

TAMIL NADU TRANSMISSION CORPORATION LIMITED
ABSTRACT

TANTRANSCO – Establishment of 110/33-11 kV SS at L&T Ramapuram with 1x50 MVA, 110/33 kV power transformer and 1x16 MVA, 110/11 kV power transformer in Chennai Operation Circle (Chennai EDC/South-I) of System Operation/Chennai – Administrative approval – Accorded.

TECHNICAL BRANCH

(Per) CH TANTRANSCO Proceedings No. 114

Dated: 07.08.2026
Visuvaivasu Varudam
Aadi - 22
Thiruvalluvar Aandu : 2057

READ: Chairman's approval dated 06.08.2026

PROCEEDINGS:

1. The Tamil Nadu Transmission Corporation Limited hereby approves the proposal for establishment of 110/33-11 kV SS at L&T Ramapuram with 1x50 MVA, 110/33 kV power transformer and 1x16 MVA, 110/11 kV power transformer in Chennai Operation Circle (Chennai EDC/South-I) of System Operation/Chennai at an estimated cost of Rs.2830.930 lakhs Gross and Nett. The detailed estimate and report are annexed to these proceedings.

2. The expenditure is chargeable to TANTRANSCO - Funds - Capital Expenditure – Chennai Operation Circle (Chennai South I EDC) - A/c code no. 1020500.

3. By virtue of the provisions contained in sub-section (2) (a) of section 185 of the Electricity Act, 2003, TANTRANSCO being the Transmission utility, Licensee and successor entity of Tamil Nadu Electricity Board will exercise the powers of the Telegraph Authority under the provisions of section 164 of the Electricity Act, 2003, which have already been conferred upon the Board under section 51 of the Indian Electricity Act, 1910.

4. The works will be taken up after ensuring necessary budget provision.

// BY ORDER OF THE CHAIRMAN//

K.SRIDHARAN

CHIEF ENGINEER /TRANSMISSION (FAC)

Encl: Report and detailed estimate.

To

The Chief Engineer/Distribution/Kanchipuram Region

(Per) CH TANTRANSCO Proceedings No. 114, dated : 07.08.2026

Copy to:

The Managing Director/TANTRANSCO/Chennai-2

The Director/Distribution/TNPDCL/Chennai-2

The Director/Transmission Projects/TANTRANSCO/Chennai-2

The Director/Operation/TANTRANSCO/Chennai-2

The Director/Finance/TANTRANSCO/Chennai-2

The Chief Financial Controller/General/ TANTRANSCO, Chennai-2.

The Chief Internal Audit Officer/TANGEDCO, Chennai-2.

The Deputy Secretary, TANTRANSCO, Chennai-2.

The Chief Engineer/ Transmission Projects & System Operation/Chennai

The Superintending Engineer/Operation/Chennai South

The Superintending Engineer/ Chennai EDC/South-I EDC

The Chief Engineer/Civil Transmission/Chennai -2

The Superintending Engineer/GCC-II/Chennai

The Superintending Engineer/Transmission -I/Chennai -2

The Superintending Engineer/Transmission -II/Chennai -2

The Superintending Engineer/System Studies/Chennai -2

The Resident Audit Officer (AGO'S Unit)/Chennai -2

B.P.Section (Administrative Branch)

Stock file

//FORWARDED BY ORDER//

Final
07/08/2026

EXECUTIVE ENGINEER/MASTER PLAN II

REPORT TO ACCOMPANY THE ESTIMATE

This proposal envisages establishment of 110/33-11 kV SS at L&T Ramapuram with 1x50 MVA, 110/33 kV power transformer and 1x16 MVA, 110/11 kV power transformer in Chennai Operation Circle (Chennai EDC/South-I) of System Operation/Chennai at an estimated cost of Rs.2830.930 lakhs Gross and Nett.

