

Modified Report

PROPOSAL ON SERVICE QUALITY IMPROVEMENT AND ORGANIZATIONAL EFFECTIVENESS OF TRANSMISSION WING IN KSEBL

SUBMITTED BY THE COMMITTEE OF:

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September 2019



A. Background

Vide office order 759/2019(CE(C&P)/MPC/2019-20) of CMD, KSEB dated 27.4.19 a committee was constituted to review the proposal on reorganization of Transmission wing, which was originally prepared by a restructuring committee entrusted by the Board, in line with the objective of restructuring of the organization in the wake of the following matters:

1. In 2010-11 the following directives were issued by KSERC
 - a. Board shall within one month initiate a work study to assess the reasonable level of employee strength and cost taking into consideration improvement in technology, possibility of outsourcing, mechanization, improved management strategies etc.
 - b. It is becoming more difficult to fund the present escalation of employee costs from the revenue from tariffs
 - c. Board has to take stern commitment to reduce the employee costs
 - d. Benefit of computerization and technology improvements adopted by the Board should reflect as reduction in employee expenses
 - e. Management of KSEB and the Government shall take positive steps to bring down the employee cost at par with the utilities of other states
 - f. The Board has to sincerely venture in for radical internal reforms to control the costs.
 - g. The reform measures are not aiming at retrenchment or reducing the existing benefits allowed to the employees but to aim at measures especially at the HR level that include
 - i. redesigning the tasks
 - ii. re-training
 - iii. re-tooling
 - iv. process re-engineering
 - v. infusion of proper IT and technology
 - vi. intervention aiming at improving the efficiency and productivity of employees
2. Kerala has one of the highest number of employees per MU of electricity sold in the country Of 1.92 (Kerala) to 1.12 (India).
3. IIM study on organization also furnished remarks as follows:
 - a. Benchmarking study has been done by IIMK to see the relative position of KSEBL with its competitors.
 - b. On analyzing the marginal contribution of each parameter to KSEB's efficient

performance, KSEB is on the frontier primarily because of low aggregate and technical losses and low power purchase cost.

- c. In order to improve efficiency, among other things, KSEB needs to focus on reducing the following:
 - i. Employee cost
 - ii. Administrative and general cost
 - iii. Operating and maintenance cost
 - d. Age of entry in KSEB being on higher side affects effectiveness of KSEB.
 - e. In distribution of technical core, management, administrative support staff and other support staff, for KSEB to be competitive, it makes sense to gradually start managing “other support staff” activities on contractual basis and try to bring down the number of “administrative support staff” to a more justifiable range of 5% of the total employee strength (from presently about 15%) in long run.
 - f. Many organizations now manage 100s of employees per administrative support staff (if at all needed) with liberal aid of computers and technology.
4. CEA regulations prescribe certain qualifications for workers employed for operation & maintenance distribution and transmission system and as well as for supervisors in this field.
 5. In view all the above and based on the final restructuring report, KSEBL require to make an action plan viz:
 - a. Present stipulations for recruitment and promotions to be reviewed
 - b. Modalities for accommodating the existing staff as well as new recruitment
 - c. Qualifications for entry cadre to be finalized
 - d. Qualifications for in-house candidates for promotion to various other higher posts needs to be fixed – this shall not collide with qualifications prescribed for direct recruitment to such higher posts.

B. The Committee constitution and meetings

Vide the above referred direction of CMD, the following committee members are assigned for review the draft proposal provided to the committee and to finalise the report.

1. Dr.P Rajan, Chief Engineer (Transgrid), Shoranur
2. Mohan Kumar B, Dy. Chief Engineer, Transmission Circle, Thiruvananthapuram
3. K P Pradeep, Deputy Chief Engineer(Grid), System Operation , Kalamaassery

4. Sivadas S, Executive Engineer, Transmission Division, Nallalam
5. Anil M, Executive Engineer, Transmission Division, Mavelikkara
6. Baby John, AEE, O/o Director (T&SO), Thiruvananthapuram
7. Renjana Devi K, AEE, 220 kV SSSD, Shoranur
8. Krishnendu M, AEE, TCSD, TransGrid, Kunnamangalam

The committee had a discussion on 15.5.2019 in the presence of the committee members, who has prepared the draft report in order to understand the modalities they have followed for preparation of the draft report. The draft proposal prepared by that Restructuring Committee was presented by the committee members. After discussions made on the draft proposal, the committee observed that few gaps exists and certain modifications are necessary for an efficient and effective transmission wing and to make the organization efficient and competitive in the present scenario. It was mentioned by restructuring committee that the current proposal is in view of CEA regulation, IIMK report, etc. However the committee has decided to review the complete proposal critically and to arrive in a model suitable for KSEBL, as the committee found few gaps in the draft report prepared by the earlier committee. The committee is also have a feeling that the actual field level inputs for the first committee were seems to be less and hence the new committee has decided to prepare a fresh report taking only the relevant information and excerpts from their report.

The past decade witnessed significant changes in the transmission wing and number of Substations and transmission lines were added to the network. Increase in the number of LT/HT/EHT consumers also necessitated development of new transmission lines/Substations. The corridor constraints now being faced for transmission of power also demands growth in the transmission infrastructure. Therefore both inter-state and intra-state transmission network should be strengthened to provide reliable quality power to consumers. For achieving the above objective, major projects are planned in the Transmission Wing in the recent years. The flagship project in the Transmission wing, viz. Transgrid 2.0 has already been started for improving the transmission network in the state. Hence within few years nearly two dozen EHT substations and interconnected lines would be in place, in order to ensure N-1 condition for both substations and lines. But as the network increases the quantum of work and the complexity of network also increases, which necessitates quality manpower trained to work in a safe and environmental friendly manner.

At present one 400 kV, twenty two 220 kV (including New Pallom Switching station), one hundred and fifty nine 110 kV, seventy three 66 kV and one hundred fifty nine 33 kV Substations are functioning in KSEB Limited. In the coming years, a fleet of new Substations will also be added with

the transmission network. The present transmission network length of KSEB Limited is 12045 circuit kilometers. By the works initiated for strengthening the transmission lines the network length will increase further.

The entire construction, operation and maintenance works under transmission wing are now under the control of two Chief Engineers one at Thiruvananthapuram & the other at Kozhikode. The works under Transgrid 2.0 is progressing under one Chief Engineer at Shornur, so as to complete the works of TransGrid in a time bound manner. Later on when the works of TransGrid is completed (around seven years) this office and places can be re-deployed suitably in consideration of the Operation & Maintenance of lines and substations augmented to the system.

From the perspective of optimum utilization of manpower, the present organizational structure need to be rearranged little, but without compromising the standards to be maintained in the construction, maintenance & operation activities in the transmission wing. More over the Relay, PET, Communication wing and Load Despatch centres are functioning under Transmission sector. System Operation and Monitoring is crucial, in maintaining the reliability of the Transmission system. Hence due importance is also given for the activities of System operation and Monitoring wing, while preparing this report.

Many new technological developments have taken place in the operation and maintenance activities of Substations and transmission lines. For improving the manpower productivity and achieving higher operational efficiency, technological up-gradation/improvements, including automation are considered in the Operation & Maintenance activity, while thinking of restructuring the existing functional units. For the construction of new Substations and Lines and also upgrading the existing line network, separate and dedicated team is proposed. The lessons from the existing organization, inefficiencies and shortcomings in comparison to a bench marked institutions can also be referred, while proposing modifications to the existing systems.

The new Committee for Transmission reorganization (hereinafter called as the Committee) subsequently had various meetings dated 28.5.2019, 13.6.2019, 4.07.2019, 20.7.2019, 26.7.2019 and 07.08.2019, 26.8.2019, 7.9.2019, 20.9.2019 and conducted deliberations in detail on each activity/process/functions in the transmission wing and arrived at various basic points/references/assumptions/concepts which are to be considered/followed while preparing suggestions for reforms viz:

1. The advancement of technologies used in Power Transmission
2. System changes brought in KSEBL in various processes in transmission
3. The Average System Availability achieved nationally in Transmission sector

4. Intrusion of ICT (Information, Communication and technology) in Electricity business.
5. Optimising manpower productivity and right sizing of the teams.
6. CEA regulations on measures related to safety and construction standards (latest).
7. KSERC directions regarding the Transmission SBU while approving ARR&ERC
8. Best practices in other utilities having similar business
9. Necessity elevating the responsibility of people or keeping discipline of the organization
10. Overall efficiency improvement and ensuring sustainability of the organization.

C. Functional Reorganization

The committee is of the general opinion that the functional areas shall be suitably driven by right people with right skills provided with right Tools & Plants, in order to improve the functional efficiency. Hence it is required to bring qualified people in the organization in each major functional area such as Electrical, SCADA & Telecom, Civil & Construction, Administration & HR, Accounts & Finance, QHSE, System Operation & Monitoring etc. Hence recruitment also shall be designed for each functional area with correct intake per year, so as to have reasonable career development and growth of employees. Also it generally agreed that only a satisfied team of employees can give rise to the output at needed level to make the organization best among others.

KSEBL being an integrated utility having its core business of Electricity Generation, Transmission, Distribution and System Operation & Monitoring, along with its support functions of Administration & HR, Finance & Accounting, Civil, QHSE, Audit etc.; it is required to specifically employ qualified and skilled people with right skill sets. The committee also reached a consensus that not only the core areas shall take 50% qualified people from open market, but also the support functional areas also shall have the same system to achieve the internal efficiency and manpower productivity. Hence while consideration of the overall improvement of the integrated utility; the suggestion on the constitution of the Board is also put up by the committee for review and approval (A typical proposal is shown in the last part of this report). The main objective of this reorganization is to achieve the functional efficiency, overall sustainability and balance in the organization. The mutual alignment of the functional units and effective cross functional coordination are two buzz words to be embraced by proposed organization to survive in a dynamic and competitive environment.

In **general an organization** shall have the following five basic parts/functional units and each functional unit shall have lean and mean structure & systems with skilled manpower to achieve the required level of operational efficiency.

1. Top Management
2. Middle Management
3. Technical Core (Lower level)
4. Technical Support staff (At all levels)
5. Administrative & Accounting support staff (At all levels)

Core functional areas in KSEBL are:

1. Distribution
2. Transmission
3. Generation
4. System Operation & Monitoring

Out of this the **Transmission sector** will be consisting of the following **core functional areas** viz:

1. Construction of Transmission lines & Substations
2. Operation of Transmission elements
3. Condition monitoring of the Transmission elements
4. Maintenance of Transmission elements

Major Support functional areas are:

1. Civil
2. Admin & HR
3. Finance & Accounts
4. Corporate affairs
5. QHSE
6. Audit

As pointed out in the IIMK studies KSEBL shall reduce the expenditure on support functions considerably up to 15% (Presently it is around 30%) and shall be just as per need, by virtue of the implementation of ICT (Information, Communication and Technology) across the organization. The actual construction works or projects must be executed on project finding mode and without time and cost overrun, by engaging the required civil and electrical construction staff. The office automation, computer technology also will bring down the staff

requirement in the support functional areas. Contract based system may be followed for the units which are not functionally efficient or not generating breakeven revenue, like 33kV and 66/110kV (minor) substation operations. If major expenditure heads are identified and austerity measures are tried in an un-biased manner, it is possible for our organization to achieve the operational profit and functional efficiency, thus to reduce the financial liability year by year.

D. Basic questions on effectiveness on Functional Units

The committee started its discussions with basic units in the Transmission wing at present and its duties and functions. Few questions asked by the committee themselves are as follows:

- Whether the manpower employed in Transmission sector is qualified enough to carry out O&M in EHT installations?
- Whether staff & Officers in Transmission wing are in possession of right skills?
- Any functional unit is redundant or inefficient as of now?
- Any manpower and resources are idling in a unit?
- Whether manpower supplied for O&M is sufficient or not?
- Are they optimally loaded as of now?
- Is there a better way of doing these functions more effective way?

Based on the above queries, the committee had detailed deliberations and analysed critically each functional unit and the major remarks and proposed staff pattern are detailed in each section.

E. Transmission Wing Re-Organization

1. Operation of 33kV (159 Nos), 66kV (73 Nos) and 110kV minor stations (118 Nos)

33kV/66kV/110kV substations are large in numbers and they play a vital role in the last mile connectivity and reliability of power to the consumers of the organization. Hence it is critical to maintain the lines and stations intact always, especially where there are no facilities for back feeding.

Currently 33kV substations are operated with technical watch and ward on contract with qualified technician grade people only. For 66kV and 110kV stations mostly the operators are on contract basis. Hence effectively there would be no change in its functioning, if we dispense with operators on permanent basis in these stations. As the operators now engaged are not having

uniform facilities, compensation, and training and welfare measures. Hence it may be useful to bring contract operators also under an organized entity which is specifically focussing on skilling and employing the qualified technicians. This can also increase the functional efficiency and productivity of the operation substations.

The maintenance team exclusively for one substation may also be dispensed and it can be entrusted to a team of specialised maintenance team for a clustered group of stations namely “Transmission section”. Also it may be noted that the operation and maintenance works in these stations are less when compared to a grid/major stations and hence the committee is of the view that permanent operating staff are not required in these minor stations, rather a competent team consisting of operator and shift assistant, qualified as per CEA norms, is proposed for operation and assisting upkeep & maintenance of the substation as per norms. The scope of work for the operation team would be as follows:

“To assist the engineer in charge of the substation for 24X7 operation with One operator (minimum Diploma qualified) and One technician (minimum ITI qualified) per shift (Both must have successfully completed necessary training as per CEA norms), reporting of details, maintenance, permit issue, issuing isolation certificate, housekeeping, safety and security of the substation as per the direction of the Engineer-in-Charge of the station and as per rules and regulations in vogue, including the cost of personal protective equipment as per norms etc, but excluding the cost of spares and tools used for mace of substation”

2. Operation of 110 kV Major Substations (41Nos)

Similar to the existing pattern, an independent operation team located in the same station is proposed for operation of major/110kV Major stations. Major stations are identified based on index worked out using the MVA capacity at each voltage level, Actual peak load of the station and number of bays to be maintained and the list of 41 major substations (110kV) are marked in the Table in **Annexure-1**, which are having the index more than the base value fixed by the committee. The staff pattern proposed for operation and assisting maintenance team will be as follows:

Assistant Engineer-Ele	-4
Technician	-4

3. Maintenance of 33kV (159Nos), 66kV (73N0s), 110kV minor stations (118Nos) and 110 kV major Substations (41Nos)

The scheduled and breakdown maintenance activities of these stations (**As per list in Annexure-1**) will be grouped under the maintenance sections known as “**Transmission Section**” usually assigned with maintenance of a geographically clustered stations (usually 2-5 substations as per actual site conditions), with an experienced Engineer as the team leader. He will be the custodian and in charge of all these 33/66/110 kV (Minor) stations (Other than major 110kV stations, since there is independent custodian (AE) for 110kV major stations).

The proposed group for one typical **Transmission Section (Major)** for maintenance of the group of stations as per cluster grouping will be with the following team members:

- | | |
|---|----|
| 1. Senior Engineer-Ele –Team Leader | -1 |
| 2. Junior Engineer Electrical – Team Supervisor | -1 |
| 3. Senior technician | -1 |
| 4. Technician | -1 |
| 5. Senior Mazdoor | -1 |
| 6. Mazdoor | -2 |
| 7. Driver (if own vehicle is available) | -1 |

Jeep facility also will be provided for the Transmission section either owned or hired, with 1500km in Urban areas and 2000km in rural areas.

The proposed group for one typical **Transmission Section (Minor)** for maintenance of the stations as per cluster grouping will be with the following team members:

- | | |
|--|----|
| 1. Senior Engineer-Ele –Team Leader | -1 |
| 2. Sub Engineer Electrical – Team Supervisor | -1 |
| 3. Technician | -1 |
| 4. Senior Mazdoor | -1 |
| 5. Mazdoor | -1 |
| 6. Driver (if own vehicle is available) | -1 |

Jeep facility also will be provided for the Transmission section either owned or hired, with 1500km in Urban areas and 2000km in rural areas.

An extended arm of this team will be assigned as “Station Assistant” who will be monitoring the day to day activities, reporting to the senior engineer of the maintenance team, housekeeping of the station, ensuring safety & security of the station, assisting maintenance team as and when required and carrying out all other works assigned by the controlling officer.

Following are the pattern of Station Assistants for each station:

- | | |
|---|----|
| 1. 33kV Stations-Technician | -1 |
| 2. 66kV Substations-Sub Engineer | -1 |
| 3. 110kV minor stations - Junior Engineer | -1 |

Similarly an extended arm of the above mentioned maintenance team (Transmission Section) will be provided in a major 110kV station consisting of one AE as “Station Engineer” and one Technician as “Station Assistant”, who will be monitoring the day to day activities, carrying out all day to day minor maintenance works as per the direction of the Transmission section head (Senior Engineer) with the help of station Assistant and operating staff, reporting to the maintenance team, housekeeping of the station, ensuring safety & security of the station, assisting maintenance team as and when required and carrying out other works assigned by the controlling officer. Moreover this Station Engineer will be the custodian and in charge of this 110kV (Major) station. The Technician will be assisting this Station Engineer in all the above activities.

The proposed pattern would be

- | | |
|--|----|
| Station Engineer- Assistant Engineer-Ele | -1 |
| Station Assistant- Technician-Ele | -1 |

Moreover, in these 110kV major substations, when there is shortage of operating staff on exigencies, the Station Engineer and the technician in that major station as mentioned above, will be taking the duty of operator and shift assistant respectively, in that 110kV station whenever required.

The Senior Engineer heading the maintenance team will be the time grade promotion cadre of the Assistant Engineer after a period of five years of service, so that experienced people will be heading the maintenance team and controlling officer to all these station Assistants and station Engineer.

4. Transmission Subdivisions (TSD)-60Nos

Transmission Subdivisions will be set up geographically by clustering the Transmission sections, as mentioned in **Annexure-1**. The jurisdiction of Transmission subdivision will be decided based on the substations under transmission sections and the geographical area. Usually 2 or 3 Transmission sections will form a Transmission Sub Division. The proposed staff pattern for the Transmission subdivisions are:

- | | |
|--|----|
| 1. Assistant Executive Engineer-Electrical | -1 |
| 2. Sub Engineer-Electrical –For DB works | -1 |

5. Transmission Subdivisions in 220kV stations (11 Minor (Except New Pallom)+10 Major)

Transmission Subdivisions will be assigned as the controlling office for 220kV substations and will be having supervisory control of Operation & Maintenance of the substations with the following staff pattern for Major 220kV substations:

- | | |
|--|----|
| 1. Assistant Executive Engineer-Electrical | -1 |
| 2. Sub Engineer-Electrical –For DB works | -1 |
| 3. Senior Engineer- Electrical | -1 |
| 4. Assistant Engineer-Electrical | -1 |
| 5. Junior Engineer-Electrical | -1 |
| 6. Sub engineer-Electrical | -1 |
| 7. Senior Technician-Ele | -1 |
| 8. Technician-Ele | -2 |
| 9. Senior Mazdoor | -1 |
| 10. Mazdoor | -1 |
| 11. Driver (if own vehicle is available) | -1 |

Similarly minor 220kV substations also will be provided with the following team

1. Assistant Executive Engineer-Electrical	-1
2. Sub Engineer-Electrical –For DB works	-1
3. Assistant Engineer-Electrical	-1
4. Junior Engineer-Electrical	-1
5. Sub engineer-Electrical	-1
6. Senior Technician-Ele	-1
7. Technician-Ele	-1
8. Senior Mazdoor	-1
9. Mazdoor	-1
10. Driver (if own vehicle is available)	-1

The minor sub divisions, wherever possible will be assigned as in charge of LMS for that Division. For maintenance of New Pallom substation only one Transmission section will be provided at New Pallom under Transmission subdivision Pallom, as it is only a switching station.

List of 220kV substations at present are listed in **Annexure-2** along with its classifications and the LMS units attached to the minor 220kV stations.

6. 33kV Line Maintenance Units (LMU)-Major -28Nos & LMU(Minor)-9Nos

Since 33kV line maintenance is essential to give 24X7 supply and the current system of maintenance of 33kV lines by distribution seems to be ineffective. Hence the maintenance of 33kV lines is also proposed under transmission wing by setting up a 33kV Line Maintenance Unit (LMU). This LM unit shall have the following staff pattern which will be under the JE in the office AEE in that Subdivision along with one separate jeep, tools, spares and PPEs, which will attend to all Routine and Breakdown maintenance of 33kV lines in that Subdivision area. The HQ of this section will be one of the substations from which more 33kV lines are emanating or the office of AEE whichever is convenient for operation and maintenance of 33kV lines. The list LMUs are shown in **Annexure-1**. The LMU will also be assisting the LMS as and when required as per the direction of the AEE in charge and vice versa.

33kV LMUs to be formed is depending upon the 33 kV line density in that Subdivision. In case of isolated and small bit of 33kV lines, the nearest subdivision LMU in that Division will be assigned for this bit of line also.

Following five member team under the leadership of a Junior Engineer, will be assigned for mace of 33kV lines (to specific substations mentioned in the list in Annexure-1). LMU will be under the control of the AEE of that subdivision:

Junior Engineer – Electrical (LMU in charge)	-1
Senior Technician	-1
Senior Mazdoor	-1
Mazdoor	-1
Driver (for LMU and if own vehicle is available)	-1

Own/hired vehicle with 1500kM in urban areas and 2000kM in rural areas will be provided along with a driver attached to the concerned subdivision.

If the 33kV lines are not that significant and far from the current LMU, an LMU(Minor) will be attached to the transmission section in the vicinity/originating station of 33kV lines and will be using the vehicle of that Transmission section, as and when required to maintain 33kV lines (If required on case to case basis). Minor LMU staff pattern as follows:

Sub Engineer – Electrical (LMU in charge)	-1
Technician	-1
Mazdoor	-1

33kV or 66kV UG cables will be looked after by the Transmission sections carrying out the maintenance the station from which the cables are originated or the section in charge of the station to which the cables are terminated as decided by the Executive Engineer of the Division/Deputy Chief Engineer of the Circle.

The Junior Engineer is considered to be a cadre for time grade promotion of sub engineers on completion of five years, so that an experienced sub engineer will be in charge of the maintenance team. The boundaries of 33kV lines will be assigned by CEs based on the lines up to 33kV substations as per the convenience for the LMU for access to lines and their maintenance. Typical assignment is shown in the Table in **Annexure-1**

Note: One extra overseer assigned for 33kV line mace in distribution sections can be withdrawn when LMUs are established.

7. Line Maintenance Section (LMS) – 28Nos

The committee has reviewed the present set up of LM sections carrying out the line maintenance. It is worth noting that LMS usually spend more time on travelling than their actual work since they are not geographically distributed. Also some of the Executive Engineers do not own the EHT lines, but only substations. Hence committee is of the view that Division head shall be responsible for all Transmission installations within his/her jurisdiction, which will improve the effectiveness of the maintenance and reduce the interruption time. The issue of coordination among divisions will not be an issue in EHT lines as the distance relays/fault locator in lines will provide the location of fault.

Hence the committee suggests having one Line Maintenance Section (LMS) per Transmission Division. Line Maintenance section is responsible for maintaining all the EHT lines under the jurisdiction of that Division. In specific areas where intensity of 220kV lines are very high, especially when Transgrid lines are established, separate LMS can be set up, if required according to the intensity of Transmission lines in a Division. for eg: Madakkathara, Kalamasseri, etc, if no LMS is located in these stations. List proposed LMS is shown in **Annexure-3**.

