

TAMILNADU POWER DISTRIBUTION CORPORATION LIMITED
ABSTRACT

Electricity – Kanchipuram Region – Chennai / South II EDC - Establishment of Santhosapuram 33/11 kV SS at Vengaivasal with 2x8 MVA power transformers – Administrative approval - Accorded.

TECHNICAL BRANCH

(Per). MD TNPDC Proceedings No: 76

Dated: 11.09.2026

Parabhava Varudam

Aavani : 25

Thiruvalluvar Aandu 2057

READ: Chairman cum Managing Director's approval dated: 09.09.2026.

PROCEEDINGS:

1. The Tamilnadu Power Distribution Corporation Ltd. hereby approves the proposal for establishment of Santhosapuram 33/11 kV SS at Vengaivasal with 2x8 MVA power transformers in Chennai/South II EDC of Kanchipuram Region at an estimated cost of Rs.2121.37 lakhs Gross and Nett. The detailed estimates and report are annexed to these proceedings.
2. The expenditure is chargeable to TNPDC - Funds - Capital Expenditure - Chennai / South II EDC – A/c code no. 1020300.
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.

(Per.) MD TNPDCCL Proceedings No: 76 dt.11.09.2026

To

The Chief Engineer/ Distribution / Kanchipuram Region.

Copy to:

The Director/Distribution/ TNPDCCL / Chennai-2

The Director/Finance/ TNPDCCL / Chennai - 2

The Chief Engineer/ Material Management / Chennai -2

The Superintending Engineer/ Chennai / South II EDC

The Superintending Engineer/ CDC / Chennai.

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 //



15.09.2026

EXECUTIVE ENGINEER/MASTER PLAN I

REPORT TO ACCOMPANY THE ESTIMATE

This proposal envisages proposal for establishment of Santhosapuram 33/11 kV SS at Vengaivasal with 2x8 MVA power transformers in Chennai / South II EDC of Kanchipuram Region at an estimated cost of Rs.2121.37 lakhs Gross and Nett.

Need:

M/s. TVS Emerald Aaranya Ltd. has developed a housing project with 666 Nos dwelling units in Vengaivasal village with a load of 8.025 MVA. It is to be stated that 473 Nos. services with the connected load of 5.5 MVA have been effected through 11 kV Express feeder of Madambakkam 110/33-11 kV SS. Further, the balance load of 2.525 MVA is pending to be effected.

In this regard, it is to be stated that as per TNERC notification No. TNERC/DC/08-12 dt:24.08.2009, space/land has to be allotted for the establishment of substation in case of group housing/commercial complex where the total demand exceeds 5 MVA. As the demand of M/s. TVS Aaranya exceeds 5 MVA, they have allotted 855 Sq.mtr of vacant land at free of cost in SF No.204/1, Vengaivasal village for the establishment of new 33/11 kV SS.

At present, Selaiyur, Santhosapuram and its surrounding areas are being fed off Madambakkam 110/33-11 kV SS and Sithalapakkam 33/11 kV SS. The details of the substations and feeders feeding the above area are furnished below:

Madambakkam 110/33-11 kV SS is in service with 4x16 MVA, 110/11 kV power transformers. The sustained peak reached on the 110/11 kV power transformers is 55.91 MVA and is loaded to 87.36% of its installed capacity. Load growth in this area is 4% per annum. The details of the feeders feeding the above area are as below:

Sl. No.	Name of the 11 kV feeder	Length in kms	CL in MVA	Peak in MVA	Voltage regn. %	Line loss in LU
1	Santhosapuram	12.04	7.113	3.143	11.03	10.81
2	Gurusamy Nagar	13	4.763	1.947	8.58	6.171
3	Industrial	10.9	6.0	3.57	8.74	9.533

Sithalapakkam 33/11 kV SS is in service with 2x16 MVA, 33/11 kV power transformers and the sustained peak reached is 30.2 MVA and is loaded to 94.37% of its installed capacity. Load growth in this area is 6% per annum. The details of the feeders feeding the above area are as below:

Sl No	Name of the 11 kV feeder	Length in kms	CL in MVA	Peak in MVA	Voltage regn. %	Line loss in LU
1	Adhi Nagar	11.69	4.863	3.87	6.33	4.503
2	Noothencherry	15.11	4.9	3.24	5.69	5.829

It may be seen that the voltage regulation of 11 kV feeders feeding the area from Madambakkam 110 kV SS have exceeded the permissible limit of 8% and 11 kV Adhinath feeder are loaded more than 200 A.

Power requirement in and around Madambakkam, Seilaiyur, Thiruvanchery and its surrounding area are drastically increasing every year. The nearby Madambakkam 110/33-11 kV SS and Sithalapakkam 33/11 kV SS are loaded to 87.36% and 94.37% respectively.

