KERALA STATE ELECTRICITY REGULATORY COMMISSION
THIRUVANANTHAPURAM

Present: **Sri T.K Jose, Chairman**
Adv A.J Wilson, Member
Sri B Pradeep, Member

OP No 65/2023

In the matter of	:	Petition for the approval of Capital Investment Plan for the period from FY 2022-23 to FY 2026-27 of Strategic Business Unit-Transmission (SBU-T) of KSEB Limited
Petitioner	:	Kerala State Electricity Board Limited (KSEB Limited)
Petitioner represented by	:	1) Rajan M.P, Dy CE, TRAC, KSEB Limited 2) Latha S.V, EE, TRAC, KSEB Limited
Date of hearing	:	28.02.2024,10.30 AM
Venue	:	Court Hall of the Commission (Hybrid Hearing Mode)

ORDER DATED 27.02.2025

1) Kerala State Electricity Board Limited (hereinafter called KSEB Limited or Licensee) on 10.01.2022 filed a petition for the approval of Capital Investment Plan (CIP) of SBU-G, SBU-T& SLDC and SBU-D for the control period from 1st April 2022 to 31st March 2027 under Regulations 10,54,67 and 71 of KSERC (Terms and Conditions for determination of Tariff) Regulations, 2021. The Commission admitted the petition as OP No. 65/2023

2) The summary of the Capital Investment Plan (CIP) of each of the Strategic Business Units of KSEB Limited as per the petition is presented in the table below.

Table 2.1

Functional area	2022-23	2023-24	2024-25	2025-26	2026-27	Total
	(₹ Cr)	(₹ Cr)	(₹ Cr)	(₹ Cr)	(₹ Cr)	(₹ Cr)
SBU-G	512.75	798.11	1122.97	1483.83	1212.92	5130.58
SBU-T	1304.14	2027.39	1673.21	1033.60	517.73	6556.07
SBU-D	3492.95	5351.03	4953.18	1523.64	1412.23	16733.03
Total	5309.84	8176.53	7749.36	4041.07	3142.88	28419.68

After completing the necessary regulatory procedures, the Commission issued Orders on the CAPEX of the SBU-Generation of KSEB Limited, as included in the petition, vide order dated 21.10.2024. Investment approval was granted for an amount of ₹1490.23 crores, which includes funding for six hydroelectric projects. For the remaining hydel projects included in the petition for approval of the Capital Investment Plan, the Commission directed the licensee to submit a petition for investment approval after optimizing the project designs as part of the mid-term review during the control period. Similarly, for projects categorized under “New Renovation/Replacement Work (major works costing ₹5 crores and above)” requiring investment approval, the licensee was instructed to provide the necessary details, including Administrative Sanction orders and Detailed Project Reports (for projects costing ₹10 crores or more), along with the above-mentioned petition.

3) KSEB Limited submitted the projects included in the Capital Investment Plan for the Strategic Business Unit of SBU-Transmission amounting to ₹6556 crores for the control period 2022-23 to 2026-27 grouped as follows:

A. Projects costing below ₹10Cr
B. Normal capital works above ₹10Cr
C. RDSS works
D. TRANSGRID works.
E. SLDC related capital works.

As per the Kerala State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations 2021, for capital investment schemes exceeding an amount of ₹10 crore in the case of KSEB Limited, detailed project reports (DPRs) must be submitted for the Commission’s approval. The DPR should include a broad cost-benefit analysis and other details substantiating the investment as specified.

4) A summary of the capital outlay for the control period 2022-23 to 2026-27 under SBU-T and SLDC as per the petition is presented in the table below.

Table 4.1

Capital Investment plan - Transmission							
Sl. No.	Category of Works	Capital outlay (₹ Cr.)					Total
		2022-23	2023-24	2024-25	2025-26	2026-27	
1	Works less than 10Cr	241.53	191.65	154.75	109.77	15.11	712.82
2	Normal works above 10 Cr	400.34	747.49	473.58	238.97	191.63	2052.01
3	RDSS Works	266.93	417.77	377.97	-	-	1062.66
4	Transgrid works	353.76	622.18	663.32	681.74	303.83	2624.84
5	SLDC works (>10 Cr)	27.00	40.00	0.00	0.00	0.00	67.00
6	SLDC works (<10 Cr)	14.58	8.30	3.60	3.13	7.15	36.75
	Grand Total	**1304.14**	**2027.39**	**1673.21**	**1033.60**	**517.73**	**6556.08**

The details of works under each category are given below.

A. Projects costing below ₹ 10 crore

Abstract of the capital works having individual project cost below ₹10 Crore planned for the control period 2022-23 to 2026-27 is summarized in the table below. These works are planned as part of normal transmission development and are grouped circle wise.

Table 4.2

Capital outlay – Projects costing below ₹ 10 crore (₹ in crores)						
Name of Circle/SLDC	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**Total**
Transmission Circle Thrissur	35.33	12.50	13.00	6.11	0.00	**66.94**
Transmission Circle, Poovan thuruthu	17.64	21.36	14.11	1.80	3.40	**58.30**
Transmission Circle, Thodupuzha	0.88	4.28	15.59	33.86	7.33	**61.94**
Transmission Circle, Kannur	26.71	44.47	27.86	11.77	0.00	**110.81**
Transmission Circle, Kalamassery	23.13	15.74	12.40	8.79	3.28	**63.35**
Transmission Circle, Kozhikode	53.48	28.13	7.80	4.40	0.00	**93.80**
Transmission Circle, Trivandrum	53.27	26.44	4.38	0.00	0.00	**84.09**
Transmission Circle, Kottarakara	14.07	0.05	0.00	0.01	0.04	**14.17**
Transmission Circle, Alappuzha	13.67	16.99	7.80	7.85	0.35	**46.66**
Transmission Circle, Palakkad	3.12	14.13	34.54	23.57	0.00	**75.36**
Trans Division, Pathanamthitta	0.00	3.80	3.60	0.00	0.00	**7.40**
Transmission Circle, Malappuram	0.23	3.78	13.67	11.60	0.71	**29.99**
Total	**241.53**	**191.65**	**154.75**	**109.77**	**15.11**	**712.82**
PSDF/Grant/Deposit work/IPDS for SBU-T	0	0	0	0	0	**0**
SBU-T: KSEBL fund	**241.53**	**191.65**	**154.75**	**109.77**	**15.11**	**712.82**
SLDC	14.58	8.3	3.6	3.13	7.15	**36.76**
PSDF grant for SLDC	0	0	0	0	0	**0**
SLDC: KSEBL fund	**14.58**	**8.3**	**3.6**	**3.13**	**7.15**	**36.76**

B. Normal capital works above ₹ 10 crore

These works are planned as part of normal transmission development and grouped under various Transmission circles. Summary of the capital works coming under various Transmission Circles and SLDC are presented in the table below.

Table 4.3

Capital outlay – Projects costing ₹ 10 crore and above (₹ in crores)							
Name of Circle	**No.of works**	**2022-23**	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**Total (₹ Cr)**
Transmission Circle Alappuzha	12	121.49	181.36	61.06	36.09	0	**400.00**
Transmission Circle, Kalamassery	3	27.802	8.752	7.752	7.752	7.75	**59.81**
Transmission Circle, Kottarakara	11	37.25	101.21	58.89	52	163.08	**412.43**
Transmission Division, Pathanamthitta	6	22.77	43.8	19.092	6.93	0	**92.59**
Transmission Circle, Poovanthuruthu	5	28.98	40.74	29.3	0	0	**99.02**
Transmission Circle, Palakkad	3	1.83	16.125	25.0925	4.8	4.8	**52.65**
Transmission Circle, Thiruvananthapuram	4	36.6	84.49	76.1	0	0	**197.19**
Transmission Circle, Kozhikode	11	24.1	82.35	81.35	48.9	16	**252.70**
Transmission Circle, Kannur	3	31.4	45.87	9.85	0	0	87.12
Transmission Circle, Thodupuzha	8	56.44	92.56	54.15	48.2	0	**251.35**
Transmission Circle, Malappuram	7	6.7	32.76	40.94	28.3	0	**108.70**
Transmission Circle, Thrissur	1	4.98	7.47	0	0	0	**12.45**
Providing bus bar protection at major 110KV Substations	1		10	10	6	0	**26.00**
Sub Total		**400.35**	**747.49**	**473.58**	**238.97**	**191.63**	**2052.01**
Less: PSDF			10	10	3.4	0	**23.40**
Total	**75**	**400.34**	**737.49**	**463.58**	**235.57**	**191.63**	**2028.61**

C. Transmission Projects under RDSS:

Govt. of India had notified through Office Memorandum dated 20.07.2021, the implementation of “Revamped Distribution Sector Scheme (RDSS) – A reforms based and results linked scheme” with the objective of improving the quality and reliability of power supply to consumer, through a financially sustainable and operationally efficient distribution sector by providing conditional financial assistance (on achievement of benchmark based on agreed action plan/ evaluation framework) for strengthening the electricity supply infrastructure based on meeting pre-qualifying criteria and achieving basic minimum benchmarks in reforms. At present 33KV systems are constructed by SBU-Transmission. Therefore, 33KV system construction including 33KV new substations and new lines, augmentation works in 33KV systems etc are carried out by SBU- Transmission under RDSS scheme. An outlay of ₹1062.38 Cr is proposed under RDSS works. A summary of circle wise segregation of works is presented in the table below.

Table 4.4

RDSS - Transmission Works - Circle wise (Amount in ₹ Cr.)							
Name of Circle	Category of works						
	New Sub stations -33 kV	Augmentati-on of Substations	R&M of S/S 11 kV& 33 kV	New 33 kV lines	Augmentation 33 kV lines	New 11 KV Outlets	Total
Thiruvananthapuram	28.31	4.48	5.37	38.36	12.48	0.00	89.01
Kottarakkara	14.30	22.01	2.32	43.87	27.48	0.00	109.98
Alappuzha	0.00	20.32	8.07	15.90	14.00	0.00	58.29
Poovanthuruthu	3.65	15.83	2.80	39.12	0.00	1.66	63.06
Pathanamthitta	12.00	0.00	1.40	10.65	16.02	0.88	40.95
Thodupuzha	16.40	14.81	8.44	40.20	18.91	0.79	99.56
Kalamassery	24.00	35.30	10.21	42.59	0.00	4.96	117.06
Thrissur	27.88	18.24	5.16	41.91	12.09	3.52	108.80
Palakkad	11.20	26.98	0.75	29.09	0.00	3.88	71.90
Malappuram	13.96	24.41	12.41	29.03	18.37	0.00	98.18
Kozhikode	12.73	13.58	5.19	49.61	19.75	2.34	103.20
Kannur	8.84	14.65	12.79	43.90	22.23	0.00	102.41
TOTAL	**173.27**	**210.61**	**74.90**	**424.23**	**161.33**	**18.03**	**1062.38**

RDSS works are funded by Government of India up to 60% of the total project cost as grant. The works are to be completed within 3 years. The year wise capital outlay of the RDSS works for the FY 2022- 23 to FY 2026-27 is presented in the table below.

Table 4.5

RDSS Works: Capital outlay (₹ Cr.)							
Particulars of works	**2022-23**		**2023-24**		**2024-25**		
	Physical target	Financial target (₹ Cr)	Physical target	Financial target (₹ Cr)	Physical target	Financial target (₹ Cr)	
	Target for the year (%)*	Amount	**Target for the year (%)***	Amount	**Target for the year (%)***	Amount	Total amount
New 33kV S/s	20%	33.68	40%	67.35	40%	72.26	**173.29**
Augmentation of Substation	25%	59.08	40%	102.227	35%	49.30	**210.61**
New 33kV Line	25%	81.14	35%	153.34	40%	189.75	**424.23**
Augmentation of 33kV line	30%	48.40	40%	64.53	30%	48.40	**161.33**
R&M of substation 11kV and 33kV	45%	34.347	32%	27.98	23%	13.85	**74.91**
New 11kV Feeder Outlet	57%	10.28	13%	2.34	30%	5.41	**18.03**
Total		266.93	0.00	417.77	0.00	377.97	**1062.40**
Less : GoI fund (@60%)		160.16		250.66		226.78	**637.44**
Net Capital outlay		106.77		167.11		151.19	**424.96**

D. TRANSGRID WORKS

The overall objective of the TRANSGRID 2.0 program is to relieve the system constraints and reduce losses to the maximum extent. The objectives of the scheme are relieving the system of its present constraints, building sufficient import capability for the future, facilitate complete power evacuation from generating stations within the State and to reduce the losses to the maximum possible.

Following Transgrid works are planned for the control period 2022-23 to 2026-27.

Table 4.6

Transgrid works								
Name of Package		Capital outlay (₹ Cr.)						
		2022-23	2023-24	2024-25	2025-26	2026-27	Total capital outlay (₹ Cr.)	CoD
1	Travancore Lines Package I	11.84	16.36	0.00	0.00	0.00	28.2	2023-24
2	Travancore Lines Package II	38.80	58.20	0.00	0.00	0.00	97	2023-24
3	Quilon Package	32.19	98.65	14.54	0.00	0.00	145.37	2024-25
4	North Green Corridor Package	62.45	175.65	253.75	269.40	136.75	898.00	2026-27
5	Attapady Green Corridor Package	29.80	48.56	78.36	84.75	41.04	282.5	2026-27
6	Ramakkelmedu Green Corridor Package	28.99	37.86	66.85	73.46	37.71	244.875	2026-27
7	North South interlink Package II	92.66	88.55	102.08	102.08	0.00	385.38	2025-26
8	Valluvanad Package	37.17	61.48	62.62	47.47	0.00	208.73	2025-26
9	Thrissivaperur Lines Package III	19.86	36.89	85.12	85.12	56.75	283.74	2026-27
10	North Malabar Lines Package II	0.00	0.00	0.00	0.00	5.24	5.24	Next control period
11	Edamon 400kV Substation	0.00	0.00	0.00	19.46	19.46	38.92	Next control period
12	Travancore Lines Package III	0.00	0.00	0.00	0.00	3.00	3.00	Next control period
13	Panjal 220kV Switching Station	0.00	0.00	0.00	0.00	2.10	2.10	Next control period
14	North South interlink Package III	0.00	0.00	0.00	0.00	1.79	1.79	Next control period
	Total	**353.76**	**622.18**	**663.32**	**681.74**	**303.83**	**2624.84**	
	Less : MNRE fund Green Energy Corrdor -II Scheme							
	North Green Corridor Package		20.34			8.7	**29.04**	
	Attapady Green Corridor Package		65.26			27.97	**93.23**	
	Ramakkelmedu Green Corridor Package		56.57			24.24	**80.81**	
	Captal outlay	**353.76**	**480.01**	**663.32**	**681.74**	**242.92**	**2421.76**	

E. Capital works of SLDC

Following capital works are planned for the control period 2022-23 to 2026-27 under SLDC.

Table 4.7

Capital works under SLDC							
	Capital outlay (₹ Cr.)						
	2022-23	2023-24	2024-25	2025-26	2026-27	Total capital outlay (₹ Cr.)	CoD
Upgradation of SCADA	27	40				67	2023-24
Total of SLDC works	**27**	**40**	**0**	**0**	**0**	**67**	

The project of upgradation/replacement of existing SCADA/EMS system through unified implementation across Southern region is aimed to incorporate future requirements of high RE penetration and essential data analytics requirements and addressing all other issues

5) **GFA addition provisionally approved by the Commission**:

While approving the ARR & ERC of KSEB Limited in June 2022, the Commission observed that the capital investment proposed by KSEB Limited in the SBU-Transmission was excessively high. The Commission remarked that such substantial investments could not be approved without proper scrutiny and an assessment of their necessity, as per the provisions of the Tariff Regulations, 2021.

After examining the details, the Commission decided to provisionally consider the 100 % GFA addition for all projects under RDSS and SLDC for ARR purposes. Taking into account the progress of works during the previous control period, the Commission also decided to provisionally consider GFA addition of:

- 50% for projects under small transmission works,
- 40% for normal transmission works costing more than ₹10 crores
- 40% for Transgrid works

While approving the ARR & ERC of KSEB Ltd, the Commission clarified that the GFA addition provisionally considered is solely for estimating the ARR of KSEB Ltd during the MYT period from 2022-23 to 2026-27. Considering the

substantial capital investments proposed by KSEB Ltd, the Commission will separately approve these investments through a public consultation process, including a public hearing. Only the GFA arising from the capital investments approved through this process will be finally considered during the truing-up of accounts of KSEB Ltd for each year of the control period.

6) To facilitate a better understanding of the schemes and to enable a detailed analysis, the Commission decided to conduct a comprehensive appraisal of the schemes prior to the public consultation process. KSEB Limited was directed vide letter dated 27.11.2023 to make detailed presentation of the schemes before the Commission at 10.30 am on 03.01.2024 and to submit the following additional details at least a week before the date of presentation.

General issues

1. *Estimates for transmission works shall be revised based on the latest Schedule of Rates applicable in Kerala and the latest cost data of transmission works approved by KSEB Ltd.*
2. *Details of Administrative Sanction/Revised Sanction of each project*
3. *Financing plan of the projects with grants/subsidy/VGF if any*
4. *For project already awarded, the present stage shall be reported*
5. *Only abstract estimates are given in the DPR of Transgrid works. Detailed estimates shall be furnished.*
6. *The planning criteria for each project as per CEA Transmission Planning Criteria 2023 shall be reported*
7. *In most of the DPRs, alternate solutions are not seen analysed as envisaged in Annexure-IV- Guidelines of Kerala State Electricity Regulatory Commission (Terms and conditions for determination of transmission tariff) Regulations 2021*
8. *For proposals where upgradation of existing substation and or line is required, the present loading of the substation/line may be reported.*
9. *Return On Equity (RoE) allowed as per the present tariff regulation is 14% whereas in some of the DPRs, it is taken as 15.5%.*
10. *Detailed Load Flow Study Report for the anticipated scenario with and without the proposed project, indicating removal of constraints n-1 contingency etc. as applicable, has to be attached with the DPR's of all the projects*
11. *For Substation Projects, schematic diagram showing transformers, substation buses, bus couplers, line and transformer bays shall be furnished*
12. *For transmission lines where the MCMV line portion is only a part of the entire length of line, the split-up details of estimate and line lengths shall be furnished*
13. *Detailed IRR calculation is to be attached. For cost-benefit analysis, the total cost of the project including interest during construction shall be taken.*
14. *For most of the projects, the additional sale of energy estimated is on the higher side resulting in escalated IRR values. Cost benefit analysis shall be prepared with realistic energy sale forecasts.*

15. *Availability of land, RoW requirement, forest and environment clearances required, permission required for Railway, highway crossing as applicable and their present status shall be reported*
16. *The grant receivable from PSDF for Green Corridor Projects shall be reported*

Specific issues

1. *In the Quilon package, sufficient no. of 110 KV feeder bays including those for feeding the new substation at Thevalakkara are provided at the new GIS substation at Sasthamcotta. However, in the estimates for the new substation at Thevalakkara also, cost of feeder bays at the feeding substation is included which results in the duplication of cost estimates. Other DPRs shall also be scrutinized for avoiding such duplication.*
2. *There is wide variation in the cost estimate for similar works. For e.g.; the cost of constructing a 110kV AIS bay at Thuravoor substation is estimated as Rs.47 lakhs whereas, that at Chavara substation is estimated as Rs.1.29 crore. Reasons for the discrepancy may be reported.*
3. *For the Thevalakara substation package, the cost savings due to the reduction in losses is estimated based on peak load system losses without considering loss load factor.*
4. *The DPR for the upgradation of SCADA work of SLDC amounting to Rs.67 Crore has not been submitted.*
5. *The DPR for the new 110 KV substation and associated lines at Oachira costing Rs.96.1 crore lacks the necessary details as envisaged in Annexure-IV- Guidelines of Kerala State Electricity Regulatory Commission (Terms and conditions for determination of transmission tariff) Regulations 2021. The DPR may be re-submitted.*

7) Accordingly, KSEB Limited presented the schemes before the Commission on 03.01.2024 at the Commission's court hall. Dr. R.M Shereef, Professor, Department of Electrical Engineering, College of Engineering, Thiruvananthapuram, along with his team members, was present at the meeting to assist the Commission in appraising the Capital Investment Plan of the SBU-Transmission of KSEB Limited. During the meeting, the Commission remarked that, although KSEB Limited made significant improvements in consumer services, its performance in project execution remains unsatisfactory, leading to cost and time overruns. The Commission emphasized the need to involve the finance wing in the planning process to mobilize resources effectively and assess the viability of projects.

It was further observed that there is a significant disparity in the project outlays for normal transmission works across different Transmission Circles. The Commission also expressed concern about the adequacy of project proposals for Malappuram District, particularly in addressing the inadequacy of the transmission network in the district.

Based on the presentation of KSEB Ltd, deliberations during the meeting, and the suggestions from the expert faculty members, the Commission informed KSEB Limited to submit an additional submission with certain corrections/modifications. Contents of the letter dated 11.01.2024 given to KSEB Limited is extracted hereunder.

" New Transmission Projects: -

KSEB Limited shall prioritize the projects into most essential, essential & desirable categories and report the details of Transgrid and Normal Development projects that are proposed to be taken up in the present Control Period with year wise outlays. The availability of resources including materials and manpower shall be considered while finalizing normal transmission works in each Transmission Circle. The details shall include the Detailed Project Report (DPR) of the project (for projects costing more than ₹10 crore), Load Flow Study report and the Administrative Sanction accorded for each project

a) *The details of additional projects, if any, that are proposed to be included in the Capital Investment Plan of the present control period with DPR, Load Flow Study Report and Administrative Sanction*

b) *Revised GFA addition during the control period considering the progress of ongoing projects and changes proposed in the Capital Investment Plan for the control period*

c) *Project specific long-term finance already arranged and the plan for availing cost-effective long-term finance for balance of projects.*

d) *The Load Flow Studies shall be conducted in the present scenario and in a projected scenario without any system modifications. If the CEA planning criteria couldn't be met in the scenarios, different proposals are to be worked out. Load flow studies have to be conducted for each proposal to find out the loading pattern and other parameters of each component of the proposals in the new scenario. The least cost solution among the new proposals meeting the planning criteria shall be the optimum solution. The Load Flow Study Report shall contain snapshot of loading and other parameters of lines and substations represented in single line network diagram in different scenarios. The alternate proposals considered shall be included in the DPRs also*

Duplication of works: - *Two works viz; alternate 33kV feeding to 33kV Pooyappally S/s from 110KV Ayoor S/s and alternate 33kV feeding to proposed 33kV Valakom S/s from 110KV Ayoor S/s costing ₹19.5 crores included in the category of normal transmission works costing more than ₹10 crores under Transmission Circle, Kottarakkara are also seen included in the RDSS proposals. Similarly, the following six reconductoring works of the existing 33kV feeders using 120 Sq mm covered conductor included in the normal transmission development works costing ₹30.9 crores under the same Circle are also seen included in the RDSS proposals.*

1. *Reconductoring of 33kV Ambalappuram Chengamanad feeder*
2. *Reconductoring of 33kV Ambalappuram Ezhukone feeder*
3. *Reconductoring of 33kV Ambalappuram Puthoor feeder*
4. *Reconductoring of 33kV Ambalappuram Pooyappally feeder*
5. *Reconductoring of 33kV Kottiyam Kannanalloor feeder*
6. *Reconductoring of 33kV Kottiyam Adichanalloor feeder*

Other Project reports may also be examined for avoiding such duplication in investment proposal

Improvements in Project Management: - *The Commission has observed that there is ample scope for improving efficiency in project management. Accordingly, KSEB Limited shall put in place the following improvements in project management techniques for cost effective and timely completion of the projects*

a) Management Information Systems for monitoring the projects at strategic level, managerial level and operational level

b) Involvement of finance wing to ensure uninterrupted cash flow as well as to avoid delay in project execution due to non-technical issues

c) Appropriate policy decisions at Board level for modifying the terms and conditions of contract agreements for attracting more vendors/EPC contractors for taking up KSEB works.

e) Mentoring and development of more localized vendors/EPC contractors for increased participation in the tenders for infrastructure projects

f) Effective liasoning mechanisms for co-ordination with different agencies and also for bringing issues including RoW that requires interdepartmental co-ordination at appropriate level of the Government

8) i) Based on the deliberations during the meeting held on 03.01.2024 and directives in the letters referred to in paragraphs 6 & 7 of this order, KSEB Limited submitted the revised DPRs for the projects included in the Capital Investment Plan of the SBU-Transmission of KSEB Limited. The licensee submitted the revised DPRs for 44 projects and informed, via a letter dated 27.02.2024, that the DPRs had been modified in accordance with Annexure 4 of the KSERC (Terms & Conditions for Determination of Tariff) Regulations, 2021.

ii) The licensee further submitted that, due to growing demand, the need for voltage improvement, and ensuring the reliability of supply, certain additional works which were not included in the original proposal are required now. Accordingly, 32 new projects with a total outlay of ₹757.26 crores have been newly proposed for approval.

iii) The licensee further informed that certain projects already submitted before the Commission is shifted from the category of 'Normal Works above ₹10 crores' to 'RDSS' and "Works less than 10 crore' categories and some works to the next control period. Certain projects are deleted due to recent developments in the evacuation system near such projects. Accordingly, four projects costing ₹85.77 crore have been shifted to RDSS, 16 projects costing ₹680.92 crore have been deferred to the next control period, and three projects costing ₹62.35 crore have been reclassified under the "less than ₹10 crore" category.

iv) The licensee further informed that the proposal submitted before Hon'ble Commission for RDSS and 'Capital Work less than 10 crores' categories are also changed. The revision in RDSS is made based on the approval obtained from Ministry of Power, Government of India, for the sub transmission level works.

v) Summary of revised capital outlay of Capital Investment Plan of Transmission for the control period 2022-27 submitted by the licensee is furnished in the table below.

