

TAMIL NADU TRANSMISSION CORPORATION LTD

ABSTRACT

TANTRANSCO – Provision of alternate source to Poraiyar 110 kV SS by erection of 110 kV SC line on DC tower with Panther conductor from Perambur 110 kV SS to Poraiyar 110 kV SS in Thanjavur Operation Circle of System Operation/Trichy under "Ungal Thoguthiyil Mudalamaichar" Scheme No. 107 - Administrative approval Accorded – Reg.

TECHNICAL BRANCH

(Per) CH TANTRANSCO Proceedings No:51

Dated:08.05.2026.

Parabhaava Varudam,
Chithirai-25,
Thiruvalluvar Aandu 2057.

READ: Chairman/TANTRANSCO approval dated 20.04.2026.

PROCEEDINGS:

1. The Tamil Nadu Transmission Corporation Limited hereby approves the proposal towards provision of alternate source to Poraiyar 110 kV SS by erection of 110 kV SC line on DC tower with Panther conductor from Perambur 110 kV SS to Poraiyar 110 kV SS in Thanjavur Operation Circle of System Operation/Trichy under "Ungal Thoguthiyil Mudalamaichar" Scheme No.107 at an estimated cost of Rs.1910.50 lakhs Gross and Nett.
2. The detailed estimate and report are annexed to these proceedings.
3. The expenditure is chargeable to "TANTRANSCO - Funds - Capital expenditure – Thanjavur Operation Circle - A/c code no: 1020400.
4. 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.

5. The works will be taken up after ensuring the budget provision.

// BY ORDER OF THE CHAIRMAN/TANTRANSCO //

J.PREMALATHA
CHIEF ENGINEER / TRANSMISSION

Encl: Report and detailed estimate.

To

The Chief Engineer/ TP & System Operation/Trichy

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/Civil Transmission /Chennai -2.

The Superintending Engineer /Planning/Transmission/ Chennai - 2

The Superintending Engineer /System Studies /Chennai - 2

The Superintending Engineer / Operation / Thanjavur

The Superintending Engineer/GCC/ Trichy .

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

B .P. Section (Administrative Branch)

Stock file

//FORWARDED BY ORDER//

J. Premalatha
08/05/2026
EE/MASTER PLAN II

Enclosure to (Per) CH TANTRANSCO Proceedings No:51 dated.08.05.2026.

REPORT TO ACCOMPANY THE ESTIMATE

This proposal envisages for provision of alternate source to Poraiyar 110 kV SS by erection of 110 kV SC line on DC tower with Panther conductor from Perambur 110 kV SS to Poraiyar 110 kV SS in Thanjavur Operation Circle of System Operation/Trichy under "Ungal Thoguthiyil Mudalamaichar" Scheme No.107 at an estimated cost of Rs.1910.50 lakhs Gross and Nett.

Need :

Poraiyar 110/33/11 kV SS is having 1x16 MVA, 110/33 kV power transformer and 2x8 MVA, 33/11 kV power transformers and the sustained peak reached on 110/33 kV side is 13.50 MVA and on 110/11 kV side is 14.82 MVA.

Poraiyar 110 kV SS is having two sources of 110 kV supply both fed from Vaitheswarankoil 110 kV SS, through double circuit lines. One fed from Vaitheswarankoil 110 kV SS and another from Kidarankondan 110 kV SS. Both these substations are being fed from a single source of Kadalangudy 230 kV SS.

Being a coastal area and prone to frequent cyclones, if any one of the DC tower collapses, there will not be any supply to all the existing four 110 kV Substations namely Poraiyar 110 kV SS, Thiruvengadu 110 kV SS, Achalpuram 110 kV SS and Kidarankondan 110 kV SS.

During any contingent situation, restoration of supply is very difficult and time consuming to Poraiyar 110 kV SS which is very nearer to coastal line, and it also involves 29 kms. of line length having 99 Nos. DC towers and Poraiyar 110 kV SS is also having low voltage issues.

To overcome the above emergency conditions, it is very essential to erect 110 kV SC line on DC tower with Panther conductor for a route length of 20 kms from Perambur 110 kV SS to Poraiyar 110KV SS for providing alternate source to Poraiyar 110 kV SS.

