up details of the A&G Expenses

Particulars	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
	Audited	Actual	Actual	Projected		
Insurance	1.21	0.00	1.20	2.55	2.81	3.09
Telephone & Postage, etc.	0.61	0.67	0.49	0.54	0.57	0.63
Legal charges (Inspection Charges)	0.00	3.67	6.12	6.73	7.08	7.79
Audit Fees	0.20	0.30	0.30	0.30	0.30	0.30
Consultancy charges	11.62	1.10	0.00	2.00	2.20	2.42
Other Professional charges	0.00	0.80	0.00	21.89	0.00	0.00
Conveyance	6.46	4.50	6.60	7.26	7.61	8.37
Electricity charges	11.85	12.25	11.03	11.30	11.89	13.08
Fees & subscription	0.00	0.00	0.44	0.59	0.50	0.50
Printing & Stationery	0.32	0.18	0.00	0.20	0.20	0.20
Freight	0.00	0.00	0.00	0.01	0.00	0.00
Bank Charges	0.01	0.10	0.06	0.10	0.10	0.10
Office Expenses	0.95	0.00	0.00	0.03	0.10	0.10
License Fee and other fee	12.37	1.80	4.50	4.68	5.00	5.00
Security arrangements	85.44	83.60	114.24	95.96	75.60	52.90
Others	46.60	0.00	0.00	0.00	0.00	0.00
A&G Expenses	177.65	108.97	144.98	154.14	113.95	94.47
Ele. Duty u/s 3(I), KED Act	49.68	51.00	52.00	54.00	55.00	58.00
Gross A&G Expenses	227.33	159.97	196.98	208.14	168.95	152.47

49. As per the split up, it may be seen that the major expenses are towards Security arrangements and the electricity duty payable to the Government under Section 3(1). The Commission in the previous orders had already directed that Duty under section 3 cannot be passed on to the consumers in view of the statutory provisions of the Kerala Electricity Duty Act, 1963.

50. The Commission has examined the projections of the licensee on the A&G expenses. Regarding security expenses, it is seen that the licensee's projection of security expenses is far higher than the employee costs deployed for licensee's operational duties. This is not acceptable, though it has been showing decreasing trend over the years of the control period. The Commission in the previous orders have commented on the higher share of security charges booked under distribution business and allowed only a part of the amount (10%) booked, considering the fact

that providing security is the responsibility of the Park business. If the licensee feels aggrieved with this allocation, they are directed to furnish complete details of the security staff, their location of posting, number, pay etc., with full justification. As far as possible, the licensee shall include the expenses which directly assignable to the distribution business directly, and apportionment of expenses shall be resorted to only if it is absolutely necessary and cannot be segregated. The licensee has also booked Rs.21.89 lakh under 'Other professional charges' during 2019-20 apparently for conducting energy audit study. **Since there are a number of competent agencies available for conducting the energy audit, the licensee shall award the work only after following proper competitive tendering process and ensuring sufficient participation. Expenses on this account shall be considered by the Commission subject to prudence check at the time of truing up of respective year.**

51. **The Commission also directs the licensee to submit a copy of the energy audit as and when the report is furnished. The licensee shall also take all efforts to reduce the administrative and general expenses.** Rs. 23.24 lakh is seen as provision under 'conveyance' during last 3 years of the control period. The nature and essentiality of this 'head' shall be explained during the truing up for consideration.
52. **R&M Expenses:** The licensee in the petition has submitted the phase wise split up details of the repair and maintenance cost projected for the control period which is tabulated below.

Table-18
Comparison of the split up of the R&M Expenses

Particulars	2018-19 Actuals (Rs Lakhs)	2019-20 Projected (Rs Lakhs)	2020-21 Projected (Rs Lakhs)	2021-22 Projected (Rs Lakhs)
R&M Contracts Phase I	288.45	339.37	373.31	410.64
R&M Contracts Phase II & III	79.10	77.19	78.74	80.31
R&M Contracts Phase IV Technocity	0.00	0.00	15.00	15.00
R&M Contracts Phase V	30.46	31.55	34.08	36.80
R&M materials Phase I	3.54	3.60	3.82	4.04
R&M materials Phase II & III	8.67	3.25	5.00	5.00
R&M Materials Phase IV Technocity	0.00	0.00	0.25	0.25
R&M materials Phase V	0.00	0.00	0.20	0.20
Gross R&M Expenses	410.13	454.97	510.39	552.25

53. The licensee has stated that R&M of electrical installations in the Technopark campuses is the major component of the repair and maintenance expenses which

includes the cost of manpower deployed for the operation, repair and maintenance which is outsourced through experienced agencies in the sector. The cost claimed is solely for the O&M of the power distribution system. The licensee has stated that the works are carried out through contracts awarded after a transparent process of tendering.

54. The licensee has furnished the details of the prevailing contracts for operation and maintenance of power distribution system in each Technopark Campus and the 110 kV substation (Phase 3) as shown below.