The staff pattern of Line Maintenance Section (LMS) proposed along with Tempo van/Traveller type vehicle and sufficient Tools and PPEs is as follows:

- | | |
|---|----|
| 1. Senior Engineer-Ele –Team Leader | -1 |
| 2. Junior Engineer Electrical – Team Supervisor | -1 |
| 3. Sub Engineer Electrical – Joint Supervisor | -1 |
| 4. Senior technician | -2 |

5. Technician	-2
6. Senior Mazdoor	-2
7. Mazdoor	-2
8. Driver (For LMS van)	-1

The Line maintenance section will be attached to Subdivision located in 220kV Substation in charge of the maintenance (hereafter it is known as Transmission Sub Division only) and in the absence of 220kV substation in a Division, the LM section will be attached to lightly loaded Transmission Sub Division in that Division. Line maintenance section should be equipped with sufficient tools and spares for routine/Breakdown maintenance of lines along with suitable own vehicle.

However in special cases the HQ and the boundaries of the LM section can be decided by the Chief Engineer concerned for easiness of functioning in discussion with concerned DCEs & EEs. Usually the philosophy followed for fixing HQ shall be the minor 220kV station or geographically centered station of the Division, so that the travel time can be minimized.

Similarly the boundaries for LMS shall be fixed as per the following philosophy

For 110kV & 66kV lines

- EHT lines to all substations within the Division boundaries and emanating from a station within the boundary of the Division
- For lines which are emanating from a station in some other Division, only the portion of the line lying within the Division area shall be looked after by that Division. Division can be defined by CE concerned.
- Even if a line is not getting terminated in a Division the portion of the line lying within the Division boundaries shall be maintained by the LMS under that Division. (Chief Engineer can decide otherwise if only a small length is passing through a Division)

For 220kV lines

- For 220kV lines CE may decide the boundary locations up to which one LMS will look after and it is usually up to Division boundaries (CE can decide otherwise if only a small length is passing through a Division)
- If special LMS are assigned in stations like Madakkathara, and Muzhiyar the boundary locations will be fixed by concerned CEs for easiness of operation & maintenance of lines.

8. Transmission Construction (TC) Subdivision-26 Nos

Presently TC sections are started as per local demand and those are not abolished/deployed when the work is completed. Hence the Committee is of the opinion that the regular civil/electrical construction/major civil/electrical maintenance of all installations under a transmission division (for Works up to 10Cr) shall be under this TC Subdivision in order to make it more effective and economical. Thus TC Subdivisions are proposed one each per Transmission Division in order to execute the construction and maintenance works in that Divisional area. This subdivision is responsible for all the construction/maintenance works related to buildings, substation, camp and other installations in that Division area, both civil and electrical. The proposed staff patterns for TC Sub Divisions are:

1. Assistant Executive Engineer-Electrical	-1
2. Assistant Engineer-Electrical	-1
3. Assistant Engineer-Civil	-1
4. Sub Engineer-Electrical	-1
5. Sub Engineer-Civil	-1

The HQ of the sub division, section etc can be fixed by the Deputy Chief Engineer suitably. Own/hired vehicle with 1500km in urban areas and 2000km in rural areas will be provided along with a driver attached to the concerned subdivision.

The works exceeding 10Cr can be separately dealt by forming separate section, under the concerned TC subdivision, on case to case basis, if the intensity of construction works is high in that Division area, with one AE, One SE (Ele/Civil) as per the nature of work, for the period of construction.

9. Power Transformer Repair(3Nos) and Power Equipment Refurbishing Units(2Nos)

The committee noticed that the Power Transformer repair Unit (PTRU) in KSEBL is giving very good contribution in repairing/overhauling of the Power Transformers, thereby saving the

asset/extending the life of the asset. Similarly the committee observed that much other power equipment like CT, PT, Isolator, LA etc can be refurbished/serviced and re-used.

Hence Power transformer Repairing Unit (PTRU), is proposed at Kozhikkode, Kalamassery and Edappon. Power Equipment Refurbishment Unit (PERU), is proposed at Pallom and Madakkathara. PTRU/PERU will be attached to the corresponding 220/400kV Sub station subdivisions.

The proposed Staff pattern of PTRU and PERU is:

1.Senior Engineer-Electrical	-1
2.Sub Engineer - Electrical	-1
3.Senior Technician-Ele	-1
4.Technician -Ele	-1
5.Senior Mazdoor	-1
6.Mazdoor	-1

10. Executive Engineers and Division offices – 23Nos

Transmission Divisions are considered to be the backbone in Planning, Construction, Operation & Maintenance of Transmission assets and hence strengthening the functioning of Transmission Divisions are inevitable. The number of Transmission Division can also be considered according to the group of Transmission Subdivisions and LM Sections; even then at least two Divisions per Circle (District) may be required considering geographic considerations and service to public, except in in Kasrgode, Wayanad and Pathanamthitta Divisions. In Idukki only one Division is existing now. But considering the upcoming 220 and 110kV networks and geography of the district, it is proposed to start another Division at Kattapana. The proposed staff pattern in a Transmission Division is

1. Executive Engineer Electrical – Team Head	-1
2. Assistant engineer-Ele -TA	-1
3. Sub engineer-Ele	-1
4. Sub engineer-Civil	-1

- | | |
|------------------------------|----|
| 5. Word Processing assistant | -1 |
| 6. Office Assistant | -1 |
| 7. PTC sweeper | -1 |

Usually each Transmission Division will be holding the Administrative control of two or three Transmission Sub Divisions as the case may be, One TC Sub Division, Transmission sub division for O&M of 220kV major stations and/or One Transmission sub division looking after maintenance of 220kV minor station and LMS.

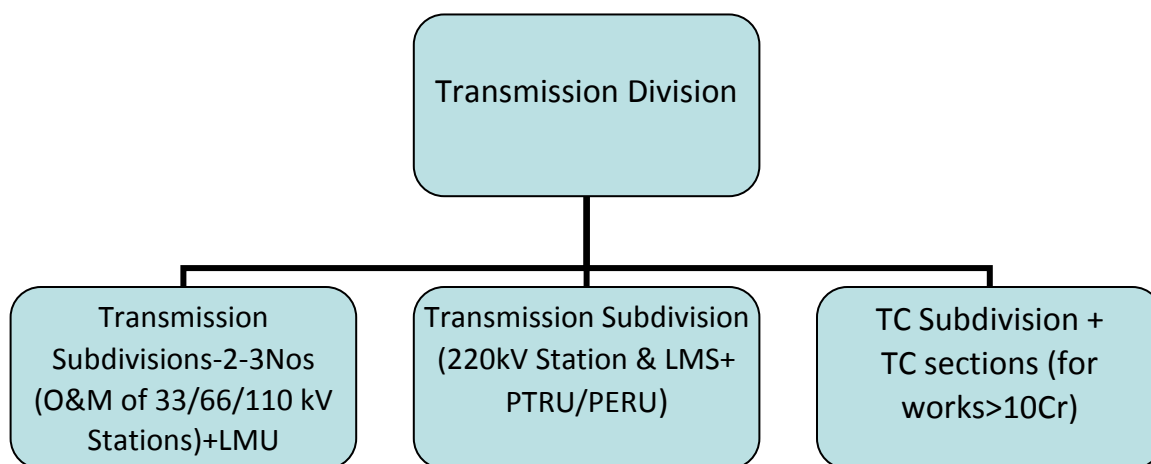


Figure 3: Typical Organization of the Transmission Divisions

Own/hired vehicle with 1500km in urban areas and 2000km in rural areas will be provided along with a driver attached to the concerned Division.

Proposed divisions are shown in **Annexure 1**

11.400kV Operation and Maintenance Divisions- 1 No

An independent team located in the same station is proposed and the staff pattern proposed for **operation and assisting maintenance team in main control room is as follows:**

- | | |
|-----------------------------------|----|
| Assistant Executive Engineer-Ele- | -4 |
| Senior Engineer-Ele | -4 |
| Sub Engineer-Ele | -4 |

For stations having separate control room for 11kV the following team is proposed

Sub Engineer-Ele -4

Technician -4

Office of the Executive Engineer will be consisting of

Executive Engineer -1

Senior Engineer-Ele -1

Junior Engineer-Ele -1

Sub Engineer-Civil -1

Office Assistant -1

Word Processing Assistant -1

Driver -1

PTC sweeper -1

Operation & Maintenance sub Division-2Nos for 400/220/110kV &Transformers

Assistant Executive Engineer-Ele - 1 per Sub division

Senior Engineer-Electrical -1 per Sub division

Assistant engineer-Ele -1 per Sub division

Junior Engineer Electrical -1 per Sub division

Sub Engineer-Ele -1 per Sub division

Senior technician -1 per Sub division

Technician -1 per Sub division

Driver -1

General Maintenance sub Division

To look after the day to day maintenance of the camp, offices, buildings, other general maintenances, Store activities etc one civil section and one electrical section will be under this sub division.

Assistant Executive Engineer –Ele -1

Assistant engineer-Ele -1

Sub Engineer-Ele -1

Assistant Engineer-Civil -1

Sub Engineer-Civil -1

Senior Mazdoor	-1
Mazdoor	-1
Driver	-1

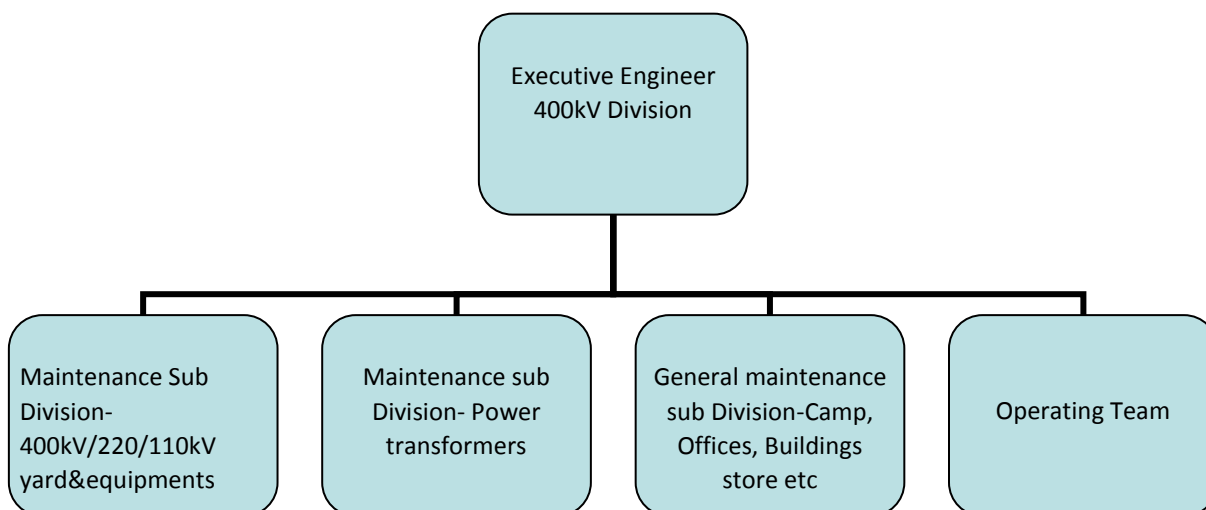


Figure 3: Typical Organization of the 400kV O&M Divisions

Executive Engineer will be provided with one car owned and Two jeeps owned for sub divisions would be the pattern for vehicles in this Division.

12. Power System Division (1No) and Sub Divisions (2Nos)

Presently Power system Engineering Division is located at DTSSO office and many times the LFS and analysis is getting delayed due to large number of proposal at one center. Hence it is proposed to have its arm in Regional centers also to facilitate the concerned regional heads to initiate study and analyze before any proposal sent to DTSSO.

So Power System Engineering Division with the following staff pattern is proposed which is under the direct control of D (T&SO);

1. Executive Engineer	- 1
2. Assistant Executive Engineer	- 1
3. Senior Engineer	- 2.

Thus Two PSE Subdivisions are proposed to deal with the PSE matters of each region under Office of CE, Transmission (North) and (South). The proposed staff pattern is:

- | | |
|---------------------------------|-----|
| 1. Assistant Executive Engineer | - 1 |
| 2. Senior Engineer | - 1 |

13. Transmission Divisions with ARU -3Nos

Currently one ARU is functioning in Pathanamthitta District. Similarly Wayanad and Kasargode needs more attention locally and hence Transmission Division (3nos) which are to be assigned as ARU, (Pathanamthitta, Kasargode and Wayanad) the staff pattern proposed additionally than conventional Division is:

- | | |
|------------------------------------|----|
| 1. Senior Engineer-Ele | -1 |
| 2. Divisional Accountant | -1 |
| 3. Superintendent | -1 |
| 4. Senior Financial Assistant | -2 |
| 5. Senior Administrative Assistant | -2 |
| 6. Junior Financial Assistant | -1 |

This arrangement will definitely improve the functional efficiency of the Transmission activities in the concerned Districts.

Own/hired vehicle 2000km will be provided along with a driver attached to the concerned Division.

14. Deputy Chief Engineers and Circle offices-11Nos

The establishment matters are proposed to be centralized and Transmission circle will be field ARU in due course. The proposed staff pattern in Transmission Circle until then is:

- | | |
|---|----|
| 1. Deputy Chief Engineer-Electrical | -1 |
| 2. Assistant Executive engineer Electrical-TA | -1 |
| 3. Senior Engineer(Ele) | -1 |
| 4. Assistant engineer-Ele | -1 |
| 5. Junior Engineer (Ele) | -1 |
| 6. Sub engineer-Ele | -1 |

7. Assistant Executive engineer-Civil	-1
8. Sub engineer-Civil	-1
9. Word Processing assistant (with Computer skill)	-1
10. Office Assistant	-1
11. Assistant finance Officer	-1
12. Senior Superintendent	-1
13. Senior Financial Assistant (AB-4)	-4
14. Senior Administrative Assistant (EB+GB)	-3
15. Junior financial Assistant	-1
16. PTC sweeper	-1

The proposal for centralizing the establishment is to be implemented in a phased manner, till then 1 SA for EB per Division is proposed for Divisions having more than 100 permanent staff.

Also in order to have a uniform pattern in naming of Transmission Circles it is proposed to change the name of Kalamasseri, Kottarakkara, Poovanthuruthu and Thodupuzha Transmission circles to Ernakulam, Kollam, Kottayam and Idukki Transmission circle respectively.

Own/hired vehicle 2000km will be provided along with a driver attached to the concerned circle.

Proposed Circles are shown in **Annexure-1**

15. Chief Engineers and Regional offices – 2Nos

At present it is proposed to have only two regional offices i.e. South and North, until the TransGrid projects are completed and when the network concentration is more in the central region, thereafter (After five years roughly) the Transgrid Team is proposed to be renamed as Chief Engineer (Transmission-Central) with HQ at Thrissur and will be looking after four districts (Palakkad, Thrissur, Ernakulam and Idukki). Then the north will be looking after five Districts and South will be looking after 5 districts. However for achieving better operational efficiency and functional effectiveness, the HQ of the Chief Engineer (Transmission-South) may be shifted to Kollam considering the geography and the network topology.

At present the activities of the office can even be carried out on line during the site visit, official travels etc of the Chief Engineer. Hence the presence of DCE in the office of CE may not be inevitable. Hence it is proposed to have 3 Executive Engineers i.e. One EE as TA to CE and general matters related to regional office. Second EE will be looking after the Capital works,

procurement, estimate, Tenders related to capital works. Third EE will be looking after all works related to O&M, condition monitoring and associated works.

There can one AEE per circle in regional office. One senior engineer per Division ARU. The head of office the Chief Engineer will be allocating works to all the staff and officers, which can be reviewed suitably by CE from time to time.

Typical staff strength proposed in regional offices is as follows:

1. Chief Engineer (Ele)	-1
2. Executive Engineer(Ele)	-3
3. Assistant Executive Engineers Ele	-5
4. Senior Engineer	-2
5. Assistant Executive Engineer-Civil	-1
6. Assistant Engineer-Civil	-1
7. Assistant Engineer-Ele-SCM	-1
8. Senior Supt-EB/GB where EB is handled	-1
9. Senior Financial Assistant	-1
10. Senior Administrative Assistant	-1
11. Junior Financial Assistant	-1
12. Sr.WPA	-1
13. WPA (with Computer skill)	-1
14. Sr.OA	-1
15. OA	-1
16. Sr. Driver	-1
17. PTC sweeper	-1

The proposal for centralizing the establishment is to be implemented in a phased manner, till then 1 Senior Administrative Assistant is proposed in CE's office.

Transmission Control centers (TCC) are also proposed in both the regions to coordinate the permit on EHT lines and shutdowns of EHT lines and substations in that region. TCC will be under the control of TA of CE and general-AEE in the office of CE.

Own car with driver will be provided.

F. System Operation & Monitoring (SOM) Wing Re-Organization

The office of the Chief Engineer (Transmission – System Operation) (CESO) formed in 1988 is responsible for the management of State Load Dispatch Centre (SLDC) in Kerala. State Load Dispatch Centre LDC is the apex body to ensure integrated real time operation of the power system in the State and is responsible for discharging various functions such as optimum scheduling and dispatch of electricity within Kerala (including those of purchasing/ selling energy directly from traders), monitor grid operations, exercise supervision and control over the intra-state transmission system, scheduling of power from Central Generating Stations, economic load dispatching, merit order dispatching, etc. observing the provisions of Electricity Act, 2003, Indian Electricity Grid Code, various regulations of CERF, Kerala State Electricity Grid Code and Regulations of KSERC.

Other responsibilities of the office CESO, Kalamassery involves maintaining Load Generation Balance of the Kerala Power System, scheduling of Internal generation, scheduling of CGS, LTA, Market Operations for the marginal quantity, Merit Order Scheduling (Economic load dispatching), Imposing real time restrictions on demand, contingency planning, black start, etc., Energy accounting for the entire power transacted through Kerala Grid., Issuing NOC for Open access, settlement of the transactions of open access consumers including KSEBL, Energy Accounts reconciliation of open access transactions., All regulatory matters connected with open access, power purchase and system management, representing in CERC and SERC for such matters. Representing KSEBL in various committees at regional level and national level, Nodal Officer for Power System Development Fund works in Kerala etc.

At present all other activities are coordinated to field level through the System Operation Circles at Thiruvananthapuram, Kalamassery and Kannur. The major activities include Commissioning testing, Performance monitoring testing of all electrical installation of KSEB Ltd. such as transformers, CT, PT, LA, Circuit breakers, meter and relays at substations etc.

Commissioning and maintaining of all communication networks including All Die Electric self Supporting (ADSS) & Optical Ground Wire (OPGW) optical fibre networks, PLCC networks and all communication equipment, periodic testing and corrective action, etc.

Planning of additional OF networks and expansion for providing visibility of the grid to SLDC, Leasing out of spare Optic Fibre capacities and Testing of roof top solar installation are also looked after by field units.

Since the major activities of the above field circles are System Monitoring and hence named as System Monitoring wing. But the Chief Engineer's office is involved in operation also and hence it is proposed to rename the CE-SO to CE-SOM (Chief Engineer-System Operation & Monitoring).

SOM wing and its activities mentioned above are seems to be in highly skilled areas when compared to other wings. Hence it is generally agreed to keep the activities of Relay & Protection, Meter Testing, Power Equipment Testing, SCADA and Telecommunication under Chief Engineer-SOM only, with its clear and adequate organization. The condition monitoring and communication & SCADA are going to be common in KSEB and the involvement of meter sections will be hectic due to the intrusion of renewable energy testing. Similarly the role of SCADA & Telecom is on the increase with the advent of Reliable Communication project and KFON.

1. Relay, PET and Meter (RPM) Sub Divisions (Major for each Circles)- 11Nos

The committee inferred that the current system of having separate sub divisions creates the issue of prolonged shut down in substations due to the independent activities of Relay, PET and meter. But if one sub division controls this, the activities of the sections can be combined in one substation so that the interruption of power can be minimized. Moreover the PET activities are not managed well due to their vast jurisdiction and heavy work load. This will affect the condition monitoring of Power equipment and the equipment life will be at risk. Hence numbers of PET sections are proposed now to meet the current work load. The meter sections are also heavily loaded due to their vast area and the works related to solar connectivity related testing. It is generally recommended for ensuring retention of skilled employees.

Hence it is proposed to have one RPM sub Division under an Assistant Executive Engineer for each transmission circle to take care of the Relay, PET and Meter testing and commissioning

activities in the circle. Also the RPM sections shall be lead by Senior Engineers so as to have experienced and senior people shall do the testing activities.

The proposed staff pattern would be as follows:

1. Assistant Executive Engineer (Relay, PET & Meter) 1 per each transmission circle

Relay section (Major)

2. Senior engineer (Relay) 1
3. Assistant engineer (Relay) 1
4. Senior Technician (Relay) 1
5. Technician (relay) 1

PET section (Major)

6. Senior engineer (PET) 1
7. Assistant engineer (PET) 1
8. Senior Technician (PET) 1
9. Senior Mazdoor 1
10. Mazdoor 1

Meter Section (Major)

11. Assistant Engineer (Meter) 1
12. Junior Engineer (Meter) 1
13. Senior Technician (Meter) 1

Own/hired vehicles with 2000km will be provided along with a driver attached to the concerned Relay section, PET section and Meter sections.

2. Relay, PET and Meter (RPM) Sub Divisions (Minor for each Division ARU)- 3Nos

It is proposed to have one minor sub Division for each Transmission Division ARUs to take care of the Relay, PET and Meter testing and commissioning activities within that ARU with reduced staff pattern. The proposed staff pattern would be as follows:

1. Assistant Executive Engineer (Relay, PET & Meter) 1 per ARU

Relay section (Minor)

2. Assistant Engineer (Relay) 1

3. Senior Technician(Relay)	1
4. Technician (Relay)	1
PET section (Minor)	
5. Assistant Engineer (PET)	1
6. Senior Technician(PET)	1
7. Senior Mazdoor	1
8. Mazdoor	1
Meter section (Minor)	
9. Assistant Engineer(Meter)	1
10. Sub Engineer (Meter)	1
11. Technician (Meter)	1

Own/hired vehicles with 1500km will be provided along with a driver attached to the concerned Relay section, PET section and Meter sections.

3. SCADA & Telecom (S&T) Subdivisions (11Nos) and sections- (20+2)Nos

As the work of OPGW, communication and SCADA are increasing and reliable communication project is in progress, it is proposed to have one sub Division for each circle to take care of the testing, maintenance and upkeep of SCADA and telecom Equipments in one circle area including the generating stations in that transmission circle area. At present only 20 sections are proposed. When 400kV Kottayam and 220kV Tirur substations are completed two more sections with HQ at Kuravilangadu and Tirur will also be started.

Out of the 22 sections 11 sections are proposed with Senior Engineers where the vital Transmission stations/Generating stations exists.

Engineers having B.Tech (ECE) is proposed as the qualification to the entry cadre to S&T wing officers. Similarly Sub Engineer and Technicians in S&T shall have Diploma and ITI in Electronics engineering respectively.