Table 8.1

Summary of Capital Outlay (Revised) –SBU Transmission								
Sl No	**Works Category**	**Nos.**	**Capital Outlay (₹ Cr.)**					
			2022-23	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**Total (₹ Cr.)**
1	Normal Works above 10 Cr	84	As per Truing up Petition 2022-23 GFA addition is ₹. 1032.73 Cr	132.5	792.34	773.96	256.47	**1955.27**
2	TransGrid	12		97	679.5	883.77	612.25	**2272.52**
3	SLDC Kerala	2		5	92.47	0	0	**97.47**
4	RDSS	48		8.12	78.67	0	0	**86.79**
5	Normal work less than 10 Cr	589		247.863	388.581	219.929	97.344	**953.717**
Total		766	1032.73	**490.48**	**2031.56**	**1877.66**	**966.06**	**6398.5**

vi) **Reply/remarks of KSEB Limited on the queries/directives of the Commission**

In response to Commissions queries/directives, KSEB Limited furnished the following reply/remarks

a. Load flow Studies: Project wise load flow study reports are attached in the DPRs. Further, load flow studies of Kerala power systems, with all the transmission schemes including the completed and the on-going schemes in the current control period from 2018-19 to 2021-22, with load forecast are also attached with the revised submission.

b. KSEB Limited furnished the following replies to the details sought by the Commision vide its letter dated 27.11.2023.

General issues:

i. *Estimates for new proposals are prepared as per the latest cost data and latest approved schedule of rates and included in the revised DPR.*
ii. *Details of AS attached with each revised DPR. It is submitted that, for the ongoing projects, AS revision will be done during execution of projects, as and when required. For the works for which AS already issued and which are not started, tendering will be done after revision of AS.*
iii. *Majority of works are implemented by using KSEBL own fund. Financing plan of each project with details of grants as applicable, is already attached above.*
iv. *The status of Physical and Financial progress of already started projects are attached as Annexure to the revised submission*
v. *The detailed estimates of Transgrid projects are given in the revised DPR submitted.*
vi. *The planning criteria adopted for each project indicating whether the project is for replacement/upgradation/n-1 reliability/ for meeting load growth /loss reduction etc are mentioned in the DPR. The load and Voltage profile are mentioned in the LFS attached with the DPR.*
vii. *Alternate solutions are considered while conducting load flow analysis for assessing the viability of the projects. Present loading of substation/line is mentioned in the DPRs, whose upgradation of substation/line is proposed.*
viii. *SLD has been incorporated in the LFS of new projects and also incorporated in DPR. The loading of the substation/line before and after are included in LFS. Further, feeder wise loading is included in the Annexures*
ix. *Return on equity of the projects were previously taken as 15.5%. Now it is changed to 14% in CBA analysis in the DPRs.*
x. *Detailed LFS report for the anticipated scenario with and without the proposed project, indicating removal of constraints, n-1 contingency etc as applicable are attached with the DPRs of all projects.*
xi. *For Substation projects, schematic diagram showing transformers, substation buses, bus couplers, line and transformer bays are enclosed in DPR.*

xii. *The details of MCMV line projects such as total line length, length of MCMV portion etc are included in DPR.*

xiii. *Detailed IRR calculation attached with DPR for cost benefit analysis, IDC is also considered in the project cost.*

xiv. *Estimation of additional sale of energy for Transmission projects is done by considering the additional capacity of the substation/line constructed the forecast demand in the horizon period, which can be served from the new asset created. The projections are made realistically.*

xv. *Availability of land, Row requirement, forest and environment clearances required, permission required for Railway, highway crossing as applicable are included in the project risk factor of DPR. Further project wise such details are enclosed as Annexure I.*

xvi. *The MNRE grant eligible for Green Corridor Transgrid Project is ₹138.71 Crore, and is mentioned in the respective DPRs.*

Sl. No	***Name of the Project***	***Approved Grant***
1	*Attapady Green Corridor*	*₹74.46 Cr*
2	*Ramakkalmedu Green Corridor*	*₹64.24 Cr*
	Total	*₹138.71 Cr*

Specific Issues.

xvii. *In the DPR submitted for the construction of 110kV Substation at Thevalakkara, cost of terminal connection arrangements at Sasthamcotta and Chavara Substations were included. However, since the cost of terminal connection arrangement at Sasthamcotta Substation is now included in the sanctioned DPR for the upgradation of 110kV Substation, Sasthamcotta to 220kV level under Transgrid, the cost of the same is excluded from the revised DPR of Thevalakkara Substation. In the proposed upgradation of Sasthamcotta – Chavara DC feeder, one circuit will be terminated at Chavara and the other circuit will be extended to Kavanad substation through suitable terminal arrangement at Chavara end and hence the cost of feeder re-arrangement at Chavara Substation is included in the revised estimate.*

xviii. *The bay work at Chavara Substation is not included in the revised DPR of Thevalakkara project. So, the discrepancy noted by Hon'ble Commission does not exist now.*

xix. *In the DPR submitted for Thevalakkara Substation package, the cost savings due to the reduction in losses is estimated as peak load system losses without considering loss load factor. In the revised DPR, the benefits and financial viability are re-calculated by considering loss load factor.*

xx. *The DPR for the Upgradation of SCADA work of SLDC was revised and revised DPR with the revised estimate is amounting to ₹70.85 Cr and Administrative sanction also obtained. Copy of the revised DPR is submitted.*

xxi. *The load flow study for new 110kV substation Oachira was conducted before the upgradation of 66kV Substation, Karunagappally to 110kV and associated line upgradation of 66kV Sasthamcotta – Karunagappally DC line to 110kV DC,and the DPR for the project was approved prior to the network development in the area. Hence, LFS is to be conducted afresh in the current scenario, and the proposal is to be reviewed. Hence proposal shifted to the next control period.*

c. KSEB Limited submitted the following details in response to the letter dated 11.01.2024 of the Commission.

New Transmission Projects.

i. *New transmission projects categorised as essential. Most essential and desirable are identified and is included in Annexure I.*

ii. *Revision in the already submitted project and new proposals under SBU T are included in the Annexure I.*

iii. *Revised GFA considering carry forward work is included in the summary of the Capital Outlay.*

iv. *Details of Project specific finance available for TransGrid project are given in the Annexure I.*

v. *The loading of the substation/line at different scenarios are included in the Annexure V. Further project wise LFS report is included in the DPR. It is submitted that, Presently Load Flow studies are conducted for the anticipated scenario with and without the proposed project, indicating removal of constraints, n-1 contingency etc.*

Duplication of works

vi. *Since the reconductoring works of existing 33kV feeders and alternate feeding to existing 33kV Substations under Transmission Circle, Kottarakkara included under RDSS, the project named "alternate 33KV feeding to existing 33KV Substations" is removed from the Capex projects above 10 Crore.*

KSEB Limited prayed before the Commission to

1. Kindly consider the additional submission for capital Invest plan under SBU T for the control period 2022-23 to 2026-27 and to approve the same by invoking the power conferred to the Hon'ble Commission under Section 181 of

Electricity Act 2003 to be read with Kerala State Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2021.

2. To pass any order as the Hon'ble Commission may deem fit and appropriate under the circumstances of the case and in the interest of justice.

9) Hearing of the Petition:

The hearing on the petition was conducted on 28.02.2024 at the Court Hall of the Commission in hybrid mode. The list of participants in the hearing is attached as **Annexure I**. During the hearing, Sri Rajan M.P., Deputy Chief Engineer, TRAC, KSEB Limited, and Smt. Latha S.V., Executive Engineer, TRAC, KSEB Limited, presented the Capital Investment Plan of SBU-Transmission on behalf of KSEB Limited. During the presentation, KSEB Limited informed the Commission that, with regard to RDSS works, the Government of India had approved only reconductoring works in the transmission sector, necessitating a revision of the original investment plan. Of the 14 Transgrid packages proposed earlier, four projects have been shifted to the next control period. Three projects have been newly added to the Transgrid project. KSEB Limited provided details on the components of major Transgrid projects and normal transmission projects, each costing more than ₹10 crores. It was also informed that a KfW Development Bank loan at concessional interest rates is available for the North Green Corridor Project, Attapady Green Corridor Project, and Ramakkalmedu Green Corridor Project.

Furthermore, 23 projects, costing ₹829 crores, have been shifted to the next control period or other categories, while 32 new projects, costing ₹757 crores, with the highest priority, have been included in the revised investment plan. The revised investment proposal has been submitted to the Commission.

The Commission requested KSEB Limited to examine the reasons for rejecting the original RDSS proposal and to clarify how this decision will impact the planned objectives and finances of the utility. The deliberations during the hearing, along with comments from stakeholders, are detailed below.

1. Shri Aneesh Parakkadan (KSEBOA) stated that although KSEB Limited had invested a significant amount in Capital Investment Plans in recent years, transmission constraints and voltage issues continue to persist in Malappuram and Idukki districts. He acknowledged that the commissioning of the 220 KV Substation at Chithirapuram has improved the power quality in the Munnar area, but pointed out that areas like Nedumkandom still face issues. He informed the Commission that despite repeated tendering for the construction of the 110 KV Kuthungal-Nedumkandom transmission line work

under the Transgrid wing, no contractors have come forward to take up the work. He expressed concern that certain contractual conditions might be deterring contractors from participating. Additionally, he highlighted that load shedding has recently been imposed on the Sengulam-Vazhathope-Nedumkandam-Kattappana 66kV SC feeder. The Commission subsequently directed the Load Despatch Wing to verify these facts and questioned why such issues were not reported to Commission earlier, if they were true. Shri Parakkadan also discussed the power-related challenges in Malappuram, noting that most substations in the Tirur area are operating at full capacity, leaving many industrial connection requests pending. He observed that while capacity additions are being made to existing substations, no new substations are being established in the area. He emphasized the urgency of prioritizing and completing key projects on time. Regarding the 400 KV line work from Wayanad to Kasaragod, he highlighted delays due to Right of Way (RoW) issues and suggested that offering a better compensation package might help resolve the situation. He requested the Commission's intervention to address these critical issues and to give approval for the Capital Investment Plan of SBU Transmission of KSEB Limited.

2. Shri Saji Mathew of MRF appreciated the Commission for conducting a detailed pre-discussion on the CAPEX plan of KSEB Limited and highlighted the following points:

   a) For new substations, GIS technology can be adopted after conducting a cost-benefit analysis. However, for the renovation of existing substations, modern AIS technology would be more cost-effective and beneficial.

   b) As per the figures in the truing-up petition of KSEB Limited for FY 2022-23, out of 18 substation works scheduled during the period, only 6 works (33%) were completed. Out of the planned 13 numbers of 110 KV substations, only 2 (15%) were completed. Transformer capacity addition of 1480 MVA was only achieved against the target of 2654 MVA (56%).

   Similarly, he highlighted the poor progress of transmission line works:

   - 187 km of 220 KV lines completed against a target of 478 km (39%).
   - 138 km of 110 KV lines completed against a target of 779 km (18%).
   - 14 km of 33 KV lines completed against a target of 82 km (17%).

   Citing the above, he raised concerns about approving large Capital Expenditure plans without getting the expected benefits from the projects due to delayed completion.

3. Shri Dijo Kappen stated that despite various directives issued by the previous Commissions, KSEB Limited has not been complying with them. He further remarked that KSEB Limited consistently fails to analyze the financial implications of various proposals and communicate them effectively to the stakeholders. He requested the Commission to approve

only prudent investments to ensure that unnecessary expenditures are not passed on to consumers as tariffs.

4. During the deliberations, the Commission urged KSEB Limited to re-evaluate the essentiality of projects included in the investment plan. Projects should be prioritized based on requirements. The Commission once again emphasized the need to complete projects on time. The licensee must establish suitable internal mechanisms to ensure the timely completion of projects. Dedicated teams should be deployed for each project, and uninterrupted team continuity must be ensured. Team leaders of appropriate qualifications and experience should be selected to remain with the project until completion. The Commission, during the deliberations, clarified that investment approval will be granted only for projects that have received Administrative Sanction and have a Detailed Project Report (DPR) for projects costing ₹10 crores and above.

The Commission also underscored the importance of a proper HR policy that includes phased recruitments to prevent large-scale retirements from negatively impacting the licensee's performance. For the timely completion of spill over works, special officers should be appointed with clear timelines for project completion. Weekly monitoring of projects should be conducted, and the progress must be published in the public domain. To encourage efficiency, performers should be recognized and appreciated to motivate other officials. The Commission highlighted that co-ordination, effective project monitoring through management information systems, and timely decision-making are the three key factors for the smooth completion of projects.

10) Analysis & Decision of the Commission:

The investment proposals under the Capital Investment Plan of the SBU-Transmission of KSEB Limited have been analyzed based on the original and revised submissions of KSEB Limited, the discussions and decisions made in the project appraisal meeting held on 03.01.2024, the comments of stakeholders/ deliberations during the hearing on 28.02.2024, the provisional approval granted for capital investment in the ARR order dated 25.06.2022, the latest progress status of the projects, CEA transmission planning criteria and the provisions of the KSERC (Terms and Conditions for Determination of Tariff) Regulations, 2021 for the control period (2022–2027) and the Commission decides as follows:

The transmission system is the backbone of the power system. A reliable intra-state transmission system, capable of maintaining voltage levels, minimizing transmission losses, and conforming to the reliability and redundancy criteria stipulated by the Central Electricity Authority (CEA), is essential. This system should incorporate advanced communication and data acquisition/transfer technology with nodal point visibility, ensuring the smooth and uninterrupted flow of electrical energy in coordination with power demand, ISTS power flow, and changes in intra-state generation. The current

transmission system in the state is reported to be inadequate in meeting many of these requirements, including the projected peak demands. Therefore, transmission systems must be planned and developed with the objective of ensuring a 24x7 power supply to all consumers while maintaining the required redundancy and reliability.

The Transgrid 2.0 proposal envisions the development of 400 kV and 220 kV transmission lines and substations across the state. This initiative aims to enable uninterrupted power flow from interstate/grid substations and intra-state generating stations to various substations. The project is designed to address existing system constraints, build sufficient import capacity for the future, facilitate power evacuation from generating stations within the state, and minimize transmission losses.

Alongside the Transgrid 2.0 project, medium-term and short-term projects should be undertaken to enhance the transmission network from grid stations, ensuring reliable power supply to specific load areas. These projects are essential for operational reliability, meeting statutory requirements, safety, preparedness, and flexibility to meet day-to-day consumer needs.

Additionally, the projects approved by the Ministry of Power under the Revamped Distribution Sector Scheme (RDSS) must be prioritized, considering the 60% grant component available for these initiatives. The State Load Dispatch Centre (SLDC) works are crucial for maintaining a well-developed communication and SCADA system, enabling real-time intervention and seamless data transfer between the national transmission network, intra-state transmission network, and specific consumers. The communication and SCADA systems should be developed in alignment with national grid requirements and must be implemented within a strict timeline. The CAPEX proposals should be evaluated based on the above requirements to ensure an efficient, future-ready transmission system.

For the previous four-year control period (2018–2022), the Commission approved a capital investment outlay of ₹4,688.31 crore for the SBU-Transmission of KSEB Limited, as per its order in OA No. 15/2018 dated 28.05.2021. The transmission plan for the control period 2022–2027 was discussed as an agenda item in the State Coordination Forum meeting held on 19.07.2023 for stakeholder information and suggestions.

a) During the appraisal meeting held on 03.01.2024, the Commission directed KSEB Limited to prioritize the projects into three categories: most essential, essential, and desirable and to provide the details of Transgrid and Normal Development projects proposed for implementation during the current control period, along with year-wise financial outlays. The Commission also emphasized the need to consider the availability of resources, including materials and manpower, while finalizing normal transmission works in each Transmission Circle.

   Furthermore, KSEB Limited was instructed to submit:

   - The Detailed Project Report (DPR) for projects costing more than ₹10 crore.
   - The Load Flow Study report for each project.
   - The Administrative Sanction accorded for each project.

Additionally, KSEB Limited was directed to submit details of any additional projects proposed for inclusion in the Capital Investment Plan of the current control period, along with the respective DPR, Load Flow Study Report, and Administrative Sanction.

b) Accordingly, KSEB Limited submitted the revised CAPEX proposal on 27.02.2024 and DPRs for 44 projects, including 9 projects under the TransGrid category, after rectifying the deficiencies pointed out by the Commission. Additionally, KSEB Limited informed that due to growing demand, the need for voltage improvement, and reliability of supply, certain additional capital works, which were not originally included in the proposal, are now required and submitted details of 32 new proposals with a total estimated cost of ₹757.26 crore.

Furthermore, KSEB Limited reported that certain projects originally submitted to the Commission have been reallocated as follows:

- Some projects have been shifted from the normal works category to the RDSS category and works less than ₹10 crore category
- Certain projects have been deferred to the next control period.
- Some projects have been removed due to recent developments in the nearby evacuation system.

KSEB Limited submitted the list of 23 such projects, categorized as follows:

- 4 projects costing ₹85.77 crore shifted to the RDSS category.
- 16 projects costing ₹680.92 crore deferred to the next control period.
- 3 projects costing ₹62.35 crore reclassified under the below ₹10 crore category.

Additionally, KSEB Limited has submitted two transmission works for approval as part of the Suo Moto proceedings initiated due to the large pendency of power allocation applications in the Tirur Circle. These works are **a)** construction of a 33 KV substation at Kunnumpuram**,** costing ₹9.25 crores and **b)** Construction of a 110 KV GIS substation at Malappuram**,** for which the submitted cost is ₹58 crores. However, the Administrative Sanction (AS) details submitted by the licensee amount to only ₹52 crores.

An analysis of the projects under each category is provided below.

c) **Projects costing below ₹10 crore (Normal Capital works below ₹10 crore):**

KSEB Limited via, its revised submission dated 27.02.2024 has proposed 589 numbers of works costing ₹1069.28 crores under this category and the projects are grouped circle wise. Of these 12 works costing ₹31.072 crore are proposed under System Operation Circles. It is observed that there is an increase in outlay for works under this category compared to the original submission. KSEB Limited has also submitted the details of the above 589 works with year wise outlays and date of completion. Maximum outlay of ₹201.838 crore is proposed for the 77 works coming under Malappuram Circle. Additionally, KSEB Limited proposed one work; construction of 33 KV Kunnumpuram Substation costing ₹9.25 crores. An abstract of the capital outlay of these projects are summarized in the table below

Table 10.1

Capital works costing less than ₹ 10 Cr								
Sl. No.	Name of Circle/Division	No of Works	Capital Outlay					
			2022-23	2023-24	2024-25	2025-26	2026-27	Total ₹ Cr.
1	Thodupuzha Circle	12	0.2060	8.2940	16.7000	9.1000	0.0000	**34.30**
2	Alapuzha Circle	43	1.8518	20.7682	51.8245	39.6100	9.0000	**123.05**
3	Poovanthuruthu Circle	10	3.7700	5.5600	20.3200	2.0000	5.0000	**36.65**
4	Malappuram Circle	78	9.1300	47.8440	95.69	43.9800	14.4400	**211.08**
5	Palakkad Circle	38	5.4700	20.7450	32.2050	27.9830	4.2100	**90.61**
6	Kozhikode Circle	90	22.9871	41.2696	61.9800	23.4100	0.0000	**149.65**
7	Pathanamthitta Division	2	0.0000	0.0000	0.6000	3.0000	3.8000	**7.40**
8	Thrissur Circle	61	3.6200	57.1970	42.6750	10.0900	0.0000	**113.58**
9	Thiruvananthapuram Circle	37	14.1259	8.1482	18.5078	12.5620	24.4100	**77.75**
10	Kottarakkara Circle	42	9.6500	8.1500	24.0900	8.1000	3.0000	**52.99**
11	Kalamassery Circle	20	12.6500	2.5000	0.0000	31.0000	30.9800	**77.13**
12	Kannur Circle	145	27.0316	20.1294	19.3907	6.6900	0.0000	**73.24**
13	Transmission Circles - Total		110.4924	240.6054	374.7370	217.5250	94.8400	**1047.43**
14	System Operation Circle	12	5.0700	7.2580	13.8440	2.4040	2.5040	**31.08**
	Grand Total	**590**	**115.5624**	**247.8634**	**397.3300**	**219.9290**	**97.3440**	**1078.538**

Most of the works under this category are intended for the capital nature of works of substations & equipment, improvements in the infrastructure for compliance to the CEA regulations and safety standards etc. and are carried out through the in-house facilities and through small contracts. The Commission after prudent scrutiny and analysis of the works, decided to give approval for the 590 works amounting to ₹1078.538 crores. **Accordingly, the Commission decided to give approval for an amount of ₹1078.538 crore for works under the category of "Projects costing less than 10 crores**". The details of works are attached as **Annexure II** of this order.

d) Normal capital works above ₹10 crores:

In its original submission, KSEB Limited proposed 75 projects under this category, with a total estimated cost of ₹2052.01 crore (₹2028.61 crore excluding grants). In its revised submission dated 27.02.2024, KSEB Limited provided the details of 84 projects with a total cost of ₹2050.2 crore under this category. KSEB Limited additionally proposed one new work, viz; construction of 110 KV substation, Malappuram and allied works costing ₹52 crores.

KSEB Limited stated that the revision was made due to modifications in the DPRs and changes in project phasing, following the essentiality and priority assessment as directed by the Commission, as explained in paragraph

10(b) of this order. On detailed scrutiny, it is noted that for the three projects viz; 1) Upgrading 66kV transformer and feeder bays to 110kV at 110kV substation, Mavelikara 2) Construction of 33kV Substation at East Kallada and augmentation of 110kV substation Sasthamkotta by installing 1x25MVA, 110/33kV Transformer and 3) Providing 1x16MVA, 110/33kV Transformer at 110kV substation, Chittur constructing 33kV SC line from 110kV substation, Chittur to proposed 33kV substation Tathamangalam, constructing 33kV unitized substation at Tathamangalam, KSEB Limited has not submitted the Administrative Sanction orders. Excluding the above three projects, the circle-wise revised proposal under this category is presented in the table below.

Table 10.2

Capital Outlay – Normal Works above 10 Cr								
Sl No	**Name of Circle/Division**	**Nos.**	**Capital Outlay (₹ Cr.)**					
			2022-23	**2023-24**	**2024- 25**	**2025-26**	**2026-27**	**Total (₹ Cr.)**
1	Alappuzha Circle	11	20.22	13.69	140.19	93.71	33.11	**300.92**
2	Kalamassery Circle	4	3	5.8	38.7	22.25	29	**98.75**
3	Kottarakara Circle	4	0	2.35	51	46.95	12.1	**112.4**
4	Pathanamthitta Division	5	0	0.08	5.5	54	25.72	**85.3**
5	Poovanthuruthu Circle	6	1.9	36.3	38.1	53.7	10.6	**140.6**
6	Palakkad Circle	7	36	13.19	69.7	27.1	0	**145.99**
7	Thiruvananthapuram Circle	4	0	0	25	110	62.19	**197.19**
8	Kozhikode Circle	12	13	50.15	68.45	108.2	18.2	**258.00**
9	Kannur Circle	6	0.31	2.48	85.73	37.41	0	**125.92**
10	Thodupuzha Circle	8	6.1	3.7	68.15	68.5	32	**178.45**
11	Malappuram Circle	8	0	4.26	130.27	40.84	9.75	**185.12**
12	Thrissur Circle	6	0	0.5	90.95	67.13	19.1	**177.68**
13	Providing Bus bar protection at Major 110kV substations	1			16			**16.00**
Total		82	80.53	132.5	827.74	729.79	251.77	**2022.33**
Less Grant					14.4			
Net Outlay		**82**	**80.53**	**132.5**	**813.34**	**729.79**	**251.77**	**2007.93**

These projects are mainly intended for the construction of new substations & new lines, upgradation of existing stations and lines etc., to address the load growth in specific areas, to improve the safety & reliability standards and to comply with the requirements under the CEA Transmission planning criteria. The Commission after prudent scrutiny and analysis of the works, decided to give approval for the net outlay for 81 works amounting to ₹2007.93 crores. **Accordingly, the Commission decided to give approval for an amount of ₹2007.93 crore for works under the category of "Normal capital works above ₹10 crores**". The details of works are attached as **Annexure III** of this order.

e) RDSS works:

KSEB Limited during the hearing of the petition informed that the capital outlay of RDSS works is revised based on the approval obtained from the Ministry of Power, Government of India. The revised outlay for RDSS Phase -I works is presented in the table below. These projects get 60% of the costs as grants from the Government of India.

