

KERALA STATE ELECTRICITY BOARD LIMITED



**ENHANCING SERVICE QUALITY AND ORGANIZATIONAL
EFFECTIVENESS IN KSEBL - REPORT OF THE
COMMITTEE FOR GENERATION WING**

OCTOBER, 2019

SUMMARY

Kerala State Electricity Board Limited is responsible for the generation, transmission and distribution of electricity in the state of Kerala. Electricity is a basic infrastructure needed for the overall development of a society. Kerala State Electricity Board Ltd, being an integrated, state public sector electricity utility company, plays a key role to provide reliable and quality power at an affordable rate for the consumers of all segments. KSEBLtdserves almost 99 % of the electricity consumers in the state.The tariff to a majority ofconsumers in the state is one among the least in the country. KSEBLtd has been successful inproviding electricity to every residence in the state through a well coordinated effort in 2016-17 andthe state was declared 100% electrified in May 2017.At present, KSEBL is executing many projects in all fields to provide uninterrupted and quality power to its consumers.

KSEBL is functioning according to the regulations issued by Kerala State Electricity Regulatory Commission. All the accounts of KSEBL are being submitted to the KSERC for the approval. Decisions on tariff revision etc are taken by KSERC after examining performance of Board, conducting public hearing etc. Hence the KSEBL always aim to perform better so that its expenditure on projects, administration expenses etc. can be justified before KSERC.

As a part of enhancing its organizational effectiveness, KSEBL has constituted four committees vide Office Order(CMD) No.759 / 2019 (CE (C&P) / MPC / 2019-20 dated 27.04.2019 for submitting a report from the Strategic Business Units viz; Generation, Transmission, Distribution and from the Corporate wing of KSEBL.The following are the members in the Generation Committee constituted by the Board.

- 1) Sri. Bibin Joseph, Director (Generation Civil), KSEBL
- 2) Sri. Mohankumar K, Deputy Chief Engineer, O/o the Director (Generation Civil)
- 3) Sri. Sreenivasan G, Deputy Chief Engineer, Generation Circle, Moozhiyar
- 4) Sri. Rajan S, Deputy Chief Engineer, PED, Thiruvananthapuram
- 5) Sri. Shaji K Mathews, Executive Engineer, Generation Division, Moolamattom
- 6) Sri. Jayarajan C N, Executive Engineer, O/o the Chief Engineer (Generation & PED) Moolamattom
- 7) Sri. Krishna Prasad.P, Executive Engineer, Peruvannamuzhi SHEP
- 8) Sri. Sreekumar G, Assistant Executive Engineer, Project Monitoring Cell
- 9) Sri. Shine Raj, Assistant Engineer, Moolamattom Renovation and Modernisation Division

This report is regarding the Generation wing of KSEBL. The report contains two parts. Part 1 is for the Generation - Electrical and Part 2 is for the Generation- Civil. The report has been prepared after studying the functions carried out by all the offices under Generation wing and optimized staff strength has been proposed. The recommendations related to Electrical and Civil wings under the Strategic Business Unit – Generation has been mentioned at the end of respective parts.

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KERALA STATE ELECTRICITY BOARD LIMITED

Incorporated under the Companies Act, 1956 (No.1/1956)
 Corporate Identity Number : U40100KL201 ISGC0272424
 Regd. Office : Vidyuthi Bhavanam, Pattom, Thiruvananthapuram-695004



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Abstract

Corporate Planning – Enhancing service quality and organizational effectiveness in KSEBL –
 Constitution of Committee – Orders issued.

Corporate Office (Planning)

Office Order (CMD) No. 759/2019 (CE (C&P) / MPC / 2019-20) dated 27/04/2019

Read (1) BO (FTD) No. 329/2018 CE(HRM)/IIMK/HLC Recommend/2017-18 dated 03.02.2018.

ORDER

As per the Board Order read above, a Sub Committee was constituted for drafting specific proposals on optimization and deployment of man power in various offices in KSEBL in consultation with the concerned Directors. The draft proposals prepared by the Sub Committee was submitted to all Directors as well as Heads of Department in the Corporate Office for their comments and inputs. In order to finalize the proposals in consideration of the inputs received, it was recommended to constitute four Committees with the following officials having domain expertise in respective functional areas, one each for Corporate Office, Distribution, Transmission & System Operations and Generation wing as detailed below.

CORPORATE OFFICE

1	LEKHA G (Chairperson)	Chief Internal Auditor
2	RAM MAHESH R	Chief Personnel Officer
3	MOHANAKUMAR B V	Deputy Chief Engineer, O/o the Director (Distribution and IT)
4	ANIL ROSH T S	Deputy Chief Accounts Officer, O/o the Financial Advisor
5	NAMPOOTHIRI K G P	Executive Engineer, TRAC
6	MANOJ G	Assistant Executive Engineer, TRAC
7	MANOJ B NAIR	Assistant Executive Engineer, O/o the Director (Corporate Plg, Generation Ele, SCM, Safety)
8	BIJU RAJ R	Assistant Executive Engineer, O/o the Director (Distribution and IT)
9	JOSE EBENEZER	Assistant Executive Engineer, Chief Engineer (HRM)
10	MANOJ MATHEW KURIAKOSE	Assistant Executive Engineer, IT Computerisation Unit
11	SREEKUMAR C	Senior Superintendent, O/o the Special Officer (Revenue)

DISTRIBUTION

1	PARAMESWARAN S (Chairman)	Chief Engineer (Distribution North) Kozhikode
2	BOSE JACOB	Deputy Chief Engineer, Electrical Circle Kozhikode
3	MANOJ V	Executive Engineer, Electrical Division Pallom
4	MOHAMMED KASIM	Executive Engineer, Electrical Division Ernakulam
5	HARIKUMAR B	Assistant Executive Engineer, Electrical Sub Division Thiruvalla
6	SIVAKUMAR S	Assistant Executive Engineer, Electrical Sub Division Peyad
7	ANITHA G NAIR	Assistant Executive Engineer, Electrical Sub Division Kesavadasapuram
8	JAYAPRAKASHAN P	Assistant Engineer, Electrical Circle Kannur
9	MADHU H	Senior Superintendent, Electrical Circle Tirur

TRANSMISSION AND SYSTEM OPERATION

1	RAJAN P (Chairman)	Chief Engineer (TransGrid) Shoranur
2	MOHAN KUMAR B	Deputy Chief Engineer, Transmission Circle Thiruvananthapuram
3	PRADEEP K P	Deputy Chief Engineer, O/o the Chief Engineer (Transmission - System Operations) Kalamassery
4	SIVADAS S	Executive Engineer, Transmission Division, Nallalam
5	ANIL M	Executive Engineer, Transmission Division, Mavelikkara
6	BABYJOHN	Assistant Executive Engineer, O/o the Director (Transmission & System Operation)
7	RENJANA DEVI K	Assistant Executive Engineer, 220 KV Sub Station Sub Division Shoranur
8	KRISHNENDU M	Assistant Executive Engineer, TransGrid TC Sub Division, Kunnamangalam

GENERATION

1	BIBIN JOSEPH (Chairman)	Chief Engineer, DRIP & Dam Safety
2	MOHAN KUMAR K	Deputy Chief Engineer, O/o the Director (Generation-Civil & HRM)
3	SREENIVASAN G	Deputy Chief Engineer, Generation Circle Moozhiyar
4	SHAJI K MATHEWS	Executive Engineer, Moolamattom Generation Division
5	JAYARAJAN C N	Executive Engineer, O/o the Chief Engineer (Generation & PED) Moolamattom
6	KRISHNA PRASAD P	Executive Engineer, SHEP Peruvannamuzhi
7	RAJAN S	Executive Engineer, Generation Division Kakkad Seethathode
8	SREEKUMAR G	Assistant Executive Engineer, Generation Division Kakkad, Seethathode
9	SIHINE RAJ	Assistant Engineer, Moolamattom Renovation and Modernisation Division

Having considered the recommendations, it was decided to constitute the committees with the above officials. The sub committee constituted vide B.O. read as (1) above shall convene and facilitate the committees in finalizing the proposals. Each committee shall analyze both the draft proposal and the comments received and conduct an in-depth study and finalize the proposal pertaining to each wing on or before 30/06/2019.

Orders are issued accordingly.

By Order of the Chairman & Managing Director

Sd/-

P.G Unnikrishnan
Secretary (Administration)

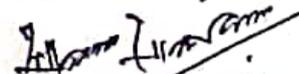
To

- (1) Smt. Lekha G, Chief Internal Auditor
- (2) Sri. Parameswaran S, Chief Engineer (Distribution North), Kozhikode
- (3) Sri. Rajan P, Chief Engineer (Trans Grid) Shoranur
- (4) Sri. Bibin Joseph, Chief Engineer (DRIP & Dam Safety)
- (5) All Committee Members

Copy to

- (1) Chief Engineer (HRM)
- (2) All Chief Engineers
- (3) Chief Vigilance Officer / Financial Advisor / Chief Internal Auditor
- (4) Company Secretary-in-charge.
- (5) Chief Personnel Officer / Legal Adviser & Disciplinary Enquiry Officer / Chief Public Relations Officers
- (6) T.A to Chairman & Managing Director / Director (D&IT) / Director (T&SO) / Director (GC&HRM) / Director (CP, GE, SCM & Safety) /PA to Director (Finance)
- (7) Sr. CA to the Secretary (Administration)
- (8) Stock File.

Forwarded / By order


Senior Superintendent

**REPORT ON ENHANCING SERVICE QUALITY AND
ORGANIZATIONAL EFFECTIVENESS IN KSEBL**

**PART 1
GENERATION –ELECTRICAL**

REPORT ON THE GENERATION - ELECTRICAL WING OF KSEBL

1. INTRODUCTION

The Generation Electrical wing of KSEBL is functioning in the Strategic Business Unit – Generation. Electrical Engineers posted in the Generation wing are responsible for the operation and maintenance of all the power stations under KSEBL in Kerala State. An efficient and safe operation of the generating stations is essential for the generation of electricity within the State of Kerala. The optimum staff strength proposed is based on a study of various activities done in this field and considering its importance in KSEBL.

The whole staff strength proposal is grouped under one Chief Engineer, viz; the Chief Engineer (Generation & PED). The main offices functioning under the Chief Engineer (Generation & PED) are as follows.

- 1) Generation
- 2) Project Electrical Design

Chief Engineer (Generation & PED)

The office of the Chief Engineer (Generation & PED) is functioning with headquarters at Moolamattom. At present, an office is functioning for Project Electrical Designs (PED) at Thiruvananthapuram. Also the following six field Circles are functioning under the control of the Chief Engineer (Generation & PED).

- a) Generation Circle, Moolamattom
- b) Generation Circle, Moozhiyar
- c) Generation Circle, Thrissur
- d) Generation Circle, Meencut
- e) Generation Circle, Kothamangalam
- f) Kozhikode Diesel Power Project
- g) Brahmapuram Diesel Power Plant

The details of various offices and power stations and the staff strength proposed in each of the offices have been mentioned in Annexure 1.

2. RECOMMENDATIONS

The following recommendations are proposed regarding the efficient functioning of various offices related to operation and maintenance of generating stations with optimum staff strength.

- 1) Regarding the posts viz; Driver/Sweeper/Confidential Assistant/Typist/ Office Assistant/Valve House Operator/ Headworks Operator/ Pump House Operator/Fair Copy Assistant/Pharmacist/ Nurse etc., the available permanent staff may continue in their position until their retirement and after that the places shall be filled up through contract engagement only. The future requirement on above mentioned posts shall be met through contract staff. The Circle Head shall decide the number of contract staff to be engaged on work contract basis. This is applicable to all the Generation Circles, Generation Divisions and Generation Sub Divisions.
- 2) In case of able bodied male Office Assistants coming through Die-in-harness, they may be posted as Electricity Worker, if they meet the qualification requirements.
- 3) Technicians are proposed for electrical maintenance work in power stations. Technicians shall include Electricity Worker, Lineman Grade I& II and Overseer. All new recruits in LM & Overseer categories should have ITI qualification.
- 4) All the officers posted in the office of the Chief Engineer (Generation & PED) must have 3 years field experience in generation.
- 5) A new Generation circle is proposed at Kozhikode (KDPP office space may be used for this new office). Kakkayam Power House, Kakkayam RMU (new Division), Small Hydro Electric Projects namely, Chembukadave I&II,

Urumi I&II, Vilangad, Poozhithode, KTR, KSHEP, Barapole and KDPP are proposed to function under this new generation Circle. All projects in the districts Kozhikode, Wayanad, Kannur and Kasargode should come under this circle.

6) Brahmapuram Diesel Power Plant (BDPP) shall work under Kothamangalam Generation circle. As the generation cost from KDPP & BDPP is high compared to the market price of electricity, the prospect of regular generation from these plants are unlikely in the near future. The operating hours of these plants during the last few years are negligible. Hence only minimum officers and staff for the upkeep of the stations need be posted. Extra manpower requirement for operation may be met with contract staff.

7) All officers posted in the Project Electrical Design wing may also have minimum 3 years field experience in Generation wing.

8) At present the Project Electrical Designs (PED) is functioning at Vydyuthi Bhavan, Thiruvananthapuram. It is proposed to continue the same under the Chief Engineer (Generation). Different options regarding restructuring/ optimization of the PED office was discussed and deliberated. Since a consensus could not be arrived at, among the committee members it is proposed to list the two proposals as furnished below.