The Sub division is proposed to be renamed as SCADA & Telecom Sub division and proposed to have one sub division per transmission Circle under normal circles with less intensity of S&T activities. The proposed Staff pattern in Sub division is:

- | | |
|--|-----|
| 1. Assistant Executive Engineer- Electronics & Communication | -1. |
|--|-----|

The proposed Staff pattern of **SCADA & Telecom section** is:

- | | |
|---|-----|
| 1. Senior engineer/Assistant Engineer - Electronics & Communication | -1 |
| 2. Senior Technician -Electronics and Communication | -1 |
| 3. Technician -Electronics and Communication | -1. |

The proposed locations for SCADA & Telecom Sub divisions and sections are:

- | | |
|------------------------------|--|
| i. Kanjirode Sub Division | --Mylatty&Kanjirode(M) sections |
| ii. Nallalam Sub Division | --Nallalam(M)&Kaniyampatta sections |
| iii. Areecode Sub Division | --Areecode(M)&Thirur (Future) sections |
| iv. Shoranur Sub Division | --Shoranur & Kanjikode (M) sections |
| v. Madakkathara Sub Division | -- Madakkathara(M) & Chalakkudy sections |
| vi. Kalamassery Sub Division | -- Kalamassery(M) & Kothamangalam sections |
| vii. Pallam Sub Division | -- Pallam(M) & Kuravilangadu (Future) sections |
| viii. Edappon Sub Division | -- Edappon & Muzhiyar(M) sections |
| ix. Edamon Sub Division | -- Edamon(M) & Kundara sections |
| x. Moolamattam Sub Division | -- Moolamattam(M) & Chithirapuram sections |
| xi. Pothecode Sub Division | -- Paruthipara & Pothencode(M) sections. |

All these sub divisions/ sections are proposed to cover the communication and SCADA maintenance of generating stations also in that district/circle/nearby ARU area. Also the Kasargode, Wayanad and Pathanamthitta ARUs are attached to Kannur, Kozhikkode and Kollam S&T sub divisions respectively.

Own/hired vehicle with 1500km in urban areas and 2000km in rural areas will be provided along with a driver attached to the concerned S&T subdivision.

4. Transmission Network Management System (TNMS) (Kalamassery)-1No

The repair and maintenance in the Optical Fibre Cable Network interconnecting the Substations will be managed by the team. The existing system may be retained till the implementation of KFON.

Assistant Engineer	-1
Sub engineer	-1
Technician	-1

5. RPM Divisions (3Nos) & S&T Divisions (3 Nos)

The proposed three Field Division office HQs with one Executive Engineer for Relay, PET & Meter (RPM) with Sub divisions under the Division are proposed as follows:

- a. Kozhikkode Division : Kasargode, Kannur, Kozhikkode, Malappuram, Wayanad,
- b. Kalamassery Division : Palakkad, Thrissur, Ernakulam, Idukki
- c. Kundara Division : Thiruvananthapuram, Kollam, Alappuzha, Pathanathitta, Kottayam

Own/hired vehicle with 2000km will be provided along with a driver attached to the concerned Division.

The proposed three Division office HQs for SCADA & Telecom with Sub divisions under the Division are as follows:

- a. Kannur Division : Kasargode, Kannur, Kozhikkode, Malappuram, Wayanad
- b. Kalamassery Division : Palakkad, Thrissur, Ernakulam, Idukki
- c. TVPM Division : Thiruvananthapuram, Kollam, Alappuzha, Pathanathitta & Kottayam

Own/hired vehicle with 2000km will be provided along with a driver attached to the concerned Division.

6. System Monitoring Circles-3 Nos

System Monitoring circles are considered to be the field circles looking after the monitoring of activities related to Relay, PET, Meter, SCADA & Telecom etc. Since the imprest is made online, the SCM & SARAS also is implemented in Transmission, the operation as one ARU for SOM will not create much issue. Also the budget expenditure for these circles usually is very small and hence it is quiet expensive to maintain the ARU in these SM circles.

The staff pattern suggested for field circle office of the Dy.Chief Engineer, System Monitoring (SOM) Circle at Kozhikkode, Kalamasseri and Thiruvananthapuram are as follows:

1. Deputy Chief Engineer-EEE/EC	-1
2. Assistant Executive Engineer - EEE/EC –TA	-1
3. Senior Engineer – EEE/EC	-1
4. Assistant Engineer – EEE/EC	-1
5. Word Processing assistant (With Computer skill)	-1
7. Office Assistant	-1
7. PTC sweeper	-1

The proposed HQs for System Monitoring (Suggested to rename and relocate as) Circles and the Divisions under the same are:

- a. Kozhikkode Circle : (Relay, Meter & PET) Kozhikkode Division & (SCADA & Telecom) Kannur Division.
- b. Kalamassery Circle : (Relay, Meter & PET) Kalamassery Division & (SCADA & Telecom) Kalamassery Division.
- c. Thiruvananthapuram Circle: (Relay, Meter & PET) Kundara Division & (SCADA & Telecom) Thiruvananthapuram Division.

Own/hired vehicle with 2000km will be provided along with a driver attached to the concerned Circle.

7. System Operation & Monitoring- Chief Engineer Office

As stated earlier the System Monitoring (SM) circle deals with only small budget, it is opined that the ARU can be shifted to office of the Chief Engineer, System Operation & Monitoring (SOM) at Kalamassery. Hence the staff pattern suggested including that for ARU functioning is as follows:

1. Chief Engineer	-1
2. Deputy Chief Engineer-Electrical (Office&Grid)	-1
3. Executive Engineer- Electrical (Commercial, General, Load Dispatch)	-3
4. Executive Engineer- SCADA & Telecom (ECE)	-1
5. Assistant Executive Engineer - Electrical	-4
6. Assistant Executive Engineer - SCADA & Telecom (ECE)	-1

7. Senior Engineer-Electrical	-4
8. Senior Engineer- SCADA & Telecom (ECE)	-1
9. Finance Officer (For Power Purchase etc)	-1
10. Assistant Finance Officer (For ARU activities)	-1
11. Senior Superintendant	-1
12. Senior Financial Assistant	-4
13. Senior Administrative Assistant	-3
14. Junior Financial Assistant	-1
15. Senior Word Processing assistant	-1
16. Word Processing assistant (With Computer Skill)	-1
17. Senior Office Assistant	-1
18. Office Assistant	-1
19. Sr. Driver	-1
20. PTC sweeper	-1
21. Assistant engineer (Civil) - Camp	-1
22. Sub Engineer(Civil)- camp	-1
23. Assistant engineer (Electrical) - Camp	-1
24. Sub Engineer(Electrical)- camp	-1

The staff pattern suggested for LD station is:

1. Executive Engineer -Ele	-5
2. Assistant Executive Engineer-Ele	-5
3. Senior Engineer-Ele	-5.

Note: Since the duty in LD station shift is strenuous and consistent activity in all shifts, the shift time may be re arranged to six hours, ie, from 00.00 Hrs to 06.00 Hrs, 06.00 Hrs to 12.00 Hrs, 12.00 Hrs to 18.00 Hrs, 18.00Hrs to 24.00 Hrs; four shifts per day and rotation after four shifts, one mace day and one night off.

Own vehicle with driver will be provided for CE-SOM.

G. TransGrid 2.0 Organization

The National policy and the Electricity Act 2003 have put emphasis on the development of transmission sector through adequate and timely investments by preparing an efficient and coordinated action plan to develop a robust and integrated power system. The transmission system is expected to be capable of meeting the demand at any part of the network without any overloading / constraints in a secure, reliable, efficient and economic manner even under contingency conditions.

A major thrust with a focused effort was adopted in planning and developing a transmission network to meet the challenges expected in transferring power to Northern region and for evacuating power from the proposed high capacity ISTS projects. Also new technologies needs to be adopted for strengthening the reliability of intra-state sub transmission network for transferring power from intra-State power stations and that received at the ISTS touch points in an effective and economical manner. Kerala state is highly inhabited and the entire state has to be treated as an extended metro city for all purposes of transmission planning.

In consideration to the planning philosophy adopted to embrace the latest technological innovations including innovative business models and alternative construction methods available in the sector with a mission to enhance system reliability and security with minimum disturbance to environment and public at large and a green vision for better energy management through reduction in system losses, the revised Long Term Transmission Plan was christened as TransGrid 2.0, the future grid of the State.

The Transgrid team has started the Phase-1 works and the staff pattern in Transgrid for the projects taken up so far is as follows and the staffs are to be deployed to next project/O&M wing or abolished as and when one project is completed:

1. TransGrid Subdivisions & Sections (Electrical-12 &24 Nos, Civil 4&8 Nos)

Twelve subdivision offices of the Assistant Executive Engineer (Electrical) are existing under Transgrid Grid viz: Kannur, Thalasseri, Kozhikkode, Manjeri, Malapparamba, Kunnankulam, Chalakkudy, Kaloork, Aluva, Kothamangalam, Kottayam, Pathanamthitta, Vizhinjam; i.e three

Transgrid electrical sub divisions for each Division. The staff pattern for each subdivision will be normally.

1. Assistant Executive Engineer – Electrical	-1
2. Assistant Engineer - Electrical	-2
3. Sub Engineer – Electrical	-2

Also Civil sub divisions with Assistant Executive Engineer (Civil) are also functioning under Trans Grid, one each for Division viz: Kozhikkode, Shoranur, Kalamasseri and Kottayam.

1. Assistant Executive Engineer – Civil	-1
2. Assistant Engineer - Civil	-2
3. Sub Engineer – Civil	-2

2. TransGrid Divisions (4 Nos)

Division Offices with Executive Engineer is functioning under Trans Grid, Four Division offices viz: Kozhikkode, Shoranur, Kalamassery and Kottayam, i.e. two divisions for each circle.

1. Executive Engineer – Electrical	-1
2. Assistant Engineer- Electrical	-1
3. Sub engineer – Electrical	-1

3. Deputy Chief Engineer Trans Grid (2Nos)

Two Circle offices with HQ at Shoranur and Kalamassery are functioning under TransGrid with the following staff pattern namely Trans Grid Circle, North & South.

1. Deputy Chief Engineer – Electrical	-1
2. Assistant Executive Engineer- Electrical	-1
3. Assistant Engineer – Electrical	-2
4. Assistant Executive Engineer- Civil (Quality&Design)	-1
5. Word Processing assistant (With Computer skill)	-1
6. Office Assistant	-1

4. Office of Chief Engineer Trans Grid at Shoranur (1No)

One Chief engineer office working as ARU with overall control of all TransGrid projects is located at Shoranur.

1. Chief Engineer	-1
2. Executive Engineer- Electrical	-2
3. Assistant Executive Engineer- Electrical	-2
4. Assistant Engineer – Electrical	-4
5. Executive Engineer- Civil	-1
6. Assistant Executive Engineer- Civil	-1
7. Assistant Engineer – Civil	-2
8. Finance Officer	-1
9. Divisional Accountant	-1
10. Senior Superintendant	-1
11. Senior Financial Assistant	-3
12. Senior Administrative Assistant	-2
13. Junior Financial Assistant	-1
14. Senior Word Processing assistant	-1
15. Office Assistant	-1
16. Driver	-1
17. PTC sweeper	-1

The committee also suggested converting this office to form CE-Transmission Central region to look after the transmission network in central part of Kerala on completion of Transgrid projects.

Vehicle with 2000kM will be provided and attached to CE's office. All other offices shall hire the vehicles with 2000kM limit.

H. Quality, Health, Safety and Environment (QHSE) Team for Transmission

Any professional and good organization shall really address the QHSE needs of the organization and shall be under a separate team independent of execution wing, so as to have the freedom implementing the Quality system, Safety system, Health and Environment issues within the organization. The bench marked organization may be examined for this purpose and clear ISO/standard procedures must be defined and implemented in due course to develop the habit of following QHSE rules and procedures as part of Organizational Culture. Hence it is proposed to have at least One QHSE team under the Chief Engineer-QHSE, with its arms at regional and circle level also, so as to have independence of operation.

Deputy Chief QHSE Engineer-Transmission & Transgrid (DCE level) at HQ	-1 No
Regional QHSE Engineers (EE level) one for each Region/Transgrid(1)	-3 No
QHSE Engineers (AEE level) one for each circle/ARU/Transgrid (2)	-16Nos

QHSE manual for organization shall be prepared and circulated across the organization.

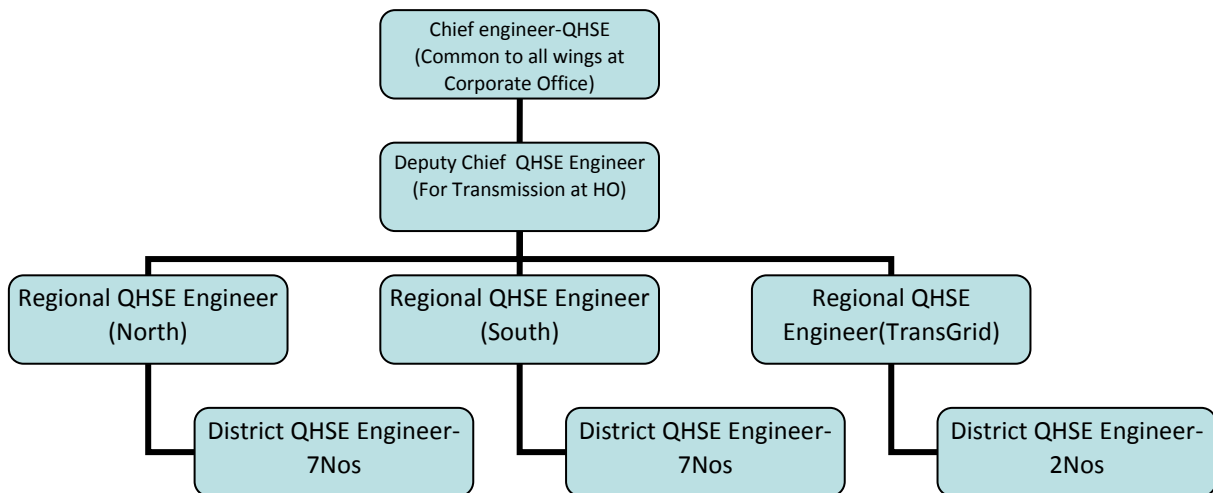


Figure 4: Typical Organization of the QHSE wing

Own/hired vehicle with 2000km shall be provided to each QHSE officer.

I. Vehicles Requirement for Transmission functional units

The pattern of department and rental vehicle is proposed as below:

Permanent drivers are proposed with Own Department vehicle for:

- Chief Engineers (Etios model Sedan)
- Deputy Chief QHSE engineers (Any model Sedan)

In addition to this, the following offices are also proposed for department vehicle, considering the urgent nature of work for supply restoration etc.

- EHT line maintenance section- 10 seated Travellor/van model vehicle
- 33 kV line maintenance section – Double cabin pick up Bolero/Nissan/Toyota
- Transmission sub division – Jeep/ Road master/Bolero type
- Relay, Meter and PET sections - Jeep /Road master/Bolero type
- SCADA & Telecom sections. - Jeep /Road master/Bolero type

All other vehicle can be on hired basis based on the need specified and the total requirement of vehicles is shown in **Annexure-6**.

J. Corporate Office for Transmission

Efficient smooth functioning of corporate office is also mandatory for the effectiveness of the subordinate offices. Hence the committee also proposed few suggestions on the organization of Transmission HO i.e DTSSO office. Deliberations are held on the issue of delayed completion of projects due the delay occurred in SCM activities. Hence few changes in SCM process is proposed.

The staff pattern suggested for office of the Director (T & SO) considering the SCM activities to be brought under the Director (By deploying one EE and 4AEEs from the office of SCM) and is proposed as follows which will be communicated to the committee for Corporate office reorganization before finalization:

1. Director (Transmission & System Operation)	-1
2. Deputy Chief Engineer – Electrical (TA to Director)	-1
3. Executive Engineer- Electrical (SCM & General)	-2
4. Assistant Executive Engineer- Electrical	
(2 for regions, 1 for Transgrid, 4 for SCM and one as PA to the Director)	-8

5. Assistant Executive Engineer- Civil	-1
6. Senior Word Processing assistant	-1
7. Word Processing assistant	-1
8. Senior Office Assistant	-1
9. Office Assistant	-1
10.Sr.Driver.	-1

Among the two EEs proposed, one EE is to deal with the SCM matters of Transmission, with two AEEs – one for each region. The EE is responsible for the SCM technical activities right from material planning, procurement right from Tender specification to purchase approval of Transmission wing. Administrative control this SCM wing will be the TA to Director, even though EE+4AEEs are assigned for SCM matters.

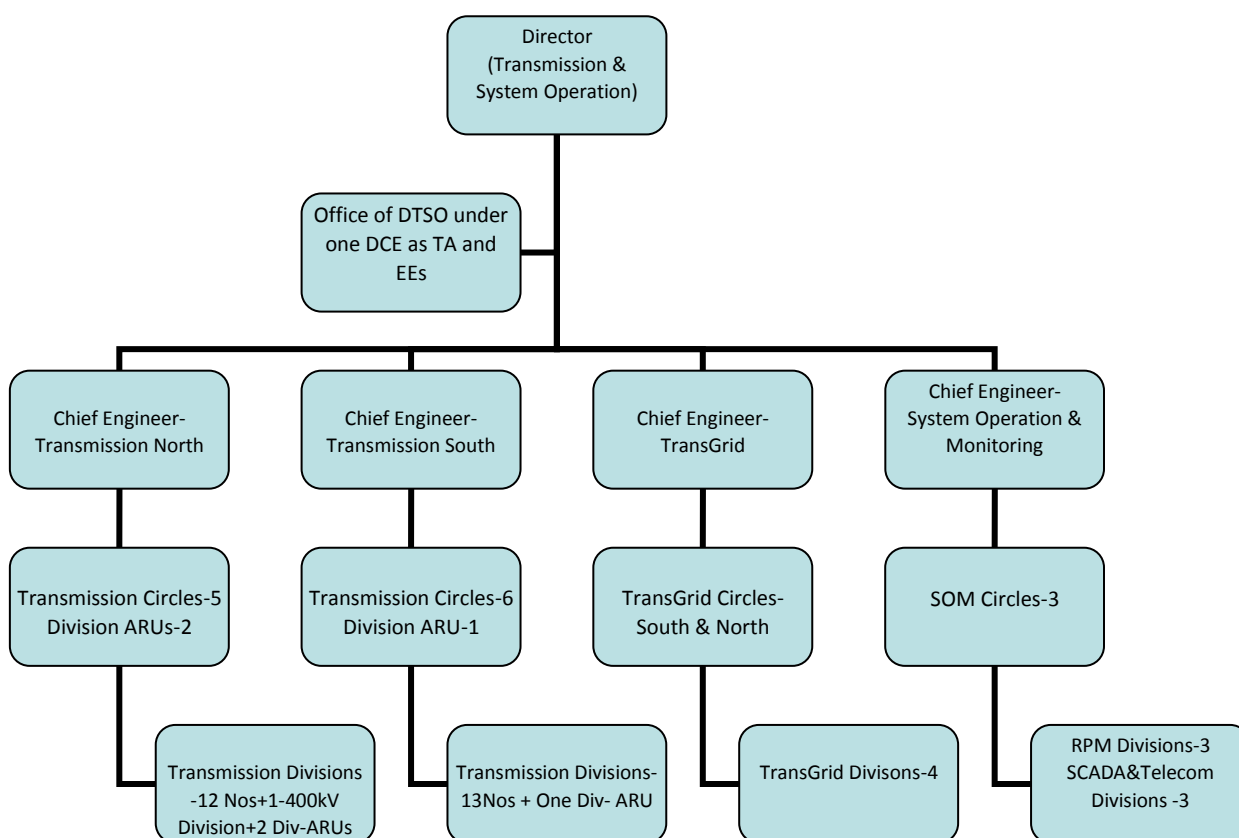


Figure 2: Typical Organization of the Transmission wing

K. Recruitment and Career Development

Committee members generally agreed on the need of bringing qualified professionals to all the functional areas and after discussions the committee made the following suggestions on the recruitment cadres and career growth channel for the people entering the organization.

Committee members generally opined that all entry carders shall allocate 50% qualified candidates from open market, 10% for internally qualified candidates and 5% to people on compassionate grounds. Balance 35% can be divided among the various in house streams but by testing the suitability by qualifying tests for respective higher positions duly approved by CEA/Statutory authority. Also necessary trainings shall be stipulated by KSEBL for each category and the credit requirements for each elevation shall be defined based on the skill sets required for each category.

The entry cadre and promotion channel of employees in

Core functional area (Electrical) positions can be proposed as:

- Mazdoor - Entry Cadre; SSLC/ equivalent failed
- Senior Mazdoor - 5 years in previous Cadre -Time grade promotion
- Technician - Entry cadre; Qualification-ITI/ITC in Electrician (2 Yrs)
- Senior Technician - 5 years in previous Cadre -Time grade promotion
- Sub Engineer - Entry cadre; Qualification- Diploma in Electrical (3 Yrs)
- Junior Engineer - 5 years in previous Cadre -Time grade promotion
- Assistant Engineer - Entry cadre; Qualification- B Tech in Electrical (4Yrs)
- Senior Engineer - 5 years in previous Cadre -Time grade promotion
- Asst Ex Engineer - Promotion of Sr. Engineers APAR + MBA/
Managerial Aptitude test (MAT) stipulated by KSEBL
- Ex Engineer - Promotion of AEEs-APAR + Management Development
Training (MDT) stipulated by KSEBL
- Dy Chief Engineer - Promotion of EEs- APAR + Leadership Advancement
Training (LAT) stipulated by KSEBL
- Chief Engineer - Promotion of DCEs as per APAR+DPC Selection

Similar pattern for Electronics & Communication stream (SCADA&Telecom) with Electronics and Communication qualification as Electronics & Communication Degree/Diploma/ITI and typical hierarchy is shown below.

Core functional area (SCADA&Telecom) positions can be proposed as:

- Technician - S&T - Entry cadre; Qualification-ITI/ITC in Electronics (2 Yrs)
- Senior Technician- S&T - 5 years in previous Cadre -Time grade promotion
- Sub Engineer- S&T - Entry cadre; Qualification- Diploma in Electronics (3 Yrs)
- Junior Engineer- S&T - 5 years in previous Cadre -Time grade promotion
- Assistant Engineer- S&T - Entry cadre; Qualification- B Tech- Electronics & Commn (4Yrs)
- Senior Engineer- S&T - 5 years in previous Cadre -Time grade promotion
- Asst Ex Engineer S&T - Promotion of Sr. Engineers APAR + MBA/
Managerial Aptitude test (MAT) stipulated by KSEBL
- Ex Engineer-S&T - Promotion of AEEs-APAR + Management Development
Training (MDT) stipulated by KSEBL
- Dy Chief Engineer(SMC) - Promotion of EEs- APAR + Leadership Advancement
Training (LAT) stipulated by KSEBL

Similarly civil Engineers with Civil engineering qualifications (for Transmission Construction) can also be proposed for KSEBL depending on the actual requirements of people to execute the works capital & maintenance civil works in these functional areas and the levels are shown below.