Transfer of load from Madambakkam 110 kV SS to the nearby Sithalapakkam 33 kV SS & Rajakilpakkam 33 kV SS and from Sithalapakkam 33 kV SS to the nearby Perumbakkam 110 kV SS & Madambakkam 110 kV SS are not feasible, as the existing Power transformers at the above nearby substations are loaded more than 70% of its capacity.

Hence, in order to improve the voltage regulation, to give relief to the existing substations, to cater the loads of M/s. TVS Aaranya and to accommodate the future load growth in this area, establishment of Santhosapuram 33/11 KV SS is essentially required.

Reduction in line loss:

On establishment of Santhosapuram 33/11 kV SS, the feeder regulation details and load to be retained in the existing feeders post establishment of the proposed SS are detailed below:

S No	Name of SS	Name of 11 KV feeder	Length in Kms	CL in MVA	Load Transfer	Voltage Regn %	Line Loss in LU
1	Madambakkam 110/33-11 kV SS	Santhosapuram	5.517	3.213	3.9	2.53	1.33
		Gurusamy Nagar	8.25	2.0	2.76	1.85	0.573
		Industrial	6.3	0.85	5.15	0.68	0.089
2	Sithalapakkam 33/11 kV SS	Adhi Nagar	8.56	2.2	2.66	1.49	0.481
		Noothencherry	7.15	3.05	1.85	2.3	1.198

On establishment of the proposed Santhosapuram 33/11 kV SS, the savings in line loss will be of 27.084 LU per annum and yield revenue of Rs.281.94 Lakhs per annum.

The Road cut restoration charges as per field rates has been adopted for 33 kV & 11 kV Cable laying works. The executing wing will be requested to adopt the road cut restoration charges as per the road type applicable at the time of execution.

Details of power transformer capacity proposed:

Connected load to a tune of 24.351 MVA (11.813 MVA from Madambakkam SS , 4.513 MVA from Sithalapakkam 33 kV SS & 8.025 MVA M/s.TVS Aaranya load) has been proposed to be transferred to the proposed Santhosapuram 33/11 kV SS. The anticipated peak to be incident on the proposed Santhosapuram 33/11 kV SS with D.F.1.83 will be of 13.3 MVA. Hence, it is proposed to install 2x8 MVA, 33/11 kV power transformers at the proposed 33/11 kV SS.

Adequacy of Transmission System

Details of Source SS:

It is to be stated that the proposed 1 No. 8 MVA power transformer at the proposed Santhosapuram 33/11 kV SS is proposed to be fed from Madambakkam 110/33-11 kV SS. In the administrative approval accorded for establishment of Vengaivasal 33/11 kV SS vide (Per) CMD Proceedings No.77, dt.29.03.2023, provision towards erection of 33 kV feeder with UG cable from TNSCB Perumbakkam 110 kV SS to the proposed Vengaivasal 33 kV SS has been made. It is proposed to fed 2nd 8 MVA power transformer at the proposed Santhosapuram 33/11 kV SS from TNSCB Perumbakkam 110 kV SS via the proposed Vengaivasal 33 kV SS by erection of 33 kV

feeder with UG cable from the proposed Vengaivasal 33/11 kV SS to the proposed Santhosapuram 33/11 kV SS. Accordingly, the adequacy of Source SS and Source feeder has been discussed below;

Sl.	Description	Main Source-I	Main Source - II
a)	Name of the source SS	Madambakkam 110/33-11 kV SS	TNSCB Perumbakkam 110/33-11 kV SS
b)	110/33 kV power transformer	2x50 MVA (110/33 kV)	2x25 MVA (110/33 kV)
c)	Sustained Peak reached	63.8 MVA	25 MVA
d)	Already proposed in MVA	Sd. Vengaivasal SS: 16	Sd. Vengaivasal SS: 16
e)	Now Proposed addition in MVA	8 MVA	8 MVA
f)	Total anticipated peak in MVA	$63.8+16+8= 87.8$ MVA	$25+16+8= 49$ MVA
f)	Pr tr capacity is adequate	Adequate.	Adequate.

Details of Source feeder:

Sl.	Description	Main Source-I	Main Source-II
a)	Name of the feeder	33 kV Madambakkam – Santhosapuram #	33 kV TNSCB Perumbakkam – Vengaivasal - Santhosapuram #
b)	Size/capacity of conductor	33 kV, 1x630 Sq.mm. UG cable/32.29 MVA	33 kV, 1x630 Sq.mm UG cable/32.29 MVA
c)	Present loading in MVA	New feeder	New feeder
d)	Proposed addition in MVA	8 MVA	8 MVA
e)	Cable capacity is adequate	Adequate	Adequate

Details of works involved:

- Establishment of new 33/11 kV indoor SS with 2x8 MVA power transformers and allied equipments.
- Laying of 3 runs of 33 kV, 1x630 Sq.mm XLPE cable from Madambakkam 110/33-11 kV SS to the proposed Santhosapuram 33/11 KV SS to a route length of 2.4 kms.