Table-19
Details of the prevailing contracts

Campus	Contractor	From date	To date	Rs.lakh
Phase -1 Kazakuttam	Sterling & Wilson P Ltd	01-04-2017	31-03-2020	786.74
Phase - 3 Kazakuttam	AEGIS Power Engineers	01-04-2017	31-12-2022	109.46
Phase -3 110 kV Substation	Sterling & Wilson P Ltd	01-03-2019	29-02-2020	45.69
Phase - 5 Kollam	AEGIS Power Engineers	01-06-2019	31-05-2020	32.27

55. The licensee has stated that the expenses allowed in the regulations are much lower than the actual expenses incurred by the licensee and the norms does not reflect reality and are not viable and sustainable to maintain the activity of the Licensee. The licensee has also submitted that the Technocity campus (Phase – 4) will begin to function from the financial year 2020-21 and has requested that the O&M cost of this facility may be allowed separately.
56. ***The Commission notes that neither the strength nor the designation of the O&M staff in the contracts are mentioned. Also 3 of the contracts have either got over or will end by March 2020 The Commission directs that both the number and type of employees for O&M duties must be reviewed before fresh contracts are awarded. Further, the Commission has considered the details submitted by the licensee and decided that the O&M cost for the new area shall be allowed based on the details submitted of the number and type of man power while filing the petition for truing up of accounts for respective years. The licensee shall invite competitive tenders for the award of R&M activities of the licence areas and ensure that there is good competition in the tender process. The Commission directs the licensee to submit all relevant details and one time expenses if any while submitting the petitions for truing up of accounts for approval.***

57. O&M Expenses Approved: The Commission has fixed the normative O&M expense in the Tariff Regulations, 2018. As per the Regulation 79(3) 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. However, based on the above analysis the Commission is of the considered view that the O&M expense of Rs.277.91 lakh, Rs.291.36 lakh, and Rs.305.488 is to be approved for 2019-20, 2020-21 and 2021-22. ***The approved O&M expense for the control period is shown below.***

Table-20
O&M Approved for the control period

Year	Rs.lakh
2018-19	265.08
2019-20	277.91
2020-21	291.36
2021-22	305.47

58. *The licensee is directed to limit the operation and maintenance expenses at the normative amount subject to the additional provisions if any approved by the Commission under the Regulations. The Commission also directs the licensee to submit all relevant details and one time expenses/pay revision if any while submitting the petitions for truing up of accounts for the relevant years of the control period, as per the provisions of the regulations for consideration.*

59. Capital Expenditure Proposed for the Control Period: The licensee has proposed a capital investment plan for the control period. Since the required details as per the regulations were not furnished, the Commission has directed the licensee to submit complete details of the proposed expenditure, source of funds, cost benefit analysis etc. The licensee vide letter dated 16-08-2019 submitted a detailed write up of the proposed capital expenditure. The proposed capital investments also included the asset additions already proposed and approved for the year 2017-18. The licensee had filed the petition for the approval of the capital expenditure 2017-18. The Commission admitted the petition as OP 12/2017 and had conducted the hearing on the petition on 12-02-2019. The Commission on 13-11-2019 issued the order on the capital investment. The Commission had in the order approved asset

additions for the year 2017-18 which also includes the proposed asset additions for 2018-19 as the same was proposed to be done in 2017-18.

60. The details of the capital expenditure is summarized below.

Table-21
Asset additions for 2017-18

Asset Description	Total Addition to Assets (Rs.lakh)	Decision of the Commission
Augmentation of existing power transmission system of KSEBL for catering the additional power requirements of Technopark Campuses.	6090.00	Granted approval and the Commission in the order has stated that no depreciation, interest charges and return on equity shall be allowed as the source of funding is through grants from State government
11kV Power Distribution System at the South and South East side of Technopark Phase-III campus.	93.37	
110kV Air Insulated Substation for Technocity.	1580.00	
200kWp Grid Connected Solar Power Plant at Ganga & Yamuna IT Building, ETPK Phase-III SEZ Thiruvananthapuram.	124.53	Commission rejected the proposal and stated that fresh bids may be invited so as to obtain most competitive rates.

Asset additions proposed during 2018-19

Asset Description	Total Addition to Assets (Rs.lakh)	Source Of Funding	Status of the capex
Insulation resistance tester (Megger).	2.11	Equity	Already Approved vide order dated 13-11-2019
Underground energized/ de-energized cable locator.	1.85	Equity	
Civil works for augmentation of 110kV substation in Technopark Phase-III.	19.69	Equity	
HT panels at 110kV Substation Technopark Phase - III campus.	30.86	Grant	
25kWp Roof Top Grid Connected Solar Power Plant at 110kV Substation Technopark Phase-III.	13.95	Grant	
DG Synchronization System and Load Sharing System for 3x1500kVA and 1x750kVA DG Sets At Ganga/Yamuna IT Building Technopark Phase-III Thiruvananthapuram	9.15	Equity	
Basement floor electrification - Park center.	16.74	Equity	
SITC of DG sets at Tejaswini building.	175.17	Equity	
Electrical works for 150TR chiller plant	8.30	Equity	
10kWp solar panel above water tanks	6.9	Equity	
SITC of AC panel at roof top - Gayathri	6.63	Equity	
Electrification of rooftop - Gayathri	30.43	Equity	
SITC of 380kVA DG set - Gayathri	66.00	Equity	

Asset additions proposed during 2019-20

Asset Description	Total Addition to Assets (Rs.lakh)	Source Of Funding
50kWp Roof Top Grid Connected Solar Power Plant above the Water Tanks, Technopark Phase-III.	28.98	Grant

Asset additions proposed during 2020-21

Asset Description	Total Addition to Assets (Rs.lakh)	Source Of Funding
HV power distribution system at Technocity campus.	846.00	Grant
Smart Utility Billing Solution for Technopark campuses.	4.00	Equity

Asset additions proposed during 2021-22

Asset Description	Total Addition to Assets (Rs.lakh)	Source Of Funding
CCMS street lighting for Technopark Phase-III campus	49.98	Equity
Electrical Infrastructure work of IT building at Technocity campus.	920.13	Loan
SITC of LED street lighting system at Technocity	40.90	Grant