Support functional area (Civil) positions can be proposed as:

- Technician - Civil - Entry cadre; Qualification-ITI/ITC in Civil Engg (2 Yrs)
- Senior Technician- Civil - 5 years in previous Cadre -Time grade promotion
- Sub Engineer- Civil - Entry cadre; Qualification- Diploma in Civil Engg (3 Yrs)
- Junior Engineer- Civil - 5 years in previous Cadre -Time grade promotion
- Assistant Engineer- Civil - Entry cadre; Qualification- B Tech- Civil Engg (4Yrs)
- Senior Engineer- Civil - 5 years in previous Cadre -Time grade promotion
- Asst Ex Engineer - Civil - Promotion of Sr. Engineers APAR + MBA/
Managerial Aptitude test (MAT) stipulated by KSEBL
- Ex Engineer- Civil - Promotion of AEEs-APAR + Management Development
Training (MDT) stipulated by KSEBL

The proposal for support staff under Administrative wing would be as follows:

- Office Assistant - Entry Cadre; SSLC/ equivalent failed
- Senior OA - 5 years in previous Cadre -Time grade promotion
- WPA - Entry cadre; Quali-Plus Two (2 Yrs)+Computer skill
- Senior WPA - 5 years in previous Cadre -Time grade promotion
- Junior Admin Assistant - Entry cadre; - Any degree (3 Yrs)
- Senior Admin Assistant - 5 years in previous Cadre -Time grade promotion
- Superintendent - Entry cadre; Any Degree with MBA(HR)/MPA
- Senior Superintendent - 5 years in previous Cadre -Time grade promotion
- Asst Admin Officer - Promotion of SS- APAR + Managerial Aptitude
Test (MAT) stipulated by KSEBL
- Administrative Officer - Promotion of AAO -APAR + Management
Development Training (MDT) stipulated by KSEBL
- Dy Chief Admin Officer -Promotion of AOs- APAR + Leadership
Advancement Training (LAT) stipulated by KSEBL
- Chief Admin Officer - Promotion of DCAOs as per APAR+DPC Selection

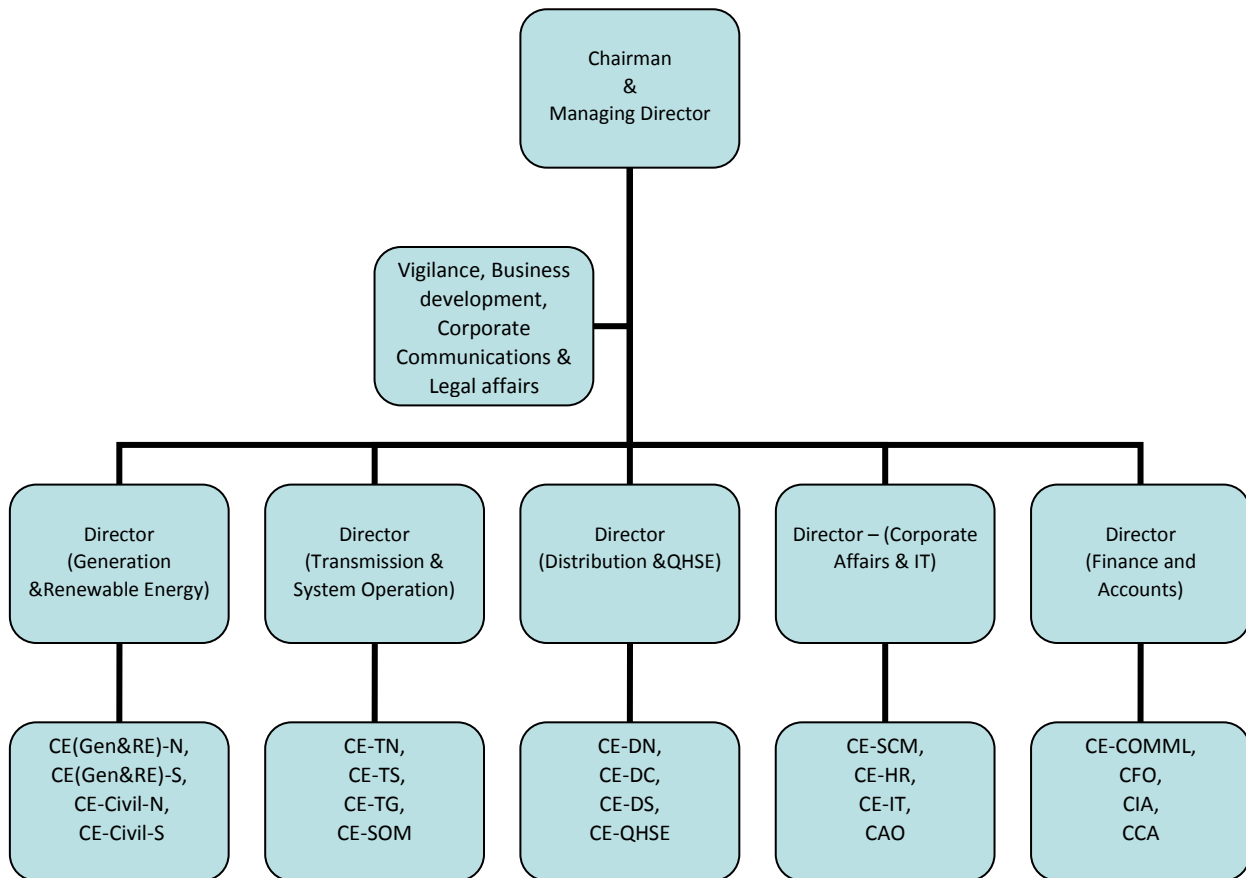
The proposal for support staff under Accounts wing would be as follows:

- Junior Financial Assistant - Entry cadre; - B.Com/B.Sc(Maths) degree (3 Yrs)
- Senior Financial Assistant - 5 years in previous Cadre -Time grade promotion
- Divisional Accountant - Entry cadre; B.Com/B.Sc(Maths) degree
with CA/ICWA/MBA(Fin)
- Senior Divisional Acctnt - 5 years in previous Cadre -Time grade promotion
- Asst Finance Officer - Promotion of SDA- APAR + Managerial Aptitude
Test (MAT) stipulated by KSEBL
- Finance Officer - Promotion of AFO -APAR + Management
Development Training (MDT) stipulated by KSEBL
- Dy Chief FO -Promotion of FOs- APAR + Leadership
Advancement Training (LAT) stipulated by KSEBL
- Chief Finance Officer - Promotion of DCFOs as per APAR+DPC Selection

Detailed table on the above are shown in **Annexure-4&5.**

L. Suggestion on Board Re-Constitution

Even though the Transmission committee's terms of reference does not include the proposal on corporate office and Board, the committee is of the feeling that the Top management team shall also be in synch with the bottom level organization and balanced. Hence it is proposed to have a Board as per the following on the functional wings in KSEBL as shown in the organization chart.



CIA-Chief Internal Auditor; CCA-Chief Concurrent Auditor

Figure 1: Typical Organization of the Board

M. General recommendations

Based on the above functional grouping and support wings in Transmission wing, the committee has also come up with few general suggestions for effective cross functional coordination and ensuring quality of manpower along with the career growth of the employees.

- a. The excess staff arising on implementation of this proposal will be shelved and used for future requirements of diversification and expansion.

- b. 50% of the entry cadre shall be recruited from open market having the respective qualifications for each entry category.
- c. 10% of each entry cadre shall be reserved for candidates from lower cadres who possess the required higher qualification.
- d. 5% in the entry cadres may be reserved for die in harness or compassionate ground appointments as per the qualification, so that the delay in appointing compassionates is avoided.
- e. Balance 35% each entry cadre shall be reserved for those who successfully complete the stipulated course work and pass the qualifying test which is approved by the CEA /authority for their elevation to the next position. (Eg. Technician Qualifying Test (TQT), Supervisor Qualifying Test (SQT), Officer Qualifying Test (OQT), etc duly approved by statutory authority)
- f. Stipulated qualifying tests, APAR, Management Aptitude Test (MAT), Management Development Training (MDT), Leadership Advancement Training (LAT) and other stipulated trainings shall be mandatory for elevation to higher positions.
- g. All offices should have facility for the Biometric punching and shall have Duty IN, Duty OUT, Work IN and Work OUT options for punching. Abnormalities, if any, will only be notified to next higher authority for the approval on line.
- h. General shift timing across organization shall be redefined as 9 am to 5pm from Monday to Friday and only 1st & 4th Saturdays (Two) as working days. Thus total working hours per week shall be around 40 Hrs. This is required to extend service to public always, as all the offices starts functioning at 9am.
- i. Shift timing for operators shall be 5-13, 13-21, 21-5 (Night shift) for all places in generation and Transmission where shift system is followed. The shift rotation can be 7+7+7 basis with one day night duty off after 7 night shifts and suffixing compensatory off for each holiday the operator works.
- j. It is also required to have an Annual Maintenance plan for all the assets duly monitored by a Real time Online Maintenance Monitoring System.
- k. If any special construction project works above 10.0Cr is executed, additional civil/electrical construction section can be formed as per the nature of work as decided by the concerned Director at that time, for the period of the new project. Such posts taken from the shelved places and must be reserved again within three months of project COD.
- l. Since all the lines and substations under transmission will satisfy N-1 criteria and the

conventional porcelain insulators are replaced with polymeric insulators shortly, the requirement of hot line mace may not be inevitable. Hence Hotline mace team can be retained for essential work as a special team.

- m. It is also suggested that only one third of employees in a pooled category may only be transferred from a specific unit in a year, so that the general transfers will not affect the smooth functioning of the skilled units in the organization.
- n. Inter functional unit transfers shall be limited to only those who have successfully completed the mandatory training for that functional area as stipulated by KSEBL.
- o. The proposal as per this report shall be fully implemented within two years, by formulating appropriate strategy.
- p. PCA shall be admitted to the eligible employees who are frequently travelling for discharge of their official duties, thereby writing TA bills by touring officers for travel within their jurisdiction can be dispensed. PCA can be allowed as a percentage of Basic pay monthly.
- q. It is generally opined that the employees shall be more responsible and adhere organizational discipline. Hence the disciplinary authority of an employee may be assigned to next higher authority to the controlling officer (i.e. reviewing officer in APAR). This will enable more discipline in the organization and increase the productivity.
- r. It is proposed to provide a category change with a time grade promotion after successful completion of five years of service in each of the entry cadres to increase the organizational efficiency by assigning more skilled jobs to experienced people.
- s. Employees can be classified from Level 1 to Level 9 and the same level in each functional wing can be considered as similar in the hierarchy, but the pay, promotion chances and elevation may depend on the channel of that particular employee. The hierarchy for each functional wing is shown in section K.
- t. Level 8 (CE level) will be purely a selection level, based on the APAR and DPC recommendation and not based on the seniority alone in order to increase the effectiveness of the senior management in the organization.
- u. The committee is of the opinion that regular intake of 10% of the sanctioned strength of entry cadre shall be recruited every year and hence within five years 50% (Open market quota) will be inducted in a span of five years regularly. Moreover career stagnation and other issues will also be reduced to a great extend. This will also improve the internal efficiency of the organization.
- v. All the vehicle existing in Transmission wing may be deployed as per new requirement and

only what is required additionally & new type may be hired or purchased.

- w. All the required Tools, Plants, equipments, testing instruments needed for additional teams due to the new proposal shall also be purchased after making the need assessment.
- x. Whenever required the controlling officers are authorised to pool the manpower, equipments and tools as the case may be, to meet the exigencies of work temporarily to any other office.
- y. Normally the employee transferred to one position shall be allowed to work minimum of two (remote areas or >250km)/three (Normal areas or <250km) years before allowing a transfer to that employee.
- z. It is mandatory to attend the interruptions round the clock to ensure 24X7 Hrs supply to public. Hence we need to improve the safety measures to work 24X7 in all circumstances.

N. Conclusion and Way forward

The approach taken by the committee is to increase the effectiveness of the functional units under transmission wing by rearranging the existing human resources and geographically regrouping the offices according to the work load, nature of work etc. The following are the major benefits envisaged by this reorganization viz:

- Increasing the organizational effectiveness
- Increasing system reliability and availability
- Reducing the frequency and duration of interruption
- Increased revenue due to additional sale of power
- Reducing the cost of manpower

However the committee is of the strong opinion that the organization shall ensure the required **Skills for its employees** in each functional area, for achieving greater operational efficiency.

Also there shall be systems to assess the skills of the employees periodically, train/refresh them as and when required. **The system** for right selection, right training, right compensation, retaining the skilled people etc shall be an integral part to become a professional organization.

The present hierarchical organization and more centralised functioning will reduce the functional efficiency of the units. **The Structure** of the organization shall be little more flexible to ensure

result oriented functioning and cross functional team formation so as to make it more efficient.

The general suggestions made under section M above contains the points to address the above issues thus to improve the organizational effectiveness and Service Quality.

The current proposal on operation of 33/66/110kV stations on contract basis can create some issues related to the contracting, quality assurance, safety and security of the people so employed in an unorganized manner. Hence the committee proposes that KSEBL to set up a subsidiary company, namely **Kerala Power Infrastructure & Services Company (KPISC)** which must be a skilled organization in specialised services for consultancy, construction, operation & maintenance activities in power sector, which are now executed through separate individual contracts. This will reduce the overheads of KSEB and functionally more efficient and create a win-win situation. There can be an MOU signed between the subsidiary company and KSEBL on the rate and terms of such contract. Moreover as a part of diversification, this company can look for services to other utilities and entities for generating more money to make that organization self sustainable. Similarly the available resources with KSEBL in Engineering, design, Management etc can also be used for diversification of the business, if required. Any type of such vertical integration or horizontal expansion may be thought of for generating additional non Tariff income and to reduce Tariff hike to the common customer of KSEBL.

It is also recommended to start one “**Technology Centre & Museum**” by KSEBL at Thiruvananthapuram, to display the legendary and modern technology in Transmission, Distribution & Generation sectors, for educating the future generations about the various technological advancement and history of electricity sector. The proposed museum shall be preferably in the power house building at TVPM, as there is some archaeological and heritage value for that premises.

It is expected that the functional efficiency, manpower productivity will show its results only after one year of its full implementation of this proposal. However the transfer among groups and wings must be declared early and the employee must undergo necessary induction training before their request for Transfer is entertained.

Details of offices, staff strength in each office and categories are shown in **Annexure 4&5** in the various functional wings and its total place requirements in each category for smooth functioning of

the Transmission wing in KSEBL. Since the new proposal contains LMU for 33kV line maintenance (28X5+9X3 Places), Station Assistants at 33kV substations (159X1No), PERU (2X6 Places), TransGrid (127 Places), QHSE wing for Transmission (24 Places), 33kV Station Assistants (159Nos), Additional PTRU (1X6 places), Additional staff under DTSO office for SCM etc, the actual proposed strength for conducting the prevailing functions are less than the current working strength.

If we are considering the actual strength as per the staff pattern for each office (Permanent and Contract) the total strength proposed now is considerably less in numbers, which can reduce the overall employee cost of the organization.

The newly proposed strength in various functional areas is as follows:

1. Transmission wing	- 3313
2. System Operation wing	- 326
3. QHSE wing	- 24
4. TransGrid	- 127

The staff strength functional area wise are as shown below

1. Core engineering-Electrical, Safety, TransGrid	- 3060
2. Core engineering Electronics & Communication	- 80
3. Support wing-Civil Engineering	- 136
4. Support wing – Accounts	- 89
5. Support wing- Administration & General	- 425

The proposed duties and functions of the offices are shown in **Annexure-7** and will be subject to review as per the systems and procedural changes in the organization.

The committee recommends having a system for periodic review and revising the human resource pattern according to the technological and procedural changes adopted by the organization from time to time.

Annexure 1:- List of Substations, Transmission Sections/Subdivisions/Divisions/Circles, LMUs

Code	Region	Trans. Circle	Trans. Division	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks
KNR-1	Chief Engineer- Transmission-Northern Region	Kannur	Kanhirode	TSDN	Mattannur	Iritty	Major	110 KV S/S Iritty	JE	Recently Upgraded to 110kV	
KNR-2								110 KV S/S Nedumpoil	JE		
KNR-3								33 KV S/S Tholambra	TN		
KNR-4								33 KV S/S Kelakam	TN		
KNR-5						Mattannur	Major	110 KV S/S Mattannur	AE	Recently Upgraded to 110kV	
KNR-6								110 KV S/S Sreekantapuram	JE		
KNR-7								33 KV S/S Pazhassi	TN		
KNR-8								33 KV S/S Kuttiyattur	TN		
KNR-9				TSDN	Pinarai	Koothuparambu	Major	110 KV S/S Kuthuparamba	JE	LMS	LMS Kanhirode - Under Future 220kV subdivision at Thalasseri
KNR-10								110 KV S/S Panoor	AE		
KNR-11								110 KV S/S Valiavelicham	JE		
KNR-12								33 KV S/S Puthur	TN		
KNR-13						Pinarai	Minor	110 KV S/S Thalassery	JE		
KNR-14								110 KV S/S Pinarayi	JE		
KNR-15								33 KV S/S Dharmadam	TN		
KNR-16								33 KV S/S Kodiyeeri	TN		
KNR-17			Kannur	TSDN	Kannur	Azhikode	Minor	110 KV S/S Azhikode	AE	LMU	33kV lines to Dharmadam, Kodiyeeri, Puthur, Tholambra, Kelakam, Thottada-2
KNR-18								110 KV S/S Mangad	JE		
KNR-19								33 KV S/S Kannur Town	TN		
KNR-20						Mundayad	Major	110 KV S/S Mundayadu	AE		
KNR-21								110 KV S/S Chovva	JE		
KNR-22								33 KV S/S Puthiyatheruvu	TN		
KNR-23								33 KV S/S Thottada	TN		
KNR-24				TSDN	Payyannur	Cherupuzha	Minor	110 KV S/S Cherupuzha	JE		
KNR-25								33 KV S/S Alakkode	TN		
KNR-26								33 KV S/S Nadukani	TN		
KNR-27						Payyangadi	Minor	110 KV S/S Payyangadi	JE		
KNR-28								110 KV S/S Ezhimala	JE		
KNR-29								110 KV S/S Payyannur	AE		
KNR-30						Payyannur	Minor	33 KV S/S Pariyaram	TN		
KNR-31								33 KV S/S Payannur Town	TN		
Code	Region	Trans. Circle	Trans. Division	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks
KGD-1	Chief Engineer-Transmission-Northern Region	Kasaragod (DN-ARU)	TD Kasaragod	TSDN	Kanhagad	Cheruvathur	Minor	110 KV S/S Cheruvathur	JE	LMU	33kV lines to Thrikkarippur, west Elery, Neeleswaram, Belur, Rajapuram, Kanhagad town
KGD-2								33 KV S/S Thrikkaripur	TN		
KGD-3								33 KV S/S West Elery	TN		
KGD-4								33 KV S/S Neeleswaram	TN		
KGD-5						Kanhagad	Minor	110 KV S/S Kanhagad	AE		
KGD-6								33 KV S/S Belur	TN		
KGD-7								33 KV S/S Kanhagad Town	TN		
KGD-8								33 KV S/S Rajapuram	TN		Newly added
KGD-9				TSDN	Kasaragod	Kasaragode	Minor	110 KV S/S Kasargode (Vidyanagar)	AE	LMU(Minor)	33kV lines to Ananthapuram, Kasargode town
KGD-10								33 KV S/S Ananthapuram	TN		
KGD-11								33 KV S/S Kasargod Town	TN		
KGD-12								110 KV S/S Kubanoor	JE		
KGD-13						Manjeswaram	Minor	110 KV S/S Manjeswaram	JE		
KGD-14								110 KV S/S Mulleria	AE		
KGD-15								33 KV S/S Badiyadukka	TN		
KGD-16								33 KV S/S Perla	TN		

Annexure 1:- List of Substations, Transmission Sections/Subdivisions/Divisions/Circles, LMUs-Contd

Code	Region	Trans. Circle	Trans. Division	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks
KDE-1	Chief Engineer-Transmission-Northern Region	Kozhikkode	Kozhikkode	TSDN	Chevayur	Chevayur	Minor	110 KV S/S Chevayur	AE		
KDE-2								110 KV S/S West Hill	JE		
KDE-3								66 KV S/S Kuttikattoor	SE		
KDE-4						Kuttikattoor	Minor	66 KV S/S Mavoor (Ambalaparamba)	SE		
KDE-5								33 KV S/S Vellannur	TN		
KDE-6				TSDN	Koduvally	Agastiamoozhi	Minor	110 KV S/S Agastiamoozhi	JE	LMU	33kv lines to Vellanur, Thambalamanna, Urumi, chembukadavu
KDE-7								33 KV S/S Thambalamanna	TN	Generation source	WIP Future 110kV
KDE-8								33 KV S/S Urumi	TN	Generation source	
KDE-9						Koduvally	Minor	110 KV S/S Kunnamangalam	AE	LMS	LMS Kozhikkode- Under future- 220kV subdivision at Kunnamangalam
KDE-10								110 KV S/S Koduvally	JE		
KDE-11								66 KV S/S Thamarassery	SE		
KDE-12				TSDN	Gandhi Road	Feroke	Minor	66 KV S/S Cyber park	SE	LMU(Minor)	33kv lines to Ramanattukara, Feroke, KINFRA
KDE-13								33 KV S/S Feroke	TN		
KDE-14								33 KV S/S Ramanattukara	TN		
KDE-15								110 KV S/S Gandhi Road (GIS)	JE		
KDE-16						Gandhi Road	Minor	66 KV S/S Mankavu	SE	WIP Future 110kV	
KDE-17								66 KV S/S Puthiyara (GIS)	SE		
KDE-18								110 KV S/S Koyilandy	JE		
KDE-19								110 KV S/S Kinaloor	JE		
KDE-20								33 KV S/S Balussery	TN		
KDE-21			Vadakara	TSDN	Meppayur	Koyilandy	Minor				
KDE-22								110 KV S/S Meppayur	JE	LMU	33kv lines to Balusseri, Melady, Perambra, Thiruvellur, Poozhithodu, Vilangad
KDE-23								33 KV S/S Melady	TN		
KDE-24								33 KV S/S Perambra	TN		
KDE-25				TSDN	Vadakara	Kuttiadi	Minor	110 KV S/S Kuttiyadi	JE	Generation source	Poozhithode
KDE-26								110 KV S/S Nadapuram	JE	Generation source	Vilangad
KDE-27								110 KV S/S Vadakara	JE		
KDE-28						Vadakara	Minor	110 KV S/S Chakkittapara	JE		
								33 KV S/S Thiruvellur	TN		
Code	Region	Trans. Circle	Trans. Division	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks
WYD-1	Chief Engineer-Transmission-Northern Region	Wayanad (DN-ARU)	TD Kaniyambetta	TSDN	Ambalavayal	Ambalavayal	Minor	66KV S/S Ambalavayal	SE		
WYD-2								33 KV S/S Meenangady	TN		
WYD-3								66 KV S/S Sultan Bathery	SE		
WYD-4						Sultan Bathery	Minor	33 KV S/S Pulpally	TN		
WYD-5				TSDN	Mananthavady	Kuthumunda	Minor	66 KV S/S Kuthumunda	SE		
WYD-6								33 KV S/S Kalpetta	TN	LMU	33kv lines to Menangadi, Pulpally, Kalpetta, Padinjarathara
WYD-7								66 KV S/S Anchukunnu	SE		
WYD-8						Mananthavady	Minor	33 KV S/S Padinjarathara	TN		
WYD-9								66 KV S/S Mananthavady	SE		

Annexure 1:- List of Substations, Transmission Sections/Subdivisions/Divisions/Circles, LMUs-Contd

