

TAMILNADU POWER DISTRIBUTION CORPORATION LIMITED
ABSTRACT

Electricity – Villupuram Region – Villupuram EDC – Enhancement of the existing power transformer capacity from 2x8 MVA to 2x8+1x5 MVA at Brammadesam 33/11 kV SS - Administrative approval - Accorded.

TECHNICAL BRANCH

(Per). MD TNPDC Proceedings No.59

Dated:30.07.2026

Sri Parabhava Varudam

Aadi : 14

Thiruvalluvar Aandu 2057.

READ: Chairman cum Managing Director's approval dt: 24.07.2026.

PROCEEDINGS:

1. The Tamilnadu Power Distribution Corporation Limited hereby approves the proposal for enhancement of existing power transformer capacity from 2x8 MVA to 2x8+1x5 MVA at Brammadesam 33/11 kV SS in Villupuram EDC of Villupuram Region at an estimated cost of Rs.192.54 lakhs Gross and Nett. subject to enhancement of existing 110/33 kV Power Transformer capacity at the existing Murukkery 110 kV SS.

The detailed estimate and report are annexed to these proceedings.

2. The expenditure is chargeable to TNPDC - Funds - Capital Expenditure - Villupuram EDC – A / C code No. 10 20 400.

3. By virtue of the provisions contained in sub-section (2) (a) of section 185 of the Electricity Act, 2003, the TNPDC being the 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 work is to be taken up after ensuring budget provision.

// BY ORDER OF THE CMD //

J.PUSHPALATHA
CHIEF ENGINEER / PLANNING & RC

Encl: Report and detailed estimate.

To

The Chief Engineer/Distribution/Villupuram Region

(Per.) MD TNPDC Proceedings No: 59 DT: 30.07.2026

Copy to:

The Director/Distribution/TNPDC/Chennai.

The Director/Finance/TNPDC/ Chennai.

The Chief Engineer/ Material Management/Chennai.

The Superintending Engineer/Villupuram EDC.

The Superintending Engineer / RE & I (D) / Chennai.

The Company Secretary/TNPDC/Chennai.

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

B.P. Section (Administrative Branch)

Stock to file

//FORWARDED BY ORDER//



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REPORT TO ACCOMPANY THE ESTIMATE

This proposal envisages enhancement of the existing power transformer capacity from 2x8 MVA to 2x8+1x5 MVA at Brammadesam 33/11 kV SS in Villupuram EDC of Villupuram Region at an estimated cost of Rs. 192.54 lakhs Gross and Nett. subject to enhancement of existing 110/33 kV power transformer capacity at Murukkery 110/33/11 kV SS.

Need:

At present, Brammadesam 33/11 kV SS is having 2x8 MVA Power Transformers. The sustained peak reached on the existing power transformer is 15.43 MVA which is 96.45% its capacity. Load growth at this SS is about 4.45%.

The details of nearby substations to Brammadesam 33/11 kV SS are as below:

S No	Name of the SS	Pr.Tr.cap. in MVA	Peak in MVA	Loading in %	Distance in kms.
1	Murukkery 110/33/11 kV SS	2x8	10.97	68.58%	7.9
2	Endiyur 33/11 kV SS	1x8	5.29	66.13%	12.1
3	Avanipur 33/11 kV SS	1x8	5.14	64.30%	15.4

As the nearby Murukkery 33/11 kV SS, Endiyur 33/11 kV SS and Avanipur 33/11 kV SS is situated far away from Brammadesam 33/11 kV SS, load transfer from Brammadesam 33/11 kV SS to the above nearby SS is not feasible. If done so, it will lead to low voltage problem.

It is observed that the voltage regulation of Perumukkal feeder, Vellakulam feeder and Keelsiviri feeder are beyond the permissible limit of 8%. In this regard, it has been reported that bifurcation of existing feeder loads to form 2 Nos. new feeders has been proposed. Out of which, 1 No. feeder bifurcation to form new 11 kV Brammadesam feeder has already been sanctioned and provision towards 1 No. 11 kV feeder bay for the other newly proposed feeder has been included in this proposal. However, the CE/D/Villupuram Region is instructed to evolve separate improvement proposal for bifurcation of the feeders and obtain administrative approval from the Competent authority.

The areas fed from Brammadesam 33/11 kV SS are having numerous quarries, crushers etc. and few industries are in construction stage. Rapid industrial load growth is expected in near future and the same could not be accommodated in the existing Power transformers at Brammadesam 33/11 kV SS.

Hence, in order (i) to avoid overloading of the existing power transformers, ii) to have N-1 criteria as per CEA regulation and (iii) to meet the future load growth, it becomes necessary

to enhance the existing power transformer capacity from 2x8 MVA to 2x8+1x5 MVA at Brammadesam 33/11 kV SS.