- i. The first option proposes to split the PED office into two offices with the existing manpower. One office may function at Moolamattom under a Deputy Chief Engineer, which is responsible for coordinating projects in the Southern Region in close co-ordination with the office of the Chief Engineer (Generation). The other office shall function from the newly proposed Kozhikode Generation Circle at KDPP under an Exe. Engineer (Ele.). This option has the advantage of better co-ordination between engineers of PED & Generation, leading to

knowledge and experience sharing and better focus for projects in the southern and northern regions.

ii. The second option is to retain the present PED office at Vidyuthi Bhavanam, Thiruvananthapuram. The reasons cited for the same are:

- a. Better co-ordination with Civil Investigation Wing, Civil Design Wing, and Corporate Management at Thiruvananthapuram.
- b. As the Directors are PQ Committee members, the meetings are to be conducted at Thiruvananthapuram. Also progress review meetings and meetings regarding tender related matters can be held by the Directors frequently.
- c. Legal opinion and FA's remarks can be obtained expeditiously by interaction and follow up.
- d. The present office at Thiruvananthapuram. has carried out the works of several SHEPs and renovation of several HEP's successfully.
- e. Splitting of electrical design into two offices is likely to generate divergent views in the implementation of projects and may lead to allegations.

The Board may take a final decision after wider consultation and after weighing the pros and cons of each option.

9) In addition to the present Equipment monitoring Sub Division, Moolamattom, one more Sub Division at Kakkayam / Kozhikode Generation Circle is proposed for the smooth monitoring of the generators at different power stations in the northern region.

10) The office of the Chief Engineer (Renewable Energy & Energy Savings) is proposed to continue under the Corporate wing. Hence the details are not included under this report pertaining to Generation wing.

ANNEXURE

The list of annexure attached along with the report is as follows.

Annexure 1 - Offices and staff under the Chief Engineer (Generation & PED) with details of offices under Generation and PED

ANNEXURE 1
PROPOSED STAFF STRENGTH OF ELECTRICAL ENGINEERS - ABSTRACT

SI No	Office	Director (Generation Electrical)	Chief Engineer (E)	Dy. Chief Engineer (E)	Executive Engineer (E)	Asst. Executive Engineer (E)	Asst. Engineer (E)	Sub Engineer (E)	Technician	Overseer (E)	Line man	Worker	PH Operating Staff (on contract) / Skilled Technician	TOTAL
1	Office of the Director (Generation Electrical)	1			1	4								6
2	Office of the Chief Engineer (Generation & PED)		1	1	2	3	3							10
3a	Project Electrical Design, Moolamattom			1	1	2	2							6
3b	Project Electrical Design, Kozhikode				1	2	2							5
4	Generation Circle, Thrissur			1	0	1	2	2						6
5	Generation Circle, Kothamangalam			1	0	1	1	1						4
6	Generation Circle, Moozhiyar			1	0	1	2	1						5
7	Generation Circle, Moolamattom			1	3	1	2	1						8
8	Generation Circle, Meencut			1	0	1	2	1						5
9	Generation Circle, Kozhikode			1	0	1	2	1						5
10	Brahmapuram Diesel Power Plant				1	2	3	1	10					17

ANNEXURE 1
PROPOSED STAFF STRENGTH OF ELECTRICAL ENGINEERS - ABSTRACT

SI No	Office	Director (Generation Electrical)	Chief Engineer (E)	Dy. Chief Engineer (E)	Executive Engineer (E)	Asst. Executive Engineer (E)	Asst. Engineer (E)	Sub Engineer (E)	Technician	Overseer (E)	Line man	Worker	PH Operating Staff (on contract) / Skilled Technician	TOTAL
11	Kozhikode Diesel Power Plant Division			0	1	3	6	3	15					28
12	Divisions													
13	Kallarkutty Gen Division				1	0	1	1						3
a	Kallarkurttty Section								1					1
14	Chithirapuram Gen Division				1	0	1	1						3
a	Chithirapuram Section								1					1
15	Peringalkuthu Gen Division				1	0	1	1						3
a	Civil section							1		1	1	4		7
16	Kakkayam Gen Division				1	0	1	1						3
a	Kakkayam Section									1	2			3
17	Kakkayam Power House													
a	Electrical Maintenance Sub Division					1	2	1	8					12

ANNEXURE 1
PROPOSED STAFF STRENGTH OF ELECTRICAL ENGINEERS - ABSTRACT

SI No	Office	Director (Generation Electrical)	Chief Engineer (E)	Dy. Chief Engineer (E)	Executive Engineer (E)	Asst. Executive Engineer (E)	Asst. Engineer (E)	Sub Engineer (E)	Technician	Overseer (E)	Line man	Worker	PH Operating Staff (on contract) / Skilled Technician	TOTAL
b	Mechanical Maintenance Sub Division					1	2	1	10					14
c	SCADA section					0	2	1	2					5
18	RMU Division, Kakkayam (New)				1	1	2	2						6
19	SHEP Sub Division					1	0	1	0					2
20	Chembukadave I													
a	Operation & maintenance						1	1					4	6
b	Maintenance							1	1					2
21	Chembukadave II													
a	Operation & maintenance						1						4	5
b	Maintenance							1	1					2
22	Urumi I												4	4
a	Maintenance							1	1					2

ANNEXURE 1
PROPOSED STAFF STRENGTH OF ELECTRICAL ENGINEERS - ABSTRACT

SI No	Office	Director (Generation Electrical)	Chief Engineer (E)	Dy. Chief Engineer (E)	Executive Engineer (E)	Asst. Executive Engineer (E)	Asst. Engineer (E)	Sub Engineer (E)	Technician	Overseer (E)	Line man	Worker	PH Operating Staff (on contract) / Skilled Technician	TOTAL
23	Urumi II													
a	Operation												4	4
b	Maintenance							1	1					2
24	Vilangad													
a	Operation & maintenance					1							4	5
b	Maintenance							1	1					2
25	Poozhithode													
a	Maintenance							1	1					2
26	Kuttiadi Tail Race													
a	Operation & maintenance					1							4	5
b	Maintenance							1	1					2
27	KSHEP													

ANNEXURE 1

PROPOSED STAFF STRENGTH OF ELECTRICAL ENGINEERS - ABSTRACT

SI No	Office	Director (Generation Electrical)	Chief Engineer (E)	Dy. Chief Engineer (E)	Executive Engineer (E)	Asst. Executive Engineer (E)	Asst. Engineer (E)	Sub Engineer (E)	Technician	Overseer (E)	Line man	Worker	PH Operating Staff (on contract) / Skilled Technician	TOTAL
a	Operation												4	4
b	Maintenance							1	1					2
28	BARAPOLE													
a	Operation												4	4
b	Maintenance							1	1					2
29	Generation Division, Seethathode				1	0	1							2
a	Generation Sub Division, Seethathode					1	0	1						2
30	Kakkad Power House													
a	Operation						4	8					8	20
b	Operation sub Station							4					4	8
c	Maintenance Sub Division						2	2	6					10
31	Ranni Perunad													

ANNEXURE 1
PROPOSED STAFF STRENGTH OF ELECTRICAL ENGINEERS - ABSTRACT

SI No	Office	Director (Generation Electrical)	Chief Engineer (E)	Dy. Chief Engineer (E)	Executive Engineer (E)	Asst. Executive Engineer (E)	Asst. Engineer (E)	Sub Engineer (E)	Technician	Overseer (E)	Line man	Worker	PH Operating Staff (on contract) / Skilled Technician	TOTAL
a	Operation & maintenance						1	1	2					4
32	Perunthenaruvi													
a	Operation & maintenance						1	1	2					4
33	Peppara													
a	Operation & maintenance						1	1	2					4
34	Lower Meenmutty													
a	Operation & maintenance						1	1	2					4
35	Generation Sub Division, Thenmala					1	0	1						2
36	Kallada Power Station													
a	Maintenance						2	1	4					7
b	Operation						4	4					4	12
37	Moozhiair Generation Division				1	0	1	1				4		7

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PROPOSED STAFF STRENGTH OF ELECTRICAL ENGINEERS - ABSTRACT

SI No	Office	Director (Generation Electrical)	Chief Engineer (E)	Dy. Chief Engineer (E)	Executive Engineer (E)	Asst. Executive Engineer (E)	Asst. Engineer (E)	Sub Engineer (E)	Technician	Overseer (E)	Line man	Worker	PH Operating Staff (on contract) / Skilled Technician	TOTAL
38	Moozhia Power House													
a	Operation					5	0	13		8			8	34
b	Moozhia Ele. Maintenance Sub Division					1	2	1	8					12
c	Moozhia Mechanical Maintenance Sub Division					1	2	1	8					12
d	Moozhia SYD Sub Division					1	2	1	4					8
e	Moozhia Transport Sub Division							1	1					2
f	SCADA Sub Division					1	2	0	2					5
39	Pallivasal Power House					1	2	1	11					15
a	Maintenance													
b	Operation						4	8	0	4				16
40	Mattupetty Power House													
a	Maintenance						1	1	1					3

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PROPOSED STAFF STRENGTH OF ELECTRICAL ENGINEERS - ABSTRACT

SI No	Office	Director (Generation Electrical)	Chief Engineer (E)	Dy. Chief Engineer (E)	Executive Engineer (E)	Asst. Executive Engineer (E)	Asst. Engineer (E)	Sub Engineer (E)	Technician	Overseer (E)	Line man	Worker	PH Operating Staff (on contract) / Skilled Technician	TOTAL
41	Sengulam Power House													
a	Maintenance					1	2	1	10					14
b	Operation						4	8	0	4				16
42	SCADA Sub Division, Vellathooval					1	1	1	2					5
43	Generation Division, Lower Periyar				1	0	1	1						3
44	LP Power House													
a	Maintenance					3	5	5	16					29
b	Operation					5	9	5		5				24
45	Idamalayar PH Division				1	0	1	1						3
a	Maintenance						3	2	10					15
b	Operation						5	10	5					20
46	Poringalkuthu Sub Division					1	0	1						2

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PROPOSED STAFF STRENGTH OF ELECTRICAL ENGINEERS - ABSTRACT

SI No	Office	Director (Generation Electrical)	Chief Engineer (E)	Dy. Chief Engineer (E)	Executive Engineer (E)	Asst. Executive Engineer (E)	Asst. Engineer (E)	Sub Engineer (E)	Technician	Overseer (E)	Line man	Worker	PH Operating Staff (on contract) / Skilled Technician	TOTAL
47	PLB Power House													
a	Maintenance						2	2	6					10
b	Operation						5	8	0					13
48	PLBE Power House													
a	Maintenance						1	1	6					8
b	Operation						4	8	0					12
49	Sholayar Power House													
a	Maintenance						2	2	6					10
b	Operation						5	8	0					13
50	SCADA Sub Division					1	1	1	2					5
a	Adyanpara Power House						1	1	1					3
51	Malampuzha Power House						1	1	1					3

ANNEXURE 1
PROPOSED STAFF STRENGTH OF ELECTRICAL ENGINEERS - ABSTRACT

SI No	Office	Director (Generation Electrical)	Chief Engineer (E)	Dy. Chief Engineer (E)	Executive Engineer (E)	Asst. Executive Engineer (E)	Asst. Engineer (E)	Sub Engineer (E)	Technician	Overseer (E)	Line man	Worker	PH Operating Staff (on contract) / Skilled Technician	TOTAL
52	Kanjikode Wind Mill							1						1
53	Malampuzha Sub Division					1	0	1						2
54	Peechi Power House						1	1	1					3
55	Chimini Power House						1	1	1					3
56	Generation Divn Moolamattom				1	1	2	1	2					7
a	Generation Sub Division (Operation) Moolamattom					6	26	27		31				90
57	PH Mechanical maintenance Divn				1									1
a	Turbine maintenance sub Division					1	2	1	5				1	10
b	Water conductor maintenance sub division					1	2	1	5				1	10
c	Governer maintenance sub division					1	2	0	3					6
58	PH Electrical maintenance Divn				1									1
a	Transformer maint sub division					1	1	1	5					8

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SI No	Office	Director (Generation Electrical)	Chief Engineer (E)	Dy. Chief Engineer (E)	Executive Engineer (E)	Asst. Executive Engineer (E)	Asst. Engineer (E)	Sub Engineer (E)	Technician	Overseer (E)	Line man	Worker	PH Operating Staff (on contract) / Skilled Technician	TOTAL
b	Generator maint sub division					1	2	1	8					12
c	Exciter & Control Maintenance Sub Division					1	2	0	3				1	7
d	SYD Maint sub division					1	3	1	6					11
e	Ele Exchange									1	2	1		4
59	Protection Division, Moolamattom				1									1
a	Protection Sub division, Moolamattom					1	2	0	2					5
b	Protection Sub division, Kakkayam					1	2	0	2					5
c	Equipment monitoring sub division, Moolamattom					1	3	0	3					7
d	Equipment monitoring sub division, Kakkayam					1	3	0	3					7
60	Malankara Power House					1	1	1	4					7
	TOTAL	1	1	8	23	71	181	189	223	55	5	9	59	825

**REPORT ON ENHANCING SERVICE QUALITY AND
ORGANIZATIONAL EFFECTIVENESS IN KSEBL**

**PART 2
GENERATION –CIVIL**

REPORT ON THE GENERATION - CIVIL WING OF KSEBL.