Code	Region	Trans. Circle	Trans. Divisi on	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks
MLP-1	Chief Engineer-Transmission-Northern Region	Malappuram	Malappuram	TSDN	Malappuram	Kizhisseri	Minor	110 KV S/S Kizhissery	AE	LMU(Minor)	33kV lines to Edavanna, Valluvambram, Makkarapparamba
MLP-2								110 KV S/S Manjeri	JE	LMS	LMS Malappuram-Under future 220kV Subdivision at Elankur
MLP-3								33 KV S/S Edavanna	TN		
MLP-4						Malappuram	Minor	110 KV S/S Malappuram	AE		
MLP-5								33 KV S/S Makkaraparamba	TN		
MLP-6								33 KV S/S Valluambram	TN		
MLP-7				TSDN	Nilambur	Edakkara	Minor	66 KV S/S Edakkara	SE		
MLP-8								33 KV S/S Kalikavu	TN		
MLP-9								33 KV S/S Pookkottumpadam	TN		
MLP-10						Nilambur	Minor	66 KV S/S Nilambur	JE		
MLP-11								33 KV S/S Wandoor	SE	LMU	33kV lines to Kalikavu, Pookkottumpadam, Vandur, Pothukal
MLP-12								33 KV S/S Pothukal	TN		
MLP-13				TSDN	Perinthalmanna	Perinthalmanna	Minor	110 KV S/S Melattur	TN		
MLP-14								110 KV S/S Perinthalmanna	JE		
MLP-15						Mankada	Minor	66 KV S/S Mankada	SE		
MLP-16								33 KV S/S Pulamanthole	TN		
MLP-17								33 KV S/S Thazhekkode	TN		
MLP-18				TSDN	Edappal	Edappal	Minor	33 KV S/S Thirunavaya	TN		
MLP-19								110 KV S/S Kuttippuram	JE		
MLP-20								110 KV S/S Edappal	JE		
MLP-21								33 KV S/S Thrikkannapuram (Thavanur)	TN		
MLP-22						Ponnani	Minor	110 KV S/S Tirur	AE	LMS	LMS-Tirur under -Future 220kV subdivision at vengalur
MLP-23								110 KV S/S Ponnani	JE		
MLP-24						Chelari	Minor	110 KV S/S Parappanagadi	JE		
MLP-25								110 KV S/S Chelari	JE		
MLP-26								33 KV S/S Kinfra	TN		
MLP-27				TSDN	Edarikkode	Edarikkode	Minor	110 KV S/S Edarikkode	AE	LMU	33kV lines to Kooriyad, kalpakanchery, Thirunavaya, Thavanur, Othukkungal
MLP-28								33 KV S/S Kalpakanchery	TN		
MLP-29								33 KV S/S Kooriyad (Kakkad)	TN		
MLP-30								33 KV S/S Othukkungal	TN		

Annexure 1:- List of Substations, Transmission Sections/Subdivisions/Divisions/Circles, LMUs-Contd

Code	Region	Trans Circle	Trans. Divisi on	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks
PKD-1	Chief Engineer-Transmission-Northern Region	Palakkad	Palakkad	TSDN	Chandranagar	Chandranagar	Major	110 KV S/S Vennakkara	AE	LMS	LMS Palakkad- under Future 220kV subdivision, Palakkad
PKD-2								110 KV S/S Parali	JE	LMU	33kV lines to Olavakkode, kongad, Sreekrishnapuram
PKD-3								66 KV S/S PKD-MC-- (Chandranagar)	SE		
PKD-4								33 KV S/S Vidyuthi Bhavan-Palakkad	TN	33kV Cable	
PKD-5								33kV Olavakkode	TN		
PKD-6						Chittoor	Minor	66 KV S/S Kannampully	SE		
PKD-7								66 KV S/S Chittoor	SE		
PKD-8								33 KV S/S Koduvayur	TN		
PKD-9								33 KV S/S Pallassena	TN		
PKD-10				TSDN	Kanjikode	Kozhinjampara	Minor	110 KV S/S Kozhinjampara	JE	LMU(Minor)	33kV lines to Menakshipuram, Vannamada, Velanthalam,
PKD-11								33 KV S/S Meenakshipuram	TN		
PKD-12								33 KV S/S Vannamada	TN		
PKD-13								33 KV S/S Velanthalam	TN		
PKD-14						Walayar	Major	110 KV S/S Kanjikode	AE		
PKD-15								110 KV S/S Walayar	JE		
PKD-16								110 KV S/S Malampuzha	JE		
PKD-17								66 KV S/S Walayar (MCL) Quarry	SE		
PKD-18				TSDN	Vadakkanchery	Kollengode	Minor	110 KV S/S Kollengode	JE	LMU	Muthalamada, Nelliampathy, Pallasana, Koduvayur
PKD-19								66 KV S/S Nenmara	SE		
PKD-20								33 KV S/S Muthalamada	TN		
PKD-21								33 KV S/S Nelliampathy	TN		
PKD-22						Vadakkanchery	Minor	110 KV S/S Vadakkanchery	JE	LMU	33kV lines to Alathur, Chittady, Tharur, Maniyampara
PKD-23								33 KV S/S Alathur	TN		
PKD-24								33 KV S/S Chittadi	TN		
PKD-25								33 KV S/S Tarur	TN		
PKD-26			Shoranur	TSDN	Koppam	Koottanad	Minor	110 KV S/S Koottanad	JE		
PKD-27								33 KV S/S Challisseri	TN		
PKD-28								33 KV S/S Pattambi	TN		
PKD-29								33 KV S/S Thrithala	TN		
PKD-30						Koppam	Major	110 KV S/S Koppam	JE	LMU	33kV lines to Thrithala, Pattambi, Chalisseri, Thiruvegapura, Thazhekkode, Pulamanthole
PKD-31								110 KV S/S Cherpulassery	JE		
PKD-32								33 KV S/S Sreekrishnapuram	TN		
PKD-33								33 KV S/S Thiruvegappura	TN		
PKD-34				TSDN	Mannarkkad	Mannarkkad	Major	110 KV S/S Mannarkkad	JE	LMU	33kV lines to Agali, Alanallur
PKD-35								110 KV S/S Kalladikode	JE		
PKD-36								33 KV S/S Agali	TN		
PKD-37								33 KV S/S Alanallur	TN		
PKD-38						Ottapalam	Major	110 KV S/S Ottapalam	JE		
PKD-39								110 KV S/S Pathirippala	JE		
PKD-40								33 KV S/S Kongad	TN		
PKD-41								33 KV S/S Maniampara	TN		

Annexure 1:- List of Substations, Transmission Sections/Subdivisions/Divisions/Circles, LMUs-Contd

Code	Region	Trans Circle	Trans. Divisi on	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks
TSR-1	Chief Engineer- Transmission-Northern Region	Thrissur	Chalakkudy	TSDN	Kodakara	Kodakara	Major	110 KV S/S Kodakara	JE	LMU	33kV lines to Koratty, Pariyaram, Vellikulangaraa, Kalletumkaraa, Parappukara
TSR-2								110 KV S/S Pudukkad	JE		
TSR-3								33 KV S/S Kalletumkkara	TN		
TSR-4								33 KV S/S Parappukara	TN		
TSR-5						Koratty	Minor	110 KV S/S Chalakkudy	AE	LMS	LMS-Chalakkudy under future 220kV subdivision Chalakkudy
TSR-6								66 KV S/S Madura Coats (Koratty)	SE		
TSR-7								33 KV S/S Koratty	TN		
TSR-8								33 KV S/S Pariyaram	TN		
TSR-9								33 KV S/S Vellikulangara	TN		
TSR-10								110 KV S/S Irinjalakuda	AE		WIP Future 220kV
TSR-11				TSDN	Kodungallur	Kattoor	Minor	110 KV S/S Kattoor	JE	LMU	33kV lines to Anjangadi, kaipamangalam, Vellangallur, Annamanad, Methala
TSR-12								33 KV S/S Anchangadi	TN		
TSR-13								33 KV S/S Vellangallur	TN		
TSR-14						Kodungallur	Minor	66 KV S/S Kodungallur	SE		
TSR-15								66 KV S/S Mala	SE		
TSR-16								33 KV S/S Annamanada	TN		
TSR-17								33 KV S/S Methala	TN		
TSR-18				TSDN	Valapad	Cherpu	Major	110 KV S/S Ollur	AE		
TSR-19								110 KV S/S Cherpu	JE		
TSR-20								33 KV S/S Palakkal	TN		
TSR-21								33 KV S/S Puthur	TN		
TSR-22						Valapad	Minor	110 KV S/S Valapad	JE	LMU	33kV lines to Anthikkad, Chirakkal, Vadanappilly, Blangad, parappur, Mullasserri, Chavakkad
TSR-23								33 KV S/S Kaipamangalam	TN		
TSR-24								33 KV S/S Anthikad	TN		
TSR-25								33 KV S/S Chirakkal	TN		
TSR-26				TSDN	Guruvayur	Guruvayur	Minor	110 KV S/S Guruvayoor	JE		
TSR-27								33 KV S/S Chavakkad	TN		
TSR-28								33 KV S/S Blangad	TN		
TSR-29								33 KV S/S Parappur	TN		
TSR-30						Kandassamkadavu	Major	110 KV S/S	JE		
TSR-31								Kandassamkadavu	JE		
TSR-32								110 KV S/S Pullazhy	JE		
TSR-33								33 KV S/S Mullassery	TN		
TSR-34								33 KV S/S Vadanapilly	TN		
TSR-35				TSDN	Viyyur	Pazhayannur	Minor	110 KV S/S Pazhayannur	JE		
TSR-36								33 KV S/S Chelakkara	TN		
TSR-37								33 KV S/S Mulloorkara	TN		
TSR-38						Viyyur	Major	110 KV S/S Viyyur	AE		Thrissur
TSR-39								110 KV S/S Athani	JE	LMU	33kV lines to Poomala, Mundur, Puthur, Pattikkad, Palakkal
TSR-40								33 KV S/S Pattikadu	TN		
TSR-41				TSDN	Wadakkanchery	Punnayurkulam	Minor	33 KV S/S Mundur	TN		
TSR-42								110 KV S/S Kunnamkulam	JE	LMS	LMS Thrissur- Under WIP Future 220kV Subdivision Kunnamkulam
TSR-43								110 KV S/S Punnayurkulam	JE		
TSR-44								33 KV S/S Kongannur	TN		
TSR-45								33 KV S/S Erumapetty	TN		
TSR-46						Wadakkanchery	Minor	110 KV S/S Wadakkanchery	JE		
TSR-47								110 KV S/S Arangottukara	JE		
								33 KV S/S Poomala	TN		

Annexure 1:-List of Substations, Transmission Sections/Subdivisions/Divisions/Circles,LMUs-Contd

Code	Region	Trans . Circle	Trans. Division	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks				
ALP-1	Chief Engineer-Transmission-Southern Region	Alappuzha	Alappuzha	TSDN	Alappuzha	Alappuzha	Minor	66 KV S/S Alappuzha	SE						
ALP-2							66 KV S/S Kuttanadu	SE							
ALP-3							66 KV S/S Pathirappally	SE							
ALP-4						Edathua	Minor	110 KV S/S Edathuva	JE	LMU	33kV lines to Thakazhy, Kadapra, Kuthiyathode, Kalarkode				
ALP-5						TSDN	Aroor		33 KV S/S Thakazhy	TN					
ALP-6								Aroor	Minor	110 KV S/S Aroor	AE				
ALP-7					110 KV S/S Eramallur			JE							
ALP-8					110 KV S/S Thycattuserry			JE		Future 220kV Thuravur					
ALP-9				Cherthala	Minor			110 KV S/S S. L. Puram (Kanjikuzhi)	JE						
ALP-10					66 KV S/S Cherthala			SE							
ALP-11					33 KV S/S Kuthiathode	TN									
ALP-12					110 KV S/S Chengannur	JE									
ALP-13			Mavelikkara	TSDN	Edappo n	Chengannur	Minor	33 KV S/S Mannar	TN	LMU	33kV lines to Pandalam, Kattanam, Vallikunnam, Mannar, Ochira				
ALP-14				TSDN	Mavelikkara	Kayamkulam	Minor	110 KV S/S Kayamkulam	AE						
ALP-15							66 KV S/S Karuvatta	SE							
ALP-16							66 KV S/S Nangiarkulangara	SE							
ALP-17							110 KV S/S Mavelikkara	AE							
ALP-18						Mavelikkara	Minor	33 KV S/S Kattanam	TN	WIP-to 66kV					
ALP-19							33 KV S/S Vallikunnam	TN							
Code	Region	Trans . Circle	Trans. Division	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks				
EKM-1	Chief Engineer-Transmission-Southern Region	Ernakulam	Ernakulam	TSDN	Ernakulam	Edappally	Major	110 KV S/S Kaloor	AE	LMS	WIP Future 220kV				
EKM-2									110 KV S/S Edappally	JE		LMS-Ernakulam-Under future Kaloor 220kV subdivision			
EKM-3									66 KV S/S Kakkanad (CEPZ)	JE					
EKM-4									66 KV S/S Thrikkakara (NPOL)	SE					
EKM-5									33 KV S/S Thammanam	TN	33kV Cable				
EKM-6						Ernakulam	Major	66 KV S/S Perumanoor (Shipyard)	JE						
EKM-7								66 KV S/S Marine Drive GIS	SE	UG Cable					
EKM-8								110 KV S/S Kadavanthra	JE						
EKM-9								66 KV S/S Panampally Nagar	SE						
EKM-10								Mattanchery	Major	110 KV S/S Chellanam	JE				
EKM-11						TSDN				110 KV S/S Mattanchery	JE				
EKM-12										110 KV S/S Willington Island	JE				
EKM-13										66 KV S/S Fort Kochi (GIS)	SE	UG Cable			
EKM-14						Major	110 KV S/S Cherai		JE						
EKM-15							110 KV S/S Ernakulam North		JE						
EKM-16							66 KV S/S Mulavukadu		SE						
EKM-17							66 KV S/S Njarakkal		SE						
EKM-18				Kalamasseri	TSDN	Edayar	Major	110 KV S/S Edayar	AE						
EKM-19								110 KV S/S Aluva	AE	LMS	LMS Kalamasseri-Aluva-WIP Under Future 220kV Subdivision				
EKM-20								110 KV S/S Kizhakkambalam	JE						
EKM-21								66 KV S/S Edathala	SE						
EKM-22								North paravur	Minor	110 KV S/S North Paravur	JE	LMU	33kV lines to Alangad, Kurumasseri, Puthenvelikkara, Vadakkekara, Varappuzha		
EKM-23						33 KV S/S Alangad	TN								
EKM-24						33 KV S/S Varappuzha	TN								
EKM-25						33 KV S/S Vadekkekara	TN								
EKM-26						110 KV S/S Kandanad	JE								
EKM-27						Vyttila	TSDN	Piravom	Minor	110 KV S/S Piravom	JE				
EKM-28				66 KV S/S Puthencruz	SE										
EKM-29				110 KV S/S Vyttila	AE										
EKM-30				110 KV S/S Panangad	JE										
EKM-31				110 KV S/S New Vyttila	JE										
EKM-32				Kothamangalam	TSDN	Angamaly	Major	66 KV S/S Thrippunithara(GIS)	SE	UG Cable					
EKM-33								110 KV S/S Angamaly	JE						
EKM-34								110 KV S/S Kurumassery	JE						
EKM-35			33 KV S/S Puthenvelikkara					TN							
EKM-36			33 KV S/S Kurumassery					TN							
EKM-37			110 KV S/S Ayyampuzha					JE							
EKM-38			Malayattur			Major	110 KV S/S Malayatttur	JE							
EKM-39							66 KV S/S Karukutty	SE							
EKM-40							33 KV S/S Kalady	TN							
EKM-41							TSDN	Perumbavoor	Odakkali	Minor	66 KV S/S Kothamangalam	SE	LMS	LMS Kothamangalam-WIP- Under Future 220kV Subdivision	
EKM-42											66 KV S/S Odakkali	SE			
EKM-43			33 KV S/S Kuruppambady	TN											
EKM-44			33 KV S/S Koovappady	TN											
EKM-45			Perumbavoor	Minor	110 KV S/S Perumbavoor	JE	LMU	33kV lines to Vengola, Kalady, Koovapady, Kuruppampady							
EKM-46					110 KV S/S Rayonpuram	JE									
EKM-47					33 KV S/S Vengola	TN									

Annexure 1:- List of Substations, Transmission Sections/Subdivisions/Divisions/Circles, LMUs-Contd

Code	Region	Trans . Circle	Trans. Division	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks
IDK-1	Chief Engineer-Transmission-Southern Region	Idukki	Thodupuzha	TSDN	Muvattupuzha	Muvattupuzha	Minor	110 KV S/S Muvattupuzha	AE	From EKM district	
IDK-2								66 KV S/S Maradi	SE	From EKM district	
IDK-3								33 KV S/S Mazhuvanoor	TN		
IDK-4						Pothanikad	Minor	110 KV S/S Myloor (Pothanikad)	JE	From EKM district	
IDK-5								33 KV S/S Kalloorkadu	TN	From EKM district	
IDK-6				TSDN	Thodupuzha	Thodupuzha	Minor	110 KV S/S Muttom	JE	LMS	LMS-Thodupuzha-Moolamattom (Generation Switchyard)
IDK-7								66 KV S/S Thodupuzha	SE	LMU(Minor)	33kv lines to Vannapuram, Kalloorkad, Mazhuvanur
IDK-8						Udumbanur	Minor	110 KV S/S Udumbannoor	JE		
IDK-9								33 KV S/S Vannappuram	TN		
IDK-10			Kattappana	TSDN	Adimali	Adimali	Major	110 KV S/S Adimali	JE	LMS	LMS Kattapana-Chithirapuram (Generation switchyard)/Adimali
IDK-11								110 KV S/S Kuthungal	JE		
IDK-12								66 KV S/S Karimanal	SE		
IDK-13								33 KV S/S Senapathy	TN		
IDK-14				TSDN	Nedunkandom	Nedunkandom	Minor	66 KV S/S Kattappana	SE		
IDK-15								66 KV S/S Nedunkandom	SE		
IDK-16								33 KV S/S Vandenmedu	TN		
IDK-17				TSDN	Vazhathoppu	Vazhathoppu	Minor	66 KV S/S Vazhathoppu	SE		
IDK-18								66 KV S/S Kulamavu	SE		
IDK-19				TSDN	Peerumedu	Peerumedu	Minor	66 KV S/S Peerumedu	SE	LMU	33kv lines to Senapathy, Upputhara, Vagmon, Kumili, Vandenmedu
IDK-20								33 KV S/S Upputhura	TN		
IDK-21								33 KV S/S Vagamon	TN		
IDK-22						Vandiperiyar	Minor	66 KV S/S Vandiperiyar	SE		
IDK-23								33 KV S/S Kumili	TN		
Code	Region	Trans . Circle	Trans. Division	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks
KTM-1	Chief Engineer-Transmission-Southern Region	Kottayam	Pala	TSDN	Kanjirappally	Kanjirappally	Major	110 KV S/S Erumeli	JE		
KTM-2								110 KV S/S Kanjirappally	JE	LMS	Pala LMS HQ at Kanjirappally
KTM-3								66 KV S/S Mundakkayam	SE	WIP to 110kV	
KTM-4								33 KV S/S Kootikkal	TN		
KTM-5				TSDN	Pala	Pala	Major	110 KV S/S Pala	AE	LMU	33kv lines to Kallara, Kaduthruthi, Kidangoor, Paika , Ramapuram, Kootikal
KTM-6								110 KV S/S Erattupetta	JE		
KTM-7								33 KV S/S Kindangoor	TN		
KTM-8								33 KV S/S Paika	TN		
KTM-10								110 KV S/S Vaikom	AE		
KTM-11				TSDN	Kuravilangadu	Vaikom	Minor	33 KV S/S Kaduthurathy	TN		
KTM-12								33 KV S/S Kallara	TN		
KTM-13								66 KV S/S Koothattukulam	SE		
KTM-14						Kurvilangadu	Minor	33 KV S/S Ramapuram	TN		
KTM-15								66 KV S/S Kuravilangadu	SE		
KTM-16				TSDN	Gandhinagar	Gandhinagar	Minor	110 KV S/S Ayarkunnam	JE		
KTM-17								110 KV S/S Chengalam	JE		
KTM-18								66 KV S/S Ettumanoor	SE		WIP Future 220kV
KTM-19								66 KV S/S Gandhinagar	SE	LMS	LMS-Poovanthuruthu (HQ at Gandhinagar) - Under future Ettumanoor 220kV Subdivision
KTM-20			Poovanthuruthu	TSDN	Kottayam	Changanassery	Minor	110 KV S/S Thrikodithanam	JE		
KTM-21								66 KV S/S Changanassery	SE		
KTM-22								33 KV S/S Karukachal	TN		
KTM-23								33 KV S/S Manimala	TN		
KTM-24				TSDN	Kottayam	Kottayam	Major	110 KV S/S Pampady	JE		
KTM-25								66 KV S/S Kottayam (Kanjikuzhy)	SE		
KTM-26								33 KV S/S Vakathanam	TN		
KTM-27								110 KV S/S Kodimatha	JE		
Code	Region	Trans . Circle	Trans. Division	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks
PTA-1	Chief Engineer-Transmission-Southern Region	Pathanamthitta(D-ARU)	TD Pathanamthitta	TSDN	Kozhenchery	Kozhenchery	Major	110 KV S/S Ranni	JE	LMU	33kv lines to Prunthenaruvil, Ranni-Perinad, Manimala
PTA-2								110 KV S/S Pathanamthitta	AE		Future 220kV station
PTA-3								110 KV S/S Kozhenchery	JE		
PTA-4								33 KV S/S Konni	TN		
PTA-5					Moozhiyar	Moozhiyar	Minor	66 KV S/S Kochu pampa	SE	LMS	LMS Muzhiyar(Generation Switchyard)- Under Future Pathanamthitta 220kV Subdivision
PTA-6								66 KV S/S Triveni	SE		
PTA-7								33 KV S/S Perumthenaruvil	TN		
PTA-8								33 KV S/S Ranni-Perunad	TN		
PTA-9				TSDN	Adoor	Adoor	Minor	110 KV S/S Koodal	JE		
PTA-10								66 KV S/S Adoor	SE	LMS	LMS Pathanamthitta (Adoor)
PTA-11								33 KV S/S Pandalam	TN		
PTA-12					Thiruvalla	Thiruvalla	Major	110 KV S/S Mallappally	JE	LMU(Minor)	33kv lines to Kumbanad, Karukachal, Konni
PTA-13								66 KV S/S Chumathra	SE		
PTA-14								66 KV S/S Thiruvalla	SE		
PTA-15								33 KV S/S Kumbanad	TN		
PTA-16								33 KV S/S Kadapra	TN		

Annexure 1:- List of Substations, Transmission Sections/Subdivisions/Divisions/Circles, LMUs-Contd