Table 10.3

RDSS Phase I - Works Under SBU(T)						
Sl No	**Name of Circle/Division**	**Nos.**	**Capital Outlay**			**Total**
			2022-23	**2023-24**	**2024-25**	**(Rs. Cr.)**
1	Thiruvananthapuram	7	0	1.89	24.12	26.01
2	Kollam	6	0	0.5	21.13	21.63
3	Pathanamthitta	4	0	0.6	16.36	16.96
4	Alappuzha	2	0	0.2	9.58	9.78
5	Thodupuzha	1	0	0	11.74	11.74
6	Ernakulam	4	0	4	18.65	22.65
7	Thrissur	4	0.0	2.6	11.1	13.7
8	Malappuram	12	0.0	3.5	37.3	40.8
9	Kozhikode	3	0.0	1.0	16.7	17.7
10	Kannur	5	0.0	6.0	30.1	36.1
Total		48	0.00	20.29	196.68	216.97
Less: GoI fund (@60%)			0	12.174	118.008	130.182
Net Capital Outlay			**0.00**	**8.12**	**78.67**	**86.79**

The Commission after prudent scrutiny and analysis of the works, decided to give approval for the net capital outlay for 48 works amounting to ₹ 86.79 crores. **Accordingly, the Commission decided to give approval for an amount of ₹ 86.79 crore for works under the category of "RDSS phase I works**". The details of works are attached as **Annexure IV** of this order.

f) Transgrid 2.0 works:

KSEB Limited in original submission proposed 14 Transgrid packages costing ₹ 2421.76 crores. But the proposal has been modified and in the revised submission KSEB Limited proposed 13 packages costing ₹ 2366.52 crore. KSEB Limited during the deliberations of the hearing informed that four packages viz; Thrissivaperur Lines Package III, North Malabar Lines Package II, Travancore Lines Package III and Panjal 220 KV Switching station have been shifted to the next control period as the projects are not required in the current control period. 3 more projects are newly included in Transgrid 2.0 Scheme, of which two projects viz; Downstream works for the upcoming 220kV Substation, Thuravoor and Construction of 17 kms Kuthumkal-Nedumkandam 110kV DC feeder were shifted from normal works category. Downstream works of Karindalam 400 KV substation is included to be taken up in the present control period. The packages included in the revised submission and its outlay is presented in the table below.

Table 10.4

Transgrid 2.0 works							
Sl No	**Name of work**	**Capital Outlay (₹ Cr.)**					**Total Cost (₹ Cr.)**
		2022-23	**2023-24**	**2024-25**	**2025-26**	**2026-27**	
1	Travancore Lines Package I	2.2	8	18			28.2
2	Travancore Lines Package II	18	24	55			97
3	Quilon Package			32	113.37		145.37
4	North Green Corridor Package	11.8	60	330	330	180	911.8
5	Attappady Green Corridor Package [total cost Rs. 311 Cr, MNRE grant Rs. 74.71 Cr, Net Rs. 236.39 Cr]			100	100	36.9	236.39
6	Ramakkalmedu Green Corridor Package [total cost Rs. 234.64 Cr, MNRE grant Rs. 64.24 Cr, Net Rs. 170.4 Cr]			0	65.4	105	170.4
7	North South interlink Package II	60		90	100	133.91	383.91
8	Valluvanad Package			25	30	29	84
9	Edamon 400 kV Substation			5	50	50	105
10	North South interlink Package III			10	40	20.8	70.8
11	Downstream works of Karindalam 400kV S/s			1.5	20	32.99	54.49
12	Downstream works for the upcoming 220kV Substation, Thuravoor	2	5	8	20	18.7	53.7
13	Construction of 17kms Kuthumkal-Nedumkandam 110kV DC feeder			5	15	15.75	35.75
	Total	**94.00**	**97.00**	**679.5**	**883.77**	**623.05**	**2377.00**

Details of Transgrid 2.0 works included in the revised submission are given below.

(1) The proposed Travancore Lines Package I involves laying a 9 km 110kV underground cable to interlink the Thiruvananthapuram Medical College and TERLS substation for improving connectivity and reliability. Currently, outages at Paruthippara and Kazhakootam substations leave Medical College, TERLS, and VSSC substations without effective back-feeding options. Establishing this connection will create a ring main system, ensuring uninterrupted power supply to critical institutions. Additionally, it will serve as a backup source for Kazhakuttam substation in case of supply failure from Pothencode. The project is crucial for maintaining operational flexibility, especially during maintenance and emergencies.

(2) The Travancore Lines Package II aims to enhance connectivity between the under-construction 110kV Muttathara Substation and the 110kV Veli, TERLS, and Kazhakootam substations in Thiruvananthapuram. The work includes laying a 12 km 110kV underground cable from the proposed 220kV GIS Vizhinjam to Muttathara and a 19.5 km underground cable from GIS Vizhinjam to Veli. With an estimated cost of ₹97 crore, this project is a crucial downstream work of the Vizhinjam GIS and will establish a ring main system, ensuring reliable power supply to these substations.

(3) The Quilon package includes establishing a 220/110kV SCADA-enabled GIS substation at Sasthamkotta by decommissioning the existing 110kV AIS substation for enhancing regional connectivity. It will connect to the Kayamkulam-Kundara (2KYKD) line via a LILO arrangement and involve constructing a 6.5 km 220/110kV MCMV line from East Kallada to Sasthamkotta. This 220kV double circuit line will receive power from the 2KYKD line, and a 110kV double circuit line will supply the proposed East Kallada substation. The existing right of way from the abandoned Kundara-Sasthamkotta 66kV line will be used for this new construction.

(4) The North Green Corridor package aims to establish a Green Power Highway between Wayanad and Kasaragod, linking renewable energy sources to the Mysore-Areacode 400kV network. It includes constructing a 400kV double circuit transmission line from the under-construction 400kV Karindalam substation to a proposed 400kV substation in Wayanad, using special lattice towers with V-string arrangements to minimize the right of way (RoW). The work involves building a 124 km 400kV twin HPC (Quad Moose equivalent) double circuit line with OPGW for communication, constructing a 5.25 km 220kV MC line for LILO integration of the Kaniyampetta-Mysore line at the 400kV Payyampally substation in Wayanad and establishing a 400/220kV GIS substation at Payyampally with six 400kV feeder bays and four 167 MVA single-phase transformers. The project ensures enhanced renewable energy integration and grid stability.

(5) The Attapady region is currently linked to the Kerala power grid through a 26 km, 33kV double circuit feeder from Agali to Mannarkkad, with a maximum capacity of 23MW. This feeder also evacuates power from an

18.6MW wind farm but has limited spare capacity, high losses (10.95%), and low reliability due to frequent faults in the Attappady Ghat section. To address these issues and support clean energy, a new transmission corridor viz; Attappady Green Corridor Package is proposed to efficiently transport 200 MW of power from Attapady to a new 220kV GIS substation at Mannarkkad in Palakkad district. This substation will connect to the Kerala grid via a 220kV corridor extending to Vettathur in Malappuram district. The project is partially funded by MNRE, covering 33% of the cost. The total project cost is ₹ 311 crores and the project is eligible for a grant of ₹74.71 crore from MNRE.

(6) The Ramakkalmedu Green Corridor project aims to eliminate the bottleneck in Ramakkalmedu in Idukki District by constructing a reliable power transmission corridor capable of transporting up to 130 MW of power to the existing KSEB Limited grid. The plan includes constructing a 33/110kV step-up substation at Anakkaramedu and a 9 km 110kV double circuit line with HPC conductors to the nearby Nedumkandam 66kV substation, which is already built to 110kV standards, thereby integrating it into the Kerala grid. The project is funded by MNRE, covering 33% of the total cost. The total project cost is ₹234.64 crores and the project is eligible for a grant of ₹64.24 crores from MNRE.

(7) The power demand in Kerala's northern region, covering Thrissur, Malappuram, Kozhikode, Wayanad, Kannur, Kasaragod, and Palakkad, has been steadily rising, with a current peak demand of 1800MW. The region is primarily supplied by 10 existing 220kV substations and two 110kV substations receiving power from Karnataka. To enhance power stability and reliability, KSEBL has initiated projects like the Eranad and Kolathunadu projects, along with new 220kV AIS/GIS substations at Manjeri, Kunnamangalam, Thalassery, Kunnamkulam, and Chalakudy. To further strengthen the power network, an alternative corridor is planned under the North–South Interlink Line Package (NSIP) and Thrissivaperoor Line Strengthening Package (TLSP). These projects will establish a coastal power corridor from Aluva to Vengallur. The DPR on North South Interlink Package II focuses on constructing a 220kV GIS substation at Irinjalakuda and associated transmission lines, including Aluva–North Paravur–Kodungallur (NSIP Phase II) and Irinjalakuda–Kunnamkulam (TLSP Phase II), ensuring a more reliable power supply for the region.

(8) The Valluvanad Lines & Substation Package (VLSP) is one of the key transmission and substation projects under TransGrid 2.0. The package is divided into two phases to ensure minimal supply interruptions during construction. In the first phase, Project A is planned for the up-gradation of 110 kV Vennakkara substation to 220 kV and Project B for establishing important transmission line connectivity from 400 kV substations, Elappuly and Madakkathara with 220kV link. In phase II, the existing 110kV SC Vennakkara–Mannarkkad feeder via Kalladikode substation will be upgraded as three subprojects. This project, along with the Attappadi Green Corridor Project, will establish a 220kV ring main interconnecting Areekode, Madakkathara, Kottathara, and Elappully substations,

significantly enhancing power reliability and availability in Mannarkad Taluk and the eastern and northern regions of Palakkad and Malappuram districts.

(9) The objective of constructing Edamon 400 KV substation is to establish a robust infrastructure ensuring a stable, reliable, and redundant power supply in the southern region of Kerala through the upgradation of the Edamon 220kV Substation to 400kV voltage level. This initiative aims to enhance power supply reliability in crucial areas, including Thiruvananthapuram, Kollam, Pathanamthitta, and Alappuzha Districts and enhance the power import capacity of the state.

(10) The North South Interlink Package III comprises the upgradation of 26.5 kms long 66 KV DC line from 220 KV substation, Aluva to 220 KV substation Chalakudy to 110 KV level including LILO arrangements to Kurumassery, Angamally, Karukutty Substation and existing EHT consumers TELK and VAIGA. Upgradation of the existing line and making LILO arrangements will improve the operational flexibility and reliability of the entire system.

(11) The proposal “Downstream works for 400 KV Substation, Karindalam” consists of project A – construction of 9.02 kms of 220 KV DC line from 220 KV Vidyanagar – Thalassery feeder to 400 KV substation, Karindalam (Kasargode) by single LILO arrangement and Project B- construction of 220 KV MC line (LILO) from 220 KV Kanjirode-Ambalathara feeder and 220 KV Taliparamba-Mylatti feeder to 400 KV substation, Karindalam by double LILO arrangement. The project intends to provide connectivity to 220 KV substations from the new 400 KV substation coming up in Karindalam. The project is proposed to improve the power system reliability and reduce the transmission congestion in Kasaragod and Kannur districts.

(12) The project; “Downstream works for the upcoming 220 KV substation, Thuravoor” is proposed to evacuate the power received at the upcoming 220kV Thuravoor Substation to the nearby Substations. The work includes constructing the outgoing 110 KV feeder lines from 220 KV substation Thuravoor for linking with the exsting 110 kV feeder lines, upgradation of existing 66 KV feeders and providing LILO arrangement to Infopark 110 KV substation. This project has been shifted from the category “normal works above 10 crores” of Alappuzha Transmission Circle.

(13) The project “construction of 17 kms of Kuthunkal-Nedumkandam DC feeder” involves construction of 17.275 km 110 kV DC LILO line from Kuthunkal Neriamangalam 110 kV DC line to Nedumkandam Substation. The proposed project is expected to provide more power stability to high range areas in Idukki District by constructing new 110 kV feeders to existing Substations, besides reducing the losses and improved voltage at the fag end substations. This project has been shifted from the category “normal works above 10 crores” of Thodupuzha Transmission Circle.

Considering the necessity of the proposals, the projects proposed under the Transgrid 2.0 works is approved for investment as detailed in the table below:

Table 10.5

Transgrid 2.0 works							
Sl No	**Name of work**	**Capital Outlay (₹ Cr.)**					**Total Cost (₹ Cr.)**
		2022-23	**2023-24**	**2024-25**	**2025-26**	**2026-27**	
1	Travancore Lines Package I	2.2	8	18			28.2
2	Travancore Lines Package II	18	24	55			97
3	Quilon Package			32	113.37		145.37
4	North Green Corridor Package	11.8	60	330	330	180	911.8
5	Attappady Green Corridor Package [MNRE grant ₹ 74.71 Cr.}			100	100	111.00	311.00
6	Ramakkalmedu Green Corridor Package [MNRE grant ₹ 64.24 Cr.]			0	65.4	169.24	234.64
7	North South interlink Package II	60		90	100	133.91	383.91
8	Valluvanad Package			25	30	29	84
9	Edamon 400 kV Substation			5	50	50	105
10	North South interlink Package III			10	40	20.8	70.8
11	Downstream works of Karindalam 400kV S/s			1.5	20	32.99	54.49
12	Downstream works for the upcoming 220kV Substation, Thuravoor	2	5	8	20	18.7	53.7
13	Construction of 17 kms Kuthumkal-Nedumkandam 110kV DC feeder			5	15	15.75	35.75
Total		94.00	97.00	679.5	883.77	761.39	**2515.66**
Less MNRE Grants					97.265	41.685	
Net Outlay		**94.00**	**97.00**	**679.5**	**786.50**	**719.70**	**2377.00**

The Commission after prudent scrutiny and analysis of the works, decided to give approval for the net capital outlay for 13 projects amounting to ₹2377 crores. **Accordingly, the Commission decided to give approval for an amount of ₹2377 crore for works under the category of "Transgrid 2.0 works**". The details of works are attached as **Annexure V** of this order.

g) SLDC works:

KSEB Limited in the revised submission proposed one new work under the category viz; "Establishment of Next Generation Security Operation Centre (SOC) at SLDC Kerala" in addition to the earlier proposed project "Upgradation of SCADA/EMS systems at main and back up Control Centres of SLDC, Kerala"

The summary of capital outlay for the projects is presented in the table below. KSEB Limited informed that for the second project, a proposal will be submitted to the Government of India for availing 100 % PSDF funding.

Table 10.6

Summary of Capital Outlay –SLDC							
		Capital Outlay (₹ Cr.)					
Sl No	Name of Projects	2022-23	2023-24	2024-25	2025-26	2026-27	Total Capital outlay (₹ Cr.)
1	Upgradation of SCADA/EMS	0	5	71.47	0	0	76.47
2	Next Generation SOC	0	0	21.00	0	0	21.00
Total		**0**	**5**	**92.47**	**0**	**0**	**97.47**

The Commission after prudent scrutiny and analysis of the works, decided to give approval for the net capital outlay for 2 projects amounting to ₹97.47 crores. **Accordingly, the Commission decided to give approval for an amount of ₹97.47 crores for works under the category of "SLDC works".**

11) Based on the observations and assessment detailed in paragraph 10 above, approval of the 'Capital investment plan for Transmission' of KSEB Limited for the control period (2022- 2027) is accorded; under the different heads, year wise, as indicated in the Table below:

Table 11.1

Capital Investment plan - Transmission							
Sl. No.	Category of Works	Capital outlay (₹ Cr.)					Total (₹ Cr.)
		2022-23	2023-24	2024-25	2025-26	2026-27	
1	Projects costing below ₹ 10 Cr.	115.56	247.86	397.83	219.92	97.34	1078.54
2	Normal works above 10 Cr.	80.53	132.5	827.74	729.79	251.77	2022.33
3	RDSS Works	0.00	20.29	196.68	-	-	216.97
4	Transgrid works	94.00	97.00	679.5	883.77	761.39	2515.66
5	SLDC works (>10 Cr)	0	5	92.47	0	0	97.47
Total		**290.09**	**502.65**	**2194.22**	**1833.48**	**1110.5**	**5930.97**
Less Grants/GoI funds			12.174	132.41	97.265	41.688	283.54
Net Capital Outlay		**290.09**	**490.48**	**2061.81**	**1736.22**	**1068.01**	**5647.43**

Accordingly, the Commission decided to approve a net capital outlay of ₹5647.43 crores as Capital Investment plan for the SBU- Transmission of KSEB Limited. The details of each category of works are given in **Annexures II, III, IV & V** attached to this order.

12 (a) Though the Commission, vide its letters dated 27.11.2023 and 11.01.2024, as well as during the deliberations of the project appraisal meeting held on 03.01.2024, directed KSEB Limited to submit Detailed Project Reports (DPRs) for projects costing more than ₹10 crores with the necessary details as envisaged in Annexure 4 of the KSERC (Terms and Conditions for Determination of Tariff) Regulations, 2021, most of the submitted DPRs lack sufficient details for proper evaluation and consideration of the investability of each project.

Therefore, it is directed that, in the future, capital investment plans shall be specific and structured that enables the Commission to evaluate the investability of the project. The DPRs shall invariably include the following details:

- Primary and Secondary Objectives: A clear statement of objectives, along with cost estimates prepared based on the latest Schedule of Rates adopted by the State Government. The justification for the investment should be supported by load flow studies, field issues, regulatory directives, statutory requirements, and relevant supporting documents.
- Planning Details: Categorization of the project along with timelines for completion and compliance with CEA Planning Criteria.
- Project Identification and Alternative Considerations: A detailed analysis of the identified project and alternative options considered.
- Need and Timing of the Investment: Justification for the necessity and optimal timing of the investment.
- Technical and Financial Justification: A thorough assessment of the project's technical feasibility and financial viability.
- Estimate Prudence and Investment Justification: Ensuring prudence in financial estimates and overall investment strategy.
- Implementation Plan with Risk and Mitigation Measures: A structured plan outlining project execution along with identified risks and corresponding mitigation strategies.

Additionally, load flow studies for the projects shall be conducted for both the current scenario and a projected scenario without any system modifications. If the CEA planning criteria are not met under these conditions, alternative proposals must be developed. Load flow studies shall be conducted for each alternative to analyze the loading pattern and other critical parameters of the system components in the new scenario. The least-cost solution that meets the planning criteria shall be considered the optimal choice. The Load Flow Study Report shall include a snapshot of the loading conditions and key parameters of transmission lines and substations, represented in a single-line network diagram under different scenarios.

(b) Many stakeholders, during the hearing of the petition, highlighted delays in the timely completion of various transmission projects. The Commission, at multiple stages of project appraisal, has also emphasized the importance of

completing projects on time to prevent cost and schedule overruns. To ensure timely project completion, the Commission issued specific directives on 11.01.2024 to enhance project management efficiency, as detailed in paragraph 7 of this order. The Commission underscores the need for deploying dedicated teams, led by qualified and experienced team leaders, to ensure continuity. Additionally, it stresses the establishment of appropriate internal mechanisms for ensuring project progress.

Additionally, the Commission underscores the importance of a well-structured HR policy, including phased recruitments, to prevent large-scale retirements from negatively affecting the licensee's performance. For the timely completion of spillover works, special officers should be appointed with clearly defined timelines for project completion. Further the Commission issues the following directives to KSEB Limited to enhance project efficiency.

- Weekly project monitoring must be conducted, with progress updates published in the public domain.
- Performers should be recognized and appreciated to motivate other officials.
- Effective coordination, project monitoring through management information systems (MIS), and timely decision-making should be ensured for the smooth and efficient execution of projects.

13) **Orders of the Commission:**

Duly considering the petition filed by KSEB Limited, additional submissions of KSEB Limited, the discussions and decisions made in the project appraisal meeting held on 03.01.2024, the suggestions/comments of stakeholders and deliberations during the hearing on 28.02.2024, the provisional approval granted for capital investment in the ARR order dated 25.06.2022, the latest progress status of the projects, provisions in the Electricity Act, 2003, Rules and Regulations made thereunder, CEA transmission planning criteria and the provisions of the KSERC (Terms and Conditions for Determination of Tariff) Regulations, 2021, the Commission hereby orders as follows.

1) To approve the 'Capital Investment Plan for the SBU – Transmission of KSEB Limited for the Control Period (2022-2027) for a net amount of **₹5647.43 crores**, as provided in Table 11.1 of paragraph 11 above. Accordingly, the provisionally approved amount for Asset Addition/Capital Investment for SBU – Transmission, as mentioned in paragraph 3.32 of the Order dated 25th June 2022 in Petition OP No. 11/2022, shall be deemed revised as per this approval.

2) For the three transmission projects categorized under "*Normal capital works above ₹10 crores*" as mentioned in paragraph 10(d) of the order, for which

Administrative Sanction details were not submitted, the licensee shall submit a petition for approval along with the required details as part of the petition for the mid-term review during the control period.

3) For the project "*Establishment of Next Generation Security Operation Centre (SOC) at SLDC Kerala*", KSEB Limited shall follow up with the Ministry of Power, Government of India to secure 100 % PSDF funding.

Further, this approval for the investment proposal is subject to the following conditions.

i) The licensee shall undertake the projects only through a competitive bidding process to ensure the least-cost execution of the proposals.

ii) The licensee shall ensure sufficient response for the tenders floated, verify that the bids received are competitive, and, in the absence of such competitiveness, shall resort to re-tendering.

iii) KSEB Ltd. shall file a petition for Truing up of the ARR & ERC for each year of the Control Period, detailing the expenditure and performance of each scheme included in the above investment approval, as stipulated in Regulation 15 of the KSERC (Terms and Conditions for Determination of Tariff) Regulations, 2021. The licensee shall provide the complete source of funding, its interest and repayment terms, etc for the proposal including the complete details of PSDF/Grants available, its terms and conditions, whether SBU-Transmission was able to adhere to these terms and conditions, deviations if any, its approval/ acceptance by PSDF/ Government of India/ other sources etc., during the truing up of accounts for the respective year.

iv) KSEB Ltd. shall also submit detailed cost-benefit analysis for each of the projects approved in this Order, including a comprehensive assessment of the extent to which the project objectives were achieved, along with any deficiencies or shortcomings in achieving these objectives, with full justification for any shortfalls. The COD (Commercial Operation Date) of each project shall be provided along with the truing-up petition. Additionally, an analysis of time and cost overruns, if any, shall be provided, along with detailed justifications for such overruns. The final orders on Capital Asset Addition shall be issued by the Commission, subject to prudency, propriety, economic, and cost-benefit analysis.

4) In the future, petitions for Capital Investment Plans shall be filed strictly in accordance with the directives issued by the Commission, as mentioned in paragraphs 7 and 12 of this order, and in line with the provisions of the KSERC (Terms and Conditions for Determination of Tariff) Regulations, 2021, or its subsequent amendments, incorporating all necessary details.

The portion of the Petition for approval of the Capital Investment Plan for SBU-Transmission included in the original petition OP No 65/ 2023 is disposed of, as ordered above.