1. INTRODUCTION

The Civil wing of KSEBL is mainly functioning in the Strategic Business Unit – Generation. Civil Engineers are also posted in other Strategic Business Units of Transmission and Distribution and also at Corporate wing of KSEBL for dealing with the Civil engineering related works in the above units.

The fields where civil engineers are posted in KSEBL are mentioned below.

a) Implementation of new Hydro Electric Projects

Civil Engineers are posted in the field offices for execution of projects. The execution team deals with the land acquisition formalities, execution of civil, hydro mechanical works etc. at site, coordinating with the erection team, project closure etc.

b) Design Wing

Civil Engineers posted at design offices look after the structural design of all project components of hydroelectric projects, structural design of other buildings, tower foundation of transmission towers etc.

c) Investigation

The investigation wing is responsible for identification of new hydro electric projects, preparation of its Pre-Feasibility Report, Detailed Investigation Report and Detailed Project Report.

d) Fabrication Units

The three mechanical facilities functioning at Pallom, Angamaly and Kozhikode are being looked after by civil engineers. The finished products include various line materials, A-poles etc.

e) DRIP and Dam Safety Wing

KSEBL possesses 59 nos dams in Kerala State. All works related to dam monitoring, maintenance etc. are being executed by civil engineers. All works

under Dam Rehabilitation and Improvement Project (DRIP) are also executed by civil engineers in KSEBL.

f) Maintenance and Construction

Civil engineers are posted at Transmission and Distribution wings for execution of civil works such as construction of substation buildings, electrical section office buildings, maintenance of KSEBL's own buildings, Inspection Bungalow etc. In generation wing also, civil engineers are posted under the generation circles for maintenance of camps, other civil works etc under the respective generation circles. Construction of office complexes such as Vydyuthi Bhavanam is being executed by the civil engineers in the civil wing.

g) Offices

Civil engineers are also posted at head office, Chief Engineer's office, circle office etc. for dealing with the timely correspondence works, tendering works of hydro electric projects, buildings, Dam Safety and DRIP works and preparation of various statutory reports.

h) Consultancy Wing

KSEBL has been empanelled as one of the consultants for providing technical assistance for Government projects by the Government of Kerala and at present, some projects have been awarded to KSEBL.

2. OFFICES UNDER GENERATION-CIVIL WING

The Generation – Civil wing, where majority of the Civil engineers in KSEBL are employed, is proposed to function under four Chief Engineers.

- 1) Chief Engineer (Civil Construction) South
- 2) Chief Engineer (Civil Construction) North
- 3) Chief Engineer (Civil – Investigation & Infrastructure Development)
- 4) Chief Engineer (Civil – Dam Safety & DRIP)

The proposed staff strengths have been mentioned under the respective Chief Engineer offices later in this report. The works, based on which the optimum staff strength has been proposed, is briefly explained below.

a) Chief Engineer offices

The office of the Chief Engineer dealing with implementation of projects is responsible for all the activities right from obtaining the administrative sanction for the project up to the account closing of the project. The intermediate activities includes land acquisition, according technical sanction for the detailed estimates, inviting tenders for the implementation of the project, execution of agreement with the successful bidder, monitoring the progress of work, obtaining necessary sanctions from the Board during the course of work, settling of accounts with the contractor, preparation of completion report etc. Some contractors may initiate litigations during the course of work, which is also to be dealt in this office. For initiating the notes / correspondences, Assistant Executive Engineers / Senior Assistant Engineers are proposed. One Assistant Executive Engineer is proposed to function as Technical Assistant to the Chief Engineer. Assistant Engineers, Sub Engineers are proposed for assisting the AEE's.

In case of the Chief Engineer office for investigation, the main work is the preparation of Detailed Project Reports, verification of Preliminary Feasibility Report, Detailed Investigation Report etc and short listing the projects for DPR preparation, based on the feasibility of the projects. The

FEMU, land management, Consultancy, implementation of infrastructure development works etc. are also proposed under this office.

In case of the office of the Chief Engineer (Dam Safety & DRIP), the works as per the CWC guidelines are to be carried out. Even though CWC guidelines specify a minimum requirement of staff for dams of various heights, only optimum staff has been proposed which is just sufficient to carry out the works related to DRIP as well as routine maintenance works for dam safety.

b) Design & Consultancy offices

Regarding the staff strength for design offices, it is to be noted that in hydro electric projects, whether small or large, normally the design drawings are to be issued for various project components such as dam / weir, power channel / tunnel, Forebay / Surge, Penstock, Power House and tail race. Normally, project components of a single project will be assigned to different AEE's to achieve simultaneous progress in the design of all project components. First, tender drawings are issued. Before execution of site works, construction drawings are issued, which may be same as the tender drawings or modified to suit the machine manufacturers specifications and requirements. Even if after issue of construction drawings, requests may come from the field for revision of construction drawings to suit the site conditions observed after excavation works.

All the requests for revision of construction drawings are to be attended within a short time to avoid any delay in the execution of site works. One AEE may be in charge of project components of one or more projects at a time. Besides the above works, requests for design of buildings (both office as well as substation buildings), transmission tower foundations etc are also to be attended by the design engineers. Hence the proposed staff strength is for the efficient and smooth functioning of design offices. These design units are responsible for

undertaking the structural design works for consultancy works also, if necessary.

c) Circle offices

Circle offices are headed by a Deputy Chief Engineer, which are also functioning as Account Rendering Units. Tendering of works within the powers of Deputy Chief Engineer is proposed to be done in circle offices. All the correspondences related to the execution of works, mentioned under the Chief Engineer offices, is applicable for Circle offices also. Besides this, the auditing of bills has to be carried out in circle offices. The staff strength related to the cadres Asst. Executive Engineer, Assistant Engineer and Sub Engineers have been proposed considering the number of ongoing projects and future projects for which frequent correspondences have to be done with contractors, higher offices and subordinate offices.

d) Division offices

Division offices are mainly field offices and the staff strength proposed are the optimum for the smooth progress of work as well as to ensure quality control. A typical staff pattern for future projects, based on the type of projects, is attached as annexure J. The Executive Engineers/ Team Leaders dealing with the implementation of projects may be designated as Project Managers, as being done at present.

3. CHIEF ENGINEER (CIVIL CONSTRUCTION) SOUTH

The office of the Chief Engineer (Civil Construction) South, with headquarters at Thiruvananthapuram will look after the construction of all the hydro electric projects in the southern region, ie; the projects located in the districts Thiruvananthapuram, Kollam, Pathanamthitta, Alappuzha, Kottayam, Idukki and Ernakulam. All the design related works in the southern region will also be looked after by this office through the office of the Deputy Chief Engineer (Design), Thiruvananthapuram. The following are the ongoing projects in the southern region, under the following two ARU's.

1) Civil Circle, Meencut

- a) Pallivasal Extension Scheme, 60 MW with two divisions.
- b) Mankulam HEP, 40 MW
- c) Chinnar SHEP, 24 MW

2) Civil Circle, Kothamangalam

- a) Bhoothathankettu SHEP, 24 MW
- b) Thottiyar HEP, 40 MW
- c) Sengulam Augmentation Scheme
- d) Upper Kallar SHEP, 2 MW

Future Projects

The following are the future projects expected in the southern region.

- a) Replacement of Sengulam Penstock pipe
- b) Upper Sengulam SHEP, 24 MW
- c) Ladrum SHEP, 3.5 MW
- d) Marmala SHEP, 7 MW
- e) Peechad SHEP, 3 MW
- f) Western Kallar SHEP, 5 MW

The Civil Division, Thiruvananthapuram is also proposed to be brought under the control of the Chief Engineer (Civil Construction) South. The staff strength at the office of the Chief Engineer (Civil Construction) South has been proposed based on the ongoing works under this office. The matters related to the future projects shall also be dealt with the proposed strength. The basis for the staff strength proposal is briefly explained below.

(i) Office of the Chief Engineer (Civil Construction) South

SI No	Designation	Proposed Strength	Remarks
1	Chief Engineer (C)	1	
2	Deputy Chief Engineer (C)	1	
3	Executive Engineer (C)	1	
4	Asst. Executive Engineer (C)	3	2 nos for two circles, 1 no AEE as TA to CE
5	Asst. Engineer (C)	2	For assisting in office works
6	Sub Engineer (C)	1	For assisting in office works

(ii) Design Cell, South

SI No	Designation	Proposed Strength	Remarks
1	Deputy Chief Engineer (C)	1	
2	Executive Engineer (C)	3	For Verification of design calculation

SI No	Designation	Proposed Strength	Remarks
3	Asst. Executive Engineer(C)	7	For design of various components of ongoing / future hydro electric projects and design for consultancy, infrastructure and transmission related works
4	Asst. Engineer (C)	3	For assisting the AEE's
5	Sub Engineer (C)	1	For assisting the AE's

For the ongoing projects, the staff strength proposed is with a view to not disturb the current pace of progress of work. The proposed staff strength of Civil engineers under the Chief Engineer (Civil Construction) South is mentioned in the Annexure A.

The Chief Engineer (Civil Construction) South has mentioned about 15 nos completed projects whose accounts are yet to be closed. It is proposed to form a dedicated team from the above proposed staff comprising of engineers from Chief Engineer office, concerned ARU etc to find out the bottlenecks in the account closing and to close the accounts within a specified time frame. Also the external consultancy wing shall be under the Chief Engineer (CC) South or any of the Chief Engineer (Civil) headquartered at Thiruvananthapuram till the SPV is formed.

A) Consultancy Wing

As per prevailing Board order, a special purpose vehicle shall be formed for consultancy services. Until the formation of such a SPV, it is proposed to

work under the control of the Chief Engineer (Civil Construction) South with headquarters at Thiruvananthapuram, with the following staff pattern.

Sl. No.	Designation	Proposed strength	Remarks
1	Executive Engineer (C)	2 No	
2	Asst. Executive Engineer (C)	9 Nos	
3	Asst. Engineer (C)	15 Nos	
4	Sub Engineer (C)	21Nos	

The organization structure of the proposed company, KEBCIL is given in chart 6B. The split up details of staff has been mentioned in Chart no.6A with details of present projects in hand etc. which is self-explanatory.

4. CHIEF ENGINEER (CIVIL CONSTRUCTION) NORTH, KOZHIKODE

The office of the Chief Engineer (Civil Construction) North is proposed to continue with the headquarters at Kozhikode. All the hydro electric projects located in the northern area, ie; in the districts Thrissur, Palakkad, Malappuram, Kozhikode, Kannur, Wayanad and Kasargode will come under the jurisdiction of the Chief Engineer (Civil Construction) North. All the design works in the northern region will be dealt by the Design & Consultancy, Kozhikode.

At present, this office is working as an ARU with location code 802, the code of earlier Civil Circle, Kozhikode, except for the fact that the Chief Engineer (Civil Construction) North is the head of ARU. It is proposed to make the Deputy Chief Engineer (Office) as the head of ARU. This will help the Chief Engineer to pay more attention towards monitoring of ongoing field works, approval of design calculations etc. Due to its proximity, the passing of bills and payment for all works under the Executive Engineer, MF II & Buildings is also proposed to be entrusted to this office. The following are the ongoing projects in the northern region.

Ongoing Projects

- 1) Chathankottunada SHEP, Stage II, 6 MW
- 2) Pazhassi Sagar SHEP, 7.50 MW
- 3) Peruvannamuzhi SHEP, 6 MW
- 4) Poringalkuthu SHEP, 24 MW

Another project, ie; Olikkal & Poovaramthode SHEP's (with installed capacity 5 MW and 3 MW respectively) is one which is likely to be commenced soon. Hence the staff pattern has been proposed taking into account this factor also.

Future Projects

The following are the future projects expected in the northern region.

- 1) Chembukkadave III SHEP, 7.50 MW

- 2) Maripuzha SHEP, 6 MW
- 3) Valanthode SHEP, 7.50 MW
- 4) Anakkayam SHEP, 7.50 MW

The present staff strength proposed is as follows

(i) Office of the Chief Engineer (Civil Construction) North

SI No	Designation	Proposed Strength	Remarks
1	Chief Engineer (C)	1	
2	Deputy Chief Engineer (C)	1	
3	Executive Engineer (C)	1	
4	Asst. Executive Engineer(C)	5	3 nos AEE for ongoing projects, 1 no AEE as TA to CE and 1 No AEE for MF II
5	Asst. Engineer (C)	3	For auditing of CC bills for projects
6	Sub Engineer (C)	4	3 nos for assisting AE's in the bill audit and 1 no SE for assisting TA

Assistant Engineers and Sub Engineers are necessary for auditing of monthly contract certificate bills of ongoing projects. Hence the above strength has been proposed.

Among the Chief Engineers, only the Chief Engineer (Civil Construction) North is heading an ARU with field works. But the ARU is still denoted as Civil Circle in the records with location code 802. In order to bring uniformity in this regard, it is proposed to designate the Deputy Chief Engineer,

O/o the Chief Engineer (Civil Construction) North, Kozhikode as the head of the ARU, ie; Civil Circle, Kozhikode.