Code	Region	Trans Circle	Trans. Divisi on	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks
KLM-1	Chief Engineer-Transmission-Southern Region	Kollam	Kundara	TSDN	Chavara	Chavara	Major	110 KV S/S Chavara	JE		
KLM-2								110 KV S/S Kavanadu	JE		
KLM-3								110 KV S/S Perinad	JE		
KLM-4						Karunagappally	Minor	110 KV S/S Sasthamcotta	AE		Future 220kv substation
KLM-5								66 KV S/S Karunagappally	SE		
KLM-6								33 KV S/S Ochira	TN		
KLM-7				TSDN	Kottiyam	Kollam	Minor	110 KV S/S Ayathil	JE		
KLM-8								110 KV S/S Kollam, GIS	JE		
KLM-9								33 KV S/S Kannanalloor	TN		
KLM-10						Kottiyam	Minor	110 KV S/S Kottiyam	AE	LMU	33kv lines to Kannanallur, Adichanellur, Paravur, Ochira
KLM-11								33 KV S/S Adichanalloor	TN		
KLM-12						Parippally	Minor	110 KV S/S Parippally	JE		
KLM-13								33 KV S/S Paravoor	TN		
KLM-14			Punalur	TSDN	Kottarakara	Ambalapuram	Minor	110 KV S/S Ambalappuram	AE	LMU	33kv lines to Ezhukone, Pooyapilly, Puthur, Chengamanad
KLM-15								33 KV S/S Ezhukone	TN		
KLM-16								33 KV S/S Pooyappally	TN		
KLM-17						Kottarakara	Minor	110 KV S/S Kottarakara	JE		
KLM-18								33 KV S/S Puthur	TN		
KLM-19								33 KV S/S Chengamanad	TN		
KLM-20				TSDN	Punalur	Anchal	Minor	66 KV S/S Anchal	SE		
KLM-21								66 KV S/S Ayoor	SE		
KLM-22								66 KV S/S Thenmala	SE		
KLM-23						Punalur	Minor	110 KV S/S Punalur	JE	LMS	Punalur LMS HQ at Edamon/Punalur
KLM-24								110 KV S/S Pathanapuram	JE		
Code	Region	Trans Circle	Trans. Divisi on	Group Tr. SDN	Name of Trans. Sub Dn	Trans. section	Group Tr. Section	S/S with Voltage level	Station Assistant	LMUs/ LMS	Remarks
TVM-1	Chief Engineer-Transmission- Southern Region	Thiruvananthapuram	Kazhakuttom	TSDN	Attingal	Attingal	Minor	110 KV S/S Attingal	AE	LMU	33kv lines to Kacheri, kadakavur, Kadakkal, Venjaramadu
TVM-2								33 KV S/S Kacheri	TN		
TVM-3								33 KV S/S Kadakkavoor	TN		
TVM-4						Kilimanoor	Minor	110kv S/S Kilimanoor	JE		
TVM-5								33 KV S/S Kadakkal	TN		
TVM-6								33 KV S/S Venjaramoodu	TN		
TVM-7						Varkala	Minor	110 KV S/S Varkala	JE		
TVM-8								33 KV S/S Kallambalam	TN		
TVM-9				TSDN	Kazha koota m	Kazhakootam	Minor	110 KV S/S Techpark (Kazhakuttam)	AE	LMS	LMS Kazhakootam under Kazhakootam Subdivision
TVM-10								110 KV S/S TERLS	AE		
TVM-11								110 KV S/S Kattakada	JE		
TVM-12						Kattakada	Minor	110 KV S/S Aruvikkara	JE		
TVM-13								33 KV S/S Aryanadu	TN		
TVM-14				TSDN	Nedumanagad			110 KV S/S Nedumangadu	AE	LMU(Minor)	33kv lines to Aryanad, Vithura, Chullimanoor
TVM-15						Nedumanagad	Minor	66 KV S/S Palode	SE		
TVM-16								33 KV S/S Chullimanoor	TN		
TVM-17								33 KV S/S Vithura	TN		
TVM-18								66 KV S/S Balaramapuram	SE		
TVM-19				TSDN	Neyyatinkara	Balaramapuram	Minor	66 KV S/S Vizhinjam	SE	WIP Future 220kv	
TVM-20								33 KV S/S Poovar	TN		
TVM-21						Neyyatinkara	Minor	110 KV S/S Parassala	JE	LMU(Minor)	33kv lines to Poovar, vellarada
TVM-22								110 KV S/S Neyyattinkara	JE		
TVM-23								33 KV S/S Vellarada	TN		
TVM-24			Thiruvananthapuram	TSDN	Paruthippara	Paruthippara	Minor	110 KV S/S Medical College	AE		
TVM-25								110 KV S/S Paruthippara	AE		
TVM-26								33 KV S/S Pattoor	TN	UG Cable	
TVM-27								33 KV S/S VB, Pattom	TN		
TVM-28						Thirumala	Minor	110 KV S/S Thirumala	AE		
TVM-29								66 KV S/S Vattiyoorkavu	SE	UG Cable	
TVM-30								33 KV S/S Peyad	TN	UG Cable	
TVM-31								66 KV S/S L A Complex (GIS)	SE	UG Cable	
TVM-32						Power House	Minor	66 KV S/S Powerhouse (GIS)	SE	UG Cable	
TVM-33								33 KV S/S Karamana	TN		
TVM-34								110 KV S/S Veli	JE	UG Cable	
		14	26	60	Trn Sub divisions	Major Trn sections	28	110kv Major Stations	41	18	LMS under TSDN/future 220kv
		3 DN ARUs	3 ARU DN's			Minor Trn sections	91	110kv Minor Stations	118	10	LMS in 220kv & 400kv
		1	400kv Division			Total Trn sections	119	66kv Stations	73	28	Total No of LMS
							119	33kv Stations	159	28	LMU under TSDNs
								Total number of Substations	391	9	LMU(Minor) attached to Transmission sections

Annexure 2:- List of 220/400kV Substations, LMS units attached to these stations

Sl.No	Region	Trans. Circle	Trans. Division	Trans. Sub Dn	Trans. section	S/S with Voltage level	Major/ Minor	Line Mace Sections
1	North	Kannur	Kanjirode	Kanjirode	Kanjirode	220 KV S/S Kanjirode	Major	
2	North	Kannur	Kannur	Thalipparamba	Thalipparamba	220 KV s/s Thalipparamba	Minor	LMS
3	North	Kasargode	TD Kasaragod	Ambalathara	Ambalathara	220 KV S/S Solar park, Ambalathara	Minor	LMS
4	North	Kasargode	TD Kasaragod	Mylatty	Mylatty	220 KV S/S Mylatty	Major	
5	North	Kozhikode	Kozhikkode	Nallalam	Nallalam	220 KV S/S Nallalam	Major	
6	North	Kozhikode	Vadakara	Orkatteri	Orkatteri	220 KV S/S Orkatteri (Vadakara)	Minor	LMS
7	North	Malappuram	Malappuram	Areacode	Areacode	220 KV S/S Areacode	Major	
8	North	Malappuram	Tirur	Malapparamaba	Malapparamaba	220 KV S/S Malaparamba	Minor	
9	North	Palakkad	Palakkad	Kanjokode	Kanjokode	220 KV S/S Kanjikode	Major	
10	North	Palakkad	Shoranur	Shoranur	Shoranur	220 KV S/S Shornur	Minor	LMS
11	North	Thrissur	Madakkathara	400 kV Madakkathara	400 kV Madakkathara	400 KV S/S Thrissur	400kV	Special LMS 400/220
12	North	Wayanad	TD Wayanad	Kaniyampetta	Kaniyampetta	220 KV S/S Kaniyampetta	Minor	LMS
13	South	Alappuzha	Alappuzha	Punnappa	Punnappa	220 KV S/S Punnappa	Minor	LMS
14	South	Alappuzha	Mavelikkara	Edappon	Edappon	220 KV S/S Edappon	Major	LMS
15	South	Ernakulam	Ernakulam	Ambalamughal	Ambalamughal	220 KV S/S Ambalamugal (BPCL)	Minor	
16	South	Ernakulam	Ernakulam	Brahmapuram	Brahmapuram	220 KV S/S Brahmapuram	Major	
17	South	Ernakulam	Kalamasseri	Kalamasseri	Kalamasseri	220 KV S/S Kalamassery	Major	
18	South	Kollam	Kottarakara	Edamon	Edamon	220 KV S/S Edamon	Major	
19	South	Kollam	Kundara	Kundara	Kundara	220 KV S/S Kundara	Minor	LMS
20	South	Kottayam	Poovanthuruthu	Pallom	New Pallom	220 KV S/S New Pallom	Switching station	
21	South	Kottayam	Poovanthuruthu	Pallom	Pallom	220 KV S/S Pallom	Major	
22	South	Thiruvananthapuram	Thiruvananthapuram	Kattakada	Kattakada	220 KV S/S Kattakkada	Minor	LMS
23	South	Thiruvananthapuram	Kazhakootam	Pothencode	Pothencode	220 KV S/S Pothencode	Major	
					Number of Major Stations		11	9
Note:					Number of Minor Stations		10	1
New Pallom 220kV is considered as switching station only					Total Number 220kV Substations		21	

Annexure3:- List of complete Line Maintenance Sections (LMS) sections in KSEBL

Sl.No	Region	Circle/ARU	Division	Presently Attached Subdivision	Transmission Sub Division Controlling LMS	LMS Name
1	North	Kasargode	TD Kasaragod	Ambalathara	220 KV S/S Solar park, Ambalathara	Kasargode
2	North	Kannur	Thalipparamba	Thalipparamba	220 KV s/s Thalipparamba	Kannur
3	North	Kannur	Kanhirode	Pinarai (Later to Thalasseri 220)	220 KV S/S Thalassery(WIP)	Kanhirode
4	North	Kozhikode	Vadakara	Orkatteri	220 KV S/S Orkatteri (Vadakara)	Vadakara
5	North	Kozhikode	Kozhikkode	Koduvally(Later to Kunnamangalam 220)	220 KV S/S Kunnamangalam(WIP)	Kozhikkode
6	North	Wayanad	TD Wayanad	Kaniyampetta	220 KV S/S Kaniyampetta	Wayanad
7	North	Malappuram	Malappuram	Malappuram (Later to Manjeri 220)	220 KV S/S Manjeri(WIP)	Malappuram
8	North	Malappuram	Tirur	Tirur (Later to Vengalur)	220 KV S/S Vengalur (Future)	Tirur
9	North	Palakkad	Palakkad	Chandranagar (Later to Palakkad 220)	220 KV S/S Vennakkara (Future)	Palakkad
10	North	Palakkad	Shoranur	Shoranur	220 KV S/S Shornur	Shoranur
11	North	Thrissur	Madakkathara	Madakkathara	400kV General Subdivision, Madakkathara	Special LMS 400/220kV
12	North	Thrissur	Thrissur	Viyyur (Later to Kunnamkulam 220)	220KV S/S Kunnamkulam(WIP)	Thrissur
13	North	Thrissur	Chalakkudy	Kodakara (Later to Chalakkudy 220)	220KV S/S Chalakkudy(WIP)	Chalakkudy
14	South	Ernakulam	Ernakulam	Ernakulam (Later to Kaloor 220)	220 KV S/S Kaloor(WIP)	Ernakulam
15	South	Ernakulam	Kalamasseri	Edayar (Later to Aluva 220)	220 KV S/S Aluva(WIP)	Kalamasseri
16	South	Ernakulam	Kothamangalam	Perumbavoor (Later to Kothamangalam 220)	220 KV S/S Kothamangalam(WIP)	Kothamangalam
17	South	Alappuzha	Alappuzha	Punnappa	220 KV S/S Punnappa	Alappuzha
18	South	Alappuzha	Mavelikkara	Edappon	220kV S/S Edappon	Mavelikkara
19	South	Idukki	Thodupuzha	Thodupuzha	220 KV S/S Moolamattom(Gen)	Thodupuzha
20	South	Idukki	Kattappana	Adimali (Later to Chithirapuram 220)	220KV S/S Chithirapuram(WIP)	Vazhathoppe
21	South	Kottayam	Pala	Pala	110 KV S/S Kanjirappally	Pala
22	South	Kottayam	Poovanthuruthu	Gandhinagar(Later to Ettumanoor 220)	220 KV S/S Ettumanoor (WIP)	Poovanthuruthu
23	South	Pathanamthitta(DN-ARU)	Pathanamthitta	Moozhiyar	220 KV S/S Moozhiyar(Gen)	Moozhiyar
24	South	Pathanamthitta(DN-ARU)	Pathanamthitta	Thiruvalla	220 KV S/S Pathanamthitta(WIP)	Pathanamthitta
25	South	Kollam	Kundara	Kundara (Later to Sasthamkotta 220)	220 KV S/S Sasthamkotta (WIP)	Kundara
26	South	Kollam	Punalur	Punalur	220 KV S/S Edamon	Punalur
27	South	Thiruvananthapuram	Kazhakuttom	Kazhakootam	110 KV S/S Techpark (Kazhakootam)	Kazhakootam
28	South	Thiruvananthapuram	Thiruvananthapuram	Kattakada	220 KV S/S Kattakada	Thiruvananthapuram

Annexure 4: Total manpower requirement office wise of Transmission & System Operation

Name of Office in Transmission wing	Abbreviation	Number of offices in Transmission & system Operation wing	Each office required Strength in Transmission wing	Total for each type of offices in Transmission wing	Remarks if any
Corporate Office	DTSO	1	18	18	Including SCM cell
Regional Office	CE-TN, CE-TS	2	24	48	North & South
Transmission Circle Offices	TRC	11	21	226	Current circles with 3 name changes
Divisions with ARU	TDN-ARU	3	15	45	PTA, WYND & KGDE (2 New)
Transmission Divisions	TDN	23	7	161	New One at Kattapana
400kV Divisions Mace	400kV TDN	1	30	30	Madakkathara only
PSE Divisions	PSE-DN	1	4	4	At TVPM
PSE Sub Division-Regions	PSE-SDN	2	2	4	Additional units
Transmission Sub Divisions	TSDN	60	2	120	In charge of 33kV LMU/LMS also
Transmission Sections (Major)	TSN-Major	28	8	224	Clustered Maintenance team-More stations
Transmission Sections (Minor)+New Pallom	TSN-Minor	91	6	546	Clustered Maintenance team-Few or 66/33 stations only
33kv line Mace Unit (LMU)-Major Under AEE, TSDN	LMU-Major	28	5	140	33kV LMU-Major under control of AEE
33kv line Mace Unit (LMU)-Minor Under Trn. Section	LMU-Minor	9	3	27	33kV- LMU under Maintenance team of substation for small area only. Using section vehicle only
110kV Station Engineer	AE	41	2	82	Custodian of station-AE
110kV Junior Engineer	JE	122	1	122	Assisting the custodian i.e Transmission section head
66kV SE	SE	69	1	69	Assisting the custodian i.e Transmission section head
33kV Technician	SN TN	159	1	159	Assisting the custodian i.e Transmission section head
220kV Trans Sub divisions-Minor-New Pallom	TSDN	10	10	100	Small 220kV stations-Except new Pallom
220kV (Major) Trans Sub Divisions	TSDN	11	12	132	Big 220kV stations
TC Sub divisions	TCSD	26	5	130	One per each TDN in place of TC sections
EHT Line Maintenance Section	LMS	28	12	336	One per each TDN in place of current LMSD
PTRU	PTRU	3	6	18	One newly added at Edappon
PERU	PERU	2	6	12	New at Pallom & MDKA
110kV Major operation	110kV OPRN	41	8	328	Only in Major stations
220kV Minor operation	220kV OPRN	10	8	80	Existing pattern
220kV major operation	220kV OPRN	11	12	132	Existing pattern
400kV operation	400kV OPRN	1	20	20	Existing pattern
Transmission Total		794		3313	
SOM LD-HO	CE-SOM	1	37	37	Only Name change
SOM Circles	SOMC	3	7	21	No ARU status
RPM Divisions	RPM DN	3	1	3	Same as now but HO relocated
S&T Division	S&T DN	3	1	3	Same as now but HO relocated
RPM Subdivisions	RPM SDN	11	1	11	One per circle
RPM Sub Division (Minor)	RPM SDN	3	1	3	One per ARU
S&T Sub Division	S&T SDN	11	1	11	One per Circle
Relay section(Major)	RS	11	4	44	One per Subdivisions in Circle
Relay section Minor	RS(M)	3	3	9	One per Subdivisions in ARU
PET section-Major	PET	11	5	55	One per Subdivisions in Circle
PET section-Minor	PET(M)	3	3	9	One per Subdivisions in ARU
Meter section-Major	METER	11	3	33	One per Subdivisions in Circle
Meter section-Minor	METER(M)	3	3	9	One per Subdivisions in ARU
S&T section-Major	S&T SN	10	3	30	One in Major Divisions only
S&T section-Minor	S&T SN(M)	10	3	30	One in Minor Divisions only
LD Station	LD	1	15	15	Same as now
TNMS	TNMS	1	3	3	Same as now until KFON in place
SOM-Total		99		326	
District QHSE Engineer	DQE	11	1	11	One per Circle ARU
District QHSE Engineer	DQE	5	1	5	One per Division ARU and two for Transgrid
Regional QHSE Engineer	RQE	3	2	6	Two for Transmission and One for Transgrid
Deputy Chief QHSE Engineer	DCQE	1	2	2	One under CE-QHSE
QHSE Total		20		24	
TransGrid CE Office	CE-TG	1	25	25	No change
TransGrid Circle Offices	TGN/TGS	2	7	14	No change
Transgrid Division Offices	TGDN	4	2	8	No change
Transgrid Sub Divisions	TGSDN	12	5	60	No change
Transgrid Civil Sdns	TGCSN	4	5	20	No change
Transgrid Total		23		127	
Grant Total Office wise		936		3790	

Annexure 5: Total manpower requirement Category wise of Transmission & System Operation

Current Eqwt position	Proposed Designations	ABBR. NEW	Level of employee	Remarks on duties and functions	Selection Procedure	Total count
A	LINE STAFF-ELECTRICAL					3060
DTSO	Director-Transmission&System Operation	DTSO	9	SBU-T Head	APAR+DPC shortlisting+Selection by GOK	1
CE	Chief Engineer-Selection Post	CE-T	8	RegionalHead	APAR+DPC selection	4
DCE	Deputy Chief Engineer-Electrical&Electronics	DCE	7	Circle Head	APAR+Leadership Advancemnet Training (LAT)	19
EE	Executive Engineer-Electrical&Electronics	EE	6	Division head	APAR+Managerial Development Training (MDT)	56
AEE	Assistant Exe. Engineer-Electrical&Electronics	AEE	5	Sub Division Head	APAR + MBA/ Mangerial Aptitude test (MAT)	203
New	Senior Engineer-Electrical&Electronics	Sr.E	5	Major/Mace sections Head	Previous cadre+5Yrs	310
AE	Assistant Engineer-Electrical&Electronics	AE-EE	4	Minor Section head/Operator	B.Tech (EEE)	372
New	Junior Engineer	JE	4	Senior Supervisor	Previous cadre+5Yrs	252
SE	Sub Engineer-Electrical & Electronics	SE	3	Supervisor	Diploma (EE)	450
Overseer	Sr.Technician	Sr.TN	3	Highly Skilled	Previous cadre+5Yrs	423
LM-1	Technician-Electrical&Electronics	TN	2	Skilled	ITI-Matric(Ele)	448
LM-2	Senior Mazdoor	Sr.MZ	2	Senior Labour	Previous cadre+5Yrs	241
EW	Mazdoor	MZ	1	Labour	10F	281
B	SUPPORT STAFF-SCADA & TELECOM					80
EE	Executive Engineer-SCADA&Telecom	EE-S&T	6	Divisional head	APAR+Managerial Development Training (MDT)	4
AEE	Asst.Executive Engineer-SCADA&Telecom	AEE-S&T	5	Sub Divisional Head	APAR + MBA/ Mangerial Aptitude test (MAT)	12
New	Senior Engineer-SCADA&Telecom	Sr.E-S&T	5	Major/Mace sections Head	Previous cadre+5Yrs	11
AE	Assistant Engineer-SCADA&Telecom	AE-S&T	4	Minor Section heads	B.Tech(ECE)	11
New	Junior Engineer-SCADA&Telecom	JE-S&T	4	Senior Supervisor	Previous cadre+5Yrs	0
SE	Sub Engineer-SCADA&Telecom	SE-S&T	3	Supervisor	Diploma (EC)	1
OVR	Sr.Technician-SCADA&Telecom	Sr.TN-S&T	3	Highly Skilled	Previous cadre+5Yrs	20
LM1	Technician-SCADA&Telecom	TN-S&T	2	Skilled	ITI-Matric(Electronics)	21
C	SUPPORT STAFF-CIVIL					136
EE	Executive Engineer-Civil	EE-Civil	6	Civil Support-Regions	APAR+Managerial Development Training (MDT)	1
AEE	Assistant Executive Engineer-Civil	AEE-Civil	5	Civil Support-Circles	APAR + MBA/ Mangerial Aptitude test (MAT)	21
New	Senior Engineer-Civil	Sr.E-Civil	0	Civil Support-Divisions	Previous cadre+5Yrs	0
AE	Assistant Engineer-Civil	AE-Civil	4	Civil Support-Sub Divisions	B.Tech (Civil)	40
New	Junior Engineer-Civil	JE-Civil	0	Civil Support-Senior supervisor	Previous cadre+5Yrs	0
SE	Sub Engineer-Civil	SE-Civil	3	Civil Support-Supervisor	Diploma (Civil)	74
OVR	Sr. Technician-Civil	Sr.TN-C	0	Civil Support-High Skill	Previous cadre+5Yrs	0
LM1	Technician-Civil	TN-C	2	Civil Support-Skilled	ITI-Matric(Civil)	0
D	SUPPORT STAFF-ACCOUNTS					89
FA	Chief Finance Officer	CFO	8	Corporate level support	APAR+DPC selection	0
Dy CFO	Deputy Chief Finance Officer	DCFO	7	SBU level support	APAR+Leadership Advancemnet Training (LAT)	0
FO	Finance officer	FO	6	Regional level support	APAR+Managerial Development Training (MDT)	2
AFO	Assistant Finance officer	AFO	5	Circle level support	APAR + Mangerial Aptitude test (MAT)	7
New	Senior Divisional Accountant	Sr.DA	0	Minor circles level support	Previous cadre+5Yrs	0
DA	Divisional Accountant	DA	4	Divisional level support	B.ScMaths/B.Com +CA/ICWA/MBA(Fin)	4
SA	Senior Financial Assistant	SFA	0	Highly skilled	Previous cadre+5Yrs	58
JA	Junior Financial Assistant	JFA	3	Skilled	B.Sc-Maths/Bcom	18
E	SUPPORT STAFF-ADMINISTRATION					425
CPO	Chief Administrative Officer	CAO	8	Corporate level support	APAR+DPC selection	0
New	Deputy Chief Administrative Officer	DCAO	7	SBU level support	APAR+Leadership Advancemnet Training (LAT)	0
AO	Administrative Officer	AO	6	Regional level support	APAR+Managerial Development Training (MDT)	0
AAO	Assistant Administrative Officer	AAO	5	Circle level support	APAR + Mangerial Aptitude test (MAT)	0
SS	Senior Superintendent	SS	0	Minor circles level support	Previous cadre+5Yrs	15
Non Cadre	Superintendent	Supt	4	Divisional level support	Any Degree +MBA(HR)/MPA	3
SA	Senior Admmistrative Assistant	SAA	0	Highly skilled	Previous cadre+5Yrs	47
JA	Junior Administrative Assistant	JAA	3	Skilled	Any Degree	0
SFA	Senior Word Processing Assistant	Sr.WPA	0	Highly skilled	Previos Cadre+5 years	5
FA	Word Processing Assistant	WPA	2	Skilled	12P	47
Sr Drv	Senior Driver	Sr. DR	0	Highly skilled	Previos Cadre+5 years	18
Drivr	Driver	DR	1	Skilled	Heavy duty Badge	189
New	Senior Office Assistant	Sr.OA	0	Senior Helper	Previos Cadre+5 years	5
OA	Office Assistant	OA	1	Helper	10F	48
PTC	PTC sweeper	PTC	0	Part time	7th	48
Grand Total manpower for Transmission wing						3790

Annexure 6: Total Vehicle requirement of Transmission & System Operation

F	VEHICLES-OWN & RENTAL					377
1	Car-Toyota Innova model			Board level	Own	1
2	Car - Toyota Etios model			Senior managaemnt	Own	5
3	Car-Sedan			Middle management	Hired	22
4	Car-Hatchback			Junior mangement	Hired	50
5	Tempo Travellor			Field office	Own/hired	28
6	Double cabin Pick up			Field office	Own/Hired	28
7	Bolero/ Jeep			Field office	Own/Hired	243

