TAMIL NADU TRANSMISSION CORPORATION LTD
ABSTRACT

TANTRANSCO – Introduction of 110/33 kV ratio with 1x16 MVA, 110/33 kV power transformer at Illedu 110/11 kV SS in Sriperumbudur Operation Circle (Chengalpattu EDC) of Kanchipuram Region – Administrative approval – Accorded

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TECHNICAL BRANCH

(Per) CH TANTRANSCO Proceedings No: 36

Dated: 08.05.2026.
Parabhaava Varudam,
Chithirai - 25,
Thiruvalluvar Aandu 2057.

READ: Chairman's approval dated : 08.04.2026.

PROCEEDINGS:

1. The Tamil Nadu Transmission Corporation Limited hereby approves the proposal for introduction of 110/33 kV ratio with 1x16 MVA, 110/33 kV power transformer at the existing Illedu 110/11 kV SS in Sriperumbudur Operation Circle (Chengalpattu EDC) of Kanchipuram Region under Assembly Announcement for the year 2025-26 at an estimated cost of Rs.428.448 Lakhs Gross and Nett. The detailed estimate and report are annexed to these proceedings.
2. The expenditure is chargeable to "TANTRANSCO - Funds - Capital expenditure – Sriperumbudur Operation Circle - 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 the budget provision.

// BY ORDER OF THE CHAIRMAN //

J.PREMALATHA
CHIEF ENGINEER / TRANSMISSION

Encl: Report and detailed estimate.

To

The Chief Engineer/Distribution/Kancheepuram Region

(Per) CH TANTRANSCO Proceedings No:36, dated:08.05.2026.

Copy to:

The Managing Director/TANTRANSCO/Chennai-2.

The Director/Transmission Projects/TANTRANSCO/Chennai-2.

The Director/Operation/TANTRANSCO/Chennai-2.

The Director/Distribution/TNPDCL/Chennai-2.

The Director/Finance/ TANTRANSCO /Chennai-2.

The Chief Engineer/Transmission/ Chennai-2.

The Chief Engineer/TP &SO/Chennai -2.

The Superintending Engineer /Planning/Transmission/ Chennai - 2

The Superintending Engineer /System Studies /Transmission/ Chennai - 2

The Superintending Engineer / Operation / Sriperumbudur

The Superintending Engineer / GCC I / Chennai .

The Superintending Engineer / Chengalpattu EDC

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

B .P. Section (Administrative Branch)

Stock file

FORWARDED BY ORDER

08/05/2026

EXECUTIVE ENGINEER/MASTER PLAN II

Enclosure to (Per) CH TANTRANSCO Proceedings No: 36, dated:08.05.2026.

REPORT TO ACCOMPANY THE ESTIMATE

This proposal envisages introduction of 110/33 kV ratio with 1x16 MVA, 110/33 kV power transformer at the existing Illedu 110/11 kV SS in Sriperumbudur Operation Circle (Chengalpattu EDC) of Kanchipuram Region under Assembly Announcement for the year 2025-26 at an estimated cost of Rs.428.448 Lakhs Gross and Nett.

NEED :

Illedu 110/11 kV SS is having power transformer capacity of 2x10 MVA and the peak reached on this SS is 13.01 MVA which is loaded to 65.50% of their power transformer capacity.

Illedu 110/11 kV SS is being fed by 230 kV Acharapakkam SS. At Acharapakkam 110/33-11 kV SS, 2x25 MVA, 110/33 kV power transformers are in service. The sustained peak reached on the existing power transformers is 30 MVA and they are currently loaded to 60 % of their rated capacity.

The following 33/11 kV substations are presently fed from Acharapakkam 110/33-11 kV SS.

Sl. No	Name of 33/11 kV SS	Capacity (in MVA)	Peak (in MVA)	Distance (in kms)
1	Polambakkam	2x8	12.0	10.8
2	Nugumbal	2x8	9.0	22.8
3	Orathy	2x8	5.71	19.0
4	Ramapuram	2x8	5.9	15.0

Further, the sanctioned Melmaruvathur 33/11 kV SS with 2x8 MVA power transformers is also proposed to be fed from the same 110 kV source.

Nugumbal 33/11 kV SS is fed by 33 kV Acharapakkam – Kadukupattu feeder which is 22.8 km in length and there are frequent interruptions for the last 2 years. Further, low voltage complaints are particularly reported at Nugumbal 33/11 kV SS, which lies at the tail end of this feeder.

The nearby 110 kV SS with 110/33 kV transformation ratio to Nugumbal 33/11 kV SS are Maduranthagam 110/33-11 kV SS and Cheyyur 110/33-11 kV SS which are

situated approximately at a distance of 26 km and 30 km away respectively, whereas Illedu 110/11 kV SS is located only at a distance of 7.8 km from Nugumbal 33/11 kV SS.

Hence, it is proposed to extend 33 kV supply to the Nugumbal 33/11 kV SS from Illedu 110/11 kV SS by introducing a 110/33 kV ratio.

The Chief Engineer/Distribution/Kanchipuram has requested to introduce 110/33 kV ratio with 1x25 MVA power transformer at Illedu 110/11 KV SS so as to extend alternate supply to both Polambakkam 33/11 kV SS and Nugumbal 33/11 kV SS.

It is to be stated that extension of 33 kV supply to Polambakkam 33/11 kV SS from Illedu 110/11 kV SS will lead to low voltage complaints since it is located at 18.26 km away. Hence, alternate source for Polambakkam 33/11 kV SS has not been proposed from Illedu 110/11 kV SS.