(ii) Design Cell, North

SI No	Designation	Proposed Strength	Remarks
1	Deputy Chief Engineer (C)	1	
2	Executive Engineer (C)	2	
3	Asst. Executive Engineer (C)	6	For design of various components of ongoing / future hydro electric projects and design for consultancy, infrastructure and transmission related works
4	Asst. Engineer (C)	4	For assisting the AEE's
5	Sub Engineer (C)	1	For assisting the AE's

The proposed staff strength of Civil engineers under the Chief Engineer (Civil Construction) North is mentioned in the Annexure B.

5. CHIEF ENGINEER (CIVIL - INVESTIGATION & INFRASTRUCTURE DEVELOPMENT)

The office of the Chief Engineer (Civil – Investigation &Infrastructure Development) with headquarters at Thiruvananthapuram will look after all Infrastructure development works of KSEBL (other than specifically assigned), and investigation works for future generation projects in KSEBL, land management and FEMU. Two circle offices will be functioning under this office as ARU’s. Civil Circle Pallom will be in charge of all mechanical facilities, infrastructure development activities throughout Kerala. Investigation Circle, Thrissur will be in charge of all the investigation for the future generation projects. The proposed divisions under the above circles are briefly explained in the paragraphs under respective circle offices.

The proposed staff strength in the office of the Chief Engineer (Civil – Investigation &Infrastructure Development) is as follows.

SI No	Designation	Proposed Strength	Remarks
1	Chief Engineer (C)	1	
2	Deputy Chief Engineer (C)	1	
3	Executive Engineer (C)	1	
4	Asst. Exe. Engineer (C)	5	One AEE for TA to CE, three AEE’s for DPR division and one AEE for Infrastructure.
5	Asst. Engineer	2	One for DPR division and one for Infrastructure
6	Sub Engineer (C)	1	For compilation of various reports

(A) Civil Circle, Pallom

Civil Circle, Pallom headed by a Deputy Chief Engineer (Civil) will be functioning at Pallom as an ARU with three divisions. For all the three divisions, two subdivisions each are added for infrastructure development works, thus aiming to utilize the divisions more efficiently.

Proposed staff pattern at HQ, Pallom

Sl No	Designation	Proposed strength	Remarks
1	Deputy Chief Engineer (C)	1 No	
2	Executive Engineer (C)*	1 No	
3	Asst. Executive Engineer (C)	1 No	
4	Asst. Engineer (C)	2 Nos	For auditing the bills, works related correspondences etc.
5	Sub Engineer (C)	4 Nos	For originating the audit note of the work bills from DB.

*In charge of quality control division also.

(i) CM Division, Pallom

This division under an Executive Engineer (Civil) will have three subdivisions, one for mechanical facility and two subdivisions for infrastructure development works. The infrastructure development works in the districts Thiruvananthapuram, Kollam, Pathanamthitta, Kottayam, and Idukki are proposed to be carried out under this division. The headquarters of the sub infrastructure subdivisions are proposed at Kottarakkara and Pathanamthitta.

(ii) Buildings & Store Division, Angamaly

This is an existing division (also an ARU) under one Executive Engineer

functioning at Angamaly. At present two subdivisions are functioning under this division. One for mechanical facility works and other for buildings and store. Now three sub divisions are proposed under this division. One subdivision is for fabrication of line materials and Store and two sub divisions for infrastructure development. This division will carry out the infrastructure development works in the districts of Alappuzha ,Ernakulam, Thrissur, Palakkad and Malappuram. The headquarters of the sub divisions are proposed at Angamaly and Shornur.

(iii) Mechanical facility II Division, Kozhikode

This division is presently functioning at Kolathara, Kozhikode. The Executive Engineer working in the office of the Chief Engineer (Civil Construction) North is looking after these works. Three sub divisions are proposed under this division. One sub division is for fabrication of line materials and other two sub divisions for infrastructure development. This division will carry out the infrastructure development works in the districts of Kozhikode, Kannur, Wayanad and Kasargode. The headquarters of the sub divisions are proposed at Kozhikode and Kannur.

Minimum staff strength is proposed under the new proposed subdivisions as explained below.

Infrastructure Sub Division – Staff pattern

Sl No	Designation	Proposed strength	Remarks
1	Asst. Executive Engineer (C)	1 No	
2	Asst. Engineer (C)	1 No	
3	Sub Engineer (C)	No. of districts	One sub Engineer for each district

(iv) **Quality Control Division**

As per the Govt Order G.O(P) no.59015/Fin dated 28.12.2015, it is ordered that quality control wing shall be constituted internally in all organization under Govt. of Kerala executing works more than Rs. 50 crore / annum. It is also mentioned that all reports to the Chief Technical Examiner shall be done through the online mode in Technical Inspection Monitoring System (TIMS) of the Chief Technical Examiner website only. The Board has adopted this order vide BO(CMD)No.2008/2016(DGC/AEE-II/CTE/2016) dated 08.07.2016.

A quality control division is proposed under Civil Circle, Pallom with the Executive Engineer (Civil), O/o the Deputy Chief Engineer, Civil Circle, Pallom heading the division in addition to the normal duties. A quality control laboratory is functioning at Idamalyar at present. It is proposed to shift this Quality Control laboratory to a more accessible place like Pallom. One Assistant Engineer and one Sub Engineer in the office of the Deputy Chief Engineer, Civil Circle, Pallom shall be in charge of the operation of the QC laboratory. Two subdivisions are proposed under this quality control division to cover the ongoing projects, infrastructure development works etc in the north and south regions. Minimum strength of one Assistant Executive Engineer (C), one Assistant Engineer (C) and one Sub Engineers (C) is proposed for each subdivision. It is proposed to fix the headquarters at Kothamangalam and Kozhikode for covering the south and north regions respectively. It is also proposed to nominate the Quality Control Executive Engineer as the nodal officer for Quality Control for KSEBL as envisaged in the Circular No Insp-Tech/16/2016/Fin dated 24.02.2016 of Finance (Inspection Wing Technical) Department.

B) Investigation Circle, Thrissur

Investigation Circle, headed by a Deputy Chief Engineer (Civil) will be functioning at Thrissur as an ARU with three investigation divisions with headquarters proposed at Kottarakkara, Munnar and Kozhikode. The staff strengths are proposed for a division as a whole instead of Sub Division / Section in order to function as a single unit / team. A team without bare minimum staff will not be able to execute field survey works efficiently, especially in forest areas. Hence the Executive Engineer may identify the projects and arrange for the field survey works according to priority. The details of proposed field division staff are mentioned in Annexure C. The field strengths are proposed based on the quantum of investigation works likely to come in the respective jurisdictions.

The following projects are proposed to be taken up for investigation by the three investigation divisions.

1) Investigation Division, Munnar

- a) Pallivasal Augmentation
- b) Pambar HEP
- c) Pooyamkutty River Basin study
- d) Mankulam Stage II SHEP

2) Investigation Division, Kottarakkara

- a) Aruvikuzhi SHEP
- b) Ottackal SHEP
- c) Perunthenaruvi SHEP Stage II
- d) Swami Saranam Project
- e) Study of Twin Kallar SHEP

3) Investigation Division, Kozhikode

- a) Lower Poozhithode
- b) Upper Poozhithode
- c) Upper Poringal HE Scheme

d) Upper Chaliyar Phase I

Proposed staff pattern of Investigation Circle, Thrissur

Sl No	Designation	Proposed strength	Remarks
1	Deputy Chief Engineer (C)	1 No	All Kerala jurisdiction
2	Executive Engineer (C)	1 No	To look after all the DB and EB related matters
3	Asst. Executive Engineer (C)	2 Nos	One AEE for three field divisions
4	Asst. Engineer (C)	4 Nos	For auditing the bills, works related correspondences etc.
5	Sub Engineer (C)	3 Nos	For consolidation of rain gauge data from various stations besides other works

A) Land Management & FEMU

This division under one Executive Engineer will be functioning at Thiruvananthapuram to look after the land management, FEMU and MNRE etc. The staff strength proposed is given below.

Sl No	Designation	Proposed strength	Remarks
1	Executive Engineer (C)	1 No	In overall charge
2	Asst. Executive Engineer (C)	1 No	
3	Asst. Engineer (C)	2 No	For assisting AEE in their works
4	Sub Engineer (C)	1No	For assisting AE in their works

B) Hydrology Division

This division under one Executive Engineer will function at Pallom. There will be three hydrology field sections under this division with one AE and one SE each in all sections.

Sl No	Designation	Proposed strength	Remarks
1	Executive Engineer (C)	1 No	All staff in charge of consolidation of hydrological data.
2	Asst. Executive Engineer (C)	1 No	
3	Asst. Engineer (C)	1 No	
4	Sub Engineer (C)	1No	

Note 1: One Assistant Engineer and 1 Sub Engineer in each investigation division may be exclusively assigned for collection of details to the hydrology division. The consolidated data should be made available to dam safety wing also. The Hydrology Division and Research Division may also be brought under the Dam Safety Wing for its efficient functioning. The issues connected with sharing of inter-state river water and its agreements shall also be attended by the Hydrology & River Water Management Division. The Research Division shall undertake various research activities related to the civil construction works and innovative programmes in the civil construction side. The details of all offices under the Chief Engineer (Civil – Investigation & Infrastructure Development) have been mentioned in the Annexure C.

6. CHIEF ENGINEER (CIVIL – DAM SAFETY & DRIP)

The office of the Chief Engineer (Dam Safety & DRIP) is functioning at Pallom in Kottayam district, to look after the dams under the control of KSEBL and also to look after the works under DRIP.

The Dam Rehabilitation and Improvement Project (DRIP) has been taken up with financial assistance from the World Bank for rehabilitation and improvement of 37 dams under 12 major Hydro Electric Projects. DRIP was proposed to be implemented over a period of six years starting from 18th April, 2012. Now it's period is extended by two years, i.e. up to June, 2020. Sanction for Phase II and III of DRIP project from 2020 to 2030 has already been given by the Govt. of India. The DRIP is envisaged to undertake schemes to improve the safety and operational performance of selected dams and its associate appurtenance. In addition to DRIP, Dam Safety works are also to be attended by the Dam Safety Wing. Also the Dam Safety Bill, 2019 has been passed by the Lok Sabha recently and it is expected that the bill will be cleared in the Rajya Sabha also. With the passing of the bill, the responsibility of dam owners and dam managers for ensuring the safety of the dams gets a legal frame work. At present 59 Dams/weirs are under the control of KSEBL including 5 dams of national importance. Periodical maintenance and upkeep is required for the safety of dams. Apart from the above, adequate staff is required for the routine inspections, operation/maintenance of shutters of dams, appurtenances and shutters of dams, rain-gauge stations, valve houses, penstock, seismograph etc. There are five field divisions working under the Research and Dam Safety Organization, Pallom under the control of the Deputy Chief Engineer. This office is working as an ARU. The following field divisions which are presently working under this office, are proposed to function as such.

- 1) Dam Safety Division I, Kakkad
- 2) Dam Safety Division II, Vazhathope
- 3) Dam Safety Division III, Idamalyar

4) Dam Safety Division IV, Pambla

5) Dam Safety Division V, Thariode

The proposed staff strength in the office of the Chief Engineer (Dam Safety & DRIP) are as follows.

SI No	Designation	Proposed Strength	Remarks
1	Chief Engineer (C)	1	
2	Deputy Chief Engineer (C)	1	To head the SPMU, strengthen the research activities, for carrying out statutory inspections, trend monitoring of the dams and for updating EAP every year.
3	Executive Engineer (C)	2	
4	Asst. Exe. Engineer (C)	4	
5	Asst. Engineer (C)	4	
6	Sub Engineer (C)	3	

The proposed staff strength in the office of the Deputy Chief Engineer (Research & Dam Safety Organization) is as follows.

SI No	Designation	Proposed Strength	Remarks
1	Deputy Chief Engineer (C)	1	
2	Executive Engineer (C)	2	
3	Asst. Executive Engineer (C)	6	
4	Asst. Engineer (C)	6	
5	Sub Engineer (C)	6	

The staff strength proposed in the field offices are shown in the Annexure D. The staff strength has been proposed considering the nature and importance of work, number of dams under control, location& accessibility etc.

7. CORPORATE WING OF KSEBL

Civil Engineers of various designations are employed under the Corporate wing of KSEBL. Following are the offices at which Civil Engineers are proposed to be posted.

1) Office of the Chairman & Managing Director

SI No	Designation	Proposed Strength	Remarks
1	Executive Engineer (C)	1 No	Same as present strength

2) Office of the Director (Generation Civil)

SI No	Designation	Proposed Strength	Remarks
1	Director (Gen. Civil)	1 No	
2	Dy. Chief Engineer (C)	1 No	
3	Asst. Exe. Engineer (C)	6 Nos	Same as present strength

3) Office of the Director (Transmission and System Operations)

SI No	Designation	Proposed Strength	Remarks
1	Assistant Engineer (C)	1 No	

4) Office of the Chief Engineer (SCM)

SI No	Designation	Proposed Strength	Remarks
1	Executive Engineer (C)	1 No	
2	Asst. Exe. Engineer (C)	2 Nos	
3	Asst. Engineer (C)	3 Nos	

5) REES - Thiruvananthapuram

SI No	Designation	Proposed Strength	Remarks
1	Executive Engineer (C)	1 No	
2	Asst. Exe. Engineer (C)	1 No	
3	Asst. Engineer (C)	1 No	

6) Vigilance Wing

SI No	Designation	Proposed Strength	Remarks
1	Assistant Exe.Engineer (C)	2 Nos	

7) Vehicle Monitoring Cell

SI No	Designation	Proposed Strength	Remarks
1	Assistant Engineer (C)	1 No	
2	Sub Engineer (C)	2 Nos	

8) Project Monitoring Cell

SI No	Designation	Proposed Strength	Remarks
1	Executive Engineer (C)	1 No	
2	Asst. Exe. Engineer (C)	1 no	
3	Asst. Engineer (C)	2 Nos	
4	Sub Engineer (C)	2 Nos	

9) TRAC

SI No	Designation	Proposed Strength	Remarks
1	Executive Engineer (C)	1 No	Same as present strength

Since it is proposed to attach the Civil Division, Thiruvananthapuram with the office of the Chief Engineer (Civil Construction), South, the same is not included here. The abstract of the above proposal has been mentioned in the Annexure E.