61. The capital expenditure proposed for the years of the control period is briefed below.

- **Supply Installation Testing and Commissioning (SITC) of 200kWp Grid Connected Solar Power Plant at Phase-III:** The licensee has proposed a 200 kWp Grid Connected Solar Photo Voltaic Plant to be constructed at Technopark Phase-III campus (by adding two separate PV Power Plants of 100kW each at the roof-tops of the Ganga/ Yamuna IT buildings) to be set up jointly through ANERT. The proposed cost for the proposal is Rs.124.53 lakh which is funded by grant from the Government.
- **Supply Installation Testing and Commissioning (SITC) of 50kWp Grid Connected Solar Power above the Water Tanks, Technopark Phase-III:** The licensee has proposed a Grid Connected Solar Photo Voltaic Plant to be constructed above the Water Tanks of Technopark Phase-III campus with a capacity of 50kWp. The proposed cost for the proposal is Rs.28.98 lakh which is funded by grant from the Government.
- **SITC of 25kWp Roof Top Grid Connected Solar Plant at 110kV Substation Technopark Phase-III:** Another proposal is for a 25 kWp Grid Connected Solar Photo Voltaic Plant to be constructed at Technopark Phase-III campus at a cost of Rs.13.95 lakh funded through grant from the Government
- **SITC of 10kWp Roof Top Grid Connected Solar Power Plant At Main Water Tank Technopark Phase-I.** A 10kWp Grid Connected Solar Photo Voltaic Plant is proposed to be constructed at Roof top of Main Water Tank Technopark Phase-I at a cost of Rs.6.90 lakh
- **Construction of 110kV Air Insulated Substation for Technocity:** Technopark has submitted that, the Technocity project was officially launched on 05-06-2010. Technocity is proposed to be developed as an integrated township of 451 acre,

and will include IT, ITeS infrastructure as well as residential, commercial facilities in addition to public service and educational institutions. The total capital outlay for developing the necessary infrastructure would be in the range of Rs 5000.00 crore to Rs 8000.00 crore. The development is planned in public- private partnership (PPP) model in association with technically and financially competent private developers. The entire project will be implemented through 'multiple special purpose vehicles' in conjunction with leading developers.

The total estimated cost of construction of 110 kV Air Insulated substation is about Rs 1611.00 lakh and the fund requirement of the project is proposed to be met from Government grant. The substation will be equipped with 1 Nos. of 110/33kV, ONAN power transformer of capacity 20MVA and 1 No. 110/11kV; ONAN power transformer of capacity 20MVA.

- **Basement floor electrification - Park center:** The proposal is for developing more IT spaces in the basement floor of Park Centre building in Technopark Phase-I campus. The cost estimated for the same is Rs.16.74 lakh which the licensee proposes to fund from own funds. The benefit mentioned by the licensee is that by converting into office space, Technopark will get more income through power sales and rent.
- **DG Synchronization System and Load Sharing System for 3x1500kVA and 1x750kVA DG Sets At Ganga/Yamuna IT Building Technopark Phase-III Thiruvananthapuram:** The licensee has proposed for a DG Synchronization System and Load Sharing System for 3x1500kVA and 1x750kVA DG Sets for the backup power for Ganga/Yamuna IT building at Technopark Phase-III as the existing system is old and is obsolete now. The cost estimated is Rs.9.15 lakh which is proposed to be funded from own resources. The licensee has also mentioned that the work has been awarded to M/s Quadrant Technologies.
- **SITC of DG sets at Thejaswini building:** The proposal is for the installing two DGs (2 nos of 630kVA) with independent Programmable Logic Control which will help in efficiently provide load sharing. The licensee has proposed the same at a cost of Rs.175.17 lakh to be funded from equity.
- **Electrical works for 150TR chiller plant:** The licensee has stated that the efficiency of the chillers at the HVAC system for the Park Centre building are very low which do not meet the required load capacity and their consumptions are

very high. Due to this, the licensee proposes to install an additional 150TR Screw type VFD chiller, which is required to meet the present connected HVAC load. For commissioning of the new HVAC system, it is required to modify the existing electrical system which involves the installation of new starter panels and laying of additional cables. The licensee has estimated the cost for the same as Rs.8.30 lakh to be funded from equity. The licensee has stated that adding new chiller makes system to works improves energy efficiency as compared to the old existing systems, which will reduce the power loss due to the less electricity consumption of chiller and save annual energy consumption.

- **SITC of AC panel at roof top – Gayathri building:** The proposal is for installing new necessary electrical panels and cable in order to provide electrical supply to the VRF units of AC panels as the smaller IT spaces with plug and play facilities in Roof top Gayatri building required to provide Air condition to their premises. The project is proposed to be funded from equity at a cost of Rs.6.63 lakh. The benefit mentioned by the licensee is that they will get more income through power sales.
- **Electrification of roof top – Gayathri building:** Based on the demand for smaller IT spaces with plug and play facilities especially from smaller and medium sized companies to commence operations from Technopark phase-I campus, a proposal for developing more IT spaces in the roof top of the Gayathri building in Technopark Phase-I campus is made. The plan consists of office space, conference rooms, pantry and common toilets. The cost of the project is estimated at Rs.30.43 lakh proposed to be funded through equity. The licensee has stated that through this will get more income through power sales and rent.
- **CCMS street lighting for Technopark Phase-III campus:** The proposal is for the installation of Centrally Controlling and Monitoring System for the street lights though wi-fi or satellite. The lighting is designed with an average illumination between (8-10) lux and are arranged in a staggered formation with an average spacing of 10 mtrs between poles. Galvanized steel octagonal poles of 5m height are proposed to be used for street lights. The project is proposed at a cost of Rs.49.98 lakh to be funded from equity.