SE/GCC/Trichy has reported that adequate space is available for extension of 110 KV Bay and allied equipments both at Perambur 110 kV SS and Poraiyar 110 kV SS.

SE/O/Thanjavur dt 10.04.2026 has furnished the following details:

i.Purpose of proposal:

Reduce overloading/ voltage issue	<p>1. Low voltage issues arise in 110 KV Poraiyar SS during summer season.</p> <p>2. This proposal ensures the availability of alternate source to 110 kV Poraiyar SS, 110 KV Kidarankondan, 110 KV Thiruvengadu SS and 110 KV Achalpuram SS during any abnormal occurrence in 110 KV Vaitheswarankoil SS.</p> <p>3. Improving Network stability during fault tripping/breakdown occurs in existing source.</p> <p>3. Load can be reduced around 15MW in the existing source feeders to 110 KV Vaitheswarankoil SS.</p> <p>4. During overloading in 230 KV Kadalangudy SS, the above mentioned 110 KV SS loads (Fully or partially) are being transferred to 230 KV Thiruvarur SS to manange overload issue.</p>
--------------------------------------	--

ii. Proposed Network element

Proposed Network element	Relief to the Existing congested elements	loading of Proposed new element after relief
Erection of 110 kV SC line on DC tower with Panther conductor from 110 KV Perambur to 110KV Poraiyar SS	15 MW to the existing 110 KV Kadalangudy-Vaitheswarankoil feeder and 110 KV Kadalangudy-TPL feeder.	<p>1. The 110 KV Poraiyar SS is being fed from 110 KV Vaitheswarankoil SS.</p> <p>2.The 110KV Kadalangudy - Vaitheswarankoil feeder and 110KV Kadalangudy- TPL feeder are the incoming sources to 110 KV Vaitheswarankoil SS.</p> <p>3. Loading of the 110KV Kadalangudy - Vaitheswarankoil feeder is 55 MW and the loading of 110KV Kadalangudy- TPL feeder is 65 MW respectively during summer seasons.</p> <p>4. If anyone of the above two feeders gets fault tripped/breakdown, other feeder</p>

		may also get tripped due to over load. 5. The proposed erection of 110 kV SC line on DC tower with Panther conductor from 110 KV Perambur to 110 KV Poraiyar SS reduces the over loading pattern of 110 KV Kadalangudy - Vaitheswarankoil and 110KV Kadalangudy - TPL feeders.
--	--	---

DETAILS OF THE WORKS INVOLVED:

- Erection of 110 kV SC line on DC tower with Panther conductor for a route length of 20 kms. from Perambur 110 kV SS to Poraiyar 110 kV SS.
- Extension of 1 No. 110 kV bay at the existing Perambur 110 kV SS.
- Extension of 1 No. 110 kV bay at the existing Poraiyar 110 kV SS.

J. Vinod
08/05/2026

Executive Engineer/Master Plan -II

Estimate for provision of alternate source to Poraiyar 110 KV SS by erection of 110 kV SC line on DC tower with Panther conductor from Perambur 110 kV SS to Poraiyar 110 kV SS in Thanjavur Operation Circle of System Operation/Trichy

			Rs IN LAKHS		
SL NO	DESCRIPTION	QUANTIT Y	RATE	PER	TOTAL AMOUNT
1	Erection of 110 kV SC line on DC tower with Panther conductor from Perambur 110 kv ss to Poraiyar 110 KV SS	20 Kms	87.84	Km	1756.80
2	110 kV Bay extension at Poraiyar SS	1 No.	76.849	E	76.849
3	110 kV Bay extension at Perambur SS	1 No.	76.849	E	76.849
Gross & Nett.					1910.50