8. STRATEGIC BUSINESS UNIT – TRANSMISSION

Many Civil Engineers are posted in the Transmission wing of KSEBL since civil works are also involved in the transmission side. At present, Civil Engineers are working under both Transmission and Transgrid wings. A proposal is given below.

Transmission Wing (including Transgrid)

Sl No	Office	EE	AEE	AE	SE	Total
1	Office of the Chief Engineer, Transgrid	1	1	1		3
2	Regional Chief Engineer office (2 nos)		2	2		4
3	Transmission Circle Offices (11 Nos)		11	0	11	22
4	TC Sub Divisions (26 Nos)			26	26	52
5	Transgrid Sub Divisions (4 Nos)		4	8	8	20
6	Transmission Divisions (23 Nos)				23	23
7	Transmission Divisions - ARU (3 Nos)				3	3
8	400 kV O&M Division, Madakkathara				1	1
9	General maintenance Sub Division, Madakkathara			1	1	2
	Total	1	18	38	73	130

9. STRATEGIC BUSINESS UNIT –DISTRIBUTION

Many Civil Engineers are posted in the distribution wing of KSEBL. KSEBL owns many electrical section offices at various parts of the State. It is proposed to execute all the maintenance works of buildings and minor construction activities under the distribution wing with the civil engineers posted in the respective circle offices. The new building constructions shall be carried out by the Infrastructure Development divisions. A proposal for distribution wing is given below.

a) Distribution Wing

SI No	Designation	Proposed Strength	Remarks
1	Asst. Exe. Engineer (C)	4 Nos	1 No AEE each in all the four offices of the Chief Engineer (Distribution)
2	Asst. Engineer (C)	18Nos	1 No AE each in the four Chief Engineer's office and 1 AE each in all the 14 districts
3	Sub Engineer (C)	29 Nos	1 No Sub Engineer each in the four Chief Engineer's office and 1 no Sub Engineer each in all the 25 Electrical Circle Offices

10. FUTURE OF CIVIL WING IN KSEB LIMITED

Civil Wing in KSEBL After 2024

The present strength of Civil Engineers in KSEBL is about 868 nos according to the details available in HRIS. Out of this, Assistant Engineers (70%) and Sub Engineers are recruited through Public Service Commission. A major recruitment was carried out during the year 1993 in the category of Assistant Engineers. After that, small scale recruitments were carried out in 2007 and 2015 respectively. Similarly, Sub Engineers were recruited in 1994 and 2002. A study of retirement dates reveal that the Assistant Engineer batch joined in 1993 will retire by 31.05.2024. Similarly, majority of the sub Engineers may also retire during the year 2026.

A major restructuring in Civil wing was done in the year 2006 vide BO (FM) No.3256/(Estt III/7451/2006) dated 29.12.2006. The total number of Civil Engineers as per this order was 1110 nos. This has come down to the figure of 868 nos. As such, it can be seen that the strength of civil Engineers at present is only 78.29% of the strength approved in 2006. But the optimum strength required is 921 nos (Please refer annexure G). This aspect points to the need for recruitment in the cadres of Assistant Engineer (Civil) and Sub Engineer (Civil).

As mentioned earlier, Civil engineers are employed mainly for the implementation of hydroelectric projects, construction of buildings, maintenance works etc. In the extreme scenario of the Board not implementing any hydel projects, the requirement of Civil Engineers will be limited to Infrastructure Development works, Dam Safety related works, construction works in Transmission wing, maintenance works in Distribution wing, fabrication of line materials etc. A study of optimum requirements reveals that the following staff pattern is required when all the ongoing Transgrid and hydroelectric projects are completed.

SI No	Designation	Strength	Remarks
1	Chief Engineer	2	
2	Deputy Chief Engineer	4	
3	Executive Engineer	20	
4	Assistant Executive Engineer	79	
5	Assistant Engineer	149	
6	Sub Engineer	278	
	Total	532	

Calendar years between 2019& 2024

SI No	Description	CE	DyCE	EE	AEE	AE	SE	Overseer	Total
1	Strength at the beginning of the year 2019	4	12	51	162	205	420	14	868
2	Expected retirements during the year between 2019 & 2024	4	12	51	133	66	115	4	385
3	Strength at the end of the year 2024	0	0	0	29	139	305	10	483
4	<i>Anticipated requirement at the end of 2024**</i>	4	10	43	140	226	395	10	828

*** The requirement has been worked out after considering the progress of present projects, future projects, its impact on the staff requirement etc.*

Calendar year 2025

Sl No	Description	CE	DyCE	EE	AEE	AE	SE	Overseer	Total
1	Strength at the beginning of the year 2025	0	0	0	29	139	305	10	483
2	Expected retirements during the year	0	0	0	11	24	44	0	79
3	Strength at the end of the year 2025	0	0	0	18	115	261	10	404
4	<i>Anticipated requirement at the end of 2025</i>	2	4	20	79	149	278	0	532

Calendar year 2026

Sl No	Description	CE	DyCE	EE	AEE	AE	SE	Overseer	Total
1	Strength at the beginning of the year 2026	0	0	0	18	115	261	10	404
2	Expected retirements during the year	0	0	0	5	25	72	2	104
3	Strength at the end of the year 2026	0	0	0	13	90	189	8	300
4	<i>Anticipated requirement at the end of 2026</i>	2	4	20	79	149	278	0	532

Calendar year 2027

Sl No	Description	CE	DyCE	EE	AEE	AE	SE	Overseer	Total
1	Strength at the beginning of the year 2027	0	0	0	13	90	189	8	300
2	Expected retirements during the year	0	0	0	5	17	56	1	79
3	Strength at the end of the year 2027	0	0	0	8	73	133	7	221
4	<i>Anticipated requirement at the end of 2027</i>	2	4	20	79	149	278	0	532**

*** The staff strength of officers shall further decrease on completion of the Dam Rehabilitation and Improvement Project (DRIP) phase II and phase III.*

From the above tables, it is clear that from 2024 onwards, strength of Civil Engineers in KSEBL will come down at a steep rate. In order to overcome this situation, it is necessary to initiate the recruitment process at the level of Sub Engineers and Assistant Engineers. The Board has already approved for the recruitment of 35 nos Assistant Engineers. Similar step is necessary in the case of Sub Engineers also.

11. OPTIMIZATIONS / SUGGESTIONS

The committee studied the activities of officers and the proposal has been made after ensuring smooth functioning of all offices during this exercise.

- a) The staff strength of Civil engineers as per the Board order No.BO (FM) No.3256/(Estt III/7451/2006) dated 29.12.2006 and subsequent Board Orders.
- b) The staff strength proposed by the subcommittee constituted by the Board for drafting specific proposals on optimization and deployment of manpower in various offices of KSEBL in consultation with the concerned Directors.
- c) The working strength (as per HRIS) as on 29.04.2019, ie; the date of Board order constituting four committees for finalization of proposals.

The changes proposed with respect to each post are detailed below.

(i) **Director (Generation- Civil)**

One of the senior most Civil Engineer is expected to become the Director (Generation – Civil). This has been mentioned in the order dated 29.12.2006 and the same is proposed here also.

(ii) **Chief Engineer (Civil)**

As per the earlier Board order dated 29.12.2006 and subsequent Board Orders, the number of Chief Engineers presently working is four. It is proposed to continue with the present four numbers. The Chief Engineer (Investigation) has been given the charge of Infrastructure Development, along with Investigation. The implementation of projects will be dealt by the Chief Engineer (Civil Construction) South and North.

(iii) **Deputy Chief Engineer (Civil)**

The strength as per the Board order dated 29.12.2006 and subsequent Board Orders is 12. The present strength as on 29.04.2019 is 12 nos. The strength proposed now is also 12 nos. which includes one post proposed for consultancy wing. One change proposed is to shift the post from

office of the Chief Engineer (HRM) to the office of the Chief Engineer (Civil Construction) South so that the Design Cell, Thiruvananthapuram will have a Deputy Chief Engineer fully devoted to look after the design works. The Deputy Chief Engineer (EAP) will function at the office of the Chief Engineer (Dam Safety & DRIP) to look after the State Project Management Unit (SPMU) for DRIP, statutory inspections, Emergency Action Plan and its updating and for strengthening the Dam Safety related research activities. The Deputy Chief Engineer, Civil Circle, Meencut will function under the Chief Engineer (Civil Construction) South. The full powers of Chief Engineer given to the Deputy Chief Engineer, Civil Circle, Meencut has been proposed to be discontinued. The implementation of Chinnar SHEP has been brought under the Civil Circle, Meencut.

(iv) **Executive Engineer (Civil)**

The strength as per the Board order dated 29.12.2006 and subsequent Board Orders is 52. The present strength as on 29.04.2019 is 52 nos. and the proposal as per the Sub Committee report is 62 nos. The optimum strength now proposed is 51 nos. only. Some places have been shifted for more effective utilization.

The details are as follows:

SI No	Office from where the posts are proposed to be shifted	Number of posts (Nos)
1	Transgrid	1
2	Ladrum & Marmala SHEP	1
3	Valanthode SHEP	1
4	CE (Distribution) Office	3
5	Civil Circle, Kothamangalam	1
	Total	7 Nos

SI No	Office to which the posts are proposed to be shifted	Number of posts (Nos)
1	Investigation Circle, Thrissur	1*
2	Civil Circle, Pallom	1*
3	MF II, Kozhikode	1
4	CE (Dam Safety & DRIP)	1
5	RMU, Kakkayam	1
6	Project Monitoring Cell	1
7	Mankulam HEP	1
	Total	7 Nos

*Two posts are proposed since these offices have all Kerala jurisdictions.

(v) **Assistant Executive Engineer (C) and Assistant Engineer (C)**

The functions of Assistant Executive Engineers and Assistant Executive Engineers were studied in detail and an optimum strength has been proposed based on the works in each office. These posts will get reduced according to the completion of hydro electric projects.

(vi) **Sub Engineer (Civil) / Overseer (Civil)**

To cope up with the technological advancement, only Sub Engineers are preferred in future. At present, Sub Engineer and Overseer in Civil wing can perform similar functions. Hence Sub Engineer / Overseer may be posted according to the availability of posts. The optimum strength for Sub Engineer (Civil) has been proposed after a detailed study and compiling the requirements in other Strategic Business Units also.

(vii) **Offices not mentioned in the earlier Sub Committee report**

In the Sub Committee report submitted to the Board earlier, the offices like FEMU, Land Management Unit, Civil engineers working in the transmission and distribution field offices, camps under generation circles, hydel tourism etc. were not mentioned. The present committee has considered all the offices and determined the optimum staff strength.

12. RECOMMENDATIONS

The following recommendations are proposed for the efficient functioning of civil wing in the field of execution of power projects and other civil engineering related works.

- 1) At present, much time is consumed for completion of land acquisition activities and commencement of work at site. Within six months of getting sanction from the Government for land acquisition, the possibility of getting the required land may be looked into and a decision to be taken regarding continuing the activities of land acquisition for the particular project. Attempts may be made to limit the time gap between the date of according the administrative sanction and the commencement of work to three years in the case of SHEPs and four years in the case of major HEPs.
- 2) The Board may take initiative to ensure higher level intervention during land acquisition process. Periodic review meetings may be conducted to assess the progress achieved in land acquisition. The time interval between two consecutive meetings shall not exceed two months.
- 3) Once the land acquisition drawing, details of land owners etc are prepared, only a Sub Division with minimum staff may be allowed to continue at site. This Sub Division may be attached to any other nearby Project Divisions. Limited number of staff to the tune of one AEE, one AE and two Sub Engineer etc. may be provided. When the land acquisition process is about to complete, a Project Manager with full team may be deployed so that the Project Manager may also involve in the finalization of detailed estimate, before according the technical sanction.
- 4) Conduct review meetings every month at Board level, to review the progress of ongoing as well as future projects. For convenience and

reduction of travelling expenses etc, review meetings may preferably be conducted in video conference mode.