Sd/-	**Sd/-**	**Sd/-**
T.K. Jose	**Adv A.J. Wilson**	**B Pradeep**
Chairman	**Member**	**Member**

Approved for issue

Sd/-
C R Satheesh Chandran
Secretary

ANNEXURE I

LIST OF PERSONS PARTICIPATED IN THE PUBLIC HEARING ON 28.02.2024

Participants present in the Court Hall of the Commission

1. Sri Viju Rajan John, CE, TSO, Kalamassery
2. Sri Rajesh, CE Transgrid, Shornur
3. Smt Kavitha C.K, DyCE (Grid), TSO, Kalamassery
4. Smt Lekha Rani R, DyCE, Transmission Circle, Kozhikode
5. Smt Priya Govind, DyCE, Transmission Circle, Kannur
6. Sri Hyderali T.P, DyCE, Transmission Circle, Malappuram
7. Sri V. Suresh, DyCE, Transgrid, Shornur
8. Sri Chandran M., DyCE, Transmission Circle, Kottarakara
9. Sri Sureshkumar S.B., DyCE, Transmission Circle, Palakkad
10. Sri Lin P.I., DyCE, Transmission Circle, Thiruvananthapuram
11. Sri Sunil K., DyCE, System Operation Circle, Kalamassery
12. Sri Rajan M.P., DyCE, TRAC
13. Smt Leelammai A., DyCE, Office of the CE (TS)
14. Smt Shiny Abraham, EE, Transmission Division, Pathanamthitta
15. Sri D. Prasad, EE, Transgrid, Shornur
16. Sri Sanjeev Koshi, EE, Transmission Circle, Kottarakara
17. Sri Pradeep Kumar R., EE, Transmission Division, Mavelikkara
18. Smt Indu.M, EE, Transmission Circle, Alappuzha
19. Smt Latha S.V, EE, TRAC
20. Smt Rekha R., EE, Power System Engineering
21. Smt Deepa R., EE, Office of the CE (TS)
22. Smt Amritha Sasi, AEE, Power System Engineering
23. Sri Shine Raj, AEE, TRAC
24. Sri Manu Senan V., AEE, TRAC
25. Sri Ajayakumar S., AE, Transmission Circle, TVM
26. Smt Asha A.V., AE, TRAC
27. Sri Abdul Nasser I., FO, Office of the FA, KSEBL
28. Sri Vinod Kumar V., FO, Office of the FA, KSEBL

29. Sri Aneesh Parakaden, KSEBOA
30. Ajayakumar, AE, Transmission Circle, Thiruvananthapuram

Participants in online mode

1. Sri Saji Mathew, MRF Kottayam
2. Sri Dejokappen
3. Smt Nishamol Antony
4. Sri Prabhakaran KV
5. Sri Prini Peter
6. Sri Edward, TRAC, KSEBL

Annexure - II

CAPITAL INVESTMENT PLAN OF SBU TRANSMISSION

Works less than 10 Cr.

Sl. No.	Project	Revised target date of completion		Capital Outlay(Crore)				
				2022-23	2023-24	2024-25	2025-26	2026-27
I	**Thodupuzha Circle**							
	Works already submitted to KSERC							
1	Changing the 110kV tapping arrangement to Piravom Substation into LILO arrangement under Transmission Circle Kalamassery	2025-26	Total					
			Substation					
			Line		0.1	0.1	0.05	
2	Upgradation of Sengulam-Pallivasal 66kV line to 110kV	2025-26	Total					
			Substation					
			Line			2.85	6.65	
3	Construction of 2 Nos 11kV feeder outlets at 33kV S/s Kalloorkkad	2023-24	Total					
			Substation	0.206	0.194			
			Line					
4	Renovation of 220 kV Pallivasal-Udumalpettu feeder using Polymer insulator (Phase II)		Total					
			Substation					
		2024-25	Line			2.95		
5	Construction of 110 kV Feeder bay for shifting 110 kV NRMV Feeder at 110 kV S/S MVPA		Total					
		2025-26	Substation			0.5	0.2	
			Line					
6	Renovation of equipment and substation including control room at 66kV Substation, Karimanal	2024-25	Total					
			Substation		4	5		
			Line					
7	providing 33kV VCB indoor panels at 33kV S/s Vagamon	2025-26	Total					
			Substation			0.3	0.2	
			Line					
8	Upgradation of balance portion of Idamalayar-Bhoothathankettu 66kV feeder to 110kV DC for BHEP evacuation		Total					
			Substation					
		2024-25	Line		3.6	4		
9	Providing 11kV VCB indoor panels at 33kV S/s Upputhara		Total					
		2025-26	Substation				0.9	
			Line					
10	Extension of Control room for providing 11kV VCB indoor panels at 33kV S/s Upputhara		Total					
		2024-25	Substation		0.4	0.4		
			Line					
11	providing 33 kV VCB indoor panels at 33kV S/s Upputhara		Total					
		2025-26	Substation				0.6	
			Line					
12	Capacity enhancement at Kumily by adding 1x5 MVA		Total					
		2025-26	Substation			0.6	0.5	
			Line					
	Total of Thodupuzha Circle			**0.206**	**8.294**	**16.700**	**9.100**	**0.000**
II	**Alapuzha Circle**							
	Works already submitted to KSERC							
1	Construction of 2Nos of 220kV feeder bays at 220kV SS, Edappon for Edappon-Pathanamthitta DC line	31.03.2024		0.52	7.98			
2	Construction of new building to accommodate Relay,PET, Communication Sub Divisions and Transmission Sub Divison and LMS Office at 220kV Substation, Edappon	31.03.2026				2.6		
3	Replacing existing 4nos of 110kV pneumatic type SF6 Breaker at 110kV Substation, Kayamkulam	31.03.2023		0.178	0.117			
4	Replacing existing 2nos of 110kV feeder panel with SIMPLEX type at 110kV Substation, Kayamkulam	30.9.2023		0.0498	0.1152			
5	Replacement of 110 kV SF6 CB of EPCG No.1 feeder & 12.5MVA transformer with new ones at 110kV Substation, Chengannur	31.03.2023			0.074	0.074		
6	Providing TLA to various 110kV Lines under LMS Edappon	31.03.2025				0.5		
7	Providing 200Ah Plante type Battery in place of the existing 100Ah Battery at 66kV Substation, Kattanam	31.04.2023			0.085			
8	Providing new 200Ah, 110V flooded type battery with110V, 30A FCBC in the place of 100Ah Flooded type battery at 66kV Substation, Karuvatta	31.04.2023			0.085			
	Works additionally proposed / Shifted from RDSS							
9	Installing 3Nos of 110/11kV, 20MVA Transformers & other bay equipments including the erection of new 11kV switchgear at 220kV S/s Edappon	31.3.2025		Own fund		3.8	3.8	

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
10	Installation of new 11kV 20 panel set at 110kV Substation, Kayamkulam	31.3.2025				1.59		
11	Installing of 11 kV 10 Panel set and extension of existing 33 kV control room for installing 10 panel set at 33kV Substation, Vallikunnam	31.3.2025				2.09		
12	Replacing existing old 11kV feeder panels with new 23 Panel set at 110kV Substation, Chengannur.	31.3.2025				1.7		
13	Replacing existing old 11kV feeder panels with new 12 Panel set at 66kV Substation, Karuvatta	31.3.2025				0.93		
14	Enhancing the capacity of existing 2Nos. of 33/11kV, 5MVA Transformers to 8MVA each at 33kV Substation, Vallikunnam	31.3.2025				2.1		
15	Providing fire protection system to 220/110kV 200MVA Transformer Bank I & II at 220kV SS Edappon	31.3.2025				3.21		
16	Providing Substation Automation System (SAS) at 220kV S/s Edappon	31.3.2025					6.6	
17	Providing Bus bar protection to 110kV Bus at 220kV Substation, Edappon	31.3.2025				0.6		
18	Providing 1No. Multivoltage 110/66/33kV Transformer at 66kV Substation, Kattanam	31.3.2025				6		
19	Enhancing capacity of existing 2 Nos of 110/11kV 10MVA Transformers to 20MVA each at 110kV Substation, Kayamkulam	31.3.2025				7.3		
20	Providing Substation Automation System (SAS) at 110kV S/s Chengannur	31.3.2025					0.4	
21	Providing Substation Automation System (SAS) at 110kV S/s Kayamakulam	31.3.2025					6.5	
22	Providing Substation Automation System (SAS) at 110kV S/s Mavelikkara	31.3.2025					8.66	
	Works already submitted to KSERC							
23	Capacity enhancement by replacing 66/11kV 2 x 10MVA Transformer with 2 x 16 MVA units (taken back from Alappuzha) at 220kV Substation, Punnapra	31.03.2025				3		
24	Upgradation of 66kV line bays to 110kV at 220kV S/S Punnapra in connection with upgradation of Karuvatta, Nangyarkulangra and Pathirappally S/Ss	31.03.2027						4
25	Providing new 110kV bay for Cherthala - Transgrid downstream work at 110 kV sub station, Aroor	31.03.2026					0.52	
26	Modification works in connection with Trans Grid works at 110 kV sub station, Thycattussery (1st Phase)	31.03.2024		1	1			
27	Modification works in connection with Trans Grid works at 110 kV sub station, Thycattussery (2nd Phase)	31.03.2026					4.28	
28	Construction of new 110kV Pallom bay at 110kV Substation, Edathua	31.03.2026					0.75	
29	Strengthening & Reconditioning of deteriorated tower legs at Line Maintenance Section, Alappuzha & Cherthala	31.03.2027		0.09	0.04	0.62		
30	Reconditioning of tower foot foundations for life enhancement of towers including additional earthing to towers at Line Maintenance Section, Alappuzha & Cherthala	31.03.2027				1		
31	Providing TLA on 110kV lines under LMS Alappuzha & Cherthala	31.08.2023				0.8		
32	Replacement of 11kV 10 Panel set at 66kV S/S Pathirappally	31.03.2025				1		
33	Upgradation of 66kV Substation Pathirappally to 110kV Substation by modification	31.03.2027						5
34	Re-placing old VRLA battery with new plante battery at 33kV Substation, Kuthiyathodu	31.04.2022		0.014				
35	Providing indoor control for 11kV feeders at 33 kV Substation, Thakazhy	31.12.2023			0.012			

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
	Works additionally proposed / Shifted from RDSS							
36	Adding 3NOS of 11KV panel to existing 11KV indoor panel at Chellanam s/s	31.03.2025				6.06		
37	Providing bus bar protection for 110kV Bus at Punnapra Ss	31.03.2025				0.5005		
38	Providing Nitrogen/High Velocity Water mist Fire Hydrant system for 200MVA transformer banks at Punnapra SS	31.03.2025				2.6		
39	Installation of Additional 110/33 kV, 16 MVA Transformer including Construction of 110kV & 33 kV Trfr Bay at 220 kV SS, Punnapra	31.03.2025				3		
40	Installation of SAS at 220 kV SS, Punnapra.	31.03.2025					8.1	
41	Installation of new 12.5 MVA power transformer, CT, PT,structures and allied works at Sl Puram Ss	31.03.2025			2			
42	Upgradation of 66 k V Substation Cherthala to 110 k V Substation Cherthala under Transgrid down stream work	31.03.2025			0.25	0.75		
43	Taking over of Cherthala,Infopark,110 kV substation	31.03.2025			9.01			
	Total of Alapuzha Circle			**1.85**	**20.77**	**51.82**	**39.61**	**9.00**
III	**TRANSMISSION CIRCLE, POOVANTHURUTH**							
	Works already submitted to KSERC							
1	Upgradation of 66 kV substation Kuruvilngadu to 110 kV level	28.02.23 Work completed	Total					
			Substation	3.77	0.48			
			Line					
2	Capacity enhancement at Pala 110 kV substation by replacing 2 nos 110/66 kV transformer with 110/11 kV 20 MVA	11.12.23 Work completed	Total					
			Substation		2.88	2.02		
			Line					
3	Replacing old 11 kV ODC with indoor panels at 33 kV substation Kidangoor	31.03.2025	Total					
			Substation					
			Line			0.6		
4	Upgradation of 66 kV substation Kottayam to 110 kV level		Total					
			Substation					
			Line			8.35		
5	Upgradation of Mundakkayam Peermedu 66 kv line to 110 kV level							
						9.35		
6	Construction of 2 nos 110 kV feeder bays for Thodupuzha at 110 kV SS Koothattukulam		Total					
			Substation					
			Line				2	2
7	Purchase of safety equipments & fire fighting equipments in various substations under circle		Total					
			Substation					
			Line					1.5
8	Repair works at 110 kV SS Kodimatha subsequent to land settlement		Total					
			Substation					
			Line					1.5
9	Replacing existing 110kV LA with composite type LA including alterations of foundations at 110 kV SS Kodimatha		Total					
			Substation		0.2			
			Line					
10	Enhancement of 10MVA Transformer with 20MVA at 110 kV SS Kodimatha	31.3.24	Total					
			Substation					
			Line		2			
	Total of Poovanthuruthu Circle			**3.77**	**5.56**	**20.32**	**2.00**	**5.00**

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
IV	**Malappuram Circle**							
	Works already submitted to KSERC							
1	Construction of 33kV Indoor substation at Civil Station, Malappuram with 2 nos. 33/11kV 5 MVA transformers and 4 nos. 11kV feeder	06-25	Total			4	4.9	
			Substation					
			Line					
2	Construction of 33kV substation at Kavanur by LILOing the 33kV line between Kizhissery & Edavanna. (3Km)	06-28	Total		3	1.98		
			Substation					
			Line					
3	Construction of New 33 kV Substation, AMU at Cherukara and Construction of 3 kM 33 kV DC Line from Substation to existing Koppam		Total			3	0.7	
			Substation					
			Line					
	Works additionally proposed / Shifted from RDSS							
4	Renovation & Enhancement of 220kV Bus #1 at 220kV SS Areekode	15.04.2024				1.9		
			Total					
5	Enhancing the capacity of 220kV feeders from PGCIL 220kV SS Areekode	12.01.2024			4.65			
			Substation					
6	Providing interenal roads to extended yard area 220kV SS Areekode	2023-24			0.2			
7	Renovation of 11KV DP Structure and Yard 220kV SS Areekode	23.01.2023		0.15				
8	Providing CCTV surveillance at sub station 220kV SS Areekode	2023-24			0.22			
		19.06.2023						
9	Dismantling existing rusted earth conductor and restringing with new GI conductor over 220kV Yard of 220kV substation, Areekode			0.125				
		27.12.2022						
10	Installation of new 110/33kV, 16MVA Transformer at 110kV SS Malappuram				0.235			
11	Construction of building for IB (3BHK)110kV SS Malappuram	2024-25						0.75
12	Enhancement 3x12.5 - 2x20 and 1x12.5 110kV SS Malappuram							
		12-2025				2	2.6	
13	Rearrangement of 110 kV Feeder bays for standardisation at 110 kv substation kizhissery	2023-24			6.4			
14	Constructing new 33 kv line bay and 33kv C&R panel installation at 110 kv substation kizhissery	2023-24			0.36			
15	Restructuring yard equipments and structures for double bus facility at 110kV SS Melattur	12-2023			2.5			
16	Providing ceiling and flooring for control room 110 kV Substation, Melattur	01-01-2024			0.23			
17	Replacing 2 nos pneumatic type 110kV circuit breaker with spring type 110 kV Substation, Melattur	01-01-2024			0.2			
18	Yard metalling works -Lower Yard 110 kV Substation, Melattur	3-2-2024			0.25			
19	Replacing old 11 kV 10 Panel set with new one at 110kV SS Perinthalmanna	30-06-23			0.66			
20	Construction of internal roads in colony at 110kV SS Manjeri	30.10.2023			0.165			

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
21	Additional 11 kVfeeder@Nilambur SS	15/5/2024				0.2		
22	Upgradation of substation to 110 kV Edakkara	18/09/2023			7.3			
23	Upgradation of 66kV to 110kV DC line Elachola- Malappuram line under TCSD NiLAMBUR	6-1			0.5	4.4	3	
24	Construction of compound wall for the site (Civil work) of 110kV SS Venniyur	4-2025				0.8		
25	Control room extension at 33kV SS Wandoor	30/05/2025				0.25		
26	Renovation 33kV feeder and Transformer panels at 33kV SS Makkaraparamba	31.3.2023			0.14			
27	Providing Battery +Charger +DCDB at 33kV SS Makkaraparamba	31.05.2024			0.1			
28	Capacity addition of Edavanna substation by providing 3rd 5MVA transformer at 33kV SS Edavanna	21.01.2023			0.85			
29	Yard remetalling and rennovation of fencing 33kV SS Edavanna	12-2023			0.1			
30	Installation of second 33/11kV 5MVA transformer at 33kV SS Kalikkavu	12-2023				0.85		
31	Enhancing capacity of 33kV Substation Valluvambram to 2*8 MVA by replacing existing 5MVA Transformers and providing	28.2.2024			2.95			
32	Constructing new 33 kv feeder bay for KI-VL 2nd Circuit 33kV Substation Valluvambram	31.5.2024				0.24		
33	Installation of second 33/11kV 5MVA transformer at 33kV SS Pothukkallu				1			
34	Construction of 33kV Substation at civil station Malappuram including line from 110kV SS Malappuram	31.05.25					8.9	
35	Construction of 33kV Substation, INKEL and line	31.03.2025				9.9		
36	Construction of 33kV Line From 33kV SS INKEL to 33kV Othukkungal	1.1.2026					3.6	2
37	Construction of 33kV Substation Karuvarakund with construction of 33kV SC line from 110kV Melattur Substation to 33kV	5-2026				3	3	3.45
38	Interlinking 33kV SC line from Kalikavu substation to Karuvarakund substation with covered conductor	12-2026					3	3.99
39	Construction of 33kV Substation Kondotty with 2.5 Km 33kV DC line using covered conductor	8-2026					3	4.25
40	Refurbishment of 33kV Kizhissery Chelari Line from 110kV SS Kizhissery	9-2025				0.6	3	
41	Installation of 110/33kV Transformer at proposed 110kV Substtaion, Thiruvali & construction of 33kV Line to Edavanna	05-26				2.8	3	
42	Special Tools Purchase(LMSD MPM)	12-2024				0.48		

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
43	Additional Tree cutting compensation for Areekode Kizhissery feeder due to replacement of towers with MCMV Towers	3-2024			0.5			
44	Replacing porcelain Insulatoor of 110kV Edakkara-Nilambur feeder under LMSDMPM	17.11.2023			0.21			
45	Vehicle Purchase- Tempo Traveller (LMSD MPM)	3-2025				0.25		
46	Enhancing capacity of 2x12.5MVA, 110/11kV Transformer to 2x20MVA, 110/11kV Transformers. Under 220kV Substation,	4-25	Total					
			Substation			4.71		
			Line					
47	Supply, installation and commisioning of CCTV Surveliance system at 220kV Substaion Malaparamba	2-24	Total					
			Substation		0.133			
			Line					
48	Replacing existing 11 KV 10 panel set with 17 panel set 2000AUnder 220kV substation, Malaparambu	4-25	Total					
			Substation			1.4		
			Line					
49	Remettaling of 110 kv yard areaUnder 220kV substation, Malaparambu	8-24	Total					
			Substation			0.25		
			Line					
50	110kV Substation, Ponnani - Construction of Control Room and including errection of 15 panel set	5-24	Total					
			Substation	0.2	0.8	2.6		
			Line					
51	Capacity enhancement of 2*12.5MVA to 2*20MVA Under 110kV Substation, Ponnani	12-24	Total					
			Substation			5.4		
			Line					
52	110kV Substation, Edarikkode - Replacing 2x16MVA Transformers with 2x25MVA Under 110kVSubstation, Edarikkode	12-23	Total					
			Substation		0.85			
			Line	4.2				
53	Construction of 33KV feeder bay for Kooriyad feederUnder 110kVSubstation, Edarikkode		Total					
			Substation		0.5			
			Line					
54	Capacity enhancement of 2*12.5MVA with 2*20MVA transformer with extension of Control room and with change existing indoor	12-24	Total					
			Substation					
			Line			7		
55	Construction of New 11KV DP Yard Under 110kVSubstation, Edarikkode	12-24	Total					
			Substation			0.27		
			Line					
56	110kV Substation, Chelari - Construction of 33kV feeder bay for Chelari - Kunnumpuram line	12-23	Total					
			Substation		0.17			
			Line					
57	Capacity enhancement of adding 1*12.5MVA to existing 2*12.5MVA,with extension of control room and erection of indoor 5 panel set Under	3-24	Total					
			Substation					
			Line		4.6			
58	Enhancing Transformer No1 from 12.5MVATrans to 20MVA Under 110kV Substation, Tirur	12-24	Total					
			Substation			2.41		
			Line					
59	Construction of OH water Tank at 110KV substation Tirur	31-10-22	Total					
			Substation	0.125				
			Line					
60	Control room extension and installation of 17 Panel 2000Amp indoor Panel set at 110KV substation Edappal	12-24	Total					
			Substation			2.5		
			Line					
61	Capacity enhancement of 2*12.5 MVA to 2*20MVA Under 110kV Substation, Edappal	6-24	Total					
			Substation		0.5	4.2		
			Line					
62	Capacity enhancement of 2*12.5 MVA to 2*20MVA with changing existing 12Panel set with 11KV,2000Amp 17Panel set Under 110kV	12-24	Total					
			Substation					
			Line			7		
63	110kV Substation, Kuttippuram - Enhancing capacity by replacing 2x10MVA by 2x20MVA and 1x12.5 MVA by1x16MVA Transformer	7-23	Total					
			Substation	0.7	5	2		
			Line					
64	Renovation of the control room floor Under 110kV Substation, Kuttippuram	6-24	Total					
			Substation			0.11		
			Line					
65	construction of compound wall for the site(civil work) of 110kV ss Venniyur	3-23	Total					
			Substation	0.14				
			Line					

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
66	33kV Substation, Kooriyad - Changing outdoor Panels to indoor panels	5-24	Total					
			Substation		0.05	0.15		
			Line					
67	33kV Substation, Kooriyad Providing 33KV feeder bay for Edarikodu -Kooriyadu Line	31.03.2024	Total					
			Substation					
			Line		0.23			
68	Replacing 2x5MVA Transformer with 2x8MVA Transformers under 33kV Substation, Thirunavaya	10.11.2022	Total					
			Substation	1.74				
			Line					
69	Modification of Control room and providing Indoor 11kV Panel under 33kV Substation, Thirunavaya	2-24	Total					
			Substation		0.9			
			Line					
70	Rennovation of control room by providing floor tiles under 33kV Substation, Kalpakanchery	3-24	Total					
			Substation		0.105			
			Line					
71	Enhancing capacity by replacing 2x5MVA Transformers with 2x8MVAunder 33kV Substation, Kalpakanchery	31.03.2023	Total					
			Substation	1.75				
			Line					
72	Capacity enhancement of adding 1*5MVA to existing 2*5MVA ,including extension of control room and installation of indoor 11KV 1250A	7-24	Total					
			Substation		0.6	1.9		
			Line					
73	33Kv system at 110KV Substation Venniyoor	04-24	Total					
			Substation		0.036	3.764		
			Line		0.3	1.7		
74	Construction of New 33kV Line Using UG/OH from Edappal to Thavanur substation	06-25	Total					
			Substation					
			Line			2	5.28	
75	Procurement of T& P (BDV Kit, Insulation tester etc) at Tirur Transmission Division	3-24	Total					
			Substation		0.2			
			Line					
76	Replacement of energy Meters and Relays at substation	3-24	Total					
			Substation		0.15			
			Line					
77	ProvidingCCTV at various substation under Tirur Transmission division (Edarikodu,Parappanagadi,Chelari,Edappal,Po	3-25	Total					
			Substation			0.43		
			Line					
78	Construction of 33 kV Substation Kunnumpuram	31.03.2025	Total			9.25		
			Substation					
			Line					
	Total of Malappuram Circle		0	**9.13**	**47.84**	**95.69**	**43.98**	**14.44**
V	**Palakkad Circle**							
	Works already submitted to KSERC							
1	Upgradation of 66 kV Substation, Kannampully to 110 kV	March 2023	line	1.3	2	2.54	0	0
			Total				0	0
			Substation					
2	Construction of 110kV line DC for LILO arrangement from 1PKKE feeder for Upgradation of 66kV Sub Station Chittur to	2-2024	line					
			Total	0	1.2	0	0	0
			Substation					
3	Upgradation of 66kV substation Chittur to 110kV level	March 2024	line					
			Total		1	5.4		
			Substation					
4	Upgradation of Palakkad Medical College 66kV Sub Station to 110kV		line					
			Total	0	0	0	0	0
			Substation				0	
5	110 kV LILO arrangement from proposed Vennakkara-Kollengode line (Up gradation of Vennakkara Nemmara 66KV SC line to 110KV	March 2025	line	1	5	1.93	0	0
			Total				0	0
			Substation					
	Works additionally proposed / Shifted from RDSS		line					
6	Construction of 33kV Containerized Substation, Mukkali and drawing of 0.35km 33kV double circuit line using 33kV AAAC	March 2026	line				0.413	
			Total	0	0	0	0	0
			Substation				3.76	
7	Capacity enhancement of 110kV substation Walayar by installing 1 no 16MVA 110/33kV transformer and interlinking of 33kV substation Velanthavalam with 110kV substation Walayar at 33kV level	March 2026	Line			1	1.645	
			Total					
			Substation			1	3.055	
8	Installation of 1 no of 33/11kV 5MVA transformer and 1 no 33kV and 11kV bay construction at 33kV Substation Alanallur	March 2025	Line			0		
			Total					
			Substation			0.57		