Annexure 7: Duties and Functions of various proposed offices

Office	Duties and functions
Chief Engineer-Transmission North/South (Regional Office)- CE-TN/S	<ul style="list-style-type: none"> • Arranging purchase of major materials for construction of substation and lines • Issuing Administrative sanction to major works • Agreement authority to major turnkey works • DPR Approval for works up to 10 crores. • Annual plan finalization for circles • Obtaining Budget allocation and Budgetary control • EHT connection Agreement. • Preparation and Finalization of long term transmission plan. • Disposal of scrap • Control of various technical committees. • Control and monitoring of planned works. • Tendering of major works as per delegations • Issue sanction for arranging vehicles on rental basis to various offices under it. • To conduct meetings for review of progress of works and performance of each Circles under it. • Administrative control of all the offices under the region • Carry out any other works that may specifically assigned by the higher authorities.
Transmission Circle (TC) Office	<ul style="list-style-type: none"> • To report annual budgetary requirement of various capital and O&M works. • Audit of bills and payment • Monthly financial account preparation and submitting • Tendering of works & Contract Management. • Establishment matters of all employees under the circle • Monitoring of progress of capital and maintenance works. • Monitoring and facilitating various litigations and court cases. • To procure decentralized items and to allocate the materials for the works • To implement and plan all the scheme works • To arrange hired vehicles for various offices under it. • To arrange disposal of scrap items • To carry out and monitor all the project works and report to higher offices of Chief Engineer and Director. • To conduct periodical Inspection to improve the performance and efficiency of all the offices under it. • To arrange speedy restoration supply during major interruptions. • To conduct meetings for review of progress of works and performance of each divisions under it. • To take appropriate action to reduce AT & C losses along- with safe working atmosphere to avoid accidents. • To carryout Transfer and Posting of personnel up to the rank of Assistant Engineer and Senior Superintendent. • Carry out any other works that may specifically assigned by the higher authorities. • To act as Appellate Authority for Right to Information. • Issuing AS and TS as per Delegation Of Powers

Transmission Division (TD) office	<ul style="list-style-type: none"> • Planning of works • Budget and annual plan preparation • Issuing Administrative and Technical sanction as per DOP. • Estimation, Design, preparation of DPR. • Tendering and awarding works. • Operation and maintenance of substation and lines under the Division. • Co ordination with LD and arranging planned shut down for maintenance works. • Managing interruption and devising plan to improve availability of transmission elements. • Prepare and scheduling annual maintenance plan • Execution of various works/projects and monitoring progress. • Arranging preventive maintenance and operating substations and lines 24x7. • Co ordination with various departments like Electrical Inspectorate, Telecom, local bodies to get various permissions. • Technical/Protection Audit. • Co ordination with System operation wing for condition monitoring of various equipment. • Verification of various maintenance records and registers operating instructions etc. • Conduct review meetings for monitoring capital and maintenance works • Carry out any other works that may specifically assigned by the higher authorities.
Transmission Sub Division (TSD) Office	<ul style="list-style-type: none"> • Responsible for Estimation/preparation of DPR/Tendering/Contract finalization towards O&M of Minor Substations and O&M of Major Substations under its control. • Responsible for supply/load rearrangements for substations under its control. • Arrange work and purchase as per delegation. • Review/Recommend/Plan the proposals for capital works like up-gradation/Bay addition/Bay extension/Equipment replacement/Protection augmentation etc in substations reported from the Transmission Section concerned. • Responsible for conducting regular inspection and monitoring of maintenance of equipment in each substation according to the approved scheduled maintenance plan of substations under its control. • Co-ordination with various statutory agencies and Utilities (Inspectorate, PTCC,PWD,KWA,NH, Corporation, Municipalities ,Panchayaths etc) for smooth execution of works • Responsible for Compliance of Grid code/CEA regulation/KSEBL Standard Specification under its jurisdiction • Responsible for supervision of works and compliance of Safety & Quality during execution • Timely attending /assisting in all court cases under its jurisdiction, if required • Supervision and control of LMS/Transmission sections under its control if available • Arrange, vehicle for the Transmission Section under its control • Maintain all statutory registers

	<ul style="list-style-type: none"> • Prepare EHS & Quality plan • Carry out any other works that may specifically assigned by the higher authorities.
Transmission section (TS)	<ul style="list-style-type: none"> • Responsible for upkeep and maintenance of each substation under its control. • Prepare and schedule annual Maintenance Plan of each major equipment according to KSEB standard practice and manufacture's recommendation per substation basis under its control. • Manage and control of 24X7hrs operation of minor substations. • Manage and control of 24X7hrs operation of major substations. Arrange and controls of duty off/leave of operators. Assign Assistant Engineer when there is shortage of operating staff on exigencies, to take the duty of operator and assign the Technician in the 33kV substation under the Transmission section or Technician in the maintenance team of the concerned substation to attend as shift assistant at any major substation under its control as and when required. • Responsible to attend breakdown/scheduled maintenance of each substation. • Responsible for load rearrangement on exigencies as per the direction AEE in charge of the section. • Prepare estimate for major maintenance works which need contract engagement. • Initiate and identify required capital works and report to the Transmission Subdivision • Up-keep and maintain of department vehicle if available, Or else maintain Log and arrange payment to the contract vehicle. • Maintain all statutory registers • Prepare EHS & Quality plan • Ensure Compliance of safety & quality during work • Responsible for Asset Management of each Substation under its control. • Carry out any other works that may specifically assigned by the higher authorities.
33kV Line Maintenance Unit (LMU)	<ul style="list-style-type: none"> • Prepare and schedule annual Maintenance Plan of each 33kV Lines under its control according to prevailing standards to ensure availability of 33kV Lines for 24X7 hrs. • Responsible for regular line patrolling and arranging required maintenance works. • Responsible to attend breakdown/scheduled maintenance of each 33kV line. Arrange Permit to work (PTW) in co-ordination with Distribution wing • Ensure maintenance of statutory clearance along entire route length of the line under its control • Prepare estimate for major maintenance works which needs contract engagement • Up-keep and maintain of department vehicle if available or maintain Log and arrange payment to the contract vehicle. • Condition monitoring of 33kV lines and suggesting required up-gradation / modernization works, if required. • Maintain all statutory registers including details of asset (tower/pole var schedule etc.) • Prepare EHS plan & Quality plan

	<ul style="list-style-type: none"> • Ensure Compliance of Safety & Quality during work • Carry out any other works that may specifically assigned by the higher authorities
Line Maintenance Section (LMS)	<ul style="list-style-type: none"> • Prepare and schedule Annual Maintenance Plan of all EHT Lines under its control according to prevailing standards to ensure availability of EHT lines for 24X7 hrs. • Responsible for regular line patrolling and carrying out required maintenance works. • Responsible to attend breakdown/scheduled maintenance of each EHT lines .Arrange Permit to work (PTW) in co-ordination with Transmission Division and Load Dispatch Centre. • Prepare estimate for major maintenance works which needs contract engagement • Maintain all statutory registers and update details of asset including line profile & Tower schedule • Responsible for maintaining statutory clearances along the entire route of the line under its control • Condition monitoring of EHT lines and suggesting required up-gradation/modernization works. • Up-keep and maintain of department vehicle if available, Or else maintain Log and arrange payment to the contract vehicle. • Prepare EHS & Quality plan • Ensure Compliance of Safety & Quality during work. • Recording and reporting monthly meter reading of EHT consumers(if required) • Carry out any other works that may specifically assigned by the higher authorities.
Power Transformer Repair Unit (PTRU)	<ul style="list-style-type: none"> • Repair, Refurbishment and major overhauling of Power Transformers as reported by transmission wing. • Co-ordinate with Power Equipment Testing wing for testing and validating repaired Power Transformer • Initiate survey reporting of unserviceable Power Equipment/parts available at PTRU • Upkeep and maintenance of Tools, Tackles etc • Prepare EHS plan& Quality plan • Ensure Compliance of Safety & Quality during work • Carry out any other works that may specifically assigned by the higher authorities.
Power Equipment Repair Unit (PERU)	<ul style="list-style-type: none"> • Repair, Refurbishment and major overhauling of Power Equipment (CT, PT, CVT, CB, Isolators etc.) as reported by transmission wing. • Co-ordinate with Power Equipment Testing wing for testing and validating repaired equipments. • Initiate survey reporting of unserviceable Power Equipment/parts available at PTRU • Upkeep and maintenance of Tools, Tackles etc • Prepare EHS plan& Quality plan • Ensure Compliance of Safety & Quality during work

	<ul style="list-style-type: none"> • Carry out any other works that may specifically assigned by the higher authorities.
Transmission Construction Sub Division (TCSD)	<ul style="list-style-type: none"> • Responsible for Estimation/preparation of DPR/Tendering/Contract finalization of all capital works (construction of Substation /bay extension in any substation or line construction under the jurisdiction of the concerned Transmission Division), except minor capital works. • Responsible for execution of all funded/centrally aided works • Responsible for Design , Engineering and necessary approvals • Arrange work and purchase as per delegation. • Arrange/Allocate required materials. • Responsible for supervision and timely completion of all capital works and compliance of Safety& Quality during execution • Responsible for major Civil / Electrical maintenance of all Offices/Substation buildings/Quarters/other buildings under the concerned Transmission Division as per the requirement received from the concerned offices as per the direction of Executive Engineer • Co-ordination with various statutory agencies and Utilities (Inspectorate, PTCC,PWD,KWA,NH, Corporation, Municipalities ,Panchayaths etc) for smooth execution of works • Arranging all statutory approvals/NOC s’ before commencement of new Substation construction/line construction/up-gradation/UG cable construction • Responsible Compliance of Grid code/CEA regulation/KSEBL Standard Specification under its jurisdiction • Arrange, Operate & Maintain of Vehicle under its control • Timely attending/assisting in all court cases under its jurisdiction • Maintain all statutory registers • Prepare EHS & Quality plan • Carry out any other works that may specifically assigned by the higher authorities.
Chief Engineer-System Operation & Monitoring (CE-SOM)	<ul style="list-style-type: none"> • Responsible for the management of State Load Dispatch Centre (SLDC) in Kerala. • Ensuring integrated real time operation of the power system in the State and is responsible for discharging various functions such as optimum scheduling and dispatch of electricity within Kerala (including those of purchasing/ selling energy directly from traders), monitor grid operations, exercise supervision and control over the intra-state transmission system, scheduling of power from Central Generating Stations, economic load dispatching, merit order dispatching, etc. observing the provisions of Electricity Act, 2003, Indian Electricity Grid Code, various regulations of CERF, Kerala State Electricity Grid Code and Regulations of KSERC. • Other responsibilities of the office CESOM, Kalamassery include maintaining Load Generation Balance of the Kerala Power System, scheduling of Internal generation, scheduling of CGS, LTA, Market Operations for the marginal quantity, Merit Order Scheduling (Economic load dispatching), Imposing real time restrictions on demand, contingency planning, black start, etc., Energy accounting for the entire power transacted through Kerala Grid., Issuing NOC for Open access, settlement of the transactions of open access consumers including KSEBL, Energy Accounts reconciliation of open access

	<p>transactions., All regulatory matters connected with open access, power purchase and system management, representing in CERC and SERC for such matters. Representing KSEBL in various committees at regional level and national level, Nodal Officer for Power System Development Fund works in Kerala etc.</p> <ul style="list-style-type: none"> • Coordinating and monitoring the activities of all field offices through System Monitoring Circles. • Act as sole ARU for SOM wing including that for Establishment, Capital works, O&M works and System operation related collection & expenses. • Carry out any other works that may specifically assigned by the higher authorities.
System Monitoring Circle (SMC)	<ul style="list-style-type: none"> • Overall responsibility of the activities of other offices under the Circle viz RPM/S&T field Divisions and sub divisions which include the Commissioning testing, Performance monitoring testing of all electrical installation of KSEB Ltd. such as transformers, CT,PT, LA, Circuit breakers, meter and relays at substations etc. • Commissioning and maintaining of all communication networks including All Die Electric self Supporting (ADSS) & Optical Ground Wire (OPGW) optical fibre networks, PLCC networks and all communication equipment, periodic testing and corrective action, etc. • Planning of additional OF networks and expansion for providing visibility of the grid to SLDC, Leasing out of spare Optic Fibre capacities and Testing of roof top solar installation are also looked after by field units. • Passing of all Purchase & work bills and send to ARU for payments. • Approval authority of all correspondences originating from SMC office. • Convene monthly review meetings on activities done under Communication & Relay Division. • Monthly interruption analysis – reasons for tripping & remedial action. • Fixing priorities in the field activities – taking timely decision. • Monthly monitoring of Scheduled vs actual in field activities – taking necessary action. • Technical audit – Team leader for technical audit team of concerned jurisdiction • Sanctioning estimate/ forwarding estimate for sanction to the Chief Engineer (SOM) for sanction. • Conduct inspection of various offices/ work sites under this circle. • Arriving decision on testing charging faulty power System equipment by taking field inputs & co-ordination with transmission authorities. • Forecasting & arriving budget requirements. • Maintaining good co-ordination with Transmission, Generation & Distribution wings on related activities. • Review & approve the need of sophisticated technologies for protection systems, testing equipments, energy meters & communication equipments and take necessary action for materializing the same. • Suggest corrections and modification for the specification of material to be purchased by KSEB for the exclusive use of relay, PET, communication, meter testing and SCADA as and when needed. • Vehicles – Availability, utilizations, expenditure

	<ul style="list-style-type: none"> • Analysis of Data from Transmission, Generation regarding new projects planned and technical issues of existing systems. • Monitoring of all activities for getting / maintaining ISO certification including training to all staffs & officers under SMC • Arrange updating of Technical specification & equipment wiring documentation of all wings under SMC • Any other activities required for the smooth functioning of the SMC • Carry out any other works that may specifically assigned by the higher authorities.
RPM Division	<ul style="list-style-type: none"> • Overall charge of the activities of the Relay Sub Divisions, PET subs Divisions and Meter testing subdivisions under the Circle. • Follow up of corrective action in liaison with the Transmission wing. • Technical advice to the Deputy Chief Engineer (System Operation) in matters pertaining to the protection aspects. • Relay co-ordination and grading of all feeders and equipments other than grid feeders. The relay co-ordination of the grid feeders and under frequency relays and any modification shall be done with the concurrence of Chief Engineer (Trans-System Operation). • Submitting consolidated progress report of relay, PET and meter testing works to Dy. Chief Engineer, System Operation Circle. • Major Interruptions, reasons and corrective actions – Daily. • Review of Schedule vs actual – subdivision level activities – Monthly. • Changes in grid parameters requiring attention of Relay / PET /Meter testing wings– As and when needed. • Review of Violation of safe loading, abnormal operations – As and when needed. • Review and approval of new projects / augmentation of existing plants – As and when needed. • Review of Expected expenditure – all Sub division level – Yearly. • Technical audit-convening and follow-up. • Updation of Technical Specification & approval of comments on Schematic drawing of control and relay panel to be purchased by KSEB Ltd.- Review and suggest corrections as & when needed. • All activities for getting / maintaining ISO certification including training to all staffs & officers under the division. • Carry out any other works that may specifically assigned by the higher authorities.
SCADA & Telecom Division	<ul style="list-style-type: none"> • Give Technical advise to the Deputy Chief Engineer (System Monitoring) in matters pertaining to the communication & SCADA aspects. • Overall charge of Communication & SCADA within the Circle. • Follow up of corrective action in liaison with the TNMS Sub Division under the Chief Engineer (SOM). • Propose suitable operating frequency of PLCC links. • Submitting consolidated progress report of Communication wing to Dy Chief Engineer, System Monitoring. • Communication link failures, SCADA failures – Corrective action taken – Daily/ Real time depending on severity.

	<ul style="list-style-type: none"> • Review of Schedule vs actual – Monthly activities done at subdivision level. • Breakdown works attended, details – Monthly. • Details of new projects planned and augmentation of existing plants – As and when needed. • Review and approve Expected expenditure – subdivision level – Yearly. • Submission of interruptions prepared by SCADA wing for the System Operation review and to alert the concerned officers in the maintenance wing about any mal-operation / failure in the Protection signaling system. • Conduct local system review meeting in liaison with the concerned officials from Relay, Communication, Transmission and Distribution and report to Deputy Chief Engineer (System Monitoring Circle). • Furnishing the required information of the system to the higher offices. • Fixing up of the merit order of feeders / equipments on which remote tripping is to be done from time to time in consultation with Deputy Chief Engineer (Grid), Kalamassery. • Co-ordination with BSNL for proper maintenance of MPLS connectivity. • All activities for getting / maintaining ISO certification including training to all staffs & officers under the division. • Carry out any other works that may specifically assigned by the higher authorities.
Relay, PET& Meter Sub Division	<ul style="list-style-type: none"> • To work out and implement the grading of relays at all stations as approved by Exe. Engineer, Relay. • Submitting progress report to Exe. Engineer (Relay). • Daily reviewing of EHT Interruptions, its reasons and corrective actions. • Detailing of new projects planned and augmentation of existing plants – As and when needed. • Approval of estimates, submission for sanction, scheduling and execution of testing job on Deposit work basis for outside clients. • Responsible for arranging vehicle for Relay & Meter Testing Sections together • Responsible for arranging separate vehicle for PET Section , • Safety officer of the Sub division - Ensure safety in working environment and use of adequate Personnel protective equipments at site. • Arranging periodic testing and calibration of testing equipments. • Arrange procurement of Testing/Measuring instrument within the delegation. • Maintaining Imprest for O&M activities of Sub division. • All activities for getting / maintaining ISO certification including training to all staffs & officers under the Sub division. • Any other activities directed by higher authorities. • Responsible for preparation of annual routine test plan of all feeder protection and Power equipment testing in each Substations under its jurisdiction. • Responsible for preparation of annual plan on Protection commissioning tests for new bays/Retrofitting/new protection schemes (busbar protection and current differential protection etc.) • Responsible for preparation of annual plan on Power Equipment commissioning tests of new bays in new / existing substations. • Responsible for testing and commissioning of new Bays/Transformers/Busbar protection in new and Existing substations.

	<ul style="list-style-type: none"> • Responsible for Trend/Condition monitoring of all major equipment in the substation and to report the same to Transmission wing. • Review and analysis of interruption and to report the same to Executive Engineer, RPM Division • Responsible for issuing comments towards GTP/GA/CRP Schemes for new substations/Augmentation • Recommendation to Transmission wing on Protection up-gradation / replacement/up-gradation of Power equipment • Recommendation to Transmission wing on up-gradation / replacement of Power equipment • Responsible for Compliance of Grid code/CEA regulation/KSEBL Standard Protection specification under its jurisdiction • Maintain all statutory registers • Prepare EHS & Quality plan • Carry out any other works that may specifically assigned by the higher authorities.
Relay Testing Section	<ul style="list-style-type: none"> • Daily reviewing of EHT Interruptions, its reasons and corrective actions. • Attending any Tripping anomalies if reported on EHT and HT feeders. • Attending, reviewing and incorporating Changes in grid parameters requiring attention of Relay wing – As and when needed. • Attending Violation of safe loading, abnormal operations – As and when needed. • Preparation of estimates, submission for sanction, scheduling and execution of testing job on Deposit work basis for outside clients. • Carrying out the scheme modification works, Retrofitting of relays as may be required for improving the healthiness of protection schemes. • Ensuring round the clock attention for ensuring healthiness of the transmission system under his/her jurisdiction. • Arrange survey report of unserviceable items. • Responsible for carrying out routine test of the entire protection relays/schemes (Line /Transformer/BB protection etc)in each Substations under its jurisdiction and to report the same to the Transmission wing • Responsible for carrying out breakdown test of protection relays/schemes (Line /Transformer/BB protection etc) feeder protection in each Substations under its jurisdiction and to report the same to the Transmission wing • Responsible for conducting Pre-commissioning and commissioning tests of new Bays/Transformers/Busbar protection in new and existing substations under the guidance of Assistant Executive Engineer. • Assist AEE on review and analysis of interruption and to report the same to Executive Engineer, RPM Division • Review and report comments on GTP/GA/MQP/CRP Schemes for new substations/Augmentation • Initiating Protection up-gradation and replacement/upgradation of Power equipment • Ensure Compliance of Grid code/CEA regulation/KSEBL Standard Protection specification under its jurisdiction • Carry out any other works that may specifically assigned by the higher authorities.

	<ul style="list-style-type: none"> • Maintain all statutory registers
Power Equipment Testing Section	<ul style="list-style-type: none"> • Routine testing, troubleshooting and commissioning of all power equipments from 33 kV to 220 kV at all substations under their jurisdiction. • Carryout routine healthiness testing of equipments in the substations in the following frequency. 220kV and 110kV substations – once in 12 months. 66 kV substations – once in 24 months. 33 kV substations – once in 36 months. Indoor 11/22/33 kV panels of 33/66/110/220 kV substns - once in 12 months. • Analyzing the degradation trend, cause of power equipment failure and giving suggestions for preventing power equipment failure. • Identifying faulty power equipments for replacement before causing permanent failure and interruption of supply. • Analyzing performance of power equipments supplied by different vendors and giving suggestions for future purchase based on the performance of equipments. • Ensuring that all new equipments to be commissioned are confirming to IEC and IEEE standards. • Commissioning of all new and re-commissioning of repaired equipments at substations from 11 kV to 220 kV voltage level. • Ensuring safety of personnel and equipments during testing. • Preparation of estimate and carrying out deposit works for testing substation power equipments of outside clients. • Giving major equipment failure analysis report as per CEA regulations. • Testing of weather proof wire, cables and other distribution materials handled by distribution stores. • Attending co-ordination meeting of transmission wing. • He / She is the custodian of the departmental vehicle, if available, and must ensure running condition of the vehicle. • Arrange survey report of unserviceable items. • Arranging periodic testing and calibration of testing equipments. • All activities for getting / maintaining ISO certification including training to all staffs & officers under the Sub division. • Responsible for carrying out routine test of the entire Power Equipment in each Substations under its jurisdiction and to report the same to the Transmission wing • Responsible for carrying out breakdown test of Power Equipment in each Substations under its jurisdiction and to report the same to the Transmission wing • Responsible for conducting pre-commissioning and commissioning tests of new Power Equipments on new bays in new and existing substations under the guidance of Assistant Executive Engineer. • Review and report comments on GTP/GA/MQP of Power Equipment for new substations/Augmentation • Initiating up-gradation and replacement of Power equipment • Ensure Compliance of Grid code/CEA regulation/KSEBL Standard Specification under its jurisdiction • Maintain all statutory registers

	<ul style="list-style-type: none"> • Carry out any other works that may specifically assigned by the higher authorities.
Meter Testing Section	<ul style="list-style-type: none"> • To make field visits to stations under the jurisdiction of the Sub-division for testing and calibration of HT and EHT energy meters & transducers of feeders and transformers once in 12 months and for testing of meters before commissioning. • Analyzing the consumption data received from stations monthly and arranging field visits for testing/inspection if any abnormalities are found. • Submitting proposals for the purchase of testing equipments. • Rectification of errors in metering arising due to wrong connections and troubleshooting etc. and replacement of faulty meters. • Testing and certifying solar plants for grid connectivity of individual consumers in co-ordination with Distribution wing. • He / She is the custodian of the departmental vehicle, if available, and must ensure running condition of the vehicle. • Arrange survey report of unserviceable items. • Arranging periodic testing and calibration of testing equipments. • All activities for getting / maintaining ISO certification including training to all staffs & officers under the Sub division. • Responsible for carrying out routine test/Re-Calibration test of the entire EHT meters in each Substations under its jurisdiction and to report the same to the Transmission wing • Responsible for carrying out breakdown test of EHT meters in each Substations under its jurisdiction and to report the same to the Transmission wing • Responsible for conducting pre-commissioning/commissioning tests of new Bays in new and Existing substations under the guidance of Assistant Executive Engineer. • Review and report comments on GTP/GA/MQP/CRP Schemes for new substations/Augmentation • Initiating up-gradation and replacement • Ensure Compliance of Grid code/CEA regulation/KSEBL Standard Protection specification under its jurisdiction • Maintain all statutory registers • Carry out any other works that may specifically assigned by the higher authorities.
SCADA & Telecom Sub Division	<ul style="list-style-type: none"> • General administration of sub division office. • All matters pertaining to Capital works which includes installation, testing and Commissioning of PLCC equipments, RTU, SCADA system, Protection couplers, Optical fibercommunication equipments, Optical fiber links, Communication Battery and Battery chargers, outdoor PLCC equipment of the stations under his/her control. • Implementation of System improvement works like Testing and commissioning of System Protection Schemes, Video Conferencing, interfacing new feeders and transformers to SCADA system, preparation of new test formats. • IO list preparation, Configuration of new RTU or new Database to existing

	<p>RTU in co-ordination with the SCADA Subdivision, Kalamassery, Trivandrum</p> <ul style="list-style-type: none"> • Conducting Monthly conference, Work scheduling, Monitoring the execution and Progress of the work and check measuring the work. • Ensure progress as per schedule is achieved. • Trouble shooting and break down maintenance of all Communication equipments. • Carry out Routine testing of digital and analogue data in co-ordination with SCADA wing and testing of protection signaling. • Submission of Monthly progress reports of the Sub division to Exe. Engineer, Communication. • Communication link failures, SCADA failures, protection Channel failures – Corrective action in real time basis. • Details of new projects planned and augmentation of existing plants – As and when needed. • Scheduling and execution of communication / SCADA up gradation projects. • Modernization and up gradation of communication links as may be required. • Custodian of Departmental vehicle, upkeep and maintenance of the same. • Preparation of Technical documents and specifications as may be required. • Arranging splicing work of optical fibre junction points at tower locations for the leased fiber. • Ensure proper quality in all services rendered by Communication wing. • Safety officer of the Sub division - Ensure safety in working environment and use of adequate Personnel protective equipments at site. • Arrange survey report of unserviceable items. • Arranging periodic testing and calibration of testing equipments. • Arrange procurement of Testing/Measuring instrument within the delegation. • Maintaining Imprest for O&M activities of Sub division. • Carry out any other works that may specifically assigned by the higher authorities.
SCADA & Telecom Section	<ul style="list-style-type: none"> • General administration of section office. • Assisting AEE for Installation, testing and Commissioning of PLCC equipments, RTU, Protection couplers, optical fiber communication equipments, Optical fiber links, Battery and Battery chargers, outdoor PLCC equipment, etc. at the stations under his control. • Assisting AEE for Installation Testing and commissioning System improvement works like of System Protection Schemes, Video Conferencing, interfacing new feeders and transformers to RTU. • Custodian of all PLCC & wide band communication, SCADA equipments and all other plant, equipments and tools at the station under his/her control. • Up keeping Capital and Material Account and Maintaining related Registers. • Monitoring the healthiness of all PLCC channels, protection coupler and System Protection Schemes – Daily. • Testing, monitoring and troubleshooting of all communication links and Exchanges under his/her control. • Trouble shooting, break down and scheduled maintenance of all PLCC equipments, RTU, Transducers, Protection coupler etc.