- 5) Accounts of all completed projects shall be closed within a maximum period of six months from the date of completion of work. In case of any disputes, a memorandum of payments (MOP), according to the final bill audited, may be prepared and a copy sent to higher authorities within the above mentioned period.
- 6) At the design offices, approved soft copies for design of project components may be developed based on the parameters considered in the design of completed projects and may be shared by the Design Cells at Thiruvananthapuram and Kozhikode so as to evolve a common procedure for design of various project components. These soft copies may help in quick dimensioning of project components for the purpose of DPR preparation, estimation etc.
- 7) PRICE Software may be implemented in its complete form, as implemented in Government departments, with details of all employees with employee code etc. uploaded in the software.
- 8) The invitation of tenders for hydro electric projects as a single package or separate package for Civil and Electro-mechanical works may be decided at Board level for each project separately, considering the merits and demerits of each option for the particular project.
- 9) Since a majority of Civil Engineers are going to retire by 2024, it is necessary to recruit Assistant Engineer (Civil) and Sub Engineer (Civil) to ensure technology transfer for the smooth conduct of various civil works in KSEBL.
- 10) For field survey at the detailed investigation stage, drone based LiDAR / Photogrammetry survey may be adopted to save time, especially for the survey in forest areas etc. In this survey, it is possible to map bare earth beneath vegetation in a better way.

13. ANNEXURES AND CHARTS

The list of annexure attached along with the report is as follows.

- Annexure A - Offices and staff under the Chief Engineer (Civil Construction) South
- Annexure B - Offices and staff under the Chief Engineer (Civil Construction) North
- Annexure C - Offices and staff under the Chief Engineer (Civil – Investigation & Infrastructure Development,)
- Annexure D - Offices and staff under the Chief Engineer (Civil – Dam Safety & DRIP)
- Annexure E - Proposed strength of Civil Engineers under Corporate Wing
- Annexure F - Proposed strength of Civil Engineers under Generation Electrical Wing
- Annexure G - Abstract of Civil Engineers in KSEBL
- Annexure H - Proposed strength of Ministerial Staff under Generation wing
(Both Electrical & Civil)
- Annexure J - Typical staff pattern for future hydro electric projects

CHARTS

- Chart 1 - Organizational chart of Civil wing up to DyCE level
- Chart 2 - Organizational chart under the Chief Engineer (CC) South
- Chart 3 - Organizational chart under the Chief Engineer (CC) North
- Chart 4 - Organizational chart under the Chief Engineer (Civil, Investigation & Infrastructure Development)
- Chart 5 - Organizational chart under the Chief Engineer (Civil-Dam Safety & DRIP)
- Chart 6A - Organization chart for Consultancy wing
- Chart 6B - Organization chart of KEBCIL after its formation

ANNEXURE A

ABSTRACT OF CIVIL ENGINEERS UNDER THE OFFICE OF THE CHIEF ENGINEER (CIVIL CONSTRUCTION) SOUTH, THIRUVANANTHAPURAM

SI No	Office	Installed Capacity (MW)	Chief Engineer (C)	Dy. Chief Engineer (C)	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C) /Overseer	Total
1	Office of the Chief Engineer (Civil Construction) South		1	1	1	3	2	1	9
2	Design Cell, South, Thiruvananthapuram			1	3	7	3	1	15
3	Civil Circle, Kothamangalam			1	0	4	4	2	11
(a)	<i>Bhoothathankettu SHEP</i>				1	1	3	8	13
(b)	<i>Upper Kallar, Peechad and Western Kallar</i>				1	2	3	6	12
(c)	<i>Thottiyar HEP</i>				1	3	5	10	19
(d)	<i>Sengulam Augmentation Scheme & Upper Sengulam SHEP</i>				1	2	3	6	12
(i)	<i>Civil Sub Division, Vellathooval (Renovation works - Penstock of Sengulan PH)</i>					1	1	2	4
(ii)	<i>Upper Sengulam Sub Division</i>					1	1	2	4
(f)	<i>Ladrum & Marmala SHEP</i>				0	1	2	2	5
(g)	<i>Idukki Augmentation Scheme</i>					0	1	2	3

ANNEXURE A

ABSTRACT OF CIVIL ENGINEERS UNDER THE OFFICE OF THE CHIEF ENGINEER (CIVIL CONSTRUCTION) SOUTH, THIRUVANANTHAPURAM

SI No	Office	Installed Capacity (MW)	Chief Engineer (C)	Dy. Chief Engineer (C)	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C) /Overseer	Total
4	Civil Circle, Meencut								
(a)	<i>Pallivasal Extension Scheme</i>	60		1		2	2	2	7
(i)	<i>Division 1</i>				1	2	3	7	13
(ii)	<i>Division 2</i>				1	2	3	7	13
(b)	<i>Mankulam HEP</i>	40			1	2	4	6	13
(c)	<i>Chinnar SHEP</i>	24			1	3	4	7	15
5	<i>Civil Division, TVM</i>				1	1	2	4	8
6	Consultancy wing				2	9	13	22	46
	TOTAL		1	4	15	46	59	97	222

ANNEXURE B

ABSTRACT OF CIVIL ENGINEERS UNDER THE OFFICE OF THE CHIEF ENGINEER (CIVIL CONSTRUCTION) NORTH, KOZHIKODE

SI No	Office	Installed Capacity (MW)	Chief Engineer (C)	Dy. Chief Engineer (C)	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C)	TOTAL
1	Office of the Chief Engineer (Civil Construction) North		1	1	1	5	3	4	15
2	Design & Consultancy, North, Kozhikode			1	2	6	4	1	14
3	Chathankottunada SHEP -II	6			1	2	4	7	14
4	Pazhassi Sagar SHEP	7.5			1	1	4	6	12
5	Peruvannamuzhi SHEP	6			1	1	2	7	11
6	Civil Division, Kakkayam (RMU Works)				1	1	2	5	9
7	Poringal SHEP	24			1	2	4	6	13
8	Anakkayam	7.5			0	1	1	2	4
9	Olikkal & Poovaramthode SHEP	5+3			1	2	4	6	13
10	Chembukkadave III SHEP	7.5			1	1	1	3	6
11	Maripuzha SHEP	6			0	1	1	2	4
12	Valanthode SHEP	7.5			0	1	1	3	5
	TOTAL		1	2	10	24	31	52	120

ANNEXURE C

ABSTRACT OF CIVIL ENGINEERS UNDER THE OFFICE OF THE CHIEF ENGINEER (CIVIL - INVESTIGATION & INFRASTRUCTURE DEVELOPMENT) THIRUVANANTHAPURAM

SI No	Office	Chief Engineer (C)	Dy. Chief Engineer (C)	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C)	TOTAL
1	Office of the Chief Engineer (Civil- Investigation & Infrastructure Development)	1	1	1	5	2	1	11
2	Investigation Circle, Thrissur		1	1	2	4	3	11
(a)	Investigation Division, Kottarakkara			1	1	2	5	9
	Hydrology section, Kottarakkara					1	1	2
(b)	Investigation Division, Munnar			1	3	4	10	18
	Hydrology Section, Munnar					1	1	2
(c)	Investigation Division, Kozhikode			1	3	4	10	18
	Hydrology Section, Kozhikkode					1	1	2

ANNEXURE C

ABSTRACT OF CIVIL ENGINEERS UNDER THE OFFICE OF THE CHIEF ENGINEER (CIVIL - INVESTIGATION & INFRASTRUCTURE DEVELOPMENT) THIRUVANANTHAPURAM

SI No	Office	Chief Engineer (C)	Dy. Chief Engineer (C)	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C)	TOTAL
3	Infrastructure Development, Civil Circle, Pallom		1	1	1	2	4	9
(a)	Central Mechanical Facility Division office			1	0	1	2	4
(b)	Quality Control Sub Division, Kothamangalam				1	1	1	3
(c)	Quality Control Sub Division, Kozhikode				1	1	1	3
	Fabrication Sub Division				1	2	5	8
(i)	Infra sub Division - 2 nos (For districts Thiruvananthapuram, Kollam, Pathanamthitta, Kottayam and Idukki) with HQ at Kottarakkara and Pathanamthitta				2	2	5	9
(b)	B & S Division, Angamaly			1	0	1	2	4
	Fabrication Sub Division				1	2	5	8

ANNEXURE C

ABSTRACT OF CIVIL ENGINEERS UNDER THE OFFICE OF THE CHIEF ENGINEER (CIVIL - INVESTIGATION & INFRASTRUCTURE DEVELOPMENT) THIRUVANANTHAPURAM

SI No	Office	Chief Engineer (C)	Dy. Chief Engineer (C)	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C)	TOTAL
(i)	<i>Infrastructure sub divn, 2 Nos (For districts Alappuzha, Ernakulam, Thrissur, Palakkad and Malappuram)with HQ at Angamaly and Shornur</i>				2	2	5	9
(c)	MF II, Kozhikode			1	0	1	2	4
	Fabrication Sub Division				1	2	5	8
(i)	<i>Infrastructure sub divn, 2 Nos(For districts Kozhikode, Kannur, Wayanad and Kasargode)with HQ at Kozhikode and Kannur</i>				2	2	4	8
4	Land Management Unit, MNRE & FEMU			1	1	2	1	5
5	Hydrology Division , Kottayam			1	1	1	1	4
	TOTAL	1	3	11	28	41	75	159

ANNEXURE D

ABSTRACT OF CIVIL ENGINEERS UNDER THE OFFICE OF THE CHIEF ENGINEER (CIVIL - DRIP & DAM SAFETY) KOTTAYAM

SI No	Office	Chief Engineer (C)	Dy. Chief Engineer (C)	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C)	TOTAL
1	Office of the Chief Engineer (Civil Dam Safety & Drip)	1	1	2	4	4	3	15
2	Research & Dam Safety Organization, Pallom		1	2	6	6	6	21
3	Dam Safety Division, Kakkad			1	0	1	1	3
a	Pamba Sub Division				1	1	4	6
b	Moozhiyar Sub Division				1	2	5	8
c	Seethathode Sub Division				1	2	5	8
4	Dam Safety Division, Vazhathope			1	0	1	1	3
a	Sub division I, Vazhathoppe				1	2	5	8
b	Sub division II, Vazhathoppe				1	2	5	8
c	Sub Division III, Moolamattom				1	1	3	5

ANNEXURE D

ABSTRACT OF CIVIL ENGINEERS UNDER THE OFFICE OF THE CHIEF ENGINEER (CIVIL - DRIP & DAM SAFETY) KOTTAYAM

SI No	Office	Chief Engineer (C)	Dy. Chief Engineer (C)	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C)	TOTAL
5	Dam Safety Division, Idamalayar			1	0	1	1	3
a	Sub division I, Idamalayar				1	2	4	7
b	Sub division II, Poringal				1	2	7	10
6	Dam Safety Division, Pambla			1	0	1	1	3
a	Sub Division I, Pambla				1	2	5	8
b	Sub Division II, Kallarkutty				1	2	6	9
7	Dam Safety Division, Thariyode			1	0	1	1	3
a	Sub division I, Kakkayam				1	2	5	8
b	Sub division II, Thariyode				1	3	8	12
	TOTAL	1	2	9	22	38	76	148

ANNEXURE E

PROPOSED STRENGTH OF CIVIL ENGINEERS UNDER CORPORATE WING

SI No	Office	Director (Gen. Civil)	Chief Engineer (C)	Dy. Chief Engineer (C)	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C)	TOTAL
1	Office of the Chairman & Managing Director				1				1
2	Office of the Director (G Civil & HRM)	1		1		6			8
3	Office of the Director (Trans)						1		1
4	Office of the Director (D & S)						1		1
5	Office of CE (SCM)				1	1	3		5
6	Vigilance Wing					2			2
7	Vehicle Monitoring						1	2	3
8	TRAC				1				1
9	PMC				1	1	1		3
10	REES				1	1	1		3
	TOTAL			1	5	11	8	2	28

ANNEXURE F

DETAILS OF CIVIL ENGINEERS PROPOSED UNDER GENERATION - ELECTRICAL WING

SI No	Office	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C)	Overseer (C)	TOTAL	Remarks
1	Generation Circle, Thrissur			1	1		2	<i>Civil Engineers posted at Generation Circle offices shall also attend the field works related to the projects coming under the respective circle offices</i>
2	Generation Circle, Kothamangalam				1		1	
3	Generation Circle, Moozhiyar				1		1	
4	Generation Circle, Moolamattom				1		1	
5	Generation Circle, Meencut				1		1	
5a	Generation Circle, Kozhikode			1	1		2	
6	Kallarkutty Generation Division							
a	Civil Sub Division		1		1	2	4	
b	Kallarkutty Section			1	1		2	
c	Chithirapuram Section			1	1	3	5	
7	Kakkayam Gen Division							
a	Civil Sub Division		1		1		2	

ANNEXURE F

DETAILS OF CIVIL ENGINEERS PROPOSED UNDER GENERATION - ELECTRICAL WING

SI No	Office	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C)	Overseer (C)	TOTAL	Remarks
b	Kakkayam Section			1	1		2	
8	Poringalkuthu Gen Division							
a	Civil Sub Division		1		1		2	
b	Civil Section			1	1		2	
9	Seethathode Gen Division				1		1	
10	Moozhiar Gen Division							
a	Civil Sub Division		1		1		2	
b	Civil Section			1	3		4	
11	Lower Periyar Camp section			1	1		2	
12	Idamalayar PH Division			1	1		2	
13	Generation Divn Moolamattom							