- **SITC of 380kVA DG set – Gayathri building:** The licensee has stated that Gayathri Building had two no's of 620 KVA DG set and they have two AMF panels, and the two DG's are loaded 90 % of the load. Technopark has to construct 17 new modules at the roof top area of Gayathri building. Considering the load of the newly installed modules, an additional DG of rating 380KVA is required. The licensee has stated that DG addition and synchronization work at Gayatri building was completed during the control period 2018-19 at a total cost of Rs. 68.66 lakh
- **HV power distribution system at Technocity campus:** The licensee proposes a HV power distribution system in order to provide a reliable and uninterrupted power source to these land parcels. Ring main distribution system is proposed for HV power distribution system .Ring Main Units (RMU's) will be installed near the plots from which the consumers can draw power to their premises. The cost estimated is Rs.846.00 lakh proposed to be funded through grant from Government.
- **Smart Utility Billing Solution for Technopark campuses:** The proposal is for automating the billing process using software/mobile applications which could reduce the electricity bill generation time and associated man hour wastage. In this system mobile application to capture the meter reading from energy meters directly by field staff instead of the existing process of manual entry to meter reading register. The mobile app will have the necessary fields required for data capture and on submission; this data will be uploaded to cloud. Based on the relevant data from each of the energy meters, cloud server would compute the electricity bill charges for respective consumers as per their tariff category. The software solution could reduce errors and make the process faster. The project cost of Rs.4.00 lakh is proposed to be funded through equity.
- **Electrical Infrastructure work of IT building at Technocity campus:** The Infrastructure work of IT building at Technocity campus is of 2 lakhs sqft and currently electrification work is going on. The building consist of 2 nos 630 kVA dry type transformers, Electrical panels, rising mains, Cabling, etc at a total connected load of 1800kW. The licensee proposed to avail loan of Rs.920.13 lakh.
- **SITC of LED Street Lighting system at Technocity :**The proposal is for double arm street lights on the main arterial road leading to the IT building. The project is proposed to be funded through grant of Rs.40.90 lakh from the Government.

62. The Commission had gone through the capital investment proposals of the licensee in detail. From the details furnished, it is seen that most of the works proposed for the years 2018-19 to 2021-22 are not related to the distribution business of the licensee, but could be related to the park business. Many of the works are also proposed to be funded through grants. **Based on the information furnished, the following works are identified as part of distribution licensee operation**

Table-22
Works identified as part of distribution licensee operation

Year	Name of work	Amount (Rs.lakh)	Source of funds
2018-19	25kWp Roof Top Grid Connected Solar Power Plant at 110kV Substation Technopark Phase-III.	13.95	Grant
	10 kWp solar panel above water tanks	6.90	Own funds
2019-20	50kWp Roof Top Grid Connected Solar Power Plant above the Water Tanks, Technopark Phase-III.	28.98	Grant
2020-21	HV power distribution system at Technocity campus.	846.00	Grant
	Smart Utility Billing Solution for Technopark campuses.	4.00	Own funds
2021-22	CCMS street lighting for Technopark Phase-III campus	49.98	Own funds
	Electrical Infrastructure work of IT building at Technocity campus.	920.13	Loan
	SITC of LED street lighting system at Technocity	40.90	Grant

63. The licensee has furnished the estimated cost of the work and the rationale for such works. In the absence of detailed quantification of benefits and costs arising from such projects, the Commission is unable to fully ascertain necessity of investment and accordingly to allow the capital expenditure as proposed by the licensee. **Hence, out of the proposed capital expenditure, the works related to distribution business shall be considered for provisional approval. In this context, the Commission reiterates that the works for which provisional approval has been accorded shall be executed through proper tendering process ensuring sufficient participation of bidders, and following due procedure.**
64. **In the case of Solar PV plant, the cost mentioned is higher than the benchmark cost of MNRE. Hence, the licensee shall ensure that installation of the Solar PV plant is done as per the bench mark cost of MNRE and in a cost effective manner through proper tendering process. In the case of street light installation, the Commission would analyse its admissibility ie., whether under**

distribution business or under the park business. Since, it is not sure that the cost of Electrical Infrastructure work of IT building at Technocity campus is inclusive of internal electrification of the building, 50% of the cost of the work only is considered provisionally for the control period. In the case of assets proposed to be funded through grants, entire amount is considered. The Commission however, reiterates that regardless of the source of funding, the licensee shall at all times ensure that works are appropriately tendered and only works with sufficient participation and justifiable cost is accepted. Thus, the capital expenditure provisionally approved for the control period is as shown below:

Table-23
Capital expenditure provisionally considered for the control period

	2018-19	2019-20	2020-21	2021-22
	Rs.lakh	Rs.lakh	Rs.lakh	Rs.lakh
Proposed in the Petition				
Grants	13.95	28.98	846.00	40.90
Own Funds	6.90		4.00	49.98
Loan				920.13
Total	20.85	28.98	850.00	1,011.01
Approved provisionally				
Grants	13.95	28.98	846.00	40.90
Own Funds	6.90		4.00	49.98
Loan				460.07
Total	20.85	28.98	850.00	550.95

65. **Depreciation:** The licensee has stated that depreciation of the assets is calculated in the straight line method based on the provisions of the (Terms and Conditions for Determination of Tariff) Regulations, 2018. Further the straight line method is adopted for the calculation of the depreciated value of assets upto the 12th year of the asset i.e., accelerated depreciation and thereafter the depreciated value of the asset after deducting the salvage value is equally divided for the remaining age of the asset.
66. The licensee has projected depreciation for each year of the control period including the capital expenditure for each year of the control period. The details of the depreciation claimed by the licensee for the years of the control period are tabulated below.