Sl. No.	Project	Revised target date of completion		Capital Outlay(Crore)				
				2022-23	2023-24	2024-25	2025-26	2026-27
9	Installation of third 33/11kV, 5MVA Transformer and construction and installation of bay equipments at 33kV substation	March 2026	Line				0	
			Total					
			Substation				1.5	
10	Overhauling of 220kV transformers (Bank1, 2 and spare) at 220kV substation Palakkad	March 2024	Line			0	0	
			Total			0	0	
			Substation			0.98	0	
11	Enhancing 110kV twin bus to 110kV Quad bus at 220kV substation Palakkad	March 2025	line			1		
			substation					
			Total					
12	Capacity enhancement of 33kV Substation, Vydyuthi Bhavanam, Palakkad by replacing 2 no. of 5MVA, 33/11kV transformers with	January 2027	line					0
			substation					2.25
			Total					
13	Providing new 11kV feeder named Thiruvazhiyode at 33kV SS Sreekrishnapuram	December 2023.	line		0			
			substation		0.175			
			Total					
14	Addition of new 11kV feeder outlet with indoor 11kV outgoing feeder panel, DP structure and 11kV XLPE UG cable at 33kV substation	March 2026	line		0		0	
			substation		0		0.2	
			Total					
15	Construction of 33kV Substation at Civil Station, Palakkad and laying of 33kV UG Cable from 33kV Vydyuthi Bhavanam,	March 2026	line				1.87	
			substation				4.04	
			Total					
16	Installation of new 3 Incomer 22 kV indoor panel set replacing old ABB panels at 220kV Substation Palakkad	March 2026	line				0	
			substation				3	
			Total					
17	Revamping the 22kV system at 220kV substation Palakkad	March 2024	line		0		0	
			substation	1.37	2.63	1	0	
			Total					
18	Re-conductoring using Covered Conductor from 110kV Substation, Kollengode to 33kV Substation, Pallassana							
		March 2026		0	0	0.04	1	0
19	Re-conductoring using Covered Conductor from 110kV Substation, Kollengode to 33kV Substation, Koduvayur							
		March 2026		0	0	0.08	2	0
20	Re-conductoring using Covered Conductor from 110kV Substation, Kollengode to 33kV Substation, Muthalamada	March 2026		0	0	0.43	1	0
21	"Capacity enhancement of 110/11KV 2x12.5MVA transformers with 2x20MVA transformers at 220 kV Substation Shoranur"	Febrruary 2025		0	0	2.995	0	0
22	Stringing 1.5km addl.220kV Palakkad -Elapully Circuit	2023-24		0	0.46	0	0	0
23	Construction of bike & car shed and modernising the premises near to control room at 220 kV Substation Shoranur	March 2024			0.18	0.14	0	0
24	Providing 1 no. of 16MVA, 110/33kV transformer at 110kV Substation, Cherpulassery by extending 1 no. 110kV bus bay and construction of 33kV SC line to 33kV Substation, Sreekrishnapuram	January 2024	0	0.8	5.04	0	0	0
25	"Construction of concrete road from existing 220kV main MAC road to the back side security cabin & stockyard at 220kVSubstation,Shoranur."	2-2025		0	0	0.3	0	0
26	Implementation of deluge fire fighting system at 220kVSubstation,Shoranur. (PSDF work)	12-2025		0	0	0.5	1.5	
27	Capacity Enhancement of 2x5MVA Transformers to 3x5 MVA Transformers at 33kV Substation Thrithala	2-2024	0	0	1.46	0	0	0
28	Installation of new 110/11kV, 12.5MVA transformer against old 12.5MVA transformer taken to PTRU for repair at 110 kV SS Ottappalam	12-2023		1	0.5	0	0	0
29	Providing additional 12.5 MVA 110/11 kV transformer at 110 kV SS Cherppulassery	March 2025		0	1	1.93	0	0
30	Extending 110 kV yard to accomodate new bays at 110 kV SS Cherppulassery	9-2025			0	0.5	0	0
31	Re arrangement of 110kV feeders and bus splitting at 110kV Substation Ottappalam	April 2024		0	0.1	0.55	0	0
32	Providing 33kV bus splitting isolator by rearranging the 33 kV yard and adding new 33 kV feeder bay at 110kV Substation, Koottanad	August 2024		0	0	0.3	0	

Sl. No.	Project	Revised target date of completion		Capital Outlay(Crore)				
				2022-23	2023-24	2024-25	2025-26	2026-27
33	Splitting of 110kV bus by providing bus Isolator and shifting of 110 kV feeders at 110 kV SS Koppam	June 2024		0	0	0.42	0	0
34	Installation of 1 no.of 110/33kV, 16MVA transformer at 110 kV SS Pathirippala and construction of 33kV single circuit line to 33kV Substation, Maniyampara	March 2027		0	0	0	0	1
35	Construction of MAC road from gate to 110KV Yard at 110 kV SS Koppam	12-2024			0	0.4	0	0
36	Extention of Control room and providing 11 kV indoor panel at 33 kV SS Marudur	July 2024			0	1	0	0
37	33 kV interlinking of 33 kV Kongannur & Challissery Substations	May 2025				1	3	0.96
38	Capacity enhancement of 2x12.5 MVA transformer to 2x20 MVA and Providing new 11kV 20 panel set at 110 kV SS Ottappalam	2-2025		0	0	6.2	0	0
	Total of Palakkad Circle			**5.47**	**20.75**	**32.21**	**27.98**	**4.21**
VI	**Kozhikode Circle**							
	Works already submitted to KSERC							
1	Upgradation of 66kv substation Anjukunnu	12-24	Total	0	1	1.7	0	0
			Substation					
			Line		0			
2	Upgradation of 66kv substation Ambalavayal	03-25	Line					
			Total	0	0	1	1.4	
			Substation					
3	LILO of 1NLKG at Chevayur SS	Work completed. Commissioned	Line					
			Total					
			Substation	0.48				
4	Capacity enhancement of urumi ss	June 2024	Line					
			Total	0				
			Substation	0	1	3.1		
5	Erection of one 12.5MVA 110/11kV Transformer at 110kV Substation Chevayur	31-03-2024	Line					
			Total					
			Substation		2.15			
6	220kV SAS/Digital SS at 220kV Substation Nallalam	31.03.2024	Line					
			Total	2.3	0.6			
			Substation					
7	Interlinking of 33kV S/s Ramanattukara with 33kV S/s Feroke using single UG cable feeder	31-03-2025	Line					
			Total	2.6		3.26		
			Substation					
8	Installation of one number 12.5MVA 110/11kV transformer at 110kV Substation Koduvally	31-03-2024	Line					
			Total	0.15	2.5	1		
			Substation					
9	Capacity enhancement by replacing 2x12.5 MVA 110/11kV Transformers with 2x20MVA Transformers at 110kV SS Westhill		Line					
			Total					
			Substation	3.87				
10	Peruvannamuzhi SHEP(2*3MVA)Power evacuation substation yard construction (with 110/33kv-16MVA Transformer) work- 110kV SS Chakkittapara and construction of 33kV line using UG cable	03-2023	Line					
			Total	1.399	5.866			
			Substation					
11	Capacity Enhancement of 33kV S/s Balussery by adding third 33/11kV 5MVA Transformer	05-2023	Line					
			Total					
			Substation	1	0.2			
12	Enhancing the capacity of 110/11kV 10 MVA Tranformer to 110/11kV 20MVA Transormer at 110 kV Substation, Vadakara	06-2022	Line					
			Total					
			Substation	2				

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
13	33Kv UG cable laying from thambalamanna for evacution power from Olikkal &Poovaram thodu SHEP	12.04.24	Line	0	0	4.2		
			Total					
			Substation	0	0			
14	SAS at 220kV Substation, Orkattery	31.03.25	Line	0	0			
			Total					
			Substation	0	0		4.8	
	Works additionally proposed / Shifted from RDSS		Line					
15	capacity enhancement of 33 kV SS Perambra by replacing one 5MVA transformer to 8MVA	31.03.2024	SS		0.05	1		
16	Capacity enhancement by replacing 5MVA Transformer No.2 with 8MVA-33kV Thiruvallur	30.04.2024	SS		0.5	0.48		
17	Enhancing the capacity of 1X12.5 MVA Tranformer to 1X 20MVA Transormer-Orkkatteri	31.03.2024	SS		1.1	1.5		
18	Installing 1*12.5MVA transformer No.3 110kV Substation, Nadapuram	28.02.2025	SS		0.1	1.4		
19	Interlinking 110kV Substation Kinalur to 33kV Substation Balussery using ACSR Dog by constructing 110/33kV bay and erection of 110/33kV 16MVA Transformer at 110kV Substation Kinalur and 33kV Bay at 33kV Substation, Balussery	31.06.2024	Line		1.5	5.05		
20	Providing alternate feeding to 33kV Substation, Melady from 110kV Substation Meppayur using ACSR Dog conductor	31.05.2024	line		1	3.3		
21	Providing new 11kV feeder outlets- 2Nos. at 110kV Substation, Kuttiadi	31.03.2024	SS		0.03	0.07		
22	Providing numerical relay ,directional OC&EF with fault locating facility . at 110kV Substation, Kuttiadi	31.03.2025	SS			0.05		
23	Control room extension at 110kV Substation Nadapuram	31.03.2024	Ss		0.2	0.4		
24	Replacing old Electro mechanical relays of 110/11kV Transformer panels with Numerical relays at 110kV Substation Chakkittapara	30.03.2024	SS		0.05			
25	33kV Substation Balussery – Conversion of Outdoor 33kV Substation Balussery to Indoor by replacement of existing 11kV ODC with 11kV Indoor panels with construction of new control room	30-9-24	SS		0.05	2.7		
26	Replacing 11kV outdoor cubicles with indoor 11kV panels including extension of control room at 33kV Substation, Thiruvallur	31.03.2024	SS	0.2	0.55	0.13		
27	Providing new 11kV feeder outlet at 33kV Substation,Thiruvallur	30.01.2024	SS		0.03			
28	New 11kV Feeder outlet at 110kV S/s Koyilandy	30.09.2023	SS		0.03			
29	Extension of sub station road for material transport to 220 kV side at 220kV Substation Orkkatteri	08.02.2023	SS		0.0749			
30	Retarring of roads inside SS compound - 110kVSS Kuttiady	24.12.2022	SS		0.0738			
31	Renovation of yard fencing at 110kV Substation Koyilandy	30.09.2023	SS		0.0325			
32	Capacity enhancementby replacing 110/11kV 10 MVA transformer with 110/11kV 20 MVA transformer/ CT,PT & LA at Koyilandy Substation Koyilandy	27.12.2022	SS		2.815			
33	Redoing of 110kV Substation Yard metalling at 110kV Substation Meppayur	17.03.2023	SS		0.0588			
34	Paving approach road to control room using interlock blocks at 110kV Substation Chakkittapara	08.06.2023	SS		0.0779			
35	Purchase of tools & plants, furniture	15.02.2024	SS			0.05		
36	Replacing deterioted tower in 66kV ambalaparamba Tap line	31.03.2024	Line			0.92		
37	Replacement of EHT Towers at various locations of 110 kV KUK feeder.	31.05.2024	Line			0.5	1.87	
38	Providing earthing on towers of 110KV EHT feeders under LMS Vadakara (20 nos)	15.03.2024	Line		0.015			

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
39	Capacity enhancement of 110 kV Substation, West Hill by replacing 110/11 kV 12.5 MVA Transformer No. 3 with 20 MVA Transformer including construction of an additional transformer bay for transformer bus arrangement	31-03-2024	SS		3.4			
40	Replacement of 110kV mild steel Column & beam in old Kakkayam feeder and transformer bays at 220kV Substation Nallalam	30.03.24	SS	0.1	1.58			
41	Repairing faulty transformer brought from various substations at PTRU, Nallalam	31.03.24	SS	0	0.3			
42	Construction of 2 Nos 110kv feeder bays at 220kv substation Nallalam	30.03.24	SS	0.05	0.3	1		
43	Replacement of 110kv bus isolators with foundation at 220kv substation Nallalam	31.03.24	SS	0.1	0.66			
44	Rennovation of drainage system at 220kv substation Nallalam	31.03.24	SS	0.1	0.28			
45	Supply and installation of fire alarm system in controlroom at 220kv substation Nallalam	31.03.24	SS		0.03			
46	Replacement of existng 110kv bus isolator with special and motorised type at 220kv substation Nallalam	31.03.25	SS		0.4			
47	Providing automatic transfer switch -complying SRPC audit quarry	30.11.23	SS		0.03			
48	All capital nature works below 5Lakh at 110 kV Substation, Chevayur	31-03-2024	SS		0.058			
49	Capital work of 110kV Substation, Chevayur - Urgent replacement of old & obsolete existing Control and Relay Panel with new Control and Relay panel of 1KICH Feeder bay		SS		0.081			
50	110kV Substation, Kuttikkattoor – Renovation of staff quarters G3,G4,G5&G6	31-03-2024	SS		0.118	0.02		
51	Construction of new Feeder bay for 110 kV Methottuthazham -Kuttikkattoor Feeder at 110 kV Substation Kuttikkattoor	31-03-2024	SS		0.5			
52	Upgradation of 66 kV Substation, Kuttikkattoor to 110kV – Renovation of water supply system of quarters and providing pipeline to newly constructed water tank	14.07.2022	SS	0.02007				
53	All capital nature works below 5Lakh at 110kV Substation, Westhill	31.03.24	SS		0.0413			
54	Construction of store building & vehicle shed at 110kV Substtion, Westhill	31.03.24	SS		0.166			
55	110kV Substation, Kuttikkattoor – Renovation of staff quarters E5,E6,G1&G2	14-04-2023	SS		0.1481			
56	110/66 KV 25 MVA Transformer Installation at 110kV Substation, Kuttikkattoor		SS	0.02	0.165			
57	110kV Substation, Chevayur- Supply, installation and commissioning of high mast lighting system in the yard		SS		0.056			
58	Extension of control room and procurement of furniture at 110kV SS Koduvally.	31-03-2023	Total	0.7				
			Substation					
			Line					
59	Re metalling work at 110kV SS Koduvally.	31-03-2024	Total		0.02	0.03		
			Substation					
			Line					
60	All capital nature works below 5 Lakhs at 110kV SS Koduvally.	31-03-2024	Total		0.115			
			Substation					
			Line					
61	Replacing Four Nos of old and deteriorated 11kV LBS with RMUs at 110kv GIS SS Gandhiroad.	31-03-2024	Total		0.14			
			Substation					
			Line					
62	All capital nature works below 5 Lakhs at 110kV GIS SS Gandhiroad.	31-12-2022	Total	0.027				
			Substation					
			Line					

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
63	Modification of old control room building for office purpose at 110kV SS Mankavu.	31-08-2022	Total	0.13	0.05			
			Substation					
			Line					
64	Renovation of damaged floor of E-Type flat at 110kv Substation Mankavu	31-03-2022	Total	0.1	0.06			
			Substation					
			Line					
65	All capital nature works below 5 Lakhs at 110kV SS Mankavu.	31-03-2024	Total	0.08	0.03			
			Substation					
			Line					
66	Upgradation of 66kV Substation, Puthiyara to 110kV level	31-03-2025	Total	0		9.2		
			Substation					
			Line					
67	Replacing 2 Nos unservicable RMUs at 66kv GIS Substation Puthiyara	31-03-2023	Total	0.07	0.015			
			Substation					
			Line					
68	All capital nature works below 5 Lakhs at 66kV GIS SS Puthiyara.	31-03-2024	Total	0.071	0.0543			
			Substation					
			Line					
69	All capital nature works below 5 Lakhs at 66kV SS Cyberpark.	31-03-2024	Total	0.01	0.026			
			Substation					
			Line					
70	Capacity Enhancement in 33kV Substation Ramanattukara by replacing 2x5 MVA with 2x8 MVA Transformers.	31-05-2022	Total	1.99				
			Substation					
			Line					
71	All capital nature works below 5 Lakhs at 33kV SS Ramanattukara.	31-03-2024	Total	0.04	0.05	0.15		
			Substation					
			Line					
72	Capacity Enhancement in 33kV Substation, Feroke - by replacing 2x5 MVA Cable entry type Transformers with 2x8 MVA Cable entry type Transformers and providing 2 additional 11kV feeder bays.	30-12-2021	Total	1.61				
			Substation					
			Line					
73	All capital nature works below 5 Lakhs at 33kV SS Feroke.	31-03-2024	Total	0.01	0.007			
			Substation					
			Line					
74	Doubling of 66 kV Nallalam-Kunnamangalam feeder Phase ii - Doubling of 66 kV Methottuthazham-Kuttikatoor feeder	31-12-2024	Total	0.16	1	3	5.54	
			Substation					
			Line					
75	Capacity Enhancement of 110kV SS Mankavu-Installation of new 20 MVA transformer at Mankavu Substation.	30-06-2025						
			Total			1	2.5	
			Substation					
76	Upgradation of 66kV Substation, Cyberpark to 110kV level	30-06-2026	Line					
			Total			2	1.5	
			Substation					
77	Upgradation of 66kv substation Sulthan Bathery	12-24	Substation	3.6	4	0.09		
			Total					
			Substation					
78	Construction of 33kV Substation Nellikkaparamba icluding associated line and bay work from 110 k V substation	03-26	Line					
			Total	0	0	4	5.8	
			Substation					
79	Construction of 33kV Substation at NIT Campus Kozhikode on cost sharing basis	30-05-2024			1	6.97		
80	Providing 11kV feeder outlet from 110kV S/S Thambalamanna for dedicated 11kV UG cable feeder to Kodenchery town	31.12.23			0.11			
81	Switchyard remetalling at 110kV Substation Agasthiamuzhi	17-10-22			0.4			
82	Replacement of Porcelain Insulator with composite polymer insulators at various locations of 2KGKN feeder	08-09			0.41			
83	Replacement of Porcelain Insulator with composite polymer insulators at various locations of 2KDKN feeder	18-03-23			0.47			
84	Switchyard remetalling at 33kV Substation Padinjarathara	11-23			0.06			
85	Installation of CCTV Camera at 110kV Substation Thambalamanna	30.04.23			0.04			
86	Purchase of Thermal Imager for 220kV GIS Kunnamangalam	16-03-2024			0.05			
87	Control room extension and allied works inconnection with replacing ODC with 10 panel set at 33kV S/S Pulpally	31-06-2024			0.5	1.5		

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
88	Construction of Conference hall with VC facility on the first floor of Control room at 220kV Substation Kaniyambetta	31-03-2024			0.215			
89	Installation of 50MVA 220/33kV Power Transformer at 220kV Substation Kaniyambetta	24-03-2023			2.48			
90	Replacing old pneumatic 220kV SF6 CBs at 220kV Substation Kaniyambetta	28-10-24				1.21		
	Total of Kozhikode Circle			**22.99**	**41.27**	**61.98**	**23.41**	**0.00**
VII	**Pathanamthitta Division**							
	Works already submitted to KSERC							
1	upgradation of 66kV s/s Chumatra to 110kV standards	31.03.2026						
			Total					
			Substation		0	0.2	1	2.4
2	upgradation of 2Nos,66kv transformer bays with 2x12.5MVA transformers &Upgradation of 2 Nos 66kv feeder bays at 110kV s/s Tiruvalla	31.03.2026	Line		0	0.4	2	1.4
	Total of Pathanamthitta Division		Line	**0**	**0**	**0.6**	**3**	**3.8**
VIII	**Thrissur Circle**							
	Works already submitted to KSERC							
1	33kV Bay addition at Kalletumkara and Parappukkara S/s for 33kV line for interlinking .	31.03.2024	Line					
			Total					
			Substation		2	1.5		
2	Enhancement of 110/11kV 12.5 MVA Transformer No.1 to 20MVA at Chalakudy	Completed	Line					
			Total					
			Substation	2.45				
3	Enhancement of 110/11kV 12.5 MVA Transformer No. 2 to 20MVA Chalakudy	completed	Line					
			Total					
			Substation		2.48			
4	Construction of Pazhayannur-Chelakkara 33KV SC line	completed	Line		3.96	1		
			Total					
			Substation					
5	Construction of 33 KV SC line for Vatanappilly - Blangad interlinking	completed	Line		3.91	1		
			Total					
			Substation					
6	Construction of 7KM 33Kv line from Viyyur to Poomala	2024-25	Line		1	2.5		
			Total					
			Substation					
7	Replacement of the existing High Impedance 110kV Bus Bar Protection Scheme at 400kV Substation Madakkathara with new Low	Completed	Line					
			Total					
			Substation		1.05			
8	Replacing the existing High Impedance 400kV Bus Bar Protection Scheme at 400kV SS Madakkathara with new Low Impedance	2024-25	Line					
			Total					
			Substation		0.1	0.5	0.49	
	Works additionally proposed / Shifted from RDSS							
9	Construction of 33kV S/s THUMBOOR by LILO arrangement from 3IJPR line at Ongichira	23-24	Line					
			Substation					
			total		**4.45**	3		
10	Construction 33 kV Substation, Elanadu and 33 kV line from Pazhayannur		Line		0.05	1.43	1	
			Substation		0.05	2	0.45	
			total		0.1	3.43	1.45	
11	Construction of 2 nos 110/11kV transformer bays and installing 2 nos 110/11kV 12.5 MVA Transformer at Karukutty SS	31.03.2025	line					
			substation		1.5	3	1.15	
			total		1.5	3	1.15	
12	Providing additional 33/11 kV 1x 5 MVA transformer at 33 kV SS ,Parappur	31.01.2024	substation	0.05	1			
13	Rebuilding of Bays at Kunnamkulam related to Transgrid Work Phase - 3		substation		0.25	2.21		
14	Providing SAS for 110kV AIS bays and allied works at Kunnamkulam substation		substation		0.25	3		
15	Replacing existing 2nos 110/11KV, 12.5MVA Transformer with 2*20MVA at Kunnamkulam.	completed	substation		2	2.78		
16	Replacing the existing 11KV VCB panel with 2000A, 20panel set at Kunnamkulam.	completed			1.32	0.18		

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
17	Replacing damaged 12 Nos towers on 6 CHVI 1 & 2 Feeder to 110kV from 220kV Substation Chalakudy to 110kV Substation, Viyyur		line		0.4	2.35		
18	Rennovation and Modernisation of 220 kV control and protection at 400 kV SS Madakkathara	2025-26	substation		0.1	0.5	2.9	
19	Replacing the existing 11KV VCB panel with 2000A, 20 panel set at Athani.		substation		0.05	0.95		
20	Installation of third 12.5 MVA transformer at Athani		substation		**0.2**	**1.3**		
21	Providing additional 110/11 kV 12.5 MVA transformer at 110 kV SS Mannuthy		substation		**2.1**	0.3		
22	Replacing existing 11kV 10 panel set with New 15 panel set at 110kV Substation Kandassankadavu		substation		**0.2**	0.1	0.75	
23	Providing 2 Nos 110kV incomer bays & 1 No Bus coupler bay And Rebuilding of 110kV SS Phase I at Kunnamkulam (in connection with the upgradation of 110kV AIS SS to 220kV GIS SS by Transgrid) and Phase 2 works	2024-25	substation		7	2		
24	Upgradation of Palakkal Substation to 110kV	completed	substation		7	1.3		
25	Extending Fire Hydrant to 400kV & 220kV yard at 400kV substation Madakathara.	completed	substation		0.32			
26	Providing fire wall 10MVA Transformer at 400kV Substation Madakkathara	completed	substation		2.75			
27	Instrument Transformer Repair Unit at 400kV Substaion Madakkathara		substation	0.15	0.25	0.05		
28	Providing Transmission line mounted LA at vulnerable locations.	2024-25	line		**0.1**	**0.39**		
29	Providing statutory ground clearance for 220kV Lower Periyar-Chalakkudy line between location 198 &199		line		0.4			
30	Providing barbed wire fencing over compound wall at 220kV Substation Kunnamkulam		substation		**0.03**	**0.02**		
31	Providing 33 kV AB / RMU/ LBS near to 110 kV Control Room at 220kV Substation Kunnamkulam		substation		**0.04**	**0.01**		
32	Rerouting 33 kV OH to UG cable in front of the substation at 110kV Substation Viyyur	completed	substation		0.35			
33	Providing EV charging station at 110kV Substation wadakanchery	completed	arging station	**0.4**	**0.1**			
34	Renovation of control room at 110kV Substation wadakanchery		substation		**0.05**	**0.05**		
35	Installation of 110/33kV, 16 MVA Transformer at 110 kV Substation , Pazhayannur and 33kV feeder bay at Chelakkara.		substation		2.5			
36	Providing 33 kV indoor panel at 110 kV Substation , Pazhayannur		Substation		0.1	0.15	0.75	
37	Providing CVT to the feeder bays at 110kV substation Athani	completed	Line					
			Total					
			Substation		0.05			
38	Providing Earthmat in the yard at 110kV substation Athani		Substation		**0.1**	**0.05**		
39	Providing protective equipments and relays in existing 2 nos 110 KV Feeder bays, including distance relays at 110kV substation Punnayurkkulam		substation		**0.06**	**0.01**		
40	Providing 11 kV feeder outlet -2 nos at 110kV substation Punnayurkkulam	completed	substation		**0.11**	**0.01**		

