

**TAMIL NADU TRANSMISSION CORPORATION LTD**  
**ABSTRACT**

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TANTRANSCO – Erection of 230 kV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO of the existing 230 KV Trichy - Thatchankurichy 230 KV feeder (Formerly 230 KV Trichy – Samayapuram feeder) (near Trichy SS end ) in Trichy Operation Circle in System Operation/Trichy by superseding the administrative approval already accorded vide (Per) CH.TANTRANSCO Proceedings No. 187,dt.08.08.2017 in Trichy Operation Circle – Revised administrative approval – Reg.

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**TECHNICAL BRANCH**

(Per) CH TANTRANSCO Proceedings No: 47

Dated: 08.05.2026.  
Parabava, Chithirai 25,  
Thiruvalluvar Aandu 2057.

**READ:** Chairman/TANTRANSCO approval dated 08.04.2026.

**PROCEEDINGS:**

1. The Tamil Nadu Transmission Corporation Limited hereby approves the proposal towards erection of 230 kV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO of the existing 230 KV Trichy - Thatchankurichy 230 KV feeder (Formerly 230 KV Trichy – Samayapuram feeder) (near Trichy SS end ) in Trichy Operation Circle in System Operation/Trichy at an estimated cost of Rs.2582.47 Lakhs Gross and Nett by superseding the administrative approval already accorded vide (Per) CH.TANTRANSCO Proceedings No. 187,dt.08.08.2017 towards erection of 230 kV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO of the existing 230 KV Trichy -Samayapuram 230 KV feeder (near Trichy SS end ) to improve system reliability at the existing 230 KV Trichy SS in Trichy Operation Circle. The detailed estimate and report are annexed to these proceedings.
2. The expenditure is chargeable to "TANTRANSCO - Funds - Capital expenditure – Trichy Operation Circle - A/c code no: 1020400.
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.

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/ 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 /Transmission/ Chennai - 2

The Superintending Engineer / Operation / Trichy

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: 47 dated. 08.05.2026.

**REPORT TO ACCOMPANY THE ESTIMATE**

This proposal envisages revised administrative approval for the proposal towards the erection of 230 kV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO of the existing 230 KV Trichy - Thatchankurichy 230 KV feeder (Formerly 230 KV Trichy – Samayapuram feeder) (near Trichy SS end ) in Trichy Operation Circle in System Operation/Trichy at an estimated cost of Rs.2582.47 Lakhs Gross and Nett by superseding the administrative approval already accorded vide (Per) CH.TANTRANSCO Proceedings No. 187,dt.08.08.2017 towards erection of 230 kV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO of the existing 230 KV Trichy - Samayapuram 230 KV feeder (near Trichy SS end ) to improve system reliability at the existing 230 KV Trichy SS in Trichy Operation Circle. in Trichy Operation Circle.

**Need :**

Administrative approval has been accorded vide (Per) CH. TANTRANSCO Proceedings No. 187,dt. 08.08.2017 towards erection of 230 KV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO the existing 230 KV Trichy-Samayapuram 230 KV feeder (near Trichy SS end ) in Trichy Operation Circle in System Operation / Trichy at an estimated cost of Rs. 2177.76 Lakhs Gross and Nett as detailed below:

SL NO	DESCRIPTION	QUANTITY	RATE	PER	TOTAL AMOUNT
1	Erection of 230 kV DC line on DC towers with zebra conductor	17 Kms.	102.77	km	1747.09
2	230 KV bay extension at Alundur 230 KV SS	2 Nos.	215.33		430.67
3	<b>Gross &amp; Nett</b>				<b>2177.76</b>

SE/GCC/Trichy dt.20.03.2024 has stated that erection of 230 kV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO the existing 230 KV Trichy - Samayapuram 230 KV feeder (near Trichy SS end ) has not been taken up so far due to the execution of other priority schemes due to severe financial crisis in TANTRANSCO.

SE/O/Trichy dt. 06.03.2026 has furnished the following details about present status:

Sl. No	Description of work as per (Per) CH. TANTRANSCO Proceedings No. 187, dt. 08.08.2017.	Status of work	Amount as per BP Rs. in Lakhs	Amount in Lakhs as per actual execution
1	Erection of 230 KV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO the existing 230 KV Trichy-Samayapuram 230 KV feeder (near Trichy SS end )	Work not taken up	2177.76	NIL

SE/GCC/Trichy dt.13.03.2026 has stated the following:

(i) 1 No. of vacant Bay is available and 1 no. vacant space is also available to accommodate 2 nos. Of 230 KV DC line on DC towers with Zebra conductor from 230 KV Alundur SS to LILO of the existing 230 KV Trichy – Thatchankurichi feeder.

(ii) The space for erection of control and relay panel is adequate in exiting control room.