Table-24
Depreciation projected for each year of the control period

Particulars	Depreciation %	2018-19			2019-20		
		GFA (Rs.lakh)	Asset additions (Rs.lakh)	Depreciation claimed (Rs.lakh)	GFA (Rs.lakh)	Asset additions (Rs.lakh)	Depreciation claimed (Rs.lakh)
Other Civil works	3.34%	188.95	19.69	5.61	208.64	0.00	6.27
Distribution lines	5.28%	661.95	0.00	19.93	661.95	0.00	12.32
Transformers	5.28%	2782.35	30.86	139.95	2813.21	0.00	137.07
LT Distribution system	5.28%	83.29	0.00	2.60	83.29	0.00	2.60
Distribution lines	5.28%	34.87	0.00	0.94	34.87	0.00	0.94
Sub-station equipments	5.28%	2.54	3.96	0.31	6.50	0.00	0.31
Others	5.28%	1875.08	0.00	99.00	1875.08	216.00	113.02
IT Equipments	15.00%	0.47	0.00	0.07	0.47	0.00	0.07
Gross Asset		5629.48	54.51	268.42	5683.99	216.00	272.60

Particulars	Depreciation %	2020-21			2021-22		
		GFA (Rs.lakh)	Asset additions (Rs.lakh)	Depreciation claimed (Rs.lakh)	GFA (Rs.lakh)	Asset additions (Rs.lakh)	Depreciation claimed (Rs.lakh)
Other Civil works	3.34%	208.64	0.00	6.27	208.64	0.00	6.27
Distribution lines	5.28%	661.95	0.00	12.32	661.95	0.00	12.08
Transformers	5.28%	2813.21	0.00	137.07	2813.21	0.00	115.93
LT Distribution system	5.28%	83.29	0.00	2.60	83.29	0.00	2.60
Distribution lines	5.28%	34.87	0.00	0.94	34.87	0.00	0.94
Sub-station equipments	5.28%	6.50	0.00	0.25	6.50	0.00	0.25
Others	5.28%	2091.09	0.00	113.02	2091.09	0.00	113.78
IT Equipments	15.00%	0.47	4.00	0.67	4.47	0.00	0.67
Gross Asset		5900.00	4.00	273.15	5904.00	0.00	252.52

67. The Commission notes that the licensee had not obtained any formal approval for the asset additions from 2012-13. The Commission had directed the licensee to submit proper petition for obtaining approval of the asset additions made over the years. The licensee has on 10-02-2020 filed the petition before the Commission for obtaining the approval of the capital additions made from 2012-13 to 2016-17. The same is being considered and ***the Commission shall conduct a hearing on the capital investment from 2012-13 onwards and separate order on the matter will be issued. Accordingly the depreciation for the assets added after 2012-13 shall be considered separately.***

68. Thus, in the case of existing assets, the Commission has considered the gross fixed assets at the beginning of the year 2012-13 (As per order dated 02-12-2019 in the truing up of accounts for the year 2015-16) As per the accounts for 2012-13, gross

fixed assets at the beginning of the year is Rs.2990.56 lakh. After excluding the assets created out of Government grants and 'one time connection charges', depreciation of Rs.131.07 lakh is allowed on the existing net GFA of Rs.2459.11 lakh. In the case of assets provisionally added during the control period, depreciation at a rate of 5.28% is considered. The total depreciation approved for the control period is as shown below:

Table-25
Depreciation allowed for each year of the control period

Particulars	2018-19	2019-20	2020-21	2021-22
	Rs.lakh	Rs.lakh	Rs.lakh	Rs.lakh
GFA at the beginning of 2012-13	2,990.56	2,990.56	2,990.56	2,990.56
<u>Less:</u> Grants/Contributions	612.06	612.06	612.06	612.06
GFA eligible for depreciation	2,459.11	2,459.11	2,459.11	2,459.11
Average rate of depreciation claimed	5.33%	5.33%	5.33%	5.33%
Depreciation for existing assets	131.07	131.07	131.07	131.07
Assets addition funded through loan/own funds	6.90	-	4.00	510.05
Cumulative Assets addition (New)	6.90	6.90	10.90	520.95
Rate of depreciation	5.28%	5.28%	5.28%	5.28%
Provisional Depreciation for new assets	0.18	0.36	0.47	14.04
Total Depreciation approved	131.25	131.43	131.54	145.11

69. With regard to depreciation for the asset additions from 2012-13 to 2017-18, the Commission shall approve the same on the petition filed by the licensee after due process. Based on the approval, depreciation shall be revised while truing up the accounts of the relevant years. Further, the depreciation for the proposed capital additions would also be included in the similar manner.

70. **Interest on loans:** The licensee in the petition has booked interest on actual loans for the control period. The licensee has stated that the loan component for electricity distribution portion is apportioned from the total loan taken for infrastructure development. The Loan taken from Canara Bank for Tejaswini building has been repaid and closed on 14-03-2018. The licensee has proposed interest on the loan taken for infrastructure creation of Ganga/ Yamuna IT building Technopark Phase-III at a rate of 9.5%. The details of the projection made by the licensee is tabulated below.