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
41	Constuction of communication room at 110kV substation Arangottukara	completed	substation	0.07	0.03			
42	Rearranging the feeder and providing 33KV bus sectionalizer at 33kV substation Parappur		substation		**0.05**	**0.01**		
43	Replacing 4 nos ARC with ODCB at 33kV substation Parappur	completed	substation		**0.22**			
44	Providing additional 33/11 kV 1x 5 MVA transformer at 33 kV SS ,Parappur		substation		**0.1**	**0.05**		
45	Providing 33kV bay for existing 33 kV feeder and C&R panel for 3MLCL feeder at 33kV		substation		**0.1**	**0.1**		
46	Providing 11kV 10 panel set at 33kV substation Kongannur		substation		0.5	0.1		
47	Providing new 11 kV 10 panelset at 33kV substation Erumapetty		substation		**0.05**	**0.05**		
48	SCADA at 33 kV Substation , Blangad		substation		**0.35**	**0.2**		
49	Laying of 11kV power cables at 220kV substation chalakudy.		substation		**0.25**			
50	Supply ,installation,Testing and commissioning of fire hydrant system for obtaining fire NOC	completed	substation		**0.02**			
51	Trans grid downstream works Part 2- erection of 20 panel set at New control room at 220kV		substation	0.5	1	0.9		
52	Tower insertion(5nos) in various locations of 1 POCH 1 & 2 feeders between Loc.1 to 91A.		LIne		0.46	0.5		
53	Erection of NB3+6Mtr towers in place of D3+3Mtr towers on 1KLCB – 1CHAN feeders		Line		**0.35**	**0.13**		
54	Providing additional earthing for towers under LMS SD Chalakudy		line		**1**	**0.28**		
55	Providing Breaker control for the exisiting 10mva Transformer and renewation of the transformer plinth at 66kV substation Vaigai	completed	substation		**0.55**			
56	Providing power cable trench for KKD & Pullazhy fdrs and 12.5MVA trfrs. Replacing OH portion of Mullassery feeder over control room with UG cable at 110kV S/S Kandassankadavu.	completed	Substation		0.097			
57	Giving 1 nos 11kv feeder to Ele.section kodungallur no.1(New 11kV VCB panel required under 110kV substation Kodungallur		Substation		0.11	0.035		
58	33kV Breaker replacement for 3KPAN1&2 at 33kv Substation Anchangadi	completed	substation		0.08			
59	33kV Breaker replacement for 3KKVD1&Tfr 1 at 33kV Vatanappilly Substation	completed	substation		0.08			
60	Providing additional 5mVA Transformer at 33kV SS Kaipamangalam		substation		0.27	0.1		
61	Construction of 33kV line bay for Kalletumkara - Parappukkara interlink line at 33kV substation Parappukkara.		line		0.2	0.15		
	Total of Thrissur Circle			**3.62**	**57.20**	**42.68**	**10.09**	**0.00**
IX	**Thiruvananthapuram Circle**							
	Works already submitted to KSERC							
1	Constructing new control room &Erecting new 11KV indoor 20 panel set at Medical college s/s	30-06-2025						
			Total					
			Substation			2	0.57	

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
2	Replacing the existing 2 nos of 12.5 MVA transformers with 2 nos of 20MVA at MEDICAL COLLEGES/S	work completed	Line					
			Total					
			Substation	1.78				
3	Construction of 8KM 33 KV OH feeder from 33KV Substation,Vellarada to prposed 33KV substation,Ottasekharamangalam	01-03-2027	Line					
			Total					
			Substation					4.5
4	Upgradation of 66KV Substation Vattiyoorkavu to 110KV by replacing 2*10MVA,66/11 KV Transformer with 2*12.5 MVA 110/11 KV	31-03-2026	Line					
			Total					
			Substation				2.5	
5	Providing SCADA facility at 33KV S/S,Patoor	01-03-2027	Line					
			Total					
			Substation					0.3
6	Providing SCADA facility at 33KV S/S,Vaidyuthibhavan	01-03-2027	Line					
			Total					
			Substation					0.26
7	Upgradation of 66KV PPRA-Thirumala feeder to 110KV Phase-I		Line			1	3.07	
		11-12-2025	Total					
			Substation					
8	Constructing a compound wall at east side of 110 kV substation compound Paruthippara	01-01-2025	Line					
			Total					
			Substation			0.05		
9	Control room extension with new panel and mac road At Medical college	31-12-2025	Line					
			Total					
			Substation				2.56	
10	Upgradation of 66 kV TVT feeder to 110 kV from PPRA to Thirumala phase II	28-2-2027	Line				1	3
			Total					
			Substation					
11	New control room at Kattakada S/s and replacing 11kv old panels with new panel and connected works	31-03-2025	Line					
			Total					
			Substation			2.93		
12	11kV Panel replacement at 110kV Substation Parassala	31-03-2025	Line					
			Total					
			Substation			1		
13	Construction of vehicle shed at Parassala	Completed	Line					
			Total					
			Substation	0.0181				
14	Replacing 11kV old panels with new panels and connected works AT Vatiyoorkavu	31.03-2026	Line					
			Total					
			Substation				0.75	
15	New panel, and other civil works at Vizhinjam	31.03-2025	Line					
			Total					
			Substation			1.28		
16	Replacing 33kV and 11kV old panels with new panels and connected works at 33KV S/S Peyad	31-03-2026	Line					
			Total					
			Substation				0.89	
17	Replacement of existing 200 MVA No.1, 220/110 kV , BHEL make Transformer with new 200 MVA, 220/110 kV Transformer at 220 kV substation, Pothencode	31-03-2025	Substation			8.76		
18	Replacement of 2 Nos of old 220 kV circuit breakers and 5 Nos of old 110 kV circuit breakers with new ones at 220 kV Substation, Pothencode	Completed	Substation	0.59				
	Providing new earth mat at 110 kV lower yard at 220 kV Substation, Pothencode	31-05-2024	Substation			1.05		
	Replacement of old porcelain insulators with composite polymer insulators at 110 kV and 220 kV yard at 220 kV Substation, Pothencode	31-03-25	Substation			0.05		
19	Renovation and uprating of existing 110 kV equipment and bus of old 110 kV yard at 220 kV Substation, Pothencode	31-01-2025	Substation			0.3		
20	Construction of double circuit UG cable / OH from 400 kV Substation, Pallippuram, one circuit directly to Kattakada 220 kV line and another circuit to 220 kV bus at 220 kV Substation, Pothencode.	31-03-2027	Line					15
21	Providing CCTV for surveillance at 2 MW solar plant opposite to 220kV Substation Pothencode.	Completed						
22	Remetalling old 110 kV yard at 220 kV Substation, Pothencode	Completed						
23	Replacement of 6 Nos old Pneumatic type 220 kV Breakers with new SF6 breakers at 220 kV Substation, Pothencode	Completed						

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
24	Extension of control room at 110 kV Substation, Varkala	Completed		0.118	0.1945			
25	Replacing ALIND make 11 kV panel set (7 panels) at 110 kV Substation, Varkala	Completed	Substation	0.4	0.6744			
26	Enhancing the capacity of 110 kV Substation, Attingal by replacing 2 nos of exsiting 16 MVA 110/33 kV transformer with 2 nos 25 MVA transformer	Completed	Line	1.8	2.2			
27	Extension of control room at 110 kV Substation, Attingal	Completed	Substation		0.48			
28	Construction of Staff room and extension of Control room at 110 kV Substation, Aruvikkara	Completed	Substation		0.2993			
29	Yard remetalling of old 110 kV Switch yard at 110 kV Substation, Nedumangad	Completed	Substation	2.2	3.6			
30	Replacement of Earth shield at Upper yard at 110 kV Substation, Nedumangad	Completed	Substation	0.6	0.7			
31	Capacity enhancement of 110 kV substation TERLS by replacing the existing 2 x 12.5 MVA, 110/11 kV transformer with 2 x 20 MVA 110/11 kV transformers on work deposit basis	Completed	Substation	4.37				
32	Capacity addition with 11kV indoor panel and control room extension at 33 kV Substation, Venjaramood	31-05-2026	Substation				0.5	0.5
33	Replacing existing 11kV ARCs & 11kV ODC with 11kV Indoor panels at 33 kV Substation, Venjaramoodu (Required : Incomer - 2 Nos, Feeder panel - 5 Nos, Bus coupler - 1 No, Bus Riser - 1 No)	31-05-2026	Substation				0.3	0.4
34	Enhancing capacity of 33 kV Substation, Venjaramood by replacing existing 5 MVA Transformer No. 1 with 8 MVA, 33/11 kV Transformer	31-05-2026	Substation				0.4	0.45
35	Control room extension of 33kV Substaion, Kadakkal and replacing of 2 Nos Old 11kV ARC and 1 No old 11kV ODC with new 3 Nos 11kV ODCs	31-05-2025	Substation			0.0878	0.022	
36	Replacement of old 11kV panel with new 10 panel set at 33kv substation, vithura	Completed	Substation	0.65				
37	Erection of second 5 MVA, 33/11 kV transformer and 2 nos of 11 kV panels and bus coupler at 33 kV Substation, Vilakulam	Completed	Substation	0.8				
	Total of Thiruvananthapuram Circle			**14.13**	**8.1482**	**18.5078**	**12.562**	**24.41**
X	**Kottarakara Circle**							
	Works already submitted to KSERC							
1	Erection of additional 200MVA, 220/110kV Transformer at Edamon 220kV Substation	2024-25			0.5	7.5		
2	Augmentation of power transformer from 12.5mva to 20mva at Kavand 110kv substation	27.04.2023		4.15	0.15			
3	Augmentation of power transformer from 12.5mva to 20mva at Punalur 110kv substation						2	3
4	Reeplacement of old 11kv 10 panels at kavanad 110kv substation	19.08.2023			1.32			
5	Reeplacement of old 11kV 10 panel sets at Kundara 220kV substation (16 panel)	27.09.2023			1.38			
6	Reeplacement of old 11kV 10 panel sets at Anchal substation	06.01.2023		0.7				
7	Reeplacement of old 11kV 10 panel sets at Punalur substation	28.06.2022		0.7				
8	Reeplacement of old 11kV 10 panel sets at Edamon substation	30.10.2022		0.61				
9	Reeplacement of old 11kV 10 panel sets at Puthoor substation				0.6			
10	Reeplacement of old 11kV 10 panel sets at pooyappally substation				0.6			
11	Reeplacement of old 11kV 10 panel sets at ezhukone substation	2024-25				0.6		
	Works additionally proposed / Shifted from RDSS							
12	Providing retaining wall at High way side at 220kV Substation, Edamon.			0.17				
13	Replacing Circuit Breakers of 220 kV feeders at 220kV Substation, Kundara.			0.58				
14	Supply, erection, testing and commissioning of 110kV Busbar Protection system at 220kV Substation, Kundara			0.7				

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
15	Replacing existing pneumatic with spring type Circuit breakers.(110kV CB with structure) (5Nos) at 220kV Substation, Kundara			0.45				
16	Providing Bus Coupler Breaker between Bus No1 &2 at110 kV Substation, Parippally			0.32				
17	Providing earthmat at 33 KV yard at 110 kV Substation, Parippally			0.17	0.1			
18	Replacing the 220kV Feeder/Transformer control Panel at 220kV Sub Station Kundara			0.45	0.07			
19	Replacementof 110 kV Control and relay panel at 220kV Substation, Kundara.			0.65				
20	110kV bus extension to Tr. no 1 using UG cable at 110kV Substation, Punalur					0.25		
21	Providing bus splitting arrangement of 110kV feeder bay at 110kV Substation, Ambalappuram				0.3	0.12		
22	Extension of control room at 33kV Substation, Ezhukone				0.32			
23	Replacement of control and relay panel of 12.5MVA Transformers at 220kV Substation, Kundara					0.65		
24	Bay Modification of 110 kV Yard at 220 kV substation Kundara					2.1		
25	Purchase of Oil filtering plant at 220kV Substation, Kundara				0.4			
26	Bus selection for 220kV feeders at 220kV Substation, Kundara					0.3		
27	Replacement of control and Relay panel for 220kV and 110kV bus coupler at 220kV Substation, Kundara					0.6		
28	Providing fire wall and oil sump for two numbers of 200MVA Transformer bank No.1 & 2 at 220kV Substation, Kundara					0.8		
29	Insertion of 220kV tower at Sabarigiri - Edamon II & III feeders in connection with line clearance					3.85		
30	New Tower at location 60 by replacing the existing deteriorated tower in STKM&CHKM Double circuit feeder				0.1	0.4		
31	Line /Tower modification work for maintaining statutory clearance in 1EPKD and 1KDCH Double circuit feeder between location 283&284					0.3		
32	Construction of cable trench at 110kV Substation, Kottarakkara				0.1	0.15		
33	Rearrangement of 110kV feeder bays for double bus arrangement at 110kV Substation, Chavara					2		
34	Yard re metalling at 110 kV Substation, Kottiyam				0.5			
35	Replacement of 3Nos of Transformer Panels 110KV S/S Ayathil					0.2		
36	Concreting of substation road at 110kV Substation, Kottiyam				0.33			
37	Capacity enhancement of 110/11kV transformers (2 Nos) from 12.5MVA to 20MVA at 110kV Substation, Kottiyam					3	4	
38	Providing LILO arrangement for 1EPKD tap feeder at Sasthamcotta Substation					0.3	0.3	
39	Transgrid Down stream works at Sasthamcotta 110kV Substation					0.3	0.45	
40	Transformer Capacity Enhancement of 2x5MVA to 2x8MVA at 33KV Substation Kannanalloor					0.5	1.35	
41	Extension of control room, replacing control panel ARC/ODC with indoor panel at 33kV S/s, Adichanalloor				1.38			
42	Providing new 11kV feeder panel at 33 Kv SS, Paravur					0.17		
	Total of Kottarakkara Circle			**9.65**	**8.15**	**24.09**	**8.1**	**3**
XI	**Kalamassery Circle**							
	Works already submitted to KSERC							
1	Transgrid downstream work at 110kV S/s N Paravur S/s -construction of 2 Nos 110kV Feeder bay	30.03.26						
							1	1.9

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
2	Construction of New Control Room For Flood Proofing at 110kV Ss Kurumassery	30.03.26						
							1.5	1.5
3	Capacity enhancement works – Replacement of 12.5MVA, 110/11kV TFR by 20MVA,110/11kVTransformer at 110kV Substation Kaloor	10.06.2022						
				1.98				
4	Transgrid downstream work at 220 kV Substation, Aluva	30.03.27						
							5	4.75
5	Transgrid downstream work at 110kV Substation, Edayar	30.03.27						
							4	5
6	Transgrid downstream work at 110kV Substation, Kizhakkabbalam	30.03.27						
							2.5	2.5
7	Raising the Height of 110kV Kalamassery Vyttila Feeder	30.03.27					0.5	2
8	Upgradation of 66kV KLNJ Feeder to 110kV	30.03.27						
							1.8	1.7
9	Enhancement of 12.5 MVA Transformers at 110kV S/s New Vyttila	30.03.26						
							3.75	
10	Construction of new 110kV feeder bay at 110kV S/s Vyttila and new feeder from 220kV S/s Kalamassery	30.03.27						
							0.6	0.6
11	Construction of new control room at 66kV S/s Panampilly nagar.	30.03.27						
							0.75	1
12	Enhancing station capacity by replacing 2 nos. of 66/11kV, 10MVA with 16MVA Transformers at 66kV S/s Panampilly nagar	30.03.27						
							2	1.28
	Works additionally proposed / Shifted from RDSS							
13	Capacity Enhancement of 12.5 MVA Transformers with 20 MVA Transformer at 110kV S/s Vyttila	WORK COMPLETED						
				2.5				
14	Capacity Enhancement of 12.5 MVA Transformers with 20 MVA Transformer at 110kV S/s Edappally	WORK COMPLETED						
				2.5				
15	Capacity Enhancement of 10 MVA Transformer with 12.5 MVA Transformer at 110kV S/s Kadavantra	WORK COMPLETED						
				1.57				
16	Capacity Enhancement of 2x5 MVA Transformers with 2x8 MVA Transformer at 33kV S/s Varapuzha	WORK COMPLETED						
				1.6				
17	Capacity Enhancement of 12.5 MVA Transformers with 20 MVA Transformer at 110kV S/s Kandanad	WORK COMPLETED						
				2.5				
18	Capacity Enhancement of 12.5 MVA Transformers with 20 MVA Transformer at 110kV S/s Edayar	WORK ONGOING			2.5			

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
19	Renewal of 220 kV S/S Brahmapuram	26-27					3.6	4
20	110 kV Government Medical College Substation Ernakulam	26-27					4	4.75
	Total of Kalamassery Circle		Line	**12.65**	**2.5**	**0**	**31**	**30.98**
XII	**Kannur Circle**							
	Works already submitted to KSERC							
1	Up gradation of 6.3km 66kV single circuit line to 110kV DC line from Kadachira to Chovva							
			Total	2.26	1.81	0.45	0	0
			Substation					
2	Conversion of 6.5km 110kV single circuit line to 110kV DC line from Pinarayi Substation to Kadachira		Line					
			Total	1.83	1.46	0.37	0	0
			Substation					
3	Upgradation of 33kV Substation, Pariyaram to 110kV Substation		Line					
			Total	0.78	3.14	7.94	0	0
			Substation					
4	33kV Substation, Payyanur Town - Capacity enhancement by replacing existing 2 Nos 5 MVA Transformers with 2 Nos new 8 MVA	completed	Line					
			Total	1.7		0	0	0
			Substation					
5	33kV SS, Puthiyatheru – Capacity addition by installation of 3rd 5MVA Transformer.	completed	Line					
			Total	1.1	0	0	0	0
			Substation					
6	33kV SS, Nadukani – Capacity enhancement by replacing existing 5 MVA Transformer with 8 MVA Transformer.	completed	Line					
			Total	0.85	0	0	0	0
			Substation					
7	220kV Substation Taliparamba: Transgrid downstream works- construction 220kV feeder bays ,110kV bays & other associated works		Line					
			Total	0	3.03	0	0	0
			Substation					
8	110kV SS, Mangad-Replacing old LT Panel	completed	Line					
			Total	0.06	0	0	0	0
			Substation					
9	220kV Subsation Taliparamba: Capacity enhancement by replacing 2×10MVA,110/11kV transformer with	450	Line					
			Total	0	4.5	0	0	0
			Substation					
10	220kV Subsation Taliparamba: Replacing 110 kV CB of capacitor bank		Line					
			Total	0	0.05	0.1	0	0
			Substation					
11	Providing water hydrant at 220 kV substation, Taliparamba		Line					
			Total	0	0.1	0.2	0	0
			Substation					
12	110kV Substation, Payangadi - Providing new 11kV outlet		Total	0	0	0	0	0
13	110kV SS Payangadi - Erection of yard lights		Total	0	0.06	0	0	0
14	110lV SS Payyanur - Replacing 110kV CB of 1PYCP II feeder	completed	Total	0.07	0	0	0	0
15	110kV SS Payyanur - Providing chainlink	completed	Total	0.05	0	0	0	0
16	110kV SS Cherupuzha - Renovation of fencing and barbed wire		Total	0	0.07	0	0	0
17	110kV SS Ezhimala - Renovation of 11kV DP's including re-cabling (2Nos.)		Total	0	0	0.05	0	0
18	220kV Substation Mylatty: construction of 220 kv feeder bays and 110 kv feeder bays under transgrid down stream		Total					
			Total	0	1.14	2.66	0	0
			Substation					
19	220kV Substation Mylatty: capacity enhancement of 2x10 mva transformer with	completed	Line					
			Total	3.3	0	0	0	0
20	Enhancement of 2 Nos of 12.5 MVA TR to 20 MVA TR at 110kV SS, Kanhangad	completed	substation	3.7				
			Total					
21	Upgradation of 33kV substation Nileshwaram to 110kV level and Construction of 1 km 110kV DC line		Line					
			Total					
			Substation					
22	33 kV Substation, Belur- Conversion of 11kV outdoor to indoor	completed	Substation	0.6				
23	33 kV Substation, West Eleri- Conversion of 11kV outdoor to indoor	completed	Substation	0.6				
24	33 kV Substation, West Eleri-Capacity enhancement by replacing 1*5MVA 33/11kV transformers with 1*8MVA 33/11kV	completed	Substation					
			Total	0.6				
			Substation					
25	Construction of 33kV Substation Padanakkad, 2X5MVA 33/11kV Transformer		Line					
			Total				5.92	
			Substation					

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
26	110kV Substation Manjeshwar-yard fencing and remetaling-		Line					
			Total		0.096			
			Substation					
27	110kv Substation Kubannur- Capacity addition-Replacement of 110/11kv 10MVA Transformer with 12.5 MVA		Line					
			Total		0.8176			
			Substation					
28	33kV Substation Badiadka - Conversion of 11kV outdoor autoreclosure into Indoor Panel		Line					
			Total		0.75			
29	Construction of 4KM 220kV Multi circuit line from proposed 400kV substation Karinthalam to existing 220kV Kanhirode – Ambalathara		Substation					
			Total					
			Substation					
30	Providing 220kV Low impedence bus bar Protection at 220kV SS Kanhirode	completed	Line	0.32				
31	Providing 220kV Low impedence bus bar Protection at 220kV SS Mylatty	completed	Line	0.32				
32	110KV Substation Panoor - Capacity Enhancement by Addition of 1x 10/12.5 MVA, 110/11kV Transformer	completed	Total					
			Substation	1.125				
			Line					
	Works additionally proposed / Shifted from RDSS							
33	110kV SS Payangadi - Renovation of Quarters			0	0.06	0	0	0
34	110 KV Substation Azhikode-Reconductering of 8 KM 33 KV single circuit OH line from 110 KV substation azhikodeto 33 KV Substation Kannur town using 33 KV120 sq mm,AAAC covered conducter (RDSS)					4		
35	33 KV substation Kannur town- capacity Enhancement by replacing 2x 5 MVA 33 / 11KV with 2 x 8 MVA 33 / 11 KV transformer (RDSS)					0.92		
36	110 KV Substation Azhikode- Renovation of store building at 110 KV Substation Ahikode				0.0114			
37	110kV SS Mundayad- Purchase of clamp meter				0.0041			
38	110kV SS Mundayad - Purchaase of Incinerator				0.0092			
39	110kV SS Mundayad- Purchase of scffolding				0.0033			
40	110kV SS Mundayad - rennovation of yard fencing				0.0489			
41	110kV SS Mundayad - Modification of water tank				0.015			
42	110kV SS Mundayad - Rennovation of quarters				0.05			
43	220kV SS Thaliparamba- Resurfacing of road to main gate	completed		0.0331				
44	LMSD , Kannur- purchase of composite polymer insulators for installing at various lightning prone tower locations of 110kV Kabjirod to Mattanur and Mattannur-Iritty feeders					0.0248		
45	LMSD Kannur- Supplying 4 nos. of 110kV TLA for installing at location no. 256 of 1KUKH and 1KPKH feeders					0.0359		
46	110kV SS CHOVVA- Enhancing capacity of Transformer No.1 12.5MVA to 20MVA	completed		1.74				
47	110kV SS CHOVVA- Installation 11kV 2sets 10Panel for capacity enhancement	completed		1.83				
48	110kV SS CHOVVA- Purchaseing scaffolding				0.0034			
49	110kV SS CHOVVA- Renovation of control room				0.009			
50	110kV SS CHOVVA- Re wiring of control room				0.0183			
51	33kV SS THOTTADA- 11kV yard metaling				0.0096			
52	110KV SS MANGAD -Purchase of tools &plants	completed		0.0045	0			
53	110KV SS MANGAD-Purchase of LT Panel	completed		0.0453	0			
54	110 KV SS MANGAD-Purchase of Clamp-On Meter			0	0.0024			
55	110KV SS MANGAD-Purchase of Scaffolding			0	0.0034			
56	110KV SS MANGAD-Purchase and installation of DCDB			0	0.03			