NEED:

M/s. L &T Private Ltd has proposed to establish residential dwelling units whose demand is anticipated to be 9.2 MVA. The land to an extent of 1520 Sq meter has been gift deeded to TNPDCCL inside L&T premises by the company for establishment of new SS.

In this regard, it is to be stated that as per TNERC notification No.TNERC/DC/08-12 dt. 24.08.2009, space/land has to be allotted for establishment of SS in case of group housing/commercial complex where the total demand exceeds 5 MVA. As the anticipated demand of L&T exceeds 5 MVA, they have allotted 1520 Sq meter land. The above land is suitable for establishment of 110/11 kV Indoor SS. Hence, it has been proposed to establish a new 110/11 kV Indoor SS in the above premises.

In this connection, it is stated that the entire Ramapuram, Manapakkam, Mugalivakkam, Sabari Nagar, Nandambakkam, Kumutham Nagar, Kamatchi Nagar, Subsree Nagar, AGS Colony, Krishnaveni Nagar, Sri Lakshmi Nagar, Shakthi Nagar, Kolapakkam, Ashram Avenue, Pattammal Garden, CRR Puram, part of Madhanandhapuram, MIOT Hospital, part of Porur area and many HT services are being fed by Ramapuram 110/11 kV SS.

I.Need for 110/11 kV ratio at L&T Ramapuram:

Ramapuram 110/11 kV SS is having 5x16 MVA power transformers. The peak reached in this is 69.65 MVA and the power transformers are loaded up to 87.06% of their capacity. The load growth on this SS is about 3.1%.

The details of 11 kV feeders feeding a portion of Ramapuram and its surrounding areas are furnished below:

Sl. No	Name of the 11 kV feeder	Length in kms	CL in MVA	Peak in MVA	Voltage regn. in %	Line loss in LU
1	Mugalivakkam	2.20	8.00	3.4	3.97	1.89
2	Kumutham Nagar	5.80	6.85	4.5	8.48	3.29
3	Subasree	7.79	6.30	4.7	13.54	5.83

It is observed that the voltage regulation of 11 kV Subasree feeder fed off Ramapuram 110 kV SS has exceeded the permissible limit of 8%. Further, both 11 KV Kumutham Nagar and 11 KV Subasree feeders are nearly fully loaded.

Under the above circumstances, it is very essential to establish new 110/11 KV Indoor SS with 1x16 MVA power transformer at L&T Ramapuram so as to reduce the loading of Ramapuram 110 kV SS, loading and voltage regulation of the 11 KV feeders feeding Ramapuram areas and also to meet the future load of M/s. L & T Pvt Ltd., Ramapuram.

On establishment of proposed L&T Ramapuram 110/33-11 kV SS, the feeder regulation details and load to be retained in the existing feeders post establishment of the proposed SS are detailed below:

Sl. No	Name of the 11 kV feeder	CL in (MVA)	Length in kms.	Voltage regn. in %	Line loss in LU
1	Ramapuram-Mugalivakkam	4.75	2.030	1.86	0.51
2	Ramapuram-Kumutham Nagar	4.45	4.66	4.27	0.95
3	Ramapuram-Subasree	4.05	7.43	8.04	2.25

2 Nos. 33 kV breakers and 3 Nos. 11 kV feeder breakers are proposed to be erected in the proposed L&T Ramapuram 110/33-11 kV SS. Being TRANSCO scheme, provision for 33 kV and 11 kV cable for additional feeders has not been included in the estimate and the CE/Distribution/Kanchipuram region is requested to evolve the same separately and obtain approval from the Competent authority separately.

II.Need for 110/33 kV ratio at L&T Ramapuram:

At present, M/s.TVS Emerald Pvt. Limited has proposed to establish a domestic township and commercial complex in Mugalivakkam with total load requirement of 3.99 MVA. In this regard, it is to be stated that as per TNERC notification No: TNERC/DC/08-29 dt.02.09.2023, space/land has to be allotted for establishment of SS in case of group housing/commercial complex where the total demand exceeds 5 MVA or the total floor area exceeds 30,000 Sq.mtrs. As the the total floor area of M/s.TVS Emerald Pvt. Limited., exceeds 30,000 Sq. mtrs., they have allotted 272 sq.mts land at Mugalivakkam Village free of cost for establishment of the proposed new SS. This land is suitable/adequate for establishment of new 33/11 kV SS.