On completion of erection of 230 kV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO of the existing 230 KV Thatchankurichy 230 kV feeder, it will be possible to provide reliable supply to Trichy 230 KV SS and also help in mitigating the overloading of existing 230 KV Alundur-Trichy feeder I.

The proposed 230 KV Alundur -Thatchankurichi DC line is included in the list of 230 KV Transmission Line constraints under over loading in 57<sup>th</sup> SRPC meeting held on 16.03.2026.

**PURPOSE OF PROPOSAL:**

Generation evacuation	(i) NLC TS- II (ii) NNTPS (iii)MEIL (TAQA) (iv)RE power evacuation of following 230 KV substations: a) Perambalur b) Thatchankurichi(Samayapuram) c) Mondipatty
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New bulk load/industry	(i) Proposed Panchappur 110/11 KV SS with 2X10 MVA Power Transformers. (ii) Proposed ELCOT 110/11 KV SS with 2X10 MVA Power Transformers.
ATC Enhancement	The following additional feeders in the downstream network of Alundur (Trichy SS) is proposed under ATC in the SRPC meeting held on 16.03.2026 under 230 KV Transmission line constraint: (i) Alundur-Trichy 3 <sup>rd</sup> 230 KV line (ii) Alundur-Samayapuram 230 KV line Hence the subject proposal of erection of 230 kV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO of the existing 230 KV Trichy - Thatchankurichy 230 KV feeder (Formerly 230 KV Trichy – Samayapuram feeder) (near Trichy SS end) gives relief for 100 MW ATC.
Reduce overloading/ voltage issue	1.Alundur – Trichy 230 KV feeder I&II: During solar hours, no constraint .During peak hours more constraints in the above feeders. The subject proposal of Alundur to Trichy 3 <sup>rd</sup> circuit mitigates over loading of Alundur – Trichy 230 KV feeder I&II and hence necessary. 2. The subject proposal provides additional sources to existing Trichy 230 KV SS 3. Gives more support to existing Trichy 230 KV SS. 4. The subject proposal is essential to avoid Grid disturbance, for enhancement of ATC and for system reliability.

### **PROPOSED NETWORK ELEMENT**

Proposed Network element	Relief to the Existing congested elements	loading of Proposed new element after relief
Erection of 230 kV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO the existing 230 KV Trichy – Thatchankurichy 230 KV feeder (near Trichy SS end)	Relief to the following 230 KV lines with RE injections : 1. Neyveli 230 KV SS- Eachankadu-Poyyur-Samayapuram –Trichy. 2.Neyveli TS II-TAQA-Perambalur-Jambunathapuram.	Load Flow study report dt.22.01.2026 for the network year condition 2027-28: (i)The new Alundur -Trichy 230 kV feeder – III is loaded to 116 MW during Nil wind Nil Solar condition and loaded to 86 MW during Full wind Full Solar condition.  (ii) Alundur- Thatchankuruchy 230 kV line is loaded to 154 MW during Nil wind Nil Solar condition and loaded to 93 MW during Full wind Full Solar condition.

## **LOAD FLOW STUDY REPORT dt. 22.01.2026:**

Load flow study has been conducted for Erection of 230 kV DC line from Alundur 230 kV SS to LILO of the existing Trichy - Thatchankuruchy 230 kV feeder for the network year condition 2027-28 with the following cases:

Base case : The existing Network condition with 2x100MVA,230/110 kV Auto transformer at Alundur 230 kV SS.

Case 1 : Base Case + With the now proposed erection of 230kV DC line from Alundur 230kV SS to LILO of the existing Trichy - Thatchankuruchy 230 kV feeder.

Case 2 : Case 1 + With the now proposed enhancement of 2 x 100MVA to 3 x 100 MVA, 230/110 kV Auto transformer at Alundur 230 kV SS

**Option 1** : Full wind Full Solar condition.

**Option 2** : Nil wind Nil Solar condition.

Erection of 230 kV DC line from Alundur 230 kV SS to LILO of the existing Trichy - Thatchankuruchy 230 kV feeder

i) In Base case, it is found that Alundur - Trichy 230 kV feeder -I (shorter line) is over loaded to 290 MW during Nil wind Nil Solar condition and loaded to 202 MW during Full wind Full Solar condition.

ii) In Case1 (after Erection of 230 kV DC line from Alundur 230 kV SS to LILO of the existing Trichy -Thatchankurichy 230 kV feeder) , it is found that Alundur-Trichy 230 kV feeder -I (shorter line) is loaded to 143 MW during Nil wind Nil Solar condition and loaded to 106 MW during Full wind Full Solar condition.

The Alundur-Trichy 230 kV feeder - II is loaded to 70 MW during Nil wind Nil Solar condition and loaded to 52 MW during Full wind Full Solar condition.