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
57	110KV SS MANGAD-capacity enhancement by adding 12.5MVA 110/11KV Transformer	completed		0.8	0			
58	110kV SS Chovva- Purchase of power line Transducer	completed		0.0015				
59	110kV SS Chovva-Supply of Earth discharge rod	completed		0.0026				
60	110kV SS Chovva- Purchasing of Outdoor end termination kit				0.0023			
61	110kV SS Mangad - Repair and maintanance of G3 &G4 staff quarters	completed		0.059				
62	220kV SS Thaliparamba-Construction of 11kV feeders under Dyuthi scheme -supply of 11kV 630A Load break switch for 11kV outgoing feeders				0.047			
63	220kV SS Thaliparamba-Supply of LT Panel				0.049			
64	110kV SS Payyanur-Renovation of quarters				0.055			
65	110kV SS Cherupuzha- Renovation of quarters				0.04			
66	33 KV SS,Alakode - Procurement of new 11 KV spare VCB truck	completed		0.04				
67	33K V SS,Alakode - Providing CCTV Camera	completed		0.008				
68	Providing drainage facilityfor rainwater inside the substation compound	completed		0.027				
69	Purchase of auxiliary relay at 220kV SS Taliparamba	completed		0.002				
70	Supply of LT XLPE Aluminium cable and end kit at 33kV Pariyaram Upgradation	completed		0.012				
71	11kV Resin Cast wound dual core CTs suitable for indoor applications Ratio:400/200/5-5A at 220kV SS Taliparamba	completed		0.004				
72	Purchase of yard light-100W Flood light,6500K,10000 LUMENS,aluminium body IP 66,Toughened glass at 220kV SS Taliparamba	completed		0.005				
73	Purchase of CT Clamp-Aluminium die cast suitable for Double Moose conductor at 220kV SS Taliparamba	completed		0.003				
74	Supply of silica gel of crystal size 3-6 mm for transformer at 220kV SS Taliparamba	completed		0.002				
75	Heat shrinkable end termination kit for 11kV,3X300MM2 -Indoor type at 220kV SS Taliparamba	completed		0.0006				
76	Heat shrinkable end termination kit for 11kV,3X300MM2 -Outdoor type at 220kV SS Taliparamba	completed		0.0006				
77	Purchase of Announciator-Microprocessor based alarm Announciator at 220kV SS Taliparamba				0.001			
78	Deposit work - NHAI -PIU Kannur six laning of Taliparamba to Muzhapilangad section of NH 17- replacing of existing tower					0.59		
79	110 kV SS Sreekandapuram - Replacement of 11 kV 14 panel set	Nil	Total			0.25		
			Substation					
			Line					
80	220 kV SS Kanhirode - Remetalling of 220 kV switchyard	Nil	Total		0.32			
			Substation					
			Line					
81	110 kV SS Sreekandapuram - Construction of road near gate	Nil	Total		0.03			
			Substation					
			Line					
82	33kV SS, Pazhassi - Supply, installation, Testing and commissioning of EXIDE make 100AH,110kV VRLA Battery	completed	Total	0.02				
			Substation					
			Line					

Sl. No.	Project	Revised target date of completion	Capital Outlay(Crore)					
				2022-23	2023-24	2024-25	2025-26	2026-27
83	110 kV SS Sreekandapuram - Procuring CGL or BEL make. 630A Vaccum interrupter for Alstom make VMX type VCB	completed	Total	0.011				
			Substation					
			Line					
84	110kV SS, Pinarayi - Procurement of 33kV 3x300 Sq.mm end termination kit suitable for 33kV UG cable	completed	Total	0.008				
			Substation					
			Line					
85	33 kV SS Pazhassi - Construction of drain	Nil	Total		0.055			
			Substation					
			Line					
86	110 kV SS Panoor -Rennovation of quarters	Nil	Total		0.02			
			Substation					
			Line					
87	110 kV SS Valiyavelicham - Purchase of 11 kV load break switch	Nil	Total		0.018			
			Substation					
			Line					
88	Capacity enhancement by installing new 2X12.5MVA transformers by replacing existing 2 x 10 MVA transformers at 220 kV SS	4.5.2023	Total	0.122	0.07			
			Substation					
			Line					
89	Capacity enhancement by adding 3rd 33/11kV 5MVA transformer at 33 kV SS Kuttiattoor including remetalling of yard	Nil	Total		0.25	0.25		
			Substation					
			Line					
90	Capacity enhancement by adding 3rd 33/11kV 5MVA transformer at 33 kV SS Dharmadam	Nil	Total		0.2	0.15		
			Substation					
			Line					
91	Procurement of 11 kV VCB truck for Stelmec make incomer panel at 33kV SS Pazhassi, 110 kV SS Nedumpoil & 33 kV SS Kuttiattoor	Nil	Total		0.135			
			Substation					
			Line					
92	Procurement of 11 kV VCB truck for Stelmec make feeder panel at 33kV SS Puthur, Kelakam & Kuttiattoor	Nil	Total		0.124			
			Substation					
			Line					
93	110 kV SS Kuthuparamba - Procurement of GOC Alstom make spare 11 kV VCB truck for feeder	Nil	Total		0.05			
			Substation					
			Line					
94	220 kV GIS SS Thalassery - Procurement of Analog & Digital Insulation resistance tester	Nil	Total		0.032			
			Substation					
			Line					
95	110 kV SS Valiyavelicham - Procurement of scaffolding & crimping tool	Nil	Total		0.005			
			Substation					
			Line					
96	TSD Mattannur - Procurement for scaffolding for the use at 5 substations	Nil	Total		0.016			
			Substation					
			Line					
97	110 kV SS Nedumpoil - Procurement of 5 kV Digital Insulation Resistance tester	Nil	Total		0.009			
			Substation					
			Line					
98	110kV Substation Kuthuparamba- Renewing and relocating of 11 kV DPs in substation compound	Nil	Total		0.15			
			Substation					
			Line					
99	110 kV SS Panoor- Procurement of HV Bushing for replacing Y phase bushing of TELK make 10 MVA 110/11 kV Transformer at	Nil	Total	0.0162	0.0275			
			Substation					
			Line					
100	33kV Substation Tholambra- Painting of control room and compound wall	Nil	Total		0.04			
			Substation					
			Line					
101	TSD Mattannur- Purchase of 3nos 11kV outdoor local break switch for 110kV SS Sreekandapuram and Iritty	completed	Total	0.0405				
			Substation					
			Line					
102	33kV SS, Veliyambra - Construction of Drain	completed	Total	0.015				
			Substation					
			Line					
103	33kV SS, Kuttiyattoor - Procurement of Vacuum interrupter for the CGL make circuit breaker of 5MVA No. 2 transformer bay	Nil	Total		0.0058			
			Substation					
			Line					
104	110kV SS Pinarayi - Providing water proofing on roof of control room building, parapet & sunshade	completed	Total	0.0324				
			Substation					
			Line					
105	TD, Kanhirode - Modification of Transmission Division office, Kanhirode	completed	Total	0.013				
			Substation					
			Line					

Sl. No.	Project	Revised target date of completion		Capital Outlay(Crore)				
				2022-23	2023-24	2024-25	2025-26	2026-27
106	33kV SS, Tholambra - Providing CCTV Camera Survellance system	completed	Total	0.005				
			Substation					
			Line					
107	33kV SS, Dharmadam - Providing CCTV Camera Survellance system	completed	Total	0.005				
			Substation					
			Line					
108	33kV SS, Puthur - Providing CCTV Camera Survellance system	completed	Total	0.0048				
			Substation					
			Line					
109	33kV SS, Kodiyeri - Providing CCTV Camera Survellance system	completed	Total	0.006				
			Substation					
			Line					
110	220kV SS Kanhirode - Replacement of SCT make 220kV CTs of 2ORKH, 2ARCH,2KHAB,2KHTA feeders & 160MVA	completed	Total	0.0265				
			Substation					
			Line					
111	TD, Kanhirode - System operation circle, Kannur- Renovation of Toilets	completed	Total	0.0199				
			Substation					
			Line					
112	33kV SS, Kelakam - Construction of Drain	completed	Total	0.0398				
			Substation					
			Line					
113	TD, Kanhirode - Procurement of LED Monitor for the use of TD, Kanhirode	completed	Total	0.0034				
			Substation					
			Line					
114	TD, Kanhirode - Procurement of surge arrester	completed	Total	0.0363				
			Substation					
			Line					
115	TD, Kanhirode - Procurement of 110kV Polymer housed lightning arrester for the use of 110kV SS KINFRA, and 220kV, Kanhirode	completed	Total	0.0049				
			Substation					
			Line					
116	110kV SS, Panoor - Procurement of A type self supporting and adjustable FRP ladder	completed	Total	0.0061				
			Substation					
			Line					
117	220kV SS, Kanhirode - Fabrication and installation of operators Table	completed	Total	0.0089				
			Substation					
			Line					
118	110kV SS , Nedumpoyil - Repair and Maintenance of D1,E1 & E2 quarters	Nil	Total		0.012			
			Substation					
			Line					
119	110kV SS , Panoor - Renovation of quarters	Nil	Total		0.02			
			Substation					
			Line					
120	110 kV SS, Valiyavelicham - Purchae of 1No. 11kV outdoor load break switch station panel	Nil	Total		0.0177			
			Substation					
			Line					
121	TSD, Mattannur- Purchase of FRP earth rod for the use of the ss under TSD, Mattannur	Nil	Total		0.0075			
			Substation					
			Line					
122	220kV GIS, Thalassery- Procurement of Neutroniics make transformer oil BDV test kit	Nil	Total		0.0068			
			Substation					
			Line					
123	33 kV SS, Pazhassi-Re Metalling of Yard-Transformer 2- bay & Bay for yard extension	Nil	Total		0.05			
			Substation					
			Line					
124	33kv Substation Kelakam- Erecting Light Pole structure for installing yard Light at 33kV Substation Kelakam	Nil	Total		0.0092			
			Substation					
			Line					
125	110 KV Substation Chemperi - Providing Chain link fencing for 11 KV Auxiliary Transformer yard and LBS Panel yard at 110	Nil	Total		0.0243			
			Substation					
			Line					
126	TC solar SS Ambalathara Second Phase works Errection of structures and equipment ,Bus and earth wire strining interconnection and equipment earthing	Nil		0.0627	0.2627			
127	Yard metalling for remaining portion of Solar yard and traction yard at 110 kV Substation Kubanoor	Nil			0.0418			
128	Construction of new road to the Control room in front and in between control room and Yard using cement concreat Tower Blocks at 110 kV Substation Mullaria	Nil			0.0199			

Sl. No.	Project	Revised target date of completion		Capital Outlay(Crore)				
				2022-23	2023-24	2024-25	2025-26	2026-27
129	110 kV Substation Kubanoor-Extention of road to 11 kV Yard and resurfacing of road from gate to Control room.	Nil					0.69	
130	220 SS Mylatty - Providing 220kV Low impedence bus bar Protection at 220kV SS Mylatty		Total	0	0.32	0	0	0
			Substation					
			Line					
131	220 SS Mylatty - 110 kv bay construction at 220 kv ss mylatty as a part of up gradation of 12 km 110 kvSC line fro 220 kv Mylatty ss to	completed	Total	0.28				
			Substation					
			Line					
132	220 SS Mylatty - Providing 220kV bay in connection with upgradation of Vidyanagar Substation	Nil	Total	0	0.1	0.6		
			Substation					
			Line					
133	220 SS Mylatty - Providing 100kVA DG set at Mylatty Substation		Total			0.15		
			Substation					
			Line					
134	220 SS Mylatty - Re surfacing of road towrds IB mylatty		Total			0.2		
			Substation					
			Line					
135	220 SS Mylatty - Re surfacing of road inside yard		Total			0.25		
			Substation					
			Line					
136	220 SS Mylatty - Remetalling of 110 kV yard		Total			0.1		
			Substation					
			Line					
137	220 SS Mylatty - providing 2 nos. of 11 kv feeder outlet for Dhyuthi scheme		Total		0.06			
			Substation					
			Line					
138	220 SS Mylatty - renovation of contorl room including Painting of control room building		Total			0.1		
			Substation					
			Line					
139	220 SS Mylatty - overhauling of 220kv isolators		Total		0.0683			
			Substation					
			Line					
140	220 SS Mylatty - Providing main 2 diffrential relay for 220/110kv transformers		Total				0.08	
			Substation					
			Line					
141	220 SS Mylatty - Metal spreading around yard fencing		Total		0.041			
			Substation					
			Line					
142	33 kV Substation,Trikaripur- Conversion of 11kV outdoor to indoor	completed	Total	0.6				
			Substation					
			Line					
143	33kV SS, Trikaripur – Capacity enhancement by replacing existing 2x5 MVA Transformer with 2x8 MVA Transformer.	completed	Total	1.75				
			Substation					
			Line					
144	33kV SS, Trikaripur-Replacing old LT Panel	completed	Total	0.009				
			Substation					
			Line					
145	10kV SS, Cheruvathur-Construction of Vehicle parking shelter		Total		0.015			
			Substation					
			Line					
	Total of Kannur Circle			**27.03**	**20.13**	**19.39**	**6.69**	**0.00**
	Total of Transmission Circles			**110.50**	**239.74**	**374.24**	**217.53**	**94.84**
	System Operation							
1	Circle level purchases/works under Modernisation of Communication			1.39	0.71	0.45	0.4	0.4
2	Proving line differential relays for PGCL feeders at 220 kv Areekode, Palakkad and Pothencode Substations					2.64		
3	Implementation of integrated protection management system with work flow automation							
4	Purchase of Numerical relays Purchase of numerical relays for the replacement of old statis relays phase II				0.04	0.03		
5	Purchase of Testing kit			1	1	5	1.5	1.5
6	Vehicle			0.96	0.45	0.51		
7	Circle level purchases/works under Modernisation of Protection			1.36	4.46			
8	Backup LD buiding at Pothencode				0.15	4.61		
9	Cyber security			0.15	0.25	0.4	0.3	0.4
10	Civil works			0.21	0.198	0.204	0.204	0.204
11	MT&SOC works							
12	Purchase of computers and printers							
	Sub Total System Operation Circle			**5.07**	**7.26**	**13.84**	**2.40**	**2.50**
	Grand Total			**115.57**	**247.00**	**397.33**	**219.93**	**97.34**

Annexure III

CAPITAL INVESTMENT PLAN OF SBU Transmission

Works greater than Rs. 10 Crore

No.	Name of Project	Whether work is shifted to Transgrid/ RDSS (Y / N)	Category (Most essential/ Essential/ Desirable)	Revised project cost (Cr.)	Grant/	Net	Revised COD	Financing Plan of works with grants/ subsidy/ VGF	Whether works awarded	Present stage of		Present status					Capital Outlay (Cr)					Remarks
										Physical Progress (%)	Financial Progress (Cr)	Land availability	ROW requirement	Forest/ enviornment al clearance	Railway Crossing	Highway crossing	2022-23	2023-24	2024-25	2025-26	2026-27	
A	**Normal Plan Works**																					
I	**Transmission Circle Alapuzha**																					
	Works already submitted to KSERC																					
1	Downstream works for the upcoming 220kV Substation, Thuravoor	Y (Works worth Rs.53.7 Cr. is transferred to	Most essential	34.81			31.03.2027	Own fund	Phase1 work is awarded	95	1.81	Available	No	NA	3 locations	Yes	1.81	1.19	12.00	10.00	9.81	Total AS amount is Rs.83.9 Cr. Works worth Rs.53.7 Cr. is transferred to Transgrid
2	110kV Substation, Kollakadavu	N	Essential	19.8			31.03.2027	Own fund	No			Available	No	NA	No	No			5.00	8.00	6.80	
3	110kV Substation, Kotta	N	Essential	14.5			31.03.2026	Own fund	No			Not available	No	NA	No	No			5.00	9.50		
4	Upgradation of 33kV Substation Mannar to 110kV	N	Most essential	21			31.03.2026	Own fund	Line work is tendered		0.04	Available	No issue	NA	No	No			5.00	16.00		
5	Upgradation of 66kV Mavelikara-Chakkuvally and Kattanam lines to 110kV	Y	Most essential	42.81			31.03.2026	Own fund	No			NA	Existing RoW	NA	No	No			20.00	22.81		
6	Edappon 110kV bay extension	N	Most essential	15.4			31.03.2026	Own fund	No			Available	NA	NA	No	NA			8.00	7.40		
7	Upgradation of 66kV Edappon-Mavelikara line to 110kV	N	Most essential	22.5			31.03.2025	Own fund	Ready for awarding			NA	Existing RoW	NA	No	No			22.50			
8	Upgradation of Pallom-Mavelikkara 66kV DC line to 110kV DC, 110kV bay extension at 110kV substation Mavelikkara, 110kV bay extension & construction of 2 Nos of 110kV feeder bays at 220kV Substation Pallom and upgradation of 66kV substation Changannassery to 110kV	N	Most essential	56.5			31.03.2027	Own fund	Upgn of Mavelikkara-Thiruvalla portion tendered			NA	Existing RoW	NA	Yes	Yes			20.00	20.00	16.50	Only the upgradation of Pallom-Mavelikkara line and bay extension at 110kV SS, Mavelikkara is coming under Alappuzha Circle (project cost - Rs.56.5 Cr). Balance work is under Poovanthuruth Circle.
9	Construction of new 110kV GIS Substation at Kavalam	N	Most essential	20.5			31.03.2025	RKI	Line work awarded	13.22	1.59	Awaiting fund for land acqisition from RKI	No issue	NA	No	No	0.54	2.50	17.46			
10	Construction of 33kV Substation, Kidangara	N	Most essential	13.8			31.05.2024	RKI	Yes	31.75	4.38	Available	No issue	NA	No	No	2.94	3.00	7.86			
11	Upgradation of 66kV Substation Alappuzha to 110kV and upgradation of Alappuzha-Pooppally 66kV SC line to 110kV DC	N	Most essential	39.3			31.06.2024	Own fund	Yes	50	19.4	Available	Existing RoW	NA	No	No	14.93	7.00	17.37			
	Sub total			**300.92**							**27.22**						**20.22**	**13.69**	**140.19**	**93.71**	**33.11**	
	Works additionally proposed / Shifted from RDSS																					
	Total of Alappuzha Circle			**300.92**							**27.22**						**20.22**	**13.69**	**140.19**	**93.71**	**33.11**	
II	**Transmission Circle, Kalamassery**																					
	Works already submitted to KSERC																					
1	Capacity enhancement at 110kV Substation, Mattanchery and bay extension	N	Essential	12.25			2026	Own fund	Phase 1 completed	56	6.95	Avilable	NA	NA	NA	NA	3.00	3.00	3.00	3.25		
2	Construction of 220/66kV Substation at Ambalamugal	N	Most essential	49			2027	Own fund	No			Avilable	No issue	NA	No	No			10.00	10.00	29.00	
	Sub total			**61.25**							**6.95**						**3.00**	**3.00**	**13.00**	**13.25**	**29.00**	
	Works additionally proposed / Shifted from RDSS																					
3	Installation of 220/110kV 200 MVA Transformer at Brahmapuram substation	Newly added	Most essential	17.7			2025	Own fund	No			Avilable	NA	NA	NA	NA			17.70			
4	110kV Cherai-Njarakkal DC Line	Newly added	Most essential	19.8			2026	Own fund	Yes	20	1.95	NA	No issue	NA	No	No		2.80	8.00	9.00		
	Total of Kalamassery Circle			**98.75**							**8.90**						**3.00**	**5.80**	**38.70**	**22.25**	**29.00**	
III	**Transmission Circle Kottarakara**																					
	Works already submitted to KSERC																					
1	Construction of new 110kV Substation at Thevalakkara and Upgradation of 66kV Sasthamcotta-Chavara DC line to 110kV DC line	N	Most Essential	31			2026	Own fund	No			Land identified	Existing RoW	NA	Yes (1 location)	No		1.00	12.00	18.00		
2	Interlinking 110kV Substation Perinad and 110kV Substation Kavanad	N	Most Essential	32			2026	Own fund	No			NA	No issue	NA	No	No		1.00	25.00	6.00		
3	Chithara 110kV Substation	N	Essential	11.2			2026	Own fund	No			Land identified	No issue	NA	No	No		0.25	4.00	6.95		
4	Conversion of 110kV Edamon-Kundara SC feeder to 110kV DC	N	Most Essential	38.2			2027	Own fund	No			NA	Existing RoW	NA	Yes	Yes		0.10	10.00	16.00	12.10	
	Sub total			**112.4**							**0.00**						**0.00**	**2.35**	**51.00**	**46.95**	**12.10**	
	Works additionally proposed / Shifted from RDSS																					
	Total of Kottarakkara Circle			**112.4**							**0.00**						**0.00**	**2.35**	**51.00**	**46.95**	**12.10**	
IV	**Transmission Division, Pathanamthitta**																					
	Works already submitted to KSERC																					

1	Construction of 110kV Substation, Theodical	N	Most essential	26.7			31.05.2026	Own fund	No			Land identified	No issue	NA	NA	NA		0.05	1.00	20.00	5.65	
2	Construction of 110kV Substation, Pallickal	N	Most essential	13.55			31.05.2026	Own fund	No			Land identified	NA	NA	NA	NA		0.01	1.00	10.00	2.54	
3	Upgradation of 33kV Substation, Konni to 110kV	N	Most essential	20.35			31.03.2027	Own fund	No			Available	No issue	NA	NA	NA		0.01	0.50	10.00	9.84	
4	Construction of 110kV Substation, Mannarakulanji	N	Most essential	13.85			31.05.2026	Own fund	No			Land identified	NA	NA	NA	NA		0.01	1.00	10.00	2.84	
	Sub total			**74.45**													**0.00**	**0.08**	**3.50**	**50.00**	**20.87**	
	Works additionally proposed / Shifted from RDSS																					
5	Construction of 33kV Substation, Kunnamthanam	Shifted from RDSS	Most essential	10.85			31.03.2027	Own fund	No			Land Available	No issue	NA	NA	NA			2.00	4.00	4.85	Shifted from RDSS to normal plan works
	Total of Pathanamthitta Division			**85.3**							**0.00**						**0.00**	**0.08**	**5.50**	**54.00**	**25.72**	
V	**Transmission Circle, Poovanthuruthu**																					
	Works already submitted to KSERC																					
1	Enhancing Transformer capacity at 110kV Substation, Vaikom	N	Most essential	16.1			2025-26	Own fund	No			Available	NA	NA	NA	NA				16.10		
2	Construction of new 110kV GIS substation at Puthuppally	N	Essential	18.7			2026-27	Own fund	No			Available	NA	NA	NA	NA		3.00	3.10	2.00	10.60	
3	220kV double bus arrangement using GIS at 220kV substation, Pallom	N	Most essential	50			2025-26	Own fund	No			NA	NA	NA	NA	NA		10.00	20.00	20.00		
4	Construction of new 33kV substation at Kumarakom with associated lines	N	Essential	26			2025-26	Own fund	No			To be identified		NA	NA	No		10.00	10.00	6.00		
5	Construction of new 110 kV substation at Vazhoor	N	Most Essential	15.2			31.03.2024	Own fund	Yes	67%	3.27	Available	NA	NA	NA	NA	1.90	13.30				
	Sub Total			**126**							**3.27**						**1.90**	**36.30**	**33.10**	**44.10**	**10.60**	
	Works additionally proposed / Shifted from RDSS																					
6	Construction of 33kV Substation at Pinnakkandu and allied works	Shifted from RDSS	Most Essential	14.6			2025-26	Own fund	No			Land acquisition in progress	NA	NA	NA	NA			5.00	9.60		Shifted from RDSS to normal plan works
	Total of Poovanthuruthu Circle			**140.6**							**3.27**						**1.90**	**36.30**	**38.10**	**53.70**	**10.60**	
VI	**Transmission Circle, Palakkad**																					
	Works already submitted to KSERC																					
1	Reconductoring of 110kV SHOT feeder & replacing old and rusted MS towers (13.6Km)	N	Most essential	13.85		13.85	2025-26	Own fund	No			NA	Existing RoW	NA	NA	NA			5.00	8.85		
2	Capacity enhancement and 110kV bus extension at 110kV substation, Kanjikode	N	Most essential	23.6		23.6	2024-25	Own fund	Yes	5%	1.15	Available	NA	NA	NA	NA		1.15	22.44			
3	Construction of 110kV Substation, Padinjarangadi	N	Most essential	13.4		13.4	2024-25	Own fund	No			Land identified	No issue	NA	NA	NA			13.40			
	Sub Total			**50.85**		50.85					**1.15**						**0.00**	**1.15**	**40.84**	**8.85**	**0.00**	
	Works additionally proposed / Shifted from RDSS																					
4	Construction of 110kV Substation at Windfarm, Kanjikode	Newly added	Most Essential	**22.25**	**0**	22.25	2025-26	Own fund	No			Available	NA	NA	NA	NA			10.00	12.25		
5	Construction of 110kV Substation, Kothakurissi	Newly added	Most Essential	12		12	2025-26	Own fund	No			Govt land to be transferred	No issue	NA	NA	NA			6.00	6.00		
6	Construction of 110kV GIS at 220kV Substation, Shoranur	Newly added	Most Essential	44.5		44.5	2024-25	Own fund	Yes	92%	38.75	NA	NA	NA	NA	NA	29.11	9.64	5.75			
7	Capacity enhancement of 220/110kV, 2x100MVA transformers with 2x200MVA transformers at 220kV Substaton, Shoranur	Newly added	Most Essential	16.4		16.4	2024-25	Own fund	Yes	50%	6.89	NA	NA	NA	NA	NA	6.89	2.40	7.11			
	Total of Palakkad Circle			**146.00**							**46.79**						**36.00**	**13.19**	**69.70**	**27.10**	**0.00**	
VII	**Transmission Circle, Thiruvananthapuram**																					
	Works already submitted to KSERC																					
1	Upgradation of 33kV Substation Poovar to 110kV	No	Most essential	83.5			30-03-2027	Own fund	No			Available	Required	Not required	No	Yes			5.00	50.00	28.50	
2	Construction of new 110kV Substation at Nemom	No	Essential	22.69			30-03-2027	Own fund	No			No	Required	Not required					5.00	12.00	5.69	
3	Construction of 110kV GIS Substation at Kudappanakunnu	No	Essential	53			30-03-2027	Own fund	No			No	Required	Not required	No	No			5.00	20.00	28.00	
4	Construction of 110kV GIS, Thirumala	No	Most essential	38.000			30-3-2026	Own fund	No			Available	Not required	Not required	No	No			10.00	28.00		
	Sub Total			**197.19**													**0.00**	**0.00**	**25.00**	**110.00**	**62.19**	
	Works additionally proposed / Shifted from RDSS																					
	Total of Thiruvananthapuram Circle			**197.19**							**0.00**						**0.00**	**0.00**	**25.00**	**110.00**	**62.19**	
VIII	**Transmission Circle, Kozhikode**																					
	Works already submitted to KSERC																					
1	Construction of 110kV substation Adivaram	N	Most essential	13			2025-26	Own fund	No	0	0.14	Aquisition in progress	NA	NA	NA	NA	0.00	2.00	5.00	6.00		
2	110kV AIS Substation, Maniyur	N	Most essential	13			31.03.2027	Own fund	No			No	NA	NA	NA	NA			3.00	5.00	5.00	
3	Upgradation of 220/66kV Substation Kaniyambetta to 220/110kV Substation	N	Most essential	38			2026-27	Own fund	Yes	20	2.14	NA	NA	NA	NA	NA	0.20	5.00	15.00	10.00	7.80	