ANNEXURE F

DETAILS OF CIVIL ENGINEERS PROPOSED UNDER GENERATION - ELECTRICAL WING

SI No	Office	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C)	Overseer (C)	TOTAL	Remarks
a	Camp Sub Division		1	2	2	2	7	
14	Office of the Chief Engineer, Generation			1			1	
15	KDPP Division under Generation Circle, Kozhikode		1	2	2	2	7	2 Nos AE is including 1 No AE(Mechanical)
16	BDPP			2	2		4	2 Nos AE is including 1 No AE(Mechanical)
	TOTAL	1	6	16	26	9	58	

ANNEXURE G

ABSTRACT OF CIVIL ENGINEERS IN KSEB Ltd

SI No	Office	Director (Gen Civil)	Chief Engineer (C)	Dy. Chief Engineer (C)	Executive Engineer (C)	Asst. Executive Engineer (C)	Asst. Engineer (C)	Sub Engineer (C)/ Overseer	TOTAL
1	Chief Engineer (Civil Construction) South		1	4	15	46	59	97	222
2	Chief Engineer (Civil Construction) North		1	2	10	24	31	52	120
3	Chief Engineer (Civil -Infrastructure Development & Investigation)		1	3	11	28	41	75	159
4	Chief Engineer (Dam Safety & DRIP)		1	2	9	22	38	76	148
5	SBU, Distribution					4	18	29	51
6	SBU, Transmission				1	18	38	73	130
7	SBU, Generation Electrical				1	6	16	35	58
8	Hydel Tourism					1	2	2	5
9	Corporate wing	1		1	5	11	8	2	28
	TOTAL	1	4	12	52	160	251	441	921

ANNEXURE H

ABSTRACT OF MINISTERIAL STAFF IN THE GENERATION WING

SI No	NAME OF ARU	Finance Officer / AFO/ DA	Senior Supdt.	Senior Asst.	Office Attendant	Driver	SFCA / JFCA	TOTAL
A	GENERATION CIVIL							
1	Office of the Chief Engineer (Civil Construction) South				1	1	1	3
3	Office of the Chief Engineer (Civil- Infrastructure Development & Investigation)			1	1	1	1	4
4	Office of the Chief Engineer (Dam Safety & DRIP)				1			1
5	Office of the Chief Engineer (Civil Construction) North	1	2	8	2	1	2	16
6	Civil Circle, Pallom	1		6		1	1	9
7	Civil Circle, Kothamangalam	1	1	6	2	0	1	11
8	Civil Circle, Meencut	1	1	5	2	2		11
9	Investigation Circle, Thrissur	1	1	5	2		1	10
10	Research & Dam Safety Organization, Pallom	1	2	8	1			12
11	Buildings & Store Division, Angamaly		1	5	1	1	1	9

ANNEXURE H

ABSTRACT OF MINISTERIAL STAFF IN THE GENERATION WING

SI No	NAME OF ARU	Finance Officer / AFO/ DA	Senior Supdt.	Senior Asst.	Office Attendant	Driver	SFCA / JFCA	TOTAL
12	RCA Unit, Kozhikode		1	2				3
13	RCA Unit, Meencut		1	1				2
B	GENERATION ELECTRICAL							
1	Generation Circle, Meencut	1	2	7	2			12
2	Generation Circle, Thrissur	1	2	6	2			11
3	Generation Circle, Moolamattom	1	2	6	2			11
4	Generation Circle, Moozhiyar	1	2	6	2			11
5	Generation Circle, Kothamangalam	1	1	6	1			9
6	Generation Circle, Kozhikode	1	2	6	2			11
7	Office of the Director (Gen Electrical)				1		1	2
	TOTAL	12	21	84	25	7	9	158

ANNEXURE J

TYPICAL STAFF PATTERN FOR HYDRO ELECTRIC PROJECTS

The implementation of hydro electric projects may be split into three phases, viz;

- 1) Approvals and Land Acquisition Phase
- 2) Field Execution Phase
- 3) Close out phase

Before phase 1, a dedicated team is proposed to be formed by the Chief Engineer in charge of construction to conduct the following field studies.

- a) Assessing the requirement of land
- b) Categorization of land such as private, Government, Forest etc.
- c) Preparation of land sketch with details of Land owners, Survey no., Village, Taluk, District etc
- d) Collection of land documents
- e) Preliminary scrutiny of land documents to determine the marketability of private lands and also to hold preliminary discussions with the land owners.

1) Approvals and Land Acquisition Phase

Once the above process is over, the dedicated team formed earlier may be disbanded and only a minimum staff may be retained till commencement of construction works at site.

The proposed minimum staff is as follows.

- 1) Assistant Executive Engineer (Civil) - 1 No
- 2) Assistant Engineer (Civil) - 1 No
- 3) Sub Engineer (Civil) - 3 Nos

The above team is to carry out necessary follow up actions for getting statutory approvals, land acquisition and also for the preparation of detailed estimate for execution.

2) Execution Phase

The staff proposed during execution of a project is proposed based on a case to case basis.

Case 1 – Major Hydro Electric Project

The staff pattern proposed is as follows.

- | | |
|---|----------|
| 1) Executive Engineer | - 2 Nos |
| 2) Assistant Executive Engineer (Civil) | - 2 Nos |
| 3) Assistant Engineer (Civil) | - 5 Nos |
| 4) Sub Engineer (Civil) | - 12 Nos |

In case the works of major components such as dam, power house etc are not commencing simultaneously, only one Executive Engineer may be posted in the beginning.

Case 2 – Small Hydro Electric Projects

Case 2 (i)

A typical staff pattern for a project consisting of a weir, water conductor system (having a length of less than 500m), forebay, penstock, power house and tail race is proposed as follows.

- | | |
|---|---------|
| 1) Executive Engineer | - 1 No |
| 2) Assistant Executive Engineer (Civil) | - 1 No |
| 3) Assistant Engineer (Civil) | - 2 Nos |
| 4) Sub Engineer (Civil) | - 6 Nos |

The Sub Engineers to be treated as a pool and works to be assigned to them according to the progress of each component.

Case 2(ii)

In case of length of water conductor system is more than 500m but less than 1000 m, one more Sub Engineer may be posted. The staff pattern proposed is as follows.

- | | |
|---|---------|
| 1) Executive Engineer | - 1 No |
| 2) Assistant Executive Engineer (Civil) | - 1 No |
| 3) Assistant Engineer (Civil) | - 2 Nos |
| 4) Sub Engineer (Civil) | - 7 Nos |

Case 2 (iii)

In case two separate weirs and channels are involved, then the proposed strength is as follows.

- | | |
|---|----------|
| 1) Executive Engineer | - 1 No |
| 2) Assistant Executive Engineer (Civil) | - 2 No |
| 3) Assistant Engineer (Civil) | - 4 Nos |
| 4) Sub Engineer (Civil) | - 10 Nos |

Note: Depending upon the accessibility of site, inter visibility of adjacent components etc, the above pattern may slightly change.

3) Close out phase

After the preparation of final contract certificate bill, only minimum staff is to be retained at the field, which is as follows.

- | | |
|-------------------------------|---------|
| 1) Executive Engineer | - 1 No |
| 2) Assistant Engineer (Civil) | - 1 Nos |
| 3) Sub Engineer (Civil) | - 3 Nos |

The above staff is responsible for the preparation of completion report for the project within the stipulated time. The Assistant Executive Engineer (Civil) may be relieved with a condition to also attend the project related queries during the close out phase.

After the preparation of project completion report and passing of final bills, the entire team may be deployed to other projects / offices. In case of any disputes, cases etc, the above team may be relieved after completion of DB and AB audits and approval of memorandum of payments, based on the final bill submitted. The payment may be made later after settling the disputes.

CHART 1

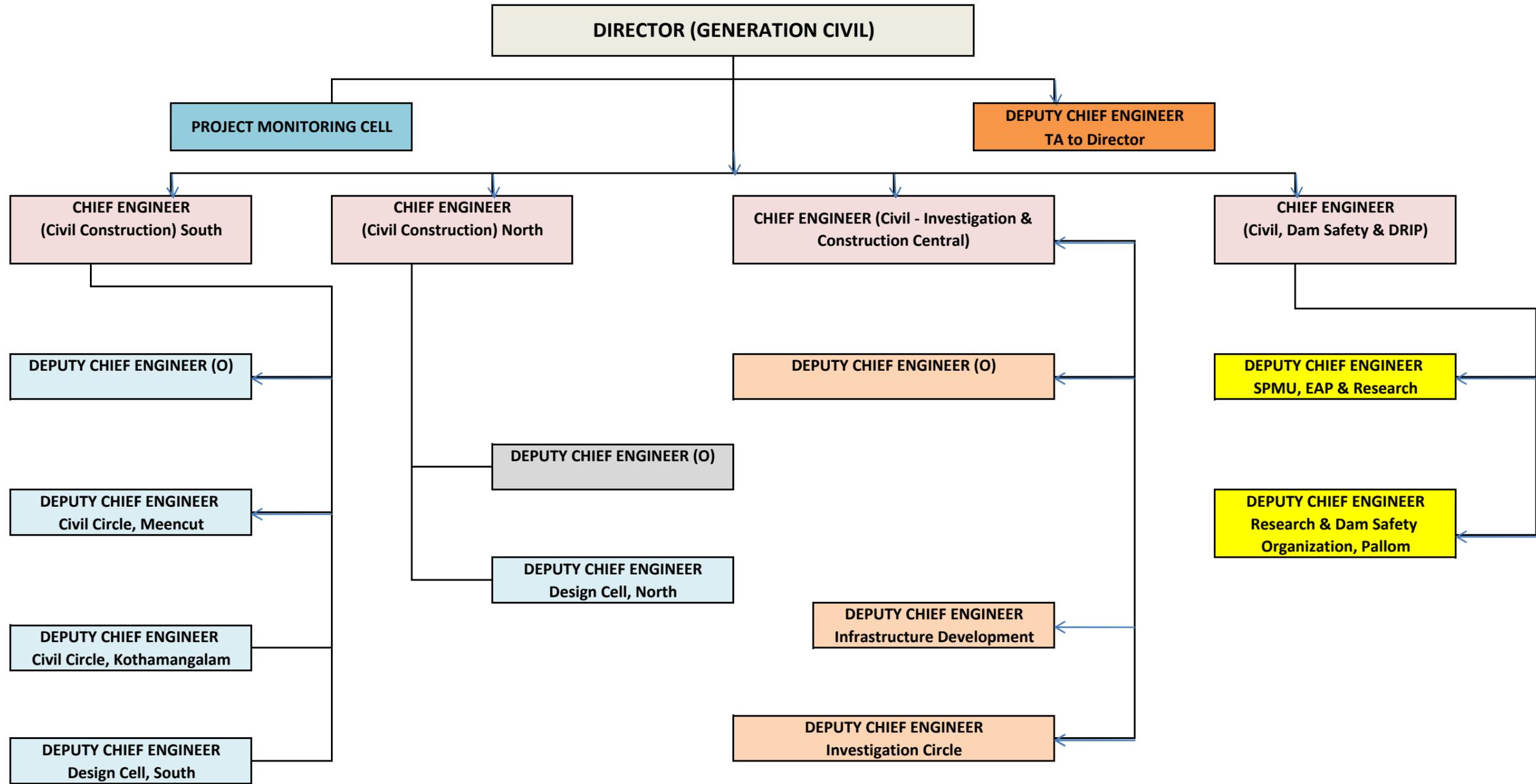


CHART 2

**CHIEF ENGINEER (CIVIL CONSTRUCTION) SOUTH
THIRUVANANTHAPURAM**

OFFICE		
DYCE	1	No
EE	1	No
AEE	3	Nos
AE	2	Nos
SE	1	Nos

DEPUTY CHIEF ENGINEER CIVIL CIRCLE, MEENCUT		
DB		
EE	0	No
AEE	2	Nos
AE	2	Nos
SE	2	Nos

DEPUTY CHIEF ENGINEER CIVIL CIRCLE KOTHAMANGALAM		
EE	0	No
AEE	4	Nos
AE	4	Nos
SE	2	Nos

DEPUTY CHIEF ENGINEER, DESIGN CELL SOUTH		
Dy.CE	1	No
EE	3	No
AEE	7	Nos
AE	3	Nos
SE	1	Nos

EXECUTIVE ENGINEER PES DIVISION 1		
EE	1	No
AEE	2	Nos
AE	3	Nos
SE	7	Nos

EXECUTIVE ENGINEER PES DIVISION 2		
EE	1	No
AEE	2	Nos
AE	3	Nos
SE	7	Nos

PROJECT MANAGER MANKULAM HEP		
EE	1	No
AEE	2	Nos
AE	4	Nos
SE	6	Nos

PROJECT MANAGER CHINNAR SHEP		
EE	1	No
AEE	3	Nos
AE	4	Nos
SE	7	Nos

CIVIL DIVISION VB, TVM		
EE	1	No
AEE	1	Nos
AE	2	Nos
SE	4	Nos

CONSULTANCY WING		
EE	2	No
AEE	9	Nos
AE	13	Nos
SE	22	Nos

PROJECT MANAGER BHOTHATHAKETTU SHEP		
EE	1	No
AEE	1	Nos
AE	3	Nos
SE	8	Nos

PROJECT MANAGER THOTTIAR HEP		
EE	1	No
AEE	3	Nos
AE	5	Nos
SE	10	Nos

PROJECT MANAGER SENGUAM AUG. SCHEME DIVISION		
EE	1	No
AEE	2	Nos
AE	3	Nos
SE	6	Nos

PROJECT MANAGER LADRUM & MARMALA SHEP		
EE	0	No
AEE	1	Nos
AE	2	Nos
SE	2	Nos

PROJECT MANAGER UPPER KALLAR SCHEME		
EE	1	No
AEE	2	Nos
AE	3	Nos
SE	6	Nos

CIVIL SUB DIVISION VELLATHOOVAL		
AEE	1	Nos
AE	1	Nos
SE	2	Nos

CIVIL SUB DIVISION IDUKKI AUG. SCHEME		
AEE	0	Nos
AE	1	Nos
SE	2	Nos

CIVIL SUB DIVISION UPPER SENGULAM		
AEE	1	Nos
AE	1	Nos
SE	2	Nos

TOTAL			
CE		1	No
DyCE		4	Nos
EE		15	Nos
AEE		46	Nos
AE		59	Nos
SE		97	Nos

CHART 3

**CHIEF ENGINEER (CIVIL CONSTRUCTION)
NORTH, KOZHIKODE**

DEPUTY CHIEF ENGINEER (O)