The new Alundur -Trichy 230 kV feeder - III is loaded to 116 MW during Nil wind Nil Solar condition and loaded to 86 MW during Full wind Full Solar condition.

iii) In Base case, it is found that Trichy - Thatchankurichy 230 kV line is loaded to 140 MW during Nil wind Nil Solar condition and loaded to 81 MW during Full wind Full Solar condition. In case2, Alundur- Thatchankuruchy 230 kV line is loaded to 154

MW during Nil wind Nil Solar condition and loaded to 93 MW during Full wind Full Solar condition.

From the study results, it is observed that the overloading of Alundur-Trichy 230 kV feeder –I (shorter line) has been mitigated on formation of Alundur-Trichy 230 kV feeder –III , line loadings are found to be normal.

Hence, it is suggested that the proposal for Erection of 230kV DC line from Alundur 230kV SS to LILO of the existing Trichy - Thatchankurichy 230 kV feeder may be considered for approval.

As per Record Notes of the Review by the MD/TANTRANSCO on Announcements with respect to Transmission held on 14.10.2024, administrative approval has to be kept valid for 5 years for all projects based on National Transmission Plan planning horizon of 5 years.

As approval for the subject work has been accorded vide (Per) CH.TANTRANSCO Proceedings No.187, dt.08.08.2017, hence revised administrative approval is necessary for floating of tenders for executing the subject work.

Sl. No	Description of Work	Cost in Lakhs	Remarks
1	Erection of 230 kV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO the existing 230 KV Trichy -Samayapuram 230 KV feeder (near Trichy SS end ) for a route length of 17 Kms	Rs.2177.76 lakhs Gross And Nett.	Approved vide (Per) CH.TANTRANSCO Proceedings No.187, dt.08.08.2017
2.	Erection of 230 kV DC line on DC tower with zebra conductor from Alundur 230 KV SS to LILO of the existing 230 KV Trichy - Thatchankurichy 230 KV feeder (Formerly Trichy-Samayapuram feeder) (near Trichy SS end ) for a route length of 13.3 Kms	Rs.2582.47 Lakhs Gross* and Nett	Revised AS submitted for approval.
3.	Increase in cost for Revised AS of the subject work:	i. Rs. 410.71 Lakhs / +18.86% ii. Due to cost escalation in the past 9 years iii. The revised AS is as per SoR 2025-26 . iv. The reduction in route length of ATS from 17 kms. to 13.3 kms. and already 1 no. vacant Bay is available with civil works and foundation.	

**Details of the work involved:**

- Erection of 230 KV DC Line On DC Tower With Zebra Conductor for a Length of 13.3 Kms. from Alundur 230 KV SS to LILO the existing 230 KV Trichy – Thatchankurichy 230 KV feeder ( near Trichy 230 KV SS end)
- One no. of 230 KV bay extension at existing Alundur 230/110 KV SS with civil works and foundation in the existing vacant space.
- One no. of 230 KV bay extension at existing Alundur 230/110 KV SS in the existing Bay.

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08/05/2026

Executive Engineer/

Master Plan II

**Erection of 230KV DC line on DC towers with ZEBRA conductor between Alundur 230 kV SS to LILO of the existing 230 KV Trichy - Thatchankurichy 230KV Feeder (near Trichy SS end) in Trichy Operation Circle of System Operation Trichy**

SL NO	DESCRIPTION	QUANTITY	Rs IN LAKHS		
			RATE	PER	TOTAL AMOUNT
1	Erection of 230KV DC line on DC towers with ZEBRA conductor between Alundur 230 kV SS to LILO of the existing 230 KV Trichy - Thatchankurichy 230KV Feeder (near Trichy SS end) (As per Annexure I)	13.3 Kms	151.39	Km	2013.49
2	2 Nos of 230 kV Bay extension at existing vacant Bay and vacant space Alundur 230 KV SS (As per Annexure II)		568.980	LS	568.980
	<b>Gross &amp; Nett.</b>				<b>2582.47</b>