In addition, M/s.Casa Grand Utopia Pvt. Limited., has proposed to establish a domestic township and commercial complex in Manapakkam with total load requirement of 6.09 MVA. In this regard, it is to be stated that as per TNERC notification No: TNERC/DC/08-29 dt.02.09.2023, space/land has to be allotted for establishment of SS in case of group housing/commercial complex where the total demand exceeds 5 MVA. As the anticipated demand from M/s.Casa Grand Utopia Pvt. Limited., exceeds 5 MVA, they have allotted 1050 sq.mts land at Manapakkam village free of cost for establishment of the proposed new SS. This land is suitable/adequate for establishment of new 33/11 kV SS.

The nearby 110 kV SS having 33 kV ratio to extend 33 kV supply to the above proposed 33 kV substations are Porur 230/33 kV GIS, K.K. Nagar 110/33-11 kV SS and Guindy 110/33-11 kV SS.

In this regard, it is to be stated that, the existing 230/33 kV Power Transformer at Porur 230 kV SS and 110/33 kV Power Transformers at K.K. Nagar 110 kV SS and Guindy 110 kV SS are already more than/nearing 90% of its capacity. Hence, it is not possible to extend 33 kV Source to the proposed 33/11 kV SS from the above said Porur 230/33 kV GIS, K.K. Nagar 110/33-11 kV SS and Guindy 110/33-11 kV SS.

The proposed L&T Ramapuram 110/11 kV SS is at a distance of 6 kms. and 4 kms. from the proposed TVS Emerald Mugalivakkam 33/11 kV SS & Casa Grand Utopia Manapakkam 33/11 kV SS respectively and adequate space is available for introduction of 110/33 kV ratio at the above proposed SS.

Under the above circumstances, in order to provide 33 kV supply to the proposed TVS Emerald Mugalivakkam 33/11 kV SS and proposed Casa Grand Utopia Manapakkam 33/11 kV SS, introduction of 110/33 kV ratio at the proposed L&T Ramapuram 110/11 kV SS is essential.

DETAILS OF POWER TRANSFORMER CAPACITY PROPOSED:

A connected load of 7.9 MVA has been proposed to be transferred from Ramapuram 110/11 kV SS to the proposed SS. In addition, an anticipated 11 kV demand of about 9.2 MVA will be incident on the proposed L&T Ramapuram 110 kV SS. Hence, a total connected load of 17.1 MVA (anticipated peak of 11.4 MVA) will be incident on the proposed SS. Hence, to meet the above demand, it is proposed to install 110/11 kV, 1x16 MVA power transformer at the proposed 110 kV SS.

It is proposed to erect 2x16 MVA, 33/11 kV Power Transformers at the proposed TVS Emerald Mugalivakkam 33/11 kV SS and 2x8 MVA, 33/11 kV Power Transformer at the proposed Casa Grand Utopia Manapakkam 33/11 kV SS. Hence, it is proposed to erect 1x50 MVA, 110/33 kV power transformer at the proposed L&T Ramapuram 110 kV SS.

ADEQUACY OF TRANSMISSION SYSTEM:

The 110 kV source to the proposed 110/11 kV Indoor SS is proposed to be extended from 230/110 kV Guindy GIS SS by making LILO of the already sanctioned 110 kV Guindy – L&T EHT feeder.

Details of the source SS:

a.	Name of the source SS	400/230-110 kV Guindy GIS SS
b.	Capacity of the auto tr.	2x100 MVA, 230/110 kV
c.	Present peak reached	154 MVA
d.	Whether the auto tr. capacity is adequate: As per the load flow study results, the source 230 kV SS is adequate to cater the proposed SS load.	