Table -26
Interest on loans projected for the control period

Particulars	2018-19	2019-20	2020-21	2021-22
	Estimated (Rs.lakh)	Projected (Rs.lakh)	Projected (Rs.lakh)	Projected (Rs.lakh)
Loan (South Indian Bank & Federal Bank) for Phase-3				
Gross Loan -Opening	1069.56	1069.56	1069.56	1069.56
Cumulative repayments of Loans upto previous year	314.75	394.74	458.84	516.86
Net loan-Opening	754.81	674.82	610.72	552.70
Add: Drawal(s) during the Year	0.00	0.00	0.00	0.00
Less: Repayment (s) of Loans during the year	79.98	64.11	58.02	52.51
Net loan - Closing	674.82	610.72	552.70	500.19
Average Net Loan				
Rate of Interest on Loan on annual basis	9.50%	9.50%	9.50%	9.50%
Interest on loan	79.31	64.11	58.02	52.51

71. Pending approval of the capital additions for the period from 2012-13 to 2016-17, the interest charges for the said period is not considered here. However, the asset additions provisionally approved for the control period shall be considered for interest charges as shown below:

Table-27
Interest charges provisionally approved for the control period

	2018-19	2019-20	2020-21	2021-22
	Rs.lakh	Rs.lakh	Rs.lakh	Rs.lakh
Asset Additions provisionally approved	6.90	-	4.00	510.05
Cumulative Asset Addition	6.90	6.90	10.90	520.95
Cumulative Depreciation approved for new assets	0.18	0.55	1.02	15.06
Balance amount of funds	6.72	6.35	9.88	505.89
Rate of interest (%)	9.50%	9.50%	9.50%	9.50%
Interest charges	0.33	0.64	0.79	25.17

72. **Interest on Working Capital:** The licensee in the initial petition had claimed interest on working capital for each year of the control period. The computation made is not as per the provisions of the Regulations. Hence the Commission directed the licensee to submit the same as per the Tariff Regulations 2018. The licensee has worked out the interest on working capital and there is no claim of the same in the revised submission, since the amount of security deposit held by the licensee is more than the normative working capital requirements. Hence no interest is allowed on working capital.

73. **Interest on security deposit:** As per the Tariff Regulations 2018, interest shall be allowed on the amount held as security deposit in cash from users of the distribution system and consumers at the bank rate as on the First day of April of the financial

year in which the application is filed. The licensee in the petition has claimed interest on security deposit as shown below.

Table – 28
Interest on security deposit projected for the control period

Particulars	2018-19 (Rs. Lakh)	2019-20 (Rs. Lakh)	2020-21 (Rs. Lakh)	2021-22 (Rs. Lakh)
Security Deposit from consumers	1503.75	1533.82	1564.50	1595.80
Interest on security deposit @ 5.41%	81.29	82.98	84.64	86.33

74. As per Regulation 72 of the Kerala Electricity Supply Code, 2014, the licensee has to pay interest on the security deposit at the bank rate prevailing in the first April of that year. Considering the bank rate of 6.25% prevailing as on 01-04-2018, the Commission provisionally allows an interest on security deposit for the control period is shown below.

Table – 29
Approved Interest on security deposit

Particulars	2018-19 (Rs. Lakh)	2019-20 (Rs. Lakh)	2020-21 (Rs. Lakh)	2021-22 (Rs. Lakh)
Security Deposit from consumers	1503.75	1533.82	1564.50	1595.80
Interest on security deposit @ 6.25%	93.98	95.86	97.78	99.74

75. **Return on Equity:-**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. Accordingly, the licensee has claimed a RoE at the rate of three percent on the net fixed assets at the beginning of the financial year as shown below.

Table - 30
RoNFA proposed for the control period

Particulars	2018-19	2019-20	2020-21	2021-22
	Rs. Lakh	Rs. Lakh	Rs. Lakh	Rs. Lakh
NFA at the beginning of the year	3830.02	3616.11	3559.51	3290.37
Total return on NFA	3%	114.90	108.48	106.79
				98.71

76. As detailed above, the Commission has considered only the assets created as on the beginning of the financial year 2012-13 with the approval of the Commission at present. Accordingly the Gross Fixed Asset excluding grants and contributions at the beginning of the financial year 2012-13 is Rs.2459.11 lakh. ***The provisionally approved return for each year of the control period on the net fixed assets at***

the beginning of 2012-13 is Rs.58.41 lakh. The licensee is also eligible for return on the new assets additions provisionally approved for the control period. Thus, the total return on NFA approved is as shown below:

Table - 31
RoNFA approved for the control period

Particulars	2018-19	2019-20	2020-21	2021-22
	Rs.lakh	Rs.lakh	Rs.lakh	Rs.lakh
Return on NFA for existing assets	58.41	58.41	58.41	58.41
Addition to NFA (new assets)	6.72	6.35	9.88	505.89
RoNFA for new assets (@3% at the beginning of the year)	0	0.19	0.30	15.18
Total RoNFA approved	58.41	58.60	58.71	73.59

77. *However the RoNFA will be appropriately revised based on the approved capital additions after its final approval by the Commission either on a separate petition or while truing up the accounts for the relevant years of the control period.*

78. Revenue from Sale of Power: The license while filing the petition for approval of ARR&ERC for the control period had projected the revenue from sale of power as per the pre-revised tariff. The Commission vide order dated 08-07-2019 in OA No.15/2018 has issued the schedule of tariff and terms and conditions for retail supply of electricity applicable till 31-03-2020. Commission during the hearing conducted had directed the licensee to submit the projections based on the revised tariff applicable for the control period. The licensee based on the direction of the Commission has furnished the phase wise, category wise revenue from sale of power for each year of the control period. The category wise revenue from sale of power claimed by the licensee for each year of the control period applicable for the years of the control period is tabulated hereunder.