On commissioning of the 110/33 kV ratio at Illedu 110/11 kV SS, the main source for Nugumbal 33/11 kV SS will be extended from Illedu 110 kV SS, while the existing supply from Acharapakkam 110 kV SS will continue to serve as the alternate source.

Being TRANSCO scheme, provision for erecting 33 kV feeder from Illedu 110/11 kV SS to Nugumbal 33/11 kV SS has not been included in the estimate. Hence, the CE/Distribution/ Kanchipuram Region may arrange to evolve the same separately and obtain the approval of the competent authority, separately.

In view of the above, introduction of 1x16 MVA, 110/33 kV Power transformer is proposed at Illedu 110/11 kV SS as the existing Nugumbal 33/11 kV SS having with 2x8 MVA power transformer capacity.

As the proposal involves introduction of 110/33 kV ratio, a separate GC breaker for the proposed 110/33 kV ratio has been proposed, as per the existing standards. Hence, provision towards 1 No. 110 kV GC breaker has been made in this proposal. Necessary arrangements/re-alignments has to be made to erect additional 110 kV GC breaker and the same may be carried out after obtaining approval from the competent authority.

The SE/GCC/Chennai has reported that adequate space is available for erection of 16 MVA, 110/33 kV Power Transformer at Illedu 110 kV SS.

Adequacy of proposed power transformer capacity:

It is proposed to provide alternate 33 kV source for Nugumbal 33/11 kV SS. Hence, it is proposed to erect 1 No. 16 MVA, 110/33 kV power transformer at Illedu 110 kV SS.

ADEQUACY OF TRANSMISSION SYSTEM :

Details of the Source SS :

a	Name of the substation	Acharapakkam 230/110 kV SS
b	Auto transformer capacity	3x100 MVA
c	Peak reached in MVA	182 MVA
d	Whether the auto transformer capacity is adequate:- As per the load flow study results dt.09.03.26, Source 230 kV substation is adequate to cater the proposed SS load at present.	

Details of the Source feeder:

a	Name of the feeder	110 kV Acharapakkam – SP Koil II feeder
b	Size/loading capacity of the conductor	Panther - 84 MVA
c	Present loading in MVA	44 MVA
d	Whether the conductor is adequate:- As per the load flow study results dt.09.03.26, the Source feeder is adequate to cater the proposed SS load at present.	

The proposed loads that will be incident after enhancement of power transformer is given below:

Sl.No	Name of the SS/EHT feeder	Capacity/ Sanctioned load	Present peak reached	Load transfer to the Enhanced transformer	Anticipated peak
1	Illedu 110/11kV SS	110/11 kV 2x10 MVA	13.1 MVA	Transfer of Existing 2x8 MVA Power transformer load from Nugumbal 33/11 kV SS to Illedu 110 kV SS after the proposed ratio introduction	16 MVA

DETAILS OF THE WORK :

- Erection of 1 no 16 MVA, 110/33 kV power transformer and its allied equipments (incl Electrical & Civil work) at Illedu 110/11 kV SS.
- Erection of 110 kV GC breaker and associated equipments at Illedu 110/11 kV SS.

08/05/2026

Executive Engineer/Master Plan II

DETAILED ESTIMATE FOR INTRODUCTION OF 110/33 kV RATIO WITH 1x16 MVA, 110/33 kV POWER TRANSFORMER AT ILLEDU 110/11 kV SS IN SRIPERUMBUDUR OPERATION CIRCLE (CHENGALPATTU EDC)

Rs. in Lakhs

S.NO	DESCRIPTION	QTY	RATE	PER	AMOUNT
I	**CIVIL WORKS**				
1	Construction of retaining wall,earth excavation,yard levelling,gravel filling,erection of plinth for power transformer and breaker,painting,etc.,				26.623
2	Total (including Contingencies @1%, Establishment & Supervision charges @15% & GST @18%)				36.489
3	**Total (Civil work)**				**36.489**
II	**ELECTRICAL WORKS**				
1	110 kV AB Switch without earth blade	4 Nos	1.814	E	7.256
2	110 kV SF6 Breaker	1 No	5.648	E	5.648
3	110 kV CT	3 Nos	1.665	E	4.995
4	110 kV LAS	3 Nos	0.323	E	0.969
5	33 kV Breaker (LV-1)	1 No	2.483	E	2.483
6	33 kV CT	3 Nos	0.260	E	0.780
7	33 kV AB switch	2 Nos	0.395	E	0.790
8	33 kV PT	3 Nos	0.285	E	0.855
9	33 kV LAS station type	3 Nos	0.032	E	0.096
10	Control and Relay panel			LS	10.000
11	Control cable			LS	5.000
12	Earthing,yard lighting			LS	2.000
13	Sub - total				40.872
14	Contingencies 1%				0.409
15	Cost of materials				41.281
16	Labour & Transport 15%				6.192
17	Sub total for material, labour & transport (A)				47.473
18	16 MVA, 110/33 kV Pr Tr with OLTC	1 No	188.012	E	188.012
19	Labour & Transport	1 No	10.000	LS	10.000
20	Earthing	1 No	0.550	E	0.550
21	Sub total for material, labour & transport (B)				198.562
22	Sub total (A)+(B)				246.035
23	Establishment & Supervision charges @15%				36.905
24	Sub total				282.940
25	GST @18%				50.929
26	Sub - total				**333.869**
27	110 kV Structure modification			LS	20.000
28	33 kV Structure	1 set		set	38.090
29	**Total (Electrical work)**				**391.959**
30	**Total (Electrical & Civil)(Gross & Nett)**				**428.448**

08/05/2026

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