



KERALA STATE ELECTRICITY BOARD Ltd

(Incorporated under the Companies Act, 1956)

Registered Office: Vidyuthi Bhavanam, Pattom,

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ABSTRACT

Providing connectivity at 110kV, two-phase supply to the newly proposed 110kV Traction Substation at Punalur on deposit work basis - Estimate for an amount of Rs.28.75 crore - Administrative Sanction accorded - Orders issued

Corporate Office (SBU-T)

BO (FTD)No.358/2023(D(T&SO)/T2/Punalur TSS/2023-24) Thiruvananthapuram, Dated: 31.07.2023

- Read: 1. Note No. CETS-AE5/20 22/2205 (3) dated 19.06.2023 of the Chief Engineer (Transmission South).
2. Letter No. D(T&SO)/PSE/NP/Punalur Traction/2021-22/194 dated 07.12.2021 of the Executive Engineer, PSE.
3. Letter No. FA/Tender 2/36/20 23 DATED 13.06.2023 of the Financial Adviser.
4. Note No. D(T&SO)/T2/Punalur TSS/2023-24 dated 05.07.2023 of the Director (T,SO&P) to the Full Time Directors (Agenda No.18/07/23).

ORDER

The Chief Engineer (Transmission South), as per the note read as 1st above, reported that Railways has requested to provide two-phase connectivity at 110kV level with a contract demand of 3 MVA for their proposed Traction Substation (TSS) at Punalur under Transmission Circle, Kottarakkara on work deposit basis.

As per provisions of the Kerala Electricity Supply Code 2014 and CEA Regulations, only three-phase supply can be provided for this voltage level and demand even though KSEBL had been providing two-phase supply to all traction substations so far, considering the prevailing practice in the country. However, as the Railway load has significantly increased, the impact of the unbalanced nature of traction loads on the electricity network has also increased to a great extent. While hearing a petition from the Railways, the Kerala State Electricity Regulatory Commission had also agreed with the findings of KSEBL on the effects of unbalanced loading of Railway Traction System on the grid, rejecting the arguments of Railways that the two-phase power supply system of Railways has no unbalance effect in the upstream power grid.

In the review meeting by the Chief Secretary, Kerala on 20.06.2022, Railways had agreed to avail three-phase balanced supply by installing Scott-connected or V-connected transformers at Traction substations, so as to avoid the ill effects of two-phase traction loads. In the meeting convened by the Hon'ble Minister for Electricity on 21.12.2022, Railways had agreed to take up with Railway Board the matter of conversion of traction power supply in Kerala to three-phase system.

In the meeting chaired by the Director (T,SO&P) on 08.03.2023, Railway officials confirmed that they will take steps for converting power supply of all existing TSS in Kerala to three-phase in a time bound manner and requested to give connectivity to their newly proposed TSS at Punalur in two-phase system, as the construction of this TSS is almost over and the load requirement is only 3 MVA with a single transformer and also

second transformer is installed. The proposal was consented by KSEBL, noting that Railways have shown intent to address the concerns of KSEBL.

The Chief Engineer (Transmission South) reported that Railways has remitted an amount of Rs.17,700/- on 25.04.2023 towards application and processing fees for providing connectivity to TSS at Punalur. An estimate amounting to Rs.28.75 Crore has been prepared for providing two-phase connectivity at 110kV level for a contract demand of 3 MVA to the proposed Traction Substation at Punalur on work deposit basis. The estimate is prepared based on DSR 2018, sanctioned estimate of Melattur Traction work 'Interlinking 110 kV GIS substation, Kollam with 110kV Substation Kottiyam using UG cable' and market rates. The abstract of the estimate is attached as Annexure.

The scope of work include

- a. Providing 110kV feeder bay at 110 kV Substation, Punalur
- b. Laying 2.75 km, 3 runs of 110kV, 300 Sq.mm XLPE UG cable from Punalur substation to the proposed TSS, one run kept as spare for providing three phase supply in future
- c. Laying 2.75 km 24 fibre OFC cable for differential protection
- d. Construction of metering bay near proposed Traction Substation
- e. Civil works including construction of cable trench, yard metaling, fencing, demolishing existing drainage trench and erection of bay equipments, erection of feeder panel etc.