*Heinad 08/05/2024*  
EXECUTIVE ENGINEER/MASTER PLAN II

## Annexure - I

## Erection of 230KV DC line on DC towers with ZEBRA conductor (SOR 25-26)

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.,			
a	404.43	MT	MS tower parts	93,926.24	MT	3,79,86,589.24
b	21.73	MT	Ordinary Bolts & nuts	1,10,160.13	MT	23,93,779.62
2	1,751.00	No.	90 KN Disc Insulators	376.80	No.	6,59,776.80
3	4,284.00	No.	120 KN Disc Insulators	500.00	No.	21,42,000.00
			Conductor & Earth wire accessories			
4	96.00	Set	Single Suspension Fittings for ACSR Zebra	1,848.50	Set	1,77,456.00
5	36.00	Set	Single suspension fittings for jumperig	1,848.50	Set	66,546.00
6	288.00	Set	Single Tension fittings for ACSR Zebra	2,315.47	Set	6,66,855.36
7	12.00	Set	Double tension fittings	4,766.58	Set	57,198.96
8	288.00	Set	Vibration Damper for ACSR Zebra	889.37	Set	2,56,138.56
9	30.00	Set	Mid span comp. joint for Zebra	584.20	Set	17,526.00
10	15.00	Set	Repair sleeve for Zebra	306.15	No.	4,592.25
11	96.00	Set	PA rod for ZEBRA	1,240.09	No.	1,19,048.64
12	60.60	KM	ACSR Zebra	3,70,141.72	KM	2,24,30,588.23
13	10.50	KM	OPGW - 48 Fibre with accessories	2,50,185.00	KM	26,26,942.50
			Earthing materials			
14	40.00	No.	Pipe type earthing	1,613.08	No.	64,523.20
15	2.00	No.	Counter poise earthing (120m length)	3,870.43	No.	7,740.86
			Tower Accessories			
16	40.00	No.	Number plate	218.76	No.	8,750.40
17	40.00	No.	Danger Board	242.95	No.	9,718.00
18	48.00	No.	Phase plate (Set of three)	252.41	No.	12,115.68
19	48.00	No.	Circuit plate	235.58	No.	11,307.84
20			TOTAL COST OF MATERIALS			6,97,19,194.15

**Annexure - I**

**Erection of 230KV DC line on DC towers with ZEBRA conductor (SOR 25-26)**

Sl. No.	Qty	Unit	Description	Rate in Rs.	Per	Amount in Rs.
21	16.00	No.	TOWER FOUNDATIONS GR type tower	1,51,855.00	No.	24,29,680.00
22	12.00	No.	0°to 2°Suspension tower KSR type tower	3,40,684.00	No.	40,88,208.00
23	12.00	No.	2°to 30°Medium angle tower LSR type tower	6,82,647.00	No.	81,91,764.00
24			30° to 60° High angle & Dead end tower Tower protection works			5,00,000.00
25			COST OF FOUNDATION WORKS			1,52,09,652.00
26			Erection charges(10% on item 20)			69,71,919.42
27			Transportation & Insurance charges (5% on Item 20)			34,85,959.71
28			Contingencies (1% on item 20, 25 & 26, 27)			9,53,867.25
29			Total amount (item 20+25+26+27+28)			9,63,40,592.53
30			Establishment & Supervision Charges at 15.0% on item 29			1,44,51,088.88
31			Total Cost of materials, Foundation and Erection charges excluding GST			11,07,91,681.40
32			GST @ 18% on total amount			1,99,42,502.65
33			TOTAL COST (Item 31 & 32)	10.00	KM	13,07,34,184.06
34	10.00	KM	Tree/Crop compensation	10,00,000.00	KM	1,00,00,000.00
35			Land compensation			1,06,50,519.03
36	10.00	KM	TOTAL COST PER	10.00	KM	15,13,84,703.09
37			TOTAL COST PER 1 KM		KM	1,51,38,470.31
38			(Rounding to nearest 1000)			1,51,39,000.00
			<b>TOTAL COST/KM in LAKHS</b>			<b>151.39</b>

**ANNEXURE - II**

**Detailed Estimate for 2 nos. Of 230 KV Bay Extensions at Alundur 230 kV SS**

Sl. No	DESCRIPTION	QTY		RATE	PER	AMOUNT IN lakhs
1	Civil works including foundation (for the vacant space for bay)	1	LS	100.000	LS	100.000
2	230 KV SF6 Breaker	2	No	12.374	E	24.748
3	230 KV CTs	6	Nos.	3.125	E	18.750
4	230 KV AB Switch with earth blade	2	No	3.895	E	7.790
5	230 KV AB Switch without earth blade	8	Nos.	2.990	E	23.920
6	230 KV LAS	6	Nos.	0.486	E	2.916
7	230 KV Line PT	6	Nos.	2.912	E	17.472
8	Control & Protection Panel for 230 KV feeder with SAS	2	Nos.	15.090	E	30.180
9	Structures	2	LS	42.768	LS	85.536
10	Control Cables	2	LS	10.000	LS	20.000
11	Bus bar, Insulators, hardwares	2	LS	10.000	LS	20.000
12	Earthing	2	LS	4.840	LS	9.680
13	Sub Total					360.992
	Contingencies 1 %					3.610
	Cost of materials and equipments					364.602
	Labour and transport 15%					54.690
	Sub total					419.292
	Establishment and Supervision Charges @ 15%					62.894
	Sub total					482.186
	GST @ 18%					86.793
	<b>Total (Gross &amp; Nett)</b>					<b>568.980</b>