Details of the Source feeder:

a.	Name of the feeder	Proposed 110 kV Guindy – L&T EHT feeder
b.	Size/Loading capacity of the conductor	110 kV, 1x630 Sq.mm XLPE cable – 109 MVA
c.	Present loading in MVA	6 MVA
f.	Whether the conductor/cable is adequate: As per the load flow study results, the source feeder is adequate to cater the proposed SS load.	

The proposed loads that will be incident after establishment of new SS as furnished from field is given below:

i) For both High RE & Non RE scenarios the following details are required for substations & line effected by this proposal:

Name of the SS	Capacity	Present Maximum Load/Sustained Peak	Load expected after new SS (After load bifurcation)	Load Relief
Ramapuram 110/11 kV SS	5x16 MVA	69.65 MVA	58.25 MVA	11.4 MVA
Total				11.4 MVA

ii) The loading of proposed SS (New SS)

Name of the SS	Capacity in MVA	Load expected/ Anticipated Load in new SS (After load bifurcation from the existing nearby substations) in MVA	Remarks
L&T Ramapuram 110/33-11 kV SS	110/33, 1x50 MVA 110/11, 1x16 MVA	110/33 kV-48 MVA (Proposed) 110/11 kV-11.4 MVA (Existing) Total anticipated-59.4 MVA	

DETAILS OF WORKS INVOLVED:

- Establishment of 110/33-11 kV SS at L&T Ramapuram with 1x50 MVA, 110/33 kV power transformer and 1x16 MVA, 110/11 kV power transformer with associated equipments.
- Laying of 110 kV 1x630 sq.mm XLPE UG cable(DC) for a route length of 0.1 km for making LILO of 110 kV Guindy – L&T Ramapuram EHT feeder.

LAND AVAILABILITY:

M/s.L&T Ltd., Chennai has allotted an extent of 1520 sq.mtr land bearing Survey No. 128/1 (Part) has been acquired and registered at Manapakkam village, Maduravoyal Taluk of Chennai District and handed over free of cost for establishment of new SS (Gift deed executed on 22.06.2023).

The Superintending Engineer/GCC-II/Chennai has certified that the above land is suitable for establishment of 110 kV Indoor SS at L&T Ramapuram.

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07/08/2026
EXECUTIVE ENGINEER/MASTER PLAN II

Detailed estimate for establishment of 110/33-11 kV Indoor SS at L&T Ramapuram with 1x50 MVA, 110/33 kV power transformer and 1x16 MVA, 110/11 kV power transformer in Chennai Operation Circle (Chennai EDC/South-I) of System Operation/Chennai