Table-32
Revenue from sale of power proposed for the control period

Consumer Category	2018-19				2019-20			
	Number of consumers	Sales (Lakh units)	Revenue Rs.lakh	Average Realisation Rs./kWh	Number of consumers	Sales (Lakh units)	Revenue Rs.lakh	Average Realisation Rs./kWh
LT IV A : INDL [<10 kW]	6	0.35	2.01	5.73	6	0.39	2.27	5.81
LT IV A : INDL [10-20 kW]	2	0.33	2.13	6.35	2	0.37	2.39	6.39
LT IV A : INDL [> 20 kW]	6	4.18	32.75	7.84	6	4.41	37.15	8.42
LT – IV B : IT [<10kW]	213	11.56	72.41	6.26	216	13.31	85.57	6.43
LT – IV B : IT [10 - 20kW]	83	13.54	91.14	6.73	82	12.69	93.80	7.39
LT – IV B : IT [>20kW]	249	385.93	2969.92	7.70	254	446.70	3476.79	7.78
LT - VI (A)	3	0.20	1.51	7.69	3	0.52	4.02	7.67

LT VI (B)	9	1.55	12.05	7.78	9	1.60	12.51	7.84
LT VI (C) (1/3 ph)	35	2.63	27.50	10.45	36	2.67	28.11	10.51
LT VI (F)(1 ph)	47	2.17	19.04	8.78	43	1.24	10.62	8.56
LT VI (F) (3 ph)	50	15.33	147.29	9.61	47	16.70	162.18	9.71
LT VI (G) GENL	1	0.05	0.62	13.71	1	0.13	0.96	7.66
LT VII (A) : COML (1ph)	53	1.17	10.39	8.92	50	1.22	8.04	6.61
LT VII (A) COML (3 ph)	61	7.34	78.94	10.76	63	7.37	82.19	11.15
LT VII (B) COML	11	0.10	0.61	6.12	10	0.09	0.61	6.69
LT IX DISPLY	2	0.06	0.12	1.93	2	0.05	0.79	14.96
LT VIII (B) Street Lights	16	2.70	10.67	3.96	16	2.29	13.98	6.11
Self Consumption	3	3.67	26.94	7.34	3	2.10	17.24	8.20
Total Units (LT)	850	452.85	3506.04	7.74	849	513.86	4039.25	7.86
HT -I Industrial	16	405.37	2776.97	6.85	16	414.42	2963.11	7.15
HT -II A Gen	1	4.13	26.76	6.48	1	3.84	26.63	6.93
HT -II B Gen	1	0.06	1.34	21.68	1	0.82	9.73	11.88
HT- IV Commercial	1	6.00	49.70	8.28	1	3.52	31.39	8.91
Total (HT)	19	415.56	2854.77	6.87	19	422.60	3030.86	7.17
Total	869	868.41	6360.81	7.32	868	936.46	7070.11	7.55

Consumer Category	2020-21				2021-22			
	Number of consumers	Sales (Lakh units)	Revenue Rs.lakh	Average Realisation Rs./kWh	Number of consumers	Sales (Lakh units)	Revenue Rs.lakh	Average Realisation Rs./kWh
LT IV A : INDL [<10 kW]	6	0.40	2.29	5.80	6	0.41	2.41	5.86
LT IV A : INDL [10-20 kW]	2	0.38	2.43	6.40	3	0.55	3.49	6.35
LT IV A : INDL [> 20 kW]	8	5.75	45.58	7.92	8	10.41	74.31	7.14
LT – IV B : IT[<10kW]	232	14.35	98.58	6.87	249	16.58	107.31	6.47
LT – IV B : IT [10 - 20kW]	95	15.44	114.64	7.43	108	21.57	156.62	7.26
LT – IV B : IT [>20kW]	259	456.59	3466.70	8.32	263	479.35	3600.21	7.51
LT - VI (A)	2	0.55	4.20	7.64	3	0.82	6.24	7.61
LT VI (B)	10	1.63	12.76	7.84	12	1.95	15.27	7.82
LT VI (C) (1/3 ph)	38	2.78	29.29	10.54	39	2.86	30.13	10.53
LT VI (F)(1 ph)	54	1.64	13.28	8.11	62	1.94	15.80	8.14
LT VI (F) (3 ph)	59	20.39	198.25	9.72	68	22.77	221.67	9.74
LT VI (G) GENL	1	0.13	0.96	7.72	1	0.13	0.96	7.72
LT VII (A) : COML (1ph)	58	1.39	9.33	6.69	64	1.68	11.87	7.07
LT VII (A) COML (3 ph)	68	7.96	88.90	11.17	72	8.43	93.90	11.14
LT VII (B) COML	12	0.11	0.64	5.87	12	0.11	0.64	5.86
LT IX DISPLY	2	0.06	0.86	14.78	2	0.06	0.86	14.76
LT VIII (B) Street Lights	19	2.59	11.62	4.49	20	2.74	12.32	4.49
Self Consumption	4	2.34	19.26	8.22	4	2.45	22.03	9.00
Total Units (LT)	929	534.47	4119.60	8.33	996	574.81	4376.05	7.61
HT -I Industrial	18	434.98	3168.57	7.28	20	483.25	3506.11	7.26
HT -II A Gen	2	13.82	101.54	7.35	2	14.86	101.16	6.81
HT -II B Gen	1	2.74	23.37	8.53	1	2.74	23.87	8.72
HT- IV Commercial	1	3.70	53.43	14.44	2	17.53	172.78	9.85