J. Srinivas
08/05/2026
EXECUTIVE ENGINEER/MASTER PLAN-II

DETAILED ESTIMATE FOR 110 KV BAY EXTENSION AT 110 KV SS

Rs. In lakhs

SI No	DESCRIPTION	UNIT	QTY	RATE	TOTAL
1	110 kV AB switch 2000 A without earth	Nos.	1	1.814	1.814
2	110 kV AB switch 2000 A with earth	Nos	1	2.300	2.300
3	110 kV SF6 Breaker 40 kA	Nos	1	5.648	5.648
4	110 kV CTs (Single Phase)	Nos	3	1.665	4.995
5	Relay & control panel	Nos	1	10.000	10.000
6	Structure		LS	15.000	15.000
7	Control cables		LS	2.000	2.000
8	Busbar arrangement		LS	2.000	2.000
9	Foundation materials		LS	5.000	5.000
10	Sub total				48.757
	Contingencies 1 %				0.488
	Cost of materials and equipments				49.245
	Labour and transport 15%				7.387
	Sub total				56.631
					8.495
	Establishment and Supervision Charges @ 15%				65.126
	Sub total				11.723
	GST @ 18%				
	Total				76.849

110 KV SC line on DC towers with Panther conductor.

Sl. No.	QTY	Unit	DESCRIPTION	Rate in Rs.	Per	Amount in Rs.
1			Galvanised steel tower materials with extension part wherever necessary, and bolts and nuts etc.,			
				93,926.24	MT	2,40,53,570.80
a	256.09	MT	b) MS 100%	1,10,160.13	MT	17,47,139.66
b	15.86	MT	c) Ordinary Bolts & nuts	376.80	No.	2,58,484.80
2	686	No.	90 KN Disc Insulators	500.00	No.	5,14,500.00
3	1029	No.	120 KN Disc Insulators			
			Conductor & Earth wire accessories			
4	60	Set	Single Suspension fittings for ACSR Panther	1,074.42	Set	64,465.20
5	36	Set	Suspension fitting for jumper	1,074.42	Set	38,679.12
6	120	Set	Single Tension fittings for ACSR Panther	1,292.40	Set	1,55,088.00
7	6	Set	Double Tension Fittings for Panther	3,678.60	Set	22,071.60
				490.22	Set	58,826.40
8	120	Set	Vibration Damper for Panther			
9	15	Set	Mid span comp.joint for ACSR Panther	438.87	Set	6,583.05
10	10	Set	Repair sleeve for ACSR Panther	235.42	Set	2,354.20
11	60	Set	PA rod for Panther	590.98	Set	35,458.80
12	30.3	KM	ACSR PANTHER conductors 1.0% sag	1,98,583.19	KM	60,17,070.66
13	10.5	KM	OPGW 48 fibres with accessories	2,50,185.00	KM	26,26,942.50
			Earthing materials			
14	40	No.	Pipe type earthing	1,613.08	No.	64,523.20
15	2	No.	Counter poise earthing (120m length)	3,870.43	No.	7,740.86
			Tower Accessories			
16	40	No.	Number plate	218.76	No.	8,750.40
17	40	No.	Danger Board	242.95	No.	9,718.00
18	20	No.	Phase plate(Set of three)	252.41	No.	5,048.20
19	20	No.	Circuit plate	235.58	No.	4,711.60
			TOTAL COST OF MATERIALS			3,57,01,727.05
			TOWER FOUNDATIONS			
20	20	No.	GCR type tower	1,02,547.00	No.	20,50,940.00
			0° to 2° Suspension tower			
21	8	No.	HCR type tower	2,64,604.00	No.	21,16,832.00
			2° to 30° Medium angle tower			
22	12	No.	KC type tower	4,69,820.00	No.	56,37,840.00
			30° to 60° High angle & Dead end tower			
23			Tower protection works			5,00,000.00
			COST OF FOUNDATION			1,03,05,612.00
24			Erection charges(10% on cost of materials)			35,70,172.71

25		Transportation & Insurance charges (5% on cost of materials)			17,85,086.35
		Total amount			5,13,62,598.11
26		Contingencies (1% on materials, foundation & erection charges)			5,13,625.98
		Total			5,18,76,224.09
27		Establishment & Supervision Charges at 15.0%			77,81,433.61
		Total			5,96,57,657.70
28		GST at 18%			1,07,38,378.39
		Total			7,03,96,036.09
30	10 KM	Tree/Crop compensation	10,00,000.00	KM	1,00,00,000.00
31	10 KM	Land compensation			74,37,469.00
		Total cost per 10 Kms			8,78,33,505.09
32		TOTAL COST PER 1 KM (Rounding to nearest 1000)			87,83,350.51
			SAY		87,84,000.00
		TOTAL COST PER 1 KM IN LAKHS			87.84