Rs in Lakhs						
SL No.	DESCRIPTION	QTY	RATE	PER	AMOUNT	TOTAL AMOUNT
I	<u>CIVIL WORKS</u>					
1	Land cost (actuals) Control room building with internal electrification, bore well with septic tank,Plinths, Fencing, Road and cable duct etc.,	(Gift deed)			0.001	
2	Laying of 110 kV 1x630 sq.mm XLPE UG cable(DC) for a route length of 0.1 km for making LILO of 110 kV Guindy – L&T Ramapuram EHT feeder.				588.860	
3	Sub-total				83.545	
4	Sub-total (including Contingencies @1%, Establishment & Supervision charges @15% & GST @18%)				672.405	
5	Total Civil work				923.934	923.935
6					923.935	
II	<u>ELECTRICAL WORKS</u>					
1	110 kV AB Switch with earth blade	2 Nos	2.300	E	4.600	
2	110 kV AB Switch without earth blade	7 Nos	1.814	E	12.698	
3	110 kV SF6 Breaker	3 Nos	5.648	E	16.944	
4	110 kV CTs (Single Phase)	9 Nos	1.050	E	9.450	
5	110 kV PTs (Single Phase)	3 Nos	1.125	E	3.375	
6	110 kV LAS (Single Phase)	6 Nos	0.323	E	1.938	
7	33 kV Indoor VCB (Transformer HV)	1 No	11.490	E	11.490	
8	33 kV Indoor VCB (Feeder-2)	2 Nos	10.089	E	20.178	
9	33 kV Indoor VCB (Bus Coupler)	1 No	12.634	E	12.634	
10	33 kV Bus Adopter	1 No	1.950	E	1.950	
11	11 kV Indoor VCB (Transformer LV)	1 No	5.816	E	5.816	
12	11 kV Indoor VCB (Feeder-3)	3 Nos	4.500	E	13.500	
13	11 kV Indoor VCB (Bus Coupler)	1 No	6.009	E	6.009	
14	11 kV Bus Adopter	1 No	1.660	E	1.660	
15	Earthing and Yard lighting			LS	10.000	
16	Control & Relay panels			LS	70.000	
17	Control cable			LS	10.000	
18	110 V, 300AH Battery	1 set	4.320	set	4.320	
19	110 V, 60A Battery Charger	2 sets	1.125	set	2.250	
20	Fire Fighting equipments			LS	6.000	

Detailed estimate for establishment of 110/33-11 kV Indoor SS at L&T Ramapuram with 1x50 MVA, 110/33 kV power transformer and 1x16 MVA, 110/11 kV power transformer in Chennai Operation Circle (Chennai EDC/South-I) of System Operation/Chennai

Rs in Lakhs						
SL No.	DESCRIPTION	QTY	RATE	PER	AMOUNT	TOTAL AMOUNT
21	110 V D.C Panel	1 No	0.830	E	0.830	
22	A.C Panel	1 No	1.029	E	1.029	
23	110 V DC Annunciator panel	1 No	0.970	E	0.970	
24	100 kVA, 11 kV/433V, Stn. Transformer	1 No	4.014	E	4.014	
25	P&T Phone	1 No	0.100	E	0.100	
26	T&P materials & furnitures			LS	4.000	
27	Scientific Instruments			LS	10.000	
28	11 kV capacitor bank/2.4 MVAR	1 set	19.367	set	19.367	
29	SAS with SCADA, RTU with LDMS and essential spares			LS	90.000	
30	Sub total				355.122	
31	Contingencies 1%				3.551	
32	Cost of materials				358.673	
33	Labour & Transport @ 15%				53.801	
34	Sub total for material, labour & transport (A)				412.474	
	POWER TRANSFORMERS					
35	50 MVA, 110/33 kV Pr.Tr with OLTC	1 No.	445.500	E	445.500	
36	16 MVA, 110/11 kV Pr.Tr. With OLTC	1 No.	234.184	E	234.184	
37	Labour & Transport for transformer	2 loc	10.000	loc	20.000	
38	Earthing	2 loc	0.550	loc	1.100	
39	Sub total for Transformer, labour & transport (B)				700.784	
40	Sub total (A)+(B)				1113.258	
41	Establishment & Supervision charges @15%				166.989	
42	Sub total				1280.247	
43	GST @18%				230.444	
44	Total				1510.691	
45	110 kV Structure	1 set	136.721	set	136.721	
46	33 kV Structure	1 set	38.090	set	38.090	
47	11 kV Structure	1 set	33.791	set	33.791	
	Total SUBSTATION Electrical work				1719.293	
	Total SUBSTATION Work (Civil & Electrical work)					2643.228
	ASSOCIATED TRANSMISSION LINES					
48	Laying of 110 kV 1x630 sq.mm XLPE UG cable(DC) for a route length of 0.1 km for making LILO of 110 kV Guindy - L&T Ramapuram EHT feeder (Annexure I)				187.702	
	TOTAL (G&N)					2830.930

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EXECUTIVE ENGINEER/MASTER PLAN II