Total (HT)	22	455.23	3346.91	7.35	25	518.38	3803.92	7.34
Total	951	989.69	7466.51	7.86	1021	1093.19	8179.97	7.48

79. As mentioned earlier, the licensee had also revised the initial projections as per the actuals for the year 2018-19. Accordingly, there is variation in the number of consumers compared to the initial projection. Based on the revised submission, the major revenue is realized from the LT IV B & HT I category of consumers. The Commission on analysis of the projections have seen that there a wide variation in the average realization of certain category of consumers in 2020-21 and 2021-22 which may be because the projections include the revenue realization of Technocity and Kollam Campuses. **Considering the revised estimations made by the licensee, the Commission approves projection of the revenue from sale of power as proposed for the years of the control period.**

80. **Non-Tariff Income:** The non-tariff income proposed by the licensee is mainly from the interest on the security deposits with KSEBL and Revenue from late payment surcharge. The comparison of the non-tariff income for the previous years and control period is tabulated below.

Table -33
Non-Tariff income projected for the control period

Particulars	2016-17 Actual Rs.lakh	2017-18 Actual Rs.lakh	2018-19 Actual Rs.lakh	2019-20 Projected Rs.lakh	2020-21 Projected Rs.lakh	2021-22 Projected Rs.lakh
Interest on security deposits with KSEBL & Bank fixed Deposits	56.82	67.63	66.98	70.33	73.85	77.54
Miscellaneous receipts	2.13	2.60	8.32	1.61	1.69	1.77
Revenue from late payment surcharge	11.73	19.40	23.09	10.00	10.00	10.00
Total	70.68	89.63	98.39	81.94	85.53	89.31

81. As per the split up details, the major component of the non-tariff income of the licensee is the Interest on security deposits with KSEB Ltd & Bank fixed Deposits. The licensee has proposed increases during the control period. With regard to miscellaneous receipts and the revenue from late payment surcharge, the projection is lower than the actuals in 2018-19. The licensee has not submitted proper reasons to substantiate the reason this reduction. **Considering the average miscellaneous receipts and the revenue from late payment surcharge over the past three years, the non tariff income approved for each year of the control period is shown below.**

Table -34
Non-Tariff income approved for the control period

Particulars	2018-19 Actual (Rs.lakh)	2019-20 Projected (Rs.lakh)	2020-21 Projected (Rs.lakh)	2021-22 Projected (Rs.lakh)
Interest on security deposits with KSEBL & Bank fixed Deposits	66.98	70.33	73.85	77.54
Miscellaneous receipts	8.32	4.35	4.35	4.35
Revenue from late payment surcharge	23.09	18.07	18.07	18.07
Total	98.39	92.75	96.27	99.96

82. **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 -35
Approved ARR&ERC for the control period

Particulars	2018-19		2019-20	
	Projection	Approved	Projection	Approved
	(Rs. Lakh)	(Rs. Lakh)	(Rs. Lakh)	(Rs. Lakh)
Power purchase Cost	5,451.92	5,316.10	6,155.69	5,988.56
Employee Expenses	33.10	265.08	35.25	277.91
Administration & General Expenses	196.98		208.14	
Repair & Maintenance Expenses	410.13		454.97	
Depreciation	268.42	131.25	272.60	131.43
Interest on loans	79.31	0.33	64.11	0.64
Interest on consumer security deposits	81.29	93.98	82.98	95.86
Return on Net Fixed Assets	114.90	58.41	108.48	58.60
Aggregate Revenue Requirement	6,636.05	5,865.15	7,382.22	6,553.00
Revenue from sale power	6,360.81	6,360.81	7,070.11	7,070.11
Non-tariff Income	98.39	98.39	81.94	92.75
Total Income	6,459.20	6,459.20	7,152.05	7,162.86
Revenue Surplus/ Gap(-)	-176.85	594.05	-230.17	609.86

Particulars	2020-21		2021-22	
	Projection	Approved	Projection	Approved
	(Rs. Lakh)	(Rs. Lakh)	(Rs. Lakh)	(Rs. Lakh)
Power purchase Cost	6,598.58	6,460.64	7,264.59	7,145.81
Employee Expenses	37.83	291.36	37.83	305.47
Administration & General Expenses	168.95		152.47	
Repair & Maintenance Expenses	510.39		552.25	
Depreciation	273.15	131.54	252.52	145.11
Interest on loans	58.02	0.79	52.51	25.17
Interest on consumer security deposits	84.64	97.78	86.33	99.74

Return on Net Fixed Assets	106.79	58.71	98.71	73.59
Aggregate Revenue Requirement	7,838.35	7,040.82	8,497.21	7,794.88
Revenue from sale power	7,466.51	7,466.51	8,179.97	8,179.97
Non-tariff Income	85.53	96.27	89.31	99.96
Total Income	7,552.04	7,562.78	8,269.28	8,279.93
Revenue Surplus/ Gap(-)	-286.31	521.96	-227.93	485.05

Order of the Commission

83. 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. Subject to the observations on O&M expenses and approval of capital expenditure, 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	6,459.20	7,162.86	7,562.78	8,279.93
Total Expenditure	5,865.15	6,553.00	7,040.82	7,794.88
Revenue Surplus	594.05	609.86	521.96	485.05

84. Directives issued by the Commission

- Limit the phase wise distribution loss at the levels approved by the Commission.
- Details of the Operation and maintenance expenses for the additional license area to be submitted while truing up the accounts for then relevant years of the Control period.

Sd/-
S.Venugopal
Member

Sd/-
Preman Dinaraj
Chairman

Approved for issue

Sd/-
Secretary (i/c)