DEPUTY CHIEF ENGINEER DESIGN & CONSULTANCY NORTH		
Dy.CE	1	No
EE	2	Nos
AEE	6	Nos
AE	4	Nos
SE	1	Nos

DB		
EE	1	No
AEE	5	Nos
AE	3	Nos
SE	4	Nos

PROJECT MANAGER CHATANKOTTUNADA SHEP STAGE II		
EE	1	No
AEE	2	Nos
AE	4	Nos
SE	7	Nos

PROJECT MANAGER PERUVANNAMUZZHI SHEP		
EE	1	No
AEE	1	Nos
AE	2	Nos
SE	7	Nos

PROJECT MANAGER PAZHASSI SAGAR SHEP		
EE	1	No
AEE	1	Nos
AE	4	Nos
SE	6	Nos

PROJECT MANAGER OLIKKAL & POOVARAMTHODE SHEP		
EE	1	No
AEE	2	Nos
AE	4	Nos
SE	6	Nos

PROJECT MANAGER VALANTHODE SHEP		
EE	0	No
AEE	1	Nos
AE	1	Nos
SE	3	Nos

TOTAL		
CE	1	No
DyCE	1	Nos
EE	10	Nos
AEE	24	Nos
AE	31	Nos
SE	52	Nos

EXECUTIVE ENGINEER RMU, KAKKAYAM		
EE	1	No
AEE	1	Nos
AE	2	Nos
SE	5	Nos

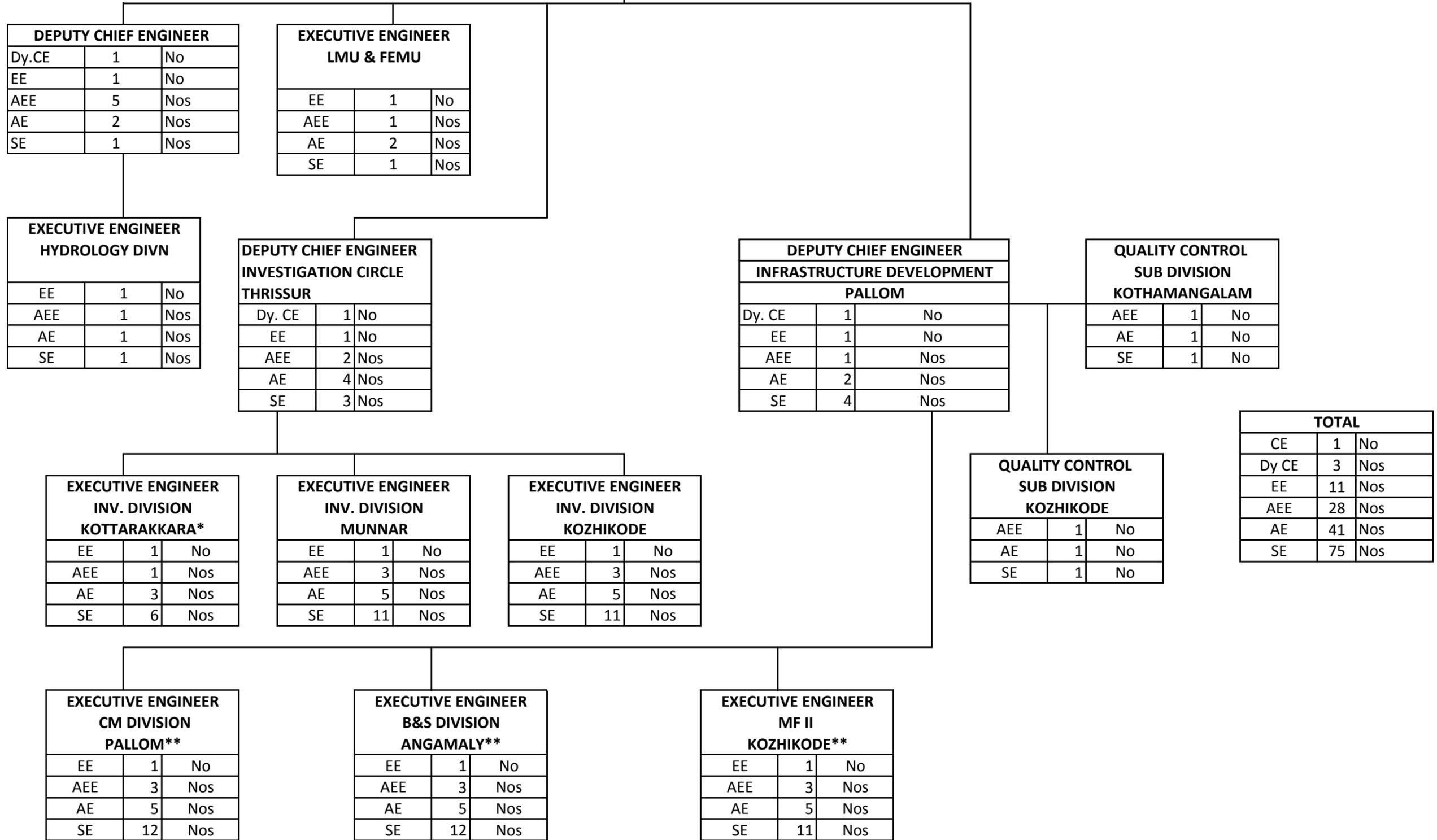
PROJECT MANAGER PORINGALKUTHU SHEP		
EE	1	No
AEE	2	Nos
AE	4	Nos
SE	6	Nos

PROJECT MANAGER ANAKKAYAM SHEP & ATHIRAPPALLY HEP		
EE	0	No
AEE	1	Nos
AE	1	Nos
SE	2	Nos

PROJECT MANAGER CHEMBUKKADAVE III & MARIPUZHA SHEP		
EE	1	No
AEE	2	Nos
AE	2	Nos
SE	5	Nos

CHART 4

CHIEF ENGINEER (CIVIL - INVESTIGATION & INFRASTRUCTURE DEVELOPMENT,



* Including staff for hydrology section

**Including staff for fabrication, infrastructure etc

CHART 5

**CHIEF ENGINEER (CIVIL) DAM SAFETY & DRIP
PALLOM, KOTTAYAM**

DEPUTY CHIEF ENGINEER		
DB		
Dy. CE	1	No
EE	2	Nos
AEE	4	Nos
AE	4	Nos
SE	3	Nos

DEPUTY CHIEF ENGINEER , RESEARCH & DAM SAFETY ORGANISATION, PALLOM - ARU		
DB		
Dy.CE	1	No
EE	2	Nos
AEE	6	Nos
AE	6	Nos
SE	6	

EXECUTIVE ENGINEER DAM SAFETY DIVISION, KAKKAD		
EE	1	No
AEE	3	Nos
AE	6	Nos
SE	15	Nos

EXECUTIVE ENGINEER DAM SAFETY DIVISION, VAZHATHOPE		
EE	1	No
AEE	3	Nos
AE	6	Nos
SE	14	Nos

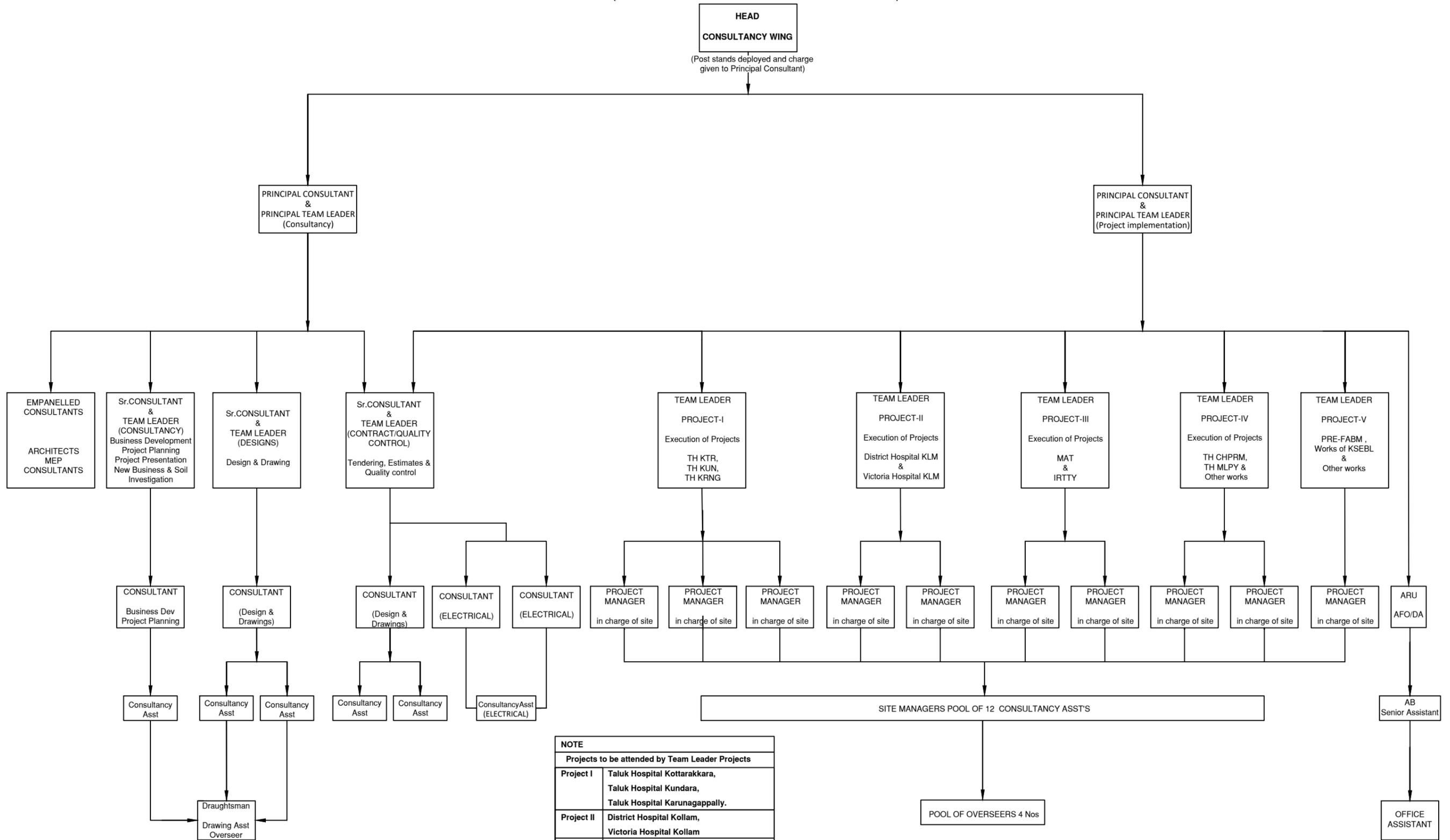
EXECUTIVE ENGINEER DAM SAFETY DIVISION, IDAMALAYAR		
EE	1	No
AEE	2	Nos
AE	5	Nos
SE	12	Nos

EXECUTIVE ENGINEER DAM SAFETY DIVISION, PAMBLA		
EE	1	No
AEE	2	Nos
AE	5	Nos
SE	12	Nos

EXECUTIVE ENGINEER DAM SAFETY DIVISION, THARIODE		
EE	1	No
AEE	2	Nos
AE	6	Nos
SE	14	Nos

TOTAL		
CE	1	No
DyCE	2	Nos
EE	9	Nos
AEE	22	Nos
AE	38	Nos
SE	76	Nos

ORGANISATIONAL STRUCTURE OF CONSULTANCY WING KSEBL
(BEFORE FORMULATION OF SUBSIDIARY COMPANY-KEBCIL)



NOTE	
Projects to be attended by Team Leader Projects	
Project I	Taluk Hospital Kottarakkara, Taluk Hospital Kundara, Taluk Hospital Karunagappally.
Project II	District Hospital Kollam, Victoria Hospital Kollam
Project III	Speciality Hospital Mattannur , Taluk Hospital Iritty.
Project IV	Taluk Hospital Chithirapuram, Taluk Hospital Mallapally.
Project V	PRE-FAB , Works of KSEBL & Other Works.

ORGANISATIONAL STRUCTURE OF KEBCIL
(AFTER FORMULATION OF SUBSIDIARY COMPANY-KEBCIL)