The Load Flow Study had been conducted for providing 3 MVA contract demand in two-phase supply at 110kV to the traction substation and the proposal was found technically feasible as per the letter read as 2nd above. The Financial Adviser, as per letter read as 3rd above, remarked that sanction can be accorded for the work.

The matter was placed before the Full Time Directors as per the note read as 4th above.

Having considered the matter in detail, the Full time Directors in the meeting held on 26.07.2023, resolved to accord administrative sanction for the estimate amounting to Rs.28.75 Crore (Rupees Twenty Eight Crore Seventy Five Lakh only) for providing two-phase connectivity at 110kV level for a maximum contract demand of 3 MVA to the proposed Traction Substation at Punalur on work deposit basis.

Further resolved to ensure that tendering shall be done with updated schedule of rates and to inform the client that there will be additional.

Orders are issued accordingly.

**By Order of the
Full Time Directors**

Sd/

**LEKHA G
Company Secretary**

To:
The Chief Engineer (Transmission South)

Copy to: The Financial Adviser/ Chief Internal Auditor/ Company Secretary
The Deputy Chief Engineer, Transmission Circle, Kottarakkara

The TA to the CMD/ Director (G-C)/ Director (D,S,SCM&IT)/ Director (T,SO&P)/
Director (G-E,REES,SOURA,S&W)
The PA to Director (Finance & HRM)
The CA to Secretary (Administration)
Stock File

Forwarded / By Order

A handwritten signature in black ink, appearing to be 'J. J. Singh' or similar, written in a cursive style.

Assistant Executive Engineer

ANNEXURE TO B.O (FTD)No.358/2023[D(T&SO)/T2/Punalur TSS/2023-24) dated 31.07.2023

ABSTRACT OF ESTIMATE

Providing 110kV 2 phase supply to 110kV Traction substation at Punalur Max. Contract Demand of 3MVA on Deposit Work Basis

Sl. No:	Description	Amount (Rs.)
I	Material Cost (A)	84612273.67
II	Errection and commissioning @ 7.5% B=7.5% of A	6345920.53
III	Transportation, Insurance and Contingencies (C=6% of A)	5076736.42
IV	Civil works	
a	Traction bay at Punalur Substation(D)	5310000.00
b	Civil works cable trench at Punalur Substation (E)	2800000.00
b	Metering bay at Railway yard (F)	3304000.00
c	Supporting bridge structure near KSRTC station (G)	2000000.00
d	RCC Road , Trench cutting and restoration at TSS entry (H)	750000.00
e	Cable laying (I)	50740000.00
V	Earth Mat (J)	2000000.00
VI	Electrical Inspectorate fee, PTCC (K)	2000000.00
VII	Road cutting and restoration (L)	25000000.00
VIII	Water supply pipe changing etc (M)	2500000.00
IX	PET testing for 35 years (N)	7194460
X	Relay testing for 35 years (O)	10659530.00
XI	Operation and Maintenance charge for 35 years (P)	1500000.00
XII	Testing and commissioning of UG cable and OFC (Q)	500000.00
XIII	Provision For Conveyance (Jeep With Driver) (R)	500000.00
XIV	Sub Total (S=A+B+C+D+E+F+G+H+I+J+K+L+M+N+O+P+Q+R)	212792920.62
XV	Overhead/Supervision Charges(T =10% of S)	21279292.06
XVI	Total Amount (S+T)	234072212.68
XVII	Unforeseen (U)	5317272.06
	Total (S+T+U)	239389484.74
	GST @18%	43090107.25
	Land cost	5020408.00
	Grand Total	287500000.00
Say Rs.28,75,00,000/- (Rupees Twenty Eight Crore Seventy Five Lakh Only)		