

TAMILNADU POWER DISTRIBUTION CORPORATION LIMITED
ABSTRACT

Electricity – Madurai Region – Madurai EDC - Enhancement of existing power transformer capacity from 1x8 MVA to 2x8 MVA at Melavalavu 33/11 kV SS in Madurai EDC of Madurai Region - Administrative approval - Accorded.

TECHNICAL BRANCH

(Per). MD TNPDC Proceedings No: 78

Dated:16.09.2026

Parabhava Varudam

Aavani :30

Thiruvalluvar Aandu 2057

READ: Chairman cum Managing Director's approval dated: 10.09.2026.

PROCEEDINGS:

1. The Tamilnadu Power Distribution Corporation Ltd. hereby approves the proposal for enhancement of existing power transformer capacity from 1x8 MVA to 2x8 MVA at Melavalavu 33/11 kV SS in Madurai EDC of Madurai Region at an estimated cost of Rs.144.94 lakhs Gross and Nett. The detailed estimate and report are annexed to these proceedings.
2. The expenditure is chargeable to TNPDC - Funds - Capital Expenditure - Madurai EDC - 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, the TNPDC being the Licensee and successor entity of Tamilnadu 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 / Madurai Region

(Per.) MD TNPDCCL Proceedings No: 78 dt.16.09.2026

Copy to:

The Director/Distribution/TNPDCCL/Chennai-2

The Director/Finance/ TNPDCCL / Chennai - 2

The Chief Engineer/ Material Management /Chennai -2

The Chief Engineer/ Transmission /Chennai -2

The Superintending Engineer/Transmission 1

The Superintending Engineer/Madurai EDC

The Superintending Engineer/GCC/Madurai

The Superintending Engineer / RE & I(D) / Chennai -2

The Company Secretary/TNPDCCL/Chennai -2

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

B.P. Section (Administrative Branch)

Stock to file

//FORWARDED BY ORDER//


Executive Engineer / Master Plan-II 16/09/20

REPORT TO ACCOMPANY THE ESTIMATE

This proposal envisages enhancement of existing power transformer capacity from 1X8MVA to 2X8MVA at Melavalavu 33/11 kV SS in Madurai EDC of Madurai Region at an estimated cost of Rs.144.94 lakhs Gross and Nett.

Need:

At present, Melavalavu 33/11 kV SS is having 1x8 MVA Power Transformer. The peak reached on this SS is 5.62 MVA which is 70.25% its capacity. Load growth at this SS is about 10%.

The details of the nearby substations to the Melavalavu 33 kV SS are as below:

Sl. No.	Name of the SS	Pr.Tr.cap in MVA	Peak in MVA	% of loading	Distance
1	Narasingampatty 110/11 kV SS	2x16	11.4	52.03%	13 kms.
2.	Melur 110/11 kV SS	2x10	11.43	81.37%	12 kms.
3.	A.Vallalapatty 33/11 kV SS	2x8	6.21	38.81%	4 kms.

As the above said nearby Narasingampatty 110 kV SS & Melur 110 kV SS are situated far away, load transfer from Melavalavu 33 kV SS to the above nearby SS is not feasible. If done so, it will lead to low voltage problem.

Even though, adequate margin is available at A.Vallalapatty 33/11 kV SS, load transfer from Melavalavu 33/11 kV SS to the above SS is not feasible due to network orientation constraint.

Further, Madurai Engineering Cluster Pvt. Ltd. has represented that their load requirement will be around 3 to 5 MVA for the proposed 25 Nos. small industries and 25 Nos. of micro industries which are under development. The above loads are to be fed from the nearby Melavalavu 33/11 kV SS. On feeding the above load, the existing 1x8 MVA Power Transformer will be overloaded.

The details of 11 kV feeders fed off Melavalavu 33/11 kV SS are as below:

Sl. No.	Name of the feeder (#)	CL in MVA	Length in kms.	Peak in MVA	Voltage regulation
1	11 kV Pattur #	4.359	12.34	1.60	15.767%
2	11 kV Ettimangalam #	3.819	6.645	1.44	7.557%
3	11kV Thumbaipatti #	3.49	8.822	1.52	6.996%

From the above, it is found that the voltage regulation of Pattur feeder is beyond the permissible limit of 8%. In this regard, the CE/D/Madurai Region has to carry out necessary improvement works to bifurcate the feeder/strengthen the existing conductor so as to improve the voltage regulation of the above feeders.

Hence, in order (i) to cater the load of Madurai Engineering Cluster Pvt. Ltd., (ii) to avoid overloading of the existing power transformer, (iii) to satisfy N-1 criteria as per CEA Regulation and (iv) to meet the future load growth, it becomes necessary to enhance the existing power transformer capacity from 1x8 MVA to 2x8 MVA at Melavalavu 33/11 kV SS.

Adequacy of transmission system:

Details of the Source SS:

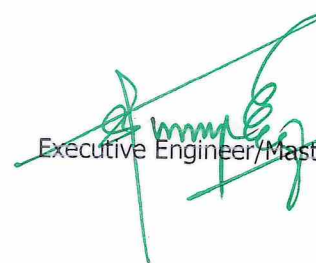
a.	Name of the substation	Narasingampatty 110/33 kV SS
b.	110/33 kV power transformer capacity	2x25 MVA
c.	Peak reached in MVA	27.05 MVA
d.	Proposed addition in MVA	Sanctioned. New Mathur SS: 8 Now proposed enh: 8 Total: 16 MVA
e.	Anticipated peak in MVA	43.05 MVA
f.	Whether pr. tr. capacity is adequate	Adequate

Details of the source feeder:

a.	Name of the feeder	33 kV Narasingampatty – Melavalavu #
b.	Size/capacity of the conductor	Dog – 17.78 MVA
c.	Present loading in MVA	5.62 MVA
d.	Proposed addition in MVA	Now proposed enh: 8 MVA
e.	Anticipated load in MVA	13.62 MVA
f.	Whether the conductor is adequate	Adequate

Details of work involved:

- Erection of 1 No. 8 MVA, 33/11 kV power transformer along with its associated equipments at Melavalavu 33/11 kV SS.


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

RS. in Lakhs					
S.NO	DESCRIPTION	QTY	RATE	PER	AMOUNT
1	33 kV AB switch	1 No	0.466	E	0.466
2	33 KV LAS	3 Nos	0.038	E	0.114
3	11 kV VCB (LV Breaker)	1 No	1.626	E	1.626
4	11 KV AB switch	2 Nos	0.236	E	0.472
5	11 kV CT	3 Nos	0.250	E	0.750
6	11 kV LAS (Station type)	3 Nos	0.018	E	0.054
7	Plinth for breaker	1 No	2.500	E	2.500
8	Control and Relay panel			LS	5.000
9	Control cable			LS	3.000
10	Earthing,Painting and Yard lighting			LS	1.000
11	Sub total				14.982
12	Contingencies 1%				0.150
13	Cost of Material				15.132
14	Labour and Transport charges @ 15%				2.270
15	GST on labour & transport @ 18%				0.409
16	Total for material and labour				17.810
17	8 MVA, 33/11 kV Pr Tr with OLTC	1 No	88.374	E	88.374
18	Labour & Transport inclusive of GST	1 No	8.00	E	8.000
19	Earthing	1 No	0.55	E	0.550
20	Estt and Supervision charges 15%				17.210
21	Sub total				131.944
22	33 kV and 11 kV structure modifications etc.,			LS	10.000
23	Fire protection wall			LS	3.000
24	Total Gross & Nett				144.94

[Signature]
Exe. Engineer/Master Plan-II

109/24