It has been reported that adequate space is available at Brammadesam 33 kV SS and is sufficient for erection of additional 5 MVA Power Transformer.

Now, Brammadesam 33/11 kV SS is fed by 33 kV Murukkery – Brammadesam feeder. As the above 33 kV feeder with peak of 15.43 MVA is not adequate to cater the additional Power transformer now proposed at Brammadesam 33 kV SS, additional 33 kV source feeder is proposed to be extended by providing a separate 33 kV feeder from Murukkery 110/33/11 kV SS. As 33 kV bay extension is under TANTRANSCO scope, the Chief Engineer/Transmission will be requested to make necessary arrangement for provision of 33 kV bay extension at Murukkery 110/33/11 kV SS.

Adequacy of transmission system:

Details of the Source SS:

a.	Name of the substation	Murukkery 110/33/11 kV SS
b.	110/33 kV Power Transformer capacity	2x16 MVA
c.	Peak reached in MVA	29.72
d.	Proposed addition in MVA	Now proposed enh: 5
e.	Anticipated peak in MVA	34.72 MVA
f.	Whether Pr Tr. capacity is adequate: Not Adequate. However, in order to avoid over loading, administrative approval has already been accorded for enhancement of existing 110/33 kV power transformer capacity from 2x16 MVA to 3x16 MVA at Murukkery 110/33/11 kV SS vide (Per) CH TANTRANSCO Proceedings No.42 Dt: 08.05.2026. On Commissioning of the sanctioned additional power transformer, the Power transformer capacity will be adequate to cater the proposed enhancement.	

Details of the Source feeder:

a.	Name of the feeder	33 kV Murukkery- Brammadesam #
b.	Size of conductor/capacity	Dog conductor - 17.78MVA
c.	Peak reached in MVA	15.43MVA
d.	Proposed addition in MVA	Now proposed enh: 5 MVA
e.	Anticipated peak in MVA	20.43 MVA
f.	Whether size of conductor is adequate: Not adequate. However, to avoid overloading, it has been proposed to erect an additional 33 kV feeder with Dog conductor from Murukkery 110 kV SS to the existing Brammadesam 33/11 kV SS and provision towards the same has been included in this proposal.	

Details of work involved:

- Erection of 1 No. 5 MVA power transformer & its associated equipment's at Brammadesam 33/11 kV SS.
- Erection of 33 kV line with Dog conductor from Murukkery 110/33/11 kV SS to Brammadesam 33/11 kV SS for a length of 8.142 kms.


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**DETAILED ESTIMATE FOR ENHANCEMENT OF EXISTING POWER TRANSFORMER CAPACITY
FROM 2x8 MVA TO 2x8+1x5 MVA AT BRAMMADESAM 33/11KV SS IN VILLUPURAM EDC**

S.NO	DESCRIPTION	QTY	RATE	PER	AMOUNT (in Lakh)
1	33 kV AB switch	4 Nos	0.466	E	1.864
2	33 KV SF6 breaker	1 No	2.930	E	2.930
3	33 KV LAS	3 Nos	0.038	E	0.114
4	33 kV CT	3 Nos	0.308	E	0.924
5	11 kV VCB (1 LV + 1 Fdr)	2 Nos	1.626	E	3.252
6	11 KV AB switch	4 Nos	0.236	E	0.944
7	11 kV CT	6 Nos	0.250	E	1.500
8	11 kV LAS (Station type)	3 Nos	0.018	E	0.054
9	11 kV LAS (Distn. type)	3 Nos	0.008	E	0.024
10	Plinth for breaker	2 Nos	2.500	E	5.000
11	Control and Relay panel				10.000
12	Control cable				3.000
13	Fire fighting equipment				0.500
14	Earthing,Painting and Yard lighting			LS	1.000
15	Sub total				31.106
16	Contingencies 1%				0.311
17	Cost of Material				31.417
18	Labour and Transport charges @ 15%				4.713
19	GST on labour & transport @ 18%				0.848
20	Total for material and labour				36.978
21	5 MVA, 33/11 kV Pr Tr with OLTC	1 No	16.286	E	16.286
22	Plinth, labour &Transport inclusive of GST	1 No	13.00	E	13.000
23	Earthing	1 No	0.55	E	0.550
24	Estt and Supervision charges 15%				10.022
25	Sub total				76.836
26	33 kV and 11 kV structure modifications				10.000
26	Erection of 33 kV line with Dog conductor	8.142 kms.	12	km	97.704
27	Fire protection wall				3.000
28	Civil works				5.000
29	Gross & Nett				192.54

* - As rate for 5 MVA Power Transformer is not available in present cost data, rate for the same as per cost data 2006-07 has been adopted


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