	<ul style="list-style-type: none"> • Maintenance and up keeping of FCT, RUG, CUG phones under various distribution, transmission, Generation and all other KSEB offices under his control. • Preparation of estimates for Capital, O & M works and purchase of spares and consumables etc. • Preparation & submission of maintenance report and progress of work to Assistant Executive Engineer (Communication). • Ensuring round the clock attention for monitoring the healthiness of the voice, data and protection communication system under his/her jurisdiction. • Ensure proper quality in all services rendered by Communication wing. • Ensure safety in working environment and use of adequate Personnel protective equipments at site. • Arrange survey report of unserviceable items. • Arranging testing and calibration of testing equipments. • Maintaining imprest for O&M activities of Section. • Supervising splicing work of optical fibre junction points at tower locations for the leased fibres. • Repair and maintenance of Communication equipments and other accessories. • Up keep and maintenance of communication room, wide band room etc as custodian. • Carry out the execution work and take the measurement and proper recording of the work • Supervise the Preventive & break down maintenance carried out by the AMC Contractor. • Carry out any other works that may specifically assigned by the higher authorities.
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For the Committee

Sd/-
(Dr. Rajan P)
Chairman

For the Committee

Sd/-
(Renjanadevi K)
Convenor

Committee on
Improvement of Service Quality & Organizational Effectiveness
in Transmission Wing of KSEBL
September 2019

Additional Details furnished by Transmission Committee on RSC Reports based on the remarks during the all committee meeting on 6th November 2019

1. Number of offices and Total manpower requirement

It is found that the number of offices in the new proposal is reduced even after considering the staff requirement in QHSE wing and other newly proposed offices. Hence the total establishment and administration cost of offices will come down drastically, but without compromising the need based requirement in line with the activities of Transmission wing.

The comparison of total manpower in various wings of Transmission, as proposed/existing is shown below. The comparison of number of offices is also shown.

1. Transmission wing	- 3313/3598
2. System Operation wing	- 326/326
3. QHSE wing	- 24/0
4. TransGrid	- 127/127
5. Overall number of Officers & Staff	-3790/4051
6. Total number of offices	-542/641

2. Number of functional units & Account Rendering Units (ARUs)

Since the committee has considered the functional operation of various wings in the organization along its vertical hierarchy, comprising of various levels of categories right from bottom to top. The major classification of functional areas and its comparison with newly proposed/existing is shown below.

The newly proposed/existing staff strength in functional area wise are shown below

1. Core Engg-Elect-Transmission, SOM, QHSE & TransGrid	- 3060/3182
2. Core Engineering Electronics & Communication	- 80/0
3. Support wing-Civil Engineering	- 136/150
4. Support wing – Accounts	- 89/32

- | | |
|---|-------------|
| 5. Support wing- Administration & General | - 425/687 |
| 6. Overall number of Officers & Staff | - 3790/4051 |
| 7. Overall number of ARUs | - 16/17 |

Total head count in both the Core engineering and Support wings are less than the existing staff strength, which in turn will reduce the actual cost of operation.

3. Number of Categories and manpower Requirement

The hierarchy proposed by the committee is slightly different from the existing categories and hence the comparison of categories can be taken for a category to a group of the newly proposed category or vice versa (Eg: The total number of AEs will be compared to newly proposed AEs + Sr Engrs and similarly Total Overseers + Linemen are compared to total of Sr Technician + Technician).

A category wise comparison and the difference with the existing in each category are also shown. Please note that few of the functional units and categories are newly formed which are also shown.

A	LINE STAFF-ELECTRICAL			Proposed strength	Grouping, if any	Grouping, if any Total	Existing category	Existing strength	Grouping, if any and Total	Difference Plus/Minus ()
	Director-Transmission&System Operation	DTSO	SBU-T Head	1		1	DTSO	1	1	0
	Chief Engineer-Selection Post	CE-T	Regional Head	4		4	CE	4	4	0
	Deputy Chief Engineer-Electrical&Electronics	DCE	Circle Head	20		20	DCE	20	20	0
	Executive Engineer-Electrical&Electronics	EE	Division head	55	EE-Ele+EE-S&T	59	EE	68	68	(9)
	Assistant Exe. Engineer-Electrical&Electronics	AEE	Sub Division Head	203	AEE-Ele+AEE-S&T	215	AEE	225	225	(10)
	Senior Engineer-Electrical&Electronics	Sr.E	Major/Mace sections Head	310	Grouped as below	included below	New		0	
	Assistant Engineer-Electrical&Electronics	AE-EE	Minor Section head/ Operator	372	AE-Ele+AE-S&T+Sr.E-Ele+Sr.E-S&T	704	AE	778	778	(74)
	Junior Engineer	JE	Senior Supervisor	252	Grouped as below	included below	New		0	
	Sub Engineer-Electrical & Electronics	SE	Supervisor	450	SE-Ele+JE-Ele+SE-S&T+JE-S&T	703	SE	643	643	60
	Sr.Technician	Sr.TN	Highly Skilled	423	STN-Ele+TN-Ele+STN-S&T+TN-S&T	912	Overseer	706	869	43
	Technician-Electrical&Electronics	TN	Skilled	448	Grouped as above	included above	LM-1	163	included above	
B	SUPPORT STAFF-SCADA & TELECOM									
	Executive Engineer-SCADA&Telecom	EE-S&T	Divisional head	4	Grouped along with Electrical	Included in EE-Ele count	EE		0	
	Asst.Executive Engineer-SCADA&Telecom	AEE-S&T	Sub Divisional Head	12	Grouped along with Electrical	Included in AEE-Ele count	AEE		0	
	Senior Engineer-SCADA&Telecom	Sr.E-S&T	Major/Mace sections Head	11	Grouped along with Electrical	Included in AE-Ele count	New		0	
	Assistant Engineer-SCADA&Telecom	AE-S&T	Minor Section heads	11	Grouped along with Electrical	Included in AE-Ele count	AE		0	
	Junior Engineer-SCADA&Telecom	JE-S&T	Senior Supervisor	0	Grouped along with Electrical	Included in EE-Ele count	New		0	
	Sub Engineer-SCADA&Telecom	SE-S&T	Supervisor	1	Grouped along with Electrical	Included in EE-Ele count	SE		0	
	Sr.Technician-SCADA&Telecom	Sr.TN-S&T	Highly Skilled	20	Grouped along with Electrical	Included in OVR-Ele count	OVR		0	
	Technician-SCADA&Telecom	TN-S&T	Skilled	21	Grouped along with Electrical	Included in LM-Ele count	LM1		0	

C	SUPPORT STAFF-CIVIL									
	Executive Engineer-Civil	EE-Civil	Civil Support-Regions	1		1	EE	1	1	0
	Assistant Executive Engineer-Civil	AEE-Civil	Civil Support-Circles	21		21	AEE	22	22	(1)
	Senior Engineer-Civil	Sr.E-Civil	Civil Support-Divisions	20	Included below	included below	New			
	Assistant Engineer-Civil	AE-Civil	Civil Support-Sub Divisions	20	AE-C+Sr.E-C	40	AE	42	42	(2)
	Junior Engineer-Civil	JE-Civil	Civil Support-Senior supervisor	37	Included below	included below	New		0	
	Sub Engineer-Civil	SE-Civil	Civil Support-Supervisor	37	SE-Civil+JE-Civil	74	SE	85	85	(11)
	Sr. Technician-Civil	Sr.TNC	Civil Support-High Skill	0	New		OVR		0	
	Technician-Civil	TNC	Civil Support-Skilled	0	New		LM1		0	
D	SUPPORT STAFF-ACCOUNTS									
	Finance officer	FO	Regional level support	2	FO+AFO+DA	13	FO	13	17	(4)
	Assistant Finance officer	AFO	Circle level support	7	Included above		AFO	3	included above	
	Senior Divisional Accountant	Sr.DA	Minor circles level support	0	Included above		New Post			
	Divisional Accountant	DA	Divisional level support	4	Included above		DA	1	included above	
	Senior Financial Assistant	SFA	Highly skilled	58	Added to SA		New Post			
	Junior Financial Assistant	JFA	Skilled	18	Added to SA		CASHIER	15	15	(15)
E	SUPPORT STAFF-ADMINISTRATION									
	Senior Superintendent	SS	Minor circles level support	15		15	SS	32	32	(17)
	Superintendent	Supt	Divisional level support	3	Included below	included below	Supmt	17	Included below	
	Senior Administrative Assistant	SAA	Highly skilled	47	SFA+JFA+SAA+JAA	126	SA	101	121	5
	Junior Administrative Assistant	JAA	Skilled	0	Included above	Included above	JA	3	Included above	
	Senior Word Processing Assistant	Sr.WPA	Highly skilled	5	Sr.WPA+WPA	52	SCA/CA	15	63	(11)
	Word Processing Assistant	WPA	Skilled	47	Included above	Included above	JFCA/SFCA	48	Included above	
Grand Total manpower for Transmission wing				2960		2960		3006	3006	(46)

F	SUPPORT STAFF REDUCED FROM TIME TO TIME									
	Senior Driver	Sr. DR	Highly skilled	18	Included below	Included below	Driv			
	Driver	DR	Skilled	189	Sr.DRV+DRV	207	Driv	387	387	(180)
	Senior Office Assistant	Sr.OA	Senior Helper	5	Included below	Included below				
	Office Assistant	OA	Helper	48	Sr.OA+OA	53	OA	67	67	(14)
	PTC sweeper	PTC		48		48	PTC Sweeper	17	17	31
				308		308		471	471	(163)
G	MAZDOOR WHICH CAN BE OUTSOURCED IF DESIRED									
	Senior Mazdoor	Sr.MZ	Senior Labour	241	Sr.MZR+MZR	522	Worker	574	574	(52)
	Mazdoor	MZ	Labour	281	Grouped as above	included above	Worker			
				522		522		574	574	(52)
	Grant Total			3790		3790		4051	4051	(261)

The Total requirement of 3790 is including the 471 positions of Driver, OA and PTC sweeper which are becoming less in number in due course, due to the system change of hiring vehicle, computerization, office automation/e-office, contract arrangement etc.

It may be specifically noted that the committee has proposed for taking up the new/additional works and the number of places shown below are added in the above proposed total manpower requirement.

- | | |
|--|----------|
| 1. QHSE wing for Transmission 20 offices | - 24 Nos |
| 2. Station Assistants for 33kV substations | -159 Nos |
| 3. 33kV Major LMUs 28Nos | -140 Nos |
| 4. 33kV Minor LMUs 9Nos | -27Nos |
| 5. 1 No PTRU additional and 2Nos of PERU | -18Nos |

Even after adding the above mentioned 368 positions additionally, the Total requirement of manpower is maintained well below the current working strength in Transmission wing.

Hence overall reduction in the manpower expected would be 471(Support staff)+56 (Reduction in core staff)+368 (For Additional works) = 895 Nos. But it is proposed that KSEBL owned subsidiary company KPISC as suggested by this committee shall be able to supply the required manpower with right qualification and skill, so as to bring the outsourced staff also under an organized sector. Also 127 positions in TransGrid would also be reducing further, as the posts are abolished as and when the works are completed.

4. Total vehicle requirement

Since the numbers of offices are reduced or functionally/geographically re-grouped, the requirement of vehicles would be less than the current numbers and can be reallocated or hired as per need.

5. Tangible benefits due to reduction in current expenditure

Even though the manpower requirement would be reduced by around 20% under various categories, the expected expenditure reduction per month would be around 2 Crores, when 3790 people are employed. If we would avoid recruiting other support staff like OA, Driver & PTC then the monthly reduction would be around 3 Cr i.e., when we are employing only 3482 persons permanently.

6. Quality of service, Quality of product and Quality of manpower.

The new proposal is purely based on the actual activity based requirement and skill levels needed in the organization as of now. There may be system changes further and the need based strength may have to be reviewed at that time. However, the special rules forthcoming in KSEBL needs to address the requirements for intake from the open market, the competency tests to be qualified for each elevation of employees in their career and the trainings needed to be attended to ensure their career development. If this proposal is strictly implemented, it would be sure that the end customers will feel the taste of these changes in quality within two years positively.

7. Segregation of capital and revenue expenditure

Since the committee has proposed strict segregation of construction and O&M activities, so as to capitalize all the expenses related to TC subdivisions, which would be taken as the capital expenditure. Hence mixing of capital and revenue expenditure can be avoided.

8. Comments on other reports and few suggestions for unification

The committee has expressed few apprehensions on the other reports as follows:

- Other committees have not gone for a radical change in the existing categories; rather they have rearranged the existing category groups to achieve the functional efficiency. But this committee feels that such arrangement may not give rise to a fully efficient functional system and needs to incorporate the measures to avoid structural aberrations by bringing in new categories based on the work study and reducing unqualified/ unskilled people working in various functional areas.
- The proposal of Distribution committee to dispense with recruitment of workers needs to be revoked and the physical labour force shall be recruited with a provision to obtain higher qualification or passing qualifying test to go up in their career, like other feeder categories. Otherwise, the required physical labour shall be hired from outside or through proposed KSEBL subsidiary company namely KPISC (Kerala Power Infrastructure & Services Company).
- Since the Transmission committee has proposed changes in the feeder categories, qualifications etc., it is mandatory to have uniform structure across the various functional verticals, so that the interchangeability of staff across the organization (after passing the requisite qualifying tests/ undergoing necessary training in the respective functional area) would not be jeopardized.
- The introduction of time grade promotion to various categories will avoid the career stagnation and monotony to the employee, which in turn will give rise to better functional effectiveness. Hence other committees shall also address this issue.
- It is suggested that the distribution sections with high index would be headed by Senior Engineer, with medium index will be headed by AE and the sections with small index would be headed by Junior Engineer. Also the Sub Division AEE shall head the O&M sections (SRT), Revenue Management Team (RMT) and Network Strengthening Team (NST) Capital/ Construction section so that the Assistant Executive Engineers are given responsibility of the entire Subdivision activities. It is also possible to have clear segregation of expenditure towards Capital and revenue. Hence the proposed SRT

shall be Distribution sections managing O&M activities only. Moreover, the NST sections shall be executing all capital works and the expenditure of NSTs will be fully capitalized.

- The role of PMD is bringing again confusion and dual control in administration and finalization and execution of projects. Since the projects are executed as small works the role of PMDs will be minimal and hence the control of NSTs shall be handed over to the Electrical Division EEs. Thus all activities under one Division shall be monitored and executed by Electrical Division EEs.
- The PMDs shall be renamed as QHSE Divisions to look after the QHSE functions and special functions like legal, disciplinary proceedings, APTS activities, Customer Relations etc., who will be directly reporting to QHSE wing.
- Distribution should also set up the QHSE wing for Distribution wing under one DCE under CE-QHSE to achieve the necessary quality and safety standards in the organization.
- The RMTs shall be suitably headed by SFA/ DA/ Sr DA based on the index of the sections related to revenue matters, who shall report to AEE of that Sub division.
- Disciplinary enquiry officer shall be assigned specifically while relieving AEE from the duties of enquiry officers. Similarly other duties relinquished from the NMT head shall be assigned suitably. If EE-PMD is assigned for QHSE, the above mentioned works can also be assigned to EE/AEE-QHSE.
- Bypassing/ Removing of hierarchy is seen in the Distribution report and also dual control of officers/ assets is noticed, which are not good for independent and efficient functioning of the organization.
- The segregation among Administration and Accounts wing is not proposed by other committees. But it is a requirement to employ rightly qualified people in accounts and administration. Administrative positions shall be specifically notified and personnel having Public relation/ administration qualifications shall be recruited as separate channel.
- Since the qualification of meter readers is also ITI, they shall also be recruited as Technician and Senior Technicians and shall be assigned the job interchangeably on rotation for meter reading, so that they will also be exposed to O&M activities of the section, which will be helpful during elevation in their career.
- The proposal on Generation-Electrical seems to be incomplete as it is not considering the specific offices in field level viz. Big/ Medium/

Small generating stations and possibility of reducing cost of O&M in generation wing. A little more elaborate and micro level station wise study is required to achieve the same.

- The proposal of maintaining Renewable energy generation wing as a separate department is not felt as necessary and hence Generation Chief Engineer can look after all kinds of generation units/ projects. Hence it is recommended to have One CE office at Thrissur namely CE-Generation-North by relocating CE (REES) who will be heading Kozhikkode, Thrissur and Kothamangalam Generation Circles. CE-Generation-South by renaming CE-Gen at Moolamattom heading Meencut, Moozhiyar and Moolamattom generation circles. Diesel power plants and renewable projects shall come under the respective generation circles.
- The civil wing requirement seems to be bulky while considering the ongoing projects and civil activities. Hence Civil design, Consultancy and construction wings can be brought under SPV or KPISC in due course. Now only three CEs viz CE(Civil-North/Central/South) and all other wings shall operate under DCEs/EEs under each CEs Viz: Investigation, Design & Consultancy, Construction, O&M, Dam Safety etc. For the civil activities under each SBU, the civil staff can be deployed to that wing as per the report of the concerned committees as staff under concerned SBU, which need not be transferable.
- The corporate reforms report has no mention about the employee selection, qualification, compensation etc. It is advisable to have lighter corporate office with more delegations to field offices with right MIS systems to monitor. Considerable reduction in cost also not noticed in the corporate office restructuring.
- It is advisable to have the Director Board with One Director for each SBU namely Generation & RE, Transmission & SOM and Distribution & QHSE. One Director can be assigned for Corporate affairs viz: HR, SCM, IT & Admin. One Director for Finance, Accounts & audit activities also. Thus Board will be consisting of 5 Directors under CMD. CMD will be looking after vigilance, corporate communication, Legal affairs & Business Development.
- Other measures to increase productivity and increasing the quality of people are not seen clearly in other reports. Modifying the working time to minimum 40 Hour per week, Bio metric punching, performance based compensation etc. are also needs to be brought

in, aiming the functional effectiveness and sustainability of the organization.

- It is also suggested to include Grievance cell for employees and pensioners of KSEBL under personnel department in corporate office.
- KSEBL shall initiate a corpus for carrying out Corporate Social Responsibility. 0.25% of salary may be donated by each employee towards this and KSEBL also shall set aside 0.25% of total salary expenditure.
- Proposal for strengthening Master Trust operation and its management shall be included in corporate reforms proposal.
- Other committees have no mention about the recruitment pattern, Training pattern, career growth plan and compensation packages etc., which are to be made clear in the new proposal or in the special rules under preparation, while marching towards a professional organization ready to take up any kind of challenges in future.

9. How to address the additional demand of solar testing

There are 11 + 3 dedicated meter testing sections proposed under 11 circles +3 Divn ARUs which will be sufficient enough to cater to the meter testing workload for solar power plants and existing substations. Also, AEEs are allowed to pool the manpower during exigencies and hence the neighbouring meter testing units with lesser workloads can be used, as and when additional manpower required for testing solar installations.

10. Outcome of the Proposal

The very purpose of restructuring committee is to propose a futuristic proposal for revamping the organization by optimizing the expenditure on all heads, bringing more qualified and competent people into the organization and to achieve the operational efficiency at par with benchmarked levels in power sector. On review of the above, we can perceive the following benefits:

- **Reduced operating expenses**
- **Reduced employee cost**
- **Increased manpower productivity**

- **Better career growth of employees and hence satisfied workforce**
- **Qualified human resources to take up challenges**
- **Quick adaptation of changes in systems and Technology**
- **Marching towards Overall sustainability of organization**

11. Addendum to the First report

It is noticed that the staff pattern for 220kV minor stations were not specifically stated inside the report, but the requisite staff strength was taken while calculating the total manpower requirement. Hence it is mentioned here as an addendum to Part E, section 5 of the main report submitted by the committee as follows.

Operation of 220kV stations (11 Minor (Except New Pallom)+10 Major)

Similar to the existing pattern, an independent operation team located in the same station is proposed under Transmission Subdivision stationed at the substation for operation of major/minor 220kV stations.

10 Major stations identified as per the as per Annexure-2, which are having the following staff pattern for operation and assisting maintenance team:

Senior Engineer-Ele	-4
Sub Engineer-Ele	-4
Senior Technician	-4

Similarly 11 Minor stations identified as per the as per Annexure-2 (Except new Pallom), which are having the following staff pattern for operation and assisting maintenance team:

Senior Engineer-Ele	-4
Senior Technician	-4

For Transmission Committee members

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2. **Mohan Kumar B, Dy Chief Engineer, Transmission Circle, Thiruvananthapuram**
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4. **Sivadas S., Executive Engineer, Transmission Division, Nallalam**
5. **Anil M., Executive Engineer, Transmission Division, Mavelikkara**
6. **Baby John, AEE, O/o Director (T&SO), Thiruvananthapuram**
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