4	Upgradation and conversion of Kuthumunda - Thamaarassery SC line to 110kV DC line	N	Most essential	25			31.03.2026	Own fund	No			NA	Existing ROW	Forest clearance required	NA	Yes			7.00	18.00		
5	Conversion of 66kV SC Ambalaparamba tap line into DC line in 110kV parameters and upgradation of substation	N	Most essential	28.2			31.03.2026	Own fund	No			KWA land. NOC obtained	Existing ROW	No	No	No			5.00	23.20		
6	110kV Substation, Panthalayani	N	Most essential	27.7			31.03.2026	Own fund	No			No	Required	NA	NA	NA		0.70	3.00	24.00		
7	110kV Substation, Pantheeramkave	N	Most essential	22			30-06-2026	Own fund	No			Aquisition in progress	No	NA	NA	NA		2.00	10.00	10.00		
8	Upgradation of66kV S/S Thamarassery and Kunnamangalam-Thamarassery line	N	Most essential	27.1			12.01.2024	Own fund	Yes	100%	16.31	No	Existing ROW	No	No	Yes	6.80	20.30				
	SubTotal			**194**							**18.59**						**7.00**	**30.00**	**48.00**	**96.20**	**12.80**	
	Works additionally proposed / Shifted from RDSS																					
9	Construction of new 110kV Substation, Pavandoor	Newly added	Most Essential	12.4			2026-27	Own fund	No	Nil	Nil	Yes	No	NA	No	No			2.00	5.00	5.40	
10	Upgradation of 66kV Substation Mananthavady to 110kV by installing 2x12.5MVA Transformers	N	Most Essential	14			2025-26	Own fund	Yes	15	0.36	Yes	NA	NA	NA	NA		2.00	5.00	7.00		
11	Conversion of 66kV Kaniyambetta - Mananthavady SC line to 110kV DC and construction of one number feeder bay in 110kV parameters at 220kV Substation Kaniyambetta	N	Most Essential	18.45			2023-24	Own fund	Yes	89	10.91	Yes	Existing RoW	NA	NA	NA	5.30	13.15				
12	Upgradation of Kainatty - Sulthan Bathery 66kV SC tap line to 110kV DC	N	Most Essential	19.15			2024-25	Own fund	Yes	18	4.85	NA	Existing RoW	NA	NA	Yes	0.70	5.00	13.45			
	Total of Kozhikode Circle			**258**							**34.71**						**13.00**	**50.15**	**68.45**	**108.20**	**18.20**	
IX	**Transmission Circle, Kannur**																					
	Works already submitted to KSERC																					
1	Construction of 220kV Substation, Vidyanagar	Y	Most essential	31			2025-26	Own fund	No			Available	NA	NA	NA	NA			25.00	6.00		
2	Construction of 110kV substation Kuttikol	N	Most essential	27.05			2024-25	Own fund	Yes	55%	2.42	Available	Required	NA	NA	NA	0.31	2.42	24.32			
3	Construction of 110kV Substation at Thimiri	N	Essential	23.57			2025-26	Own fund	No	NA	0.05	In Process	Required	NA	NA	NA		0.06	10.41	13.11		
	Sub Total			**81.62**							**2.47**						**0.31**	**2.48**	**59.73**	**19.11**	**0.00**	
	Works additionally proposed / Shifted from RDSS																					
4	Construction of 33kV Substation Adoor and allied 33kV UG cable line		Essential	13			25-26	Own fund	No			No	NA	No	NA	NA			8.00	5.00		
5	Upgradation of 33kV substation Nileshwaram to 110kV and construction of 1 km 110kV DC line		Essential	11.5			25-26	Own fund	No			Available	Required	No	NA	NA			8.00	3.50		
6	Upgradation of 66kV SC line to 110kV DC from 110kV SS, Nedumpoyil to Chandhanathode (7.94 km) & from 66kV SS, Mananthavady to Thalappuzha (4.3 km) including upgradation of terminal equipments at Nedumpoil SS.		Essential	19.8			25-26	Own fund	No			NA	Existing ROW	NA	NA	NA			10.00	9.80		
	Total of Kannur Circle			**125.92**							**2.47**						**0.31**	**2.48**	**85.73**	**37.41**	**0.00**	
X	**Thodupuzha**																					
	Works already submitted to KSERC																					
1	Upgradation of 66kV S/s Peerumedu to 110kV	N	Essential	17.75			2025-26	Own fund	No			Yes	NA	NA	NA	NA			7.75	10.00		
2	Upgradation of 66kV Nedumkandam S/s to 110kV & Construction of 17kms Kuthumkal-Nedumkandam 110kV DC feeder	Y (Line work to Transgrid)	Most Essential	18.5			2026-27	Own fund	No			Yes	NA	NA	NA	NA			1.50	10.00	7.00	
3	Upgradation of 66kV Substation, Kattappana to 110kV	N	Most Essential	14.7			2025-26	Own fund	No			Yes	NA	NA	NA	NA			2.00	12.70		
4	Construction of 36km Peerumade-Kattappana 110kV DC feeder	Y (To Transgrid)	Essential	40.7			2026-27	Own fund	No			NA	No	No	No	No			5.70	10.00	25.00	
5	110kV Substation Keezhillam	N	Most Essential	30.3			2025-26	Own fund	No			No	Yes	No	No	No			4.50	25.80		
6	Upgradation of 110kV Substation Odakkali from 10 MVA to 12.5 MVA	N	Most Essential	16.4			2024-25	Own fund	No			Yes	yes	No	No	No			16.40			
7	Construction of 110kV Substation at Murickassery and allied 110kV DC line from Konnathady	N	Most Essential	20.1			2024-25	Own fund	Yes	75%	3.60	Yes	Yes	No	No	No	1.10	2.20	16.80			
	Sub Total			**158.45**							**3.60**						**1.10**	**2.20**	**54.65**	**68.50**	**32.00**	
	Works additionally proposed / Shifted from RDSS																					
8	Renovation of 110kV Substation Perumbavoor		Most essential	20			2024-25	Own fund	Yes	36	4.23		No	No	No	No	5.00	1.50	13.50			
	Total of Thodupuzha Circle			**178.45**							**7.83**						**6.10**	**3.70**	**68.15**	**68.50**	**32.00**	
XI	**Transmission Circle, Malappuram**																					
	Works already submitted to KSERC																					
1	Construction of 110kV Substation Venniyur with 2x12.5 MVA Transformers and construction of 5 km 110kV DC line	N	Most essential	32			2025-26	Own fund	No			Yes	Yes	Nil	Nil	Nil			10.00	22.00		
2	Construction of 110kV Substation, Thiruvali by installing 2x12.5 MVA Transformers	N	Most essential	12.5			2025-26	Own fund	No			Yes	Yes	Nil	Nil	Nil		1.60	9.00	1.90		

3	Construction of 110kV Substation, Kadampuzha and construction of 4.5km 110kV DC line from Malaparmba-Kuttippuram line with LILO arrangement	N	Most essential	19.8			2025-26	Own fund	Yes	5%	1.40	In Process	Yes	Nil	Nil	Nil		1.40	15.00	3.40		
4	Construction of 110kV Substation, Vengara as LILO (8km) of Kizhissery-Malappuram 110kV line	N	Most essential	24			2025-26	Own fund	Yes	5%	1.26	In Process	Yes	Nil	Nil	Nil		1.26	15.00	7.74		
	Sub Total			**88.3**							**2.66**						**0.00**	**4.26**	**49.00**	**35.04**	**0.00**	
	Works additionally proposed / Shifted from RDSS																					
5	Construction of 33kV Substation, Changaramkulam, Installation of 110/33kV 16MVA Transformer at 110kV SS Edappal, contruction of 33kV Line from Edappal to Changaramkulam including bay work at Edappal SS	N	Most essential	12.8			2025-26	Own fund	No			No	Yes	nil	nil	Yes			8.00	4.80		Land required as per LARR act
6	220kV S/s, Malaparamba - Enhancing capacity of 2x100MVA 220/110kV Transformer to 2x200MVA	N	Essential	19.27			2024-25	Own fund	Yes	50%	7	NA	NA	NA	NA	NA			19.27			
7	Automation of 220kV feeder bays including renovation of yard equipments at 220kV Substation, Areekode	N	Essential	12.75			2025-26	Own fund	No			NA	NA	NA	NA	NA			2.00	1.00	9.75	
8	Supply and installation of 132 kV XLPE cables and construction of 110 kV GIS Substation Malappuram	N	Essential	52			2024-25	Own fund		NA	NA	NA	NA	NA	NA	NA			52.00			
	Total of Malappuram Circle			**133.12**							**9.66**						**0.00**	**4.26**	**130.27**	**40.84**	**9.75**	
XII	**Transmission Circle Thrissur**																					
	Works already submitted to KSERC																					
	Sub Total																					
	Works additionally proposed / Shifted from RDSS																					
1	Upgradation of 6CHVI (Chalakudy-Viyyur) 66kV feeders to 110kV	Newly added	Most essential	47.15			2026-27	Own fund	No			Yes	Existing RoW	NA	NA	Yes		0.05	10.00	18.00	19.10	
2	Constuction of 110kV GIS at Chalakudy substation	Newly added	Most essential	52.3			2025-26	Own fund	No			Yes	NA	NA	NA	NA		0.05	30.25	22.00		
3	Construction of new 110kV Substation at Veloor	Newly added	Essential	12.2			2025-26	Own fund	No			No	NA	NA	NA	NA		0.25	6.50	5.45		
4	Reconductoring of 16km Viyyur-Kandassankadavu 110kV DC line using ACSR Wolf	Newly added	Most essential	22.68			2025-26	Own fund	No			NA	NA	NA	NA	NA		0.05	18.00	4.63		
5	Upgradation of 33kV Koratty SS to 110kV GIS	Newly added	essential	22.25			2025-26	Own fund	No			Yes	NA	NA	NA	NA		0.05	12.20	10.00		
6	Rebuilding and modernization of 110kV substation Viyyur	Newly added	Most essential	21.1			2025-26	Own fund	No			Yes	NA	NA	NA	NA		0.05	14.00	7.05		
	Total of Thrissur Circle			**177.68**							**0.00**						**0.00**	**0.50**	**90.95**	**67.13**	**19.10**	
XIII	**Other Transmission works**																					
	Works already submitted to KSERC																					
1	Providing bus bar protection at major 110kV Substations	N	Most Essential	**16**	**14.4**	**1.6**	2024-25	PSDF Grant (90%)	No			NA	NA	NA	NA	NA			1.60			
	Total Transmission Normal Works			**2007.93**							**206.77**						**80.53**	**132.50**	**813.34**	**729.79**	**251.77**	

Annexure IV

RDSS Phase I - Works							
Sl No	**Transmission Circle**	**Name of work**	**Length of Line (ckt km)**	**Amount (Rs. Cr.)**	**Capital Outlay**		
					2022-23	**2023-24**	**2024-25**
1	Thiruvananthapuram	Reconductoring of Parassala-Vellarada 33kV OH line using covered conductor	15	4.82		1.46	3.36
2		Reconductoring of Nedumangad-Chullimanoor 33kV OH line using covered conductor	12	3.85		0.17	3.68
3		Reconductoring of Nedumangad-Vithura 33kV OH line using covered conductor	8	2.57		0.1	2.47
4		Reconductoring of Attingal-Venjaramood 33kV OH line using covered conductor	10.5	3.37		0.16	3.21
5		Reconductoring of Kilimanor-Kadakkal 33kV OH line using covered conductor	9.5	3.05			3.05
6		Reconductoring of Kilimanoor-Kallambalam 33kV OH line using covered conductor	15	4.82			4.82
7		Reconductoring of Nedumangad-Aryanad 33kV OH line using covered conductor	11	3.53			3.53
	Thiruvananthapuram	**Sub Total**	**81**	**26.01**	**0**	**1.89**	**24.12**
8	Kollam	Reconductoring of Ambalapuram-Ezhukone 33kV OH line using covered conductor	5	1.94			1.94
9		Reconductoring of Ambalapuram-Chengamanad 33kV OH line using covered conductor	13	5.03		0.5	4.53
10		Reconductoring of Ambalapuram-Pooyappally 33kV OH line using covered conductor	11	4.26			4.26
11		Reconductoring of Ambalapuram-Puthoor 33kV OH line using covered conductor	10.5	4.07			4.07
12		Reconductoring of Kottiyam-Kananalloor 33kV OH line using covered conductor	6.5	2.52			2.52
13		Reconductoring of Kottiyam-Adichanalloor 33kV OH line using covered conductor	9.85	3.81			3.81
	Kollam	**Sub Total**	**55.85**	**21.63**	**0**	**0.5**	**21.13**

14	Pathanamthitta	Reconductoring of Ranni-Mukkam 33kV OH line using covered conductor	10.5	3.89			3.89
15		Reconductoring of Edathua-Kadapra 33kV OH line using covered conductor	9.2	3.41			3.41
16		Reconductoring of Pathanamthitta-Ranni Perunad 33kV OH line using covered conductor	16.5	6.12		0.6	5.52
17		Reconductoring of Mallappally-Kumbanad 33kV OH line using covered conductor	9.56	3.54			3.54
	Pathanamthitta	**Sub Total**	**45.76**	**16.96**	**0**	**0.6**	**16.36**
18	Alappuzha	Reconductoring of Thycattussery-Kuthiyathode 33kV OH line using covered conductor	6.5	3.57		0.2	3.37
19		Reconductoring of Punnapra-Thakazhy 33kV OH line using covered conductor	11.3	6.21			6.21
	Alappuzha	**Sub Total**	**17.8**	**9.78**	**0**	**0.2**	**9.58**
20	Thodupuzha	Laying of 21km 33kV, 3X300 Sq mm,XLPE	21	11.74			11.74
	Thodupuzha	**Sub Total**	**21**	**11.74**	**0**	**0**	**11.74**
21	Ernakulam	Reconductoring of North Paravur-Varappuzha 33kV OH line using covered conductor	10	4.62		2	2.62
22		Reconductoring of North Paravur-Vadakkekara 33kV OH line using covered conductor	10	4.62		2	2.62
23		Reconductoring of Perumbavoor-Kuruppampady 33kV OH line using covered conductor	7.5	3.7			3.7
24		Reconductoring of Moovattupuzha-Kalloorkkad 33kV OH line using covered conductor	14.5	9.71			9.71
	Ernakulam	**Sub Total**	**42**	**22.65**	**0**	**4**	**18.65**

25	Thrissur	Reconductoring of Valappad-Anchangady feeder OH line using covered conductor	18.7	1.75		0.6	1.15
26		Reconductoring of Guruvayur-Blangad 33kV OH line using covered conductor	12	5.50		2	3.5
27		Reconductoring of Irinjalakkuda-Parappukara 33kV DC OH line using covered conductor including standardisation	23.2	5.51			5.51
	Thrissur	**Sub Total**	**53.9**	**12.8**	**0.0**	**2.6**	**10.2**
28	Malappuram	Reconductoring of Melattur-Thazhekkode 33kV OH line using covered conductor	10	5.93		2.5	3.43
29		Reconductoring of Vairamcode-Kalpakanchery 33kV OH line using covered conductor	9.25	6.36		1	5.36
30		Reconductoring of Pulamanthole (Karinganad)-Koppam 33kV OH line using covered conductor	4	2.93			2.93
31		Reconductoring of Makkaraparamba-Pulamanthole (Palachode) 33kV OH line using covered conductor	5	3.65			3.65
32	Malappuram	Kizhissery – Valluvambram(DOG conductor). Standardisation of 33kV SC line from 110kV Substation, Kizhissery to 33kV Substation, Valluvambram to Double Circuit line using ACSR Dog conductor.	16	3.9			3.9
33		Nilambur – Pothukallu.(DOG conductor) Conversion of 33kV SC to 33kV DC from Muttiyal to Adyanpara and providing control at Adyanpara using RMU.	1.5	1.21			1.21
34		Wandoor – Pookottumpadam. (DOG conductor) Conversion of 33KV SC line to (Wandoor-Kalikavu-Pookuttumpadam tap) to 33 KV DC Using 14 Mtr A pole and lattice poles.	10	2.52			2.52
35		Melatoor – Wandoor(DOG conductor). Standardisation of of 33 KV Melattur-Wandoor Line by replacing existing PSC Poles..	19	5.2			5.2
36		Edavanna – Wandoor(DOG conductor). Standardisation of 33 KV Edavanna-Wandoor Line by replacing existing PSC Poles.	13.5	4.01			4.01

37	Malappuram	Nilambur – Akambadam Jn(UGC) -Reconductoring of 33 KV Line from Nilambur to Akampadam Junction (Nilambur-Adyanpara Line) with UG Cable	1	0.96			0.96
38		Edarikkode – Kooriyad(DOG conductor). Augmentation of 33kV Lines – 33kV DC line with DOG Conductor from 110kV Edarikode Substation to 33kV Kooriyad Substation.	7	2.45			2.45
39		Vairamcode – Thirunavaya(DOG conductor). Conversion of 33kV SC line from Vairamkode to Tirunavaya to 33kV DC line.	3.6	1.64			1.64
	Malappuram	**Sub Total**	**99.9**	**40.8**	**0.0**	**3.5**	**37.3**
40	Kozhikode	Reconductoring of Nallalam-Feroke 33kV OH line using UG cable	7	5.74		1	4.74
41		Reconductoring of Meppayur-Melady 33kV OH line using covered conductor	9.6	5.88			5.88
42		Reconductoring of Koyilandy-Balussery 33kV OH line using covered conductor	12.5	6.06			6.06
	Kozhikode	**Sub Total**	**29.1**	**17.7**	**0.0**	**1.0**	**16.7**
43	Kannur	Reconductoring of Kanjirode-Pazhassi 33kV OH line using covered conductor	18.7	15.35		2	13.35
44		Reconductoring of Panoor-Puthur 33kV OH line using covered conductor	7.5	6.22		1	5.22
45		Reconductoring of Azhikkode-Kannur Town 33kV OH line using covered conductor	8	4.41		1	3.41
46		Reconductoring of Mulleriya-Badiyaduka 33kV OH line using covered conductor	12.6	8.18		2	6.18
	Kannur	**Sub Total**	**46.8**	**34.2**	**0.0**	**6.0**	**28.2**
	Kannur	**11 kV feeder outlets for SCADA/DMS 15 Nos in Kannur** (Since no bids received in this tender, requested MoP, alternate option to arrange the purchase and erection of panels departmentally .		1.95			1.95
	Thrissur	11 kV feeder outlets for SCADA/DMS 3 Nos inThrissur districts(Since no bids received in this tender, requested MoP, alternate option to arrange the purchase and erection of panels departmentally.		0.89			0.89
		Grand total		**216.97**	**0.00**	**20.29**	**196.68**

Annexure - V

CAPITAL INVESTMENT PLAN OF SBU Transmission

Transgrid 2.0 Works

No.	Name of Project	Whether work is shifted to Transgrid/ RDSS (Y / N)	Category (Most essential/ Essential/ Desirable)	Revised total project cost (Cr.)	Grant/	Net	Revised COD	Financing Plan of works with grants/ subsidy/ VGF	Whether the work is awarded or not	Present stage of		Present status					Capital Outlay (Cr)					Remarks
										Physical Progress (%)	Financial Progress (Cr)	Land availability	ROW requirement	Forest/ enviornmental clearance	Railway Crossing	Highway crossing	2022-23	2023-24	2024-25	2025-26	2026-27	
	Transgrid works																					
	New works																					
	Works as per original submission																					
1	Travancore Lines Package I	Transgrid	Most Essential	28.2			2024-25	Own Fund	Yes	25.79	14.69	NA	NA	NA	Sanctioned	Pending with NHAI	2.20	8.00	18.00			
2	Travancore Lines Package II	Transgrid	Most Essential	97			2024-25	Own Fund	Yes	25.79	13.34	NA	NA	NA	Sanctioned	Pending with NHAI	18.00	24.00	55.00			
3	Quilon Package	Transgrid	Most Essential	145.37			2025-26	OwnFund	No										32.00	113.37		
4	North Green Corridor Package	Transgrid	Most Essential	911.8			2026-27	KfW loan + own fund	Line Part Yes	10.8	51.2	Under Process	Compensation issues	Under final inspection	NA	NA	11.80	60.00	330.00	330.00	180.00	
5	Attapady Green Corridor Package	Transgrid	Most Essential	311.1	74.71	236.39	2026-27	MNRE grant + KfW loan	No	0	0.00	Available	New RoW						100.00	100.00	111.00	
6	Ramakkelmedu Green Corridor Package	Transgrid	Most Essential	234.64	64.24	170.4	2026-27	MNRE grant + KfW loan	No	0	0.00	ANERT land handing over under process	Existing RoW							65.40	169.24	
7	North South interlink Package II	Transgrid	Most Essential	383.91			2026-27	Own Fund	No	0	0.00	NA	Existing RoW	NA	Not applied	Not applied	60.00		90.00	100.00	133.91	
8	Valluvanad Package	Transgrid	Most Essential	210.41			2026-27	Own Fund	No	0	0.00	Available	Existing RoW	NA	NA	Not applied			25.00	30.00	29.00	One portion of the project is deferred(ie Mannarkad-Vennakakara upgradation)
9	Edamon 400kV Substation	Transgrid	Most Essential	403.5			2027-28	Own Fund	No	0	0.00	Own Land	NA	NA	NA	NA			5.00	50	50	Completion during next Control Period
10	North South interlink Package III	Transgrid	Most Essential	70.8			2027-28	Own Fund	No	0	0.00								10.00	40.00	20.80	
	Works additionally proposed / shifted from Normal category																					
11	Downstream works of Karindalam 400kV S/s	Transgrid	Most Essential	54.49			2026-27	Own Fund	No	0	0.00	NA	New RoW	NA	NA	NA	0.00	0.00	1.50	20.00	32.99	
12	Down stream works for the upcoming 220kV Substation, Thuravoor - Line Work	Y (Rs.53.7 Cr. for 110 kV line works is being done by Transgrid)	Most essential	53.7			2026-27	Own fund	Modification work at 110 kV ss Thycattussery (phase1) is awarded.	95	1.81	Available	Existing RoW	NA	3 Nos	Yes	2.00	5.00	8.00	20.00	18.70	
13	Construction of 17kms Kuthumkal-Nedumkandam 110kV DC feeder	Y	Most essential	35.75			2026-27	Own fund	No			NA	New RoW	NA	NA	NA			5.00	15.00	15.75	
	Transgrid total																**94.00**	**97.00**	**679.50**	**883.77**	**761.39**	