Annexure I
Detailed estimate supply of 110 kV cable for establishment of 110/33-11 kV SS at L&T Ramapuram with 1x50 MVA, 110/33 kV power transformer and 1x16 MVA, 110/11 kV power transformer in Chennai Operation Circle (Chennai EDC/South-I) of System Operation/Chennai

Sl. No.	Name of Materials	Qty	Rate	Per	Amount
1	1x630 sq.mm XLPE Alu cable (2 X 3 X 0.1= 0.6 KM)	0.60	88.179	Km	52.907
2	110 KV 1x630 sq.mm straight joint kit	6	1.970	No	11.820
3	Out door terminaton kit for-110 KV 630 Sqmm XLPE cable	6	5.287	No	31.722
4	110 KV Out door termination Structure	6	0.243	No	1.458
5	Single phase Link boxes with CCPU	6	0.392	No	2.349
6	Single phase Link boxes without CCPU	6	0.231	No	1.389
7	Three phase Link boxes without CCPU	1	0.586	No	0.586
8	6.35 x 11 KV , 240 sq mm Sheath bonding cable	0.050	47.694	Km	2.385
9	48 core optic fibre (ADSS) cable with joints 40 mm dia HDPE duct hose pipe, FODP and all accessories	0.20	3.023	Km	0.605
10	110 kV LAS with surge monitor	6	0.323	No	1.938
11	Earthing materials complete for out door termination and link box, 110 KV LAS etc.,	24	0.100	Nos	2.400
12	Support structure for 110 KV LAS	6	0.143	Nos	0.858
13	Supply of Pre warning tape	0.10	0.100	Km	0.010
14	Spring loaded clamp for 110 KV,1x630 Sqmm XLPE UG Cable	30	0.014	Nos	0.420
			Total		110.846
Contingencies @ 1% on A					1.108
Sub Total B					111.955
Labour and Transport as per Annexure II					24.656
Sub Total C					136.610
Transit Insurance, Testing & Commissioning @ 1% on C					1.366
Sub Total D					137.977
Drawing Scrutinizing charges @ 0.25% on D					0.345
Sub Total E					138.321
Establishment and Supervision charges @ 15% on E					20.748
Sub Total F					159.070
GST @ 18% on F					28.633
Grand Total					187.702

Annexure II

Labour charges for erection of 110 KV UG Cable towards establishment of 110/33-11 kV SS at L&T Ramapuram with 1x50 MVA, 110/33 kV power transformer and 1x16 MVA, 110/11 kV power transformer in Chennai Operation Circle (Chennai EDC/South-I) of System Operation/Chennai

1	Transporting of 110 KV, 1 x 630 Sq.mm 110 KV XLPE UG cable drums each weighing approximate 7 T in lorries using adequate capacity truck mounted crane for both loading and unloading including labour required for loading, transporting, unloading, driver bata etc., Supplying and providing winch, steel wire drum, cable drum stand, rollers, ramp and other T&P's required for laying to the work site by engaging lorry and crane fr site (No materials will be supplied from department stores) Positioning of winch, D.G.Set and others rollers for cable laying on a day before laying, Laying of cables in trench and duct by means of winch over rollers, dressing the cable in trefoil formation, tying the cables with nylon rope at every 3m intervals & erection Pre warning tape. The rate includes the cost of pulling the steel wire rope from winch side to drum side, devolution of any balance cable to stores, all tools & plants, labour consumables, lead, lift etc, complete.	600	Cktm	1094.00	Cktm	656400.00
2	Erection charges for 110 KV Outdoor termination kit including structure, link box.	6	Nos.	200000.00	Each	1200000.00
3	Erection & company supervision of stright joints including link box and earthing	6	Nos.	68192.00	Each	409152.00
4	Precomissioning testing of 110 KV UG cable as per IS standards and TNEB norms	1	LS	200000.00	E	200000.00
Sub Total (Labour)						2465552.00
Labur charges (in Lakhs)						24.656