- Laying of 3 runs of 33 kV, 1x630 Sq.mm XLPE cable from the proposed Vengaivasal 33/11 kV SS to the proposed Santhosapuram 33/11 kV SS to a route length of 4.45 kms.
- Laying of 11KV 3x300 sq.mm. cable of 8.0 kms. for providing 11 kV link lines.
- Provision of 33 kV feeder bay at the existing Madambakkam 110/33-11 kV SS is under TANTRANSCO scope, the Chief Engineer/Transmission will be requested to make necessary arrangement for provision of 33 kV bay extension at Madambakkam 110 kV SS, so as to feed the proposed Santhosapuram 33 kV SS.
- Provision of 33 kV indoor breaker at the proposed Vengaivasal 33/11 kV SS.

Land availability:

M/s.TVS Aaranya Emerald Haven Towers have allotted land to an extent of 855 Sq.mts, Survey no.204/1 at Vengaivasal Main Road, Vengaivasal village, Chengelpet District and handed over as gift deed registered in favour of TNPDCCL for establishment of the proposed 33/11 kV SS at free of cost.

The Superintending Engineer/CDC/Chennai /TNPDCCL has certified that the land is suitable for establishment of 33/11 kV Indoor SS with certain conditions and the CE/D/Kanchipuram Region is requested to carry out the same before commencement of Substation erection works.

Further as per the instructions of TNERC regulation 29, dt.27.01.2021, the difference in cost between the indoor SS and the conventional outdoor AIS SS has been collected from the developer.



15.09.2024

Executive Engineer/Master Plan 1

**ABSTRACT ESTIMATE FOR ESTABLISHMENT OF SANTHOSAPURAM 33/11 KV
INDOOR SS WITH 2X8 MVA POWER TRANSFORMERS IN CHENNAI EDC/SOUTH
II OF KANCHIPURAM REGION**

ABSTRACT

SL NO	DESCRIPTION	Amount in Lakhs
1	Establishment of Santhosapuram 33/11 kV indoor SS with 2x8 MVA power transformers	837.22
2	Erection of 33 kV & 11 kV link lines	1284.15
	Total	2121.37



15.09.2026

EXECUTIVE ENGINEER/MASTER PLAN I

**ESTIMATE FOR ESTABLISHMENT OF SANTHOSAPURAM 33/11 KV INDOOR SS WITH 2X8 MVA
POWER TRANSFORMERS IN CHENNAI EDC/SOUTH II OF KANCHIPURAM REGION**

Sl. No	DESCRIPTION	QTY	RATE	PER	AMOUNT in Lakh
I	CIVIL WORKS				
1	Land cost (gift deed)				0.000
2	Control Room building with pile foundation, RCC Cable duct, Land levelling, Water system including Sump and Septic tank, Lead road, Compound wall, Transformer plinth, RCC fire wall etc. including GST *(Standard civil rate for 33/11 kv indoor SS communicated by SE/Civil/Distribution vide U.O.No.SE/C/Dist./F.33 kv Indoor SS/D.45/23 Dt.02.03.2023)				250.00
3	Total Civil works				250.00
II	Electrical Works				
1	33 KV VCB Indoor (Transformer HV)	2 Nos.	13.558	E	27.12
2	33 KV VCB Indoor feeder (1 No. at proposed Vengaivasal SS and 2 Nos. at proposed Santhosapuram 33 kv SS	3 Nos.	11.904	E	35.71
3	33 kv VCB Indoor (Bus coupler) (1 No. at proposed Vengaivasal SS and 1 No. at proposed Santhosapuram 33 kv SS	2 Nos.	14.908	E	29.82
4	33 KV Bus Adapter (1 No. at proposed Vengaivasal SS and 1 No. at proposed Santhosapuram 33 kv SS	2 Nos.	1.954	E	3.91
5	11 KV VCB Indoor (Transformer LV)	2 Nos.	6.863	E	13.73
6	11 KV VCB Indoor (for 6 nos. feeder + 2 nos. spare)	6 Nos.	5.310	E	31.86
7	11 KV VCB Indoor (Bus coupler)	1 No.	7.091	E	7.09
8	11 KV Bus Adapter	1 No.	1.659	E	1.66
9	Control cable			LS	10.00
10	100 KVA, 11 kv/433 V Distribution Transformer	1 Set	4.737	Set	4.74
11	110 V Battery set (1 no.) with 2 Chargers.			Set	8.707
12	AC Panel	1 No.	3.874	E	3.87
13	DC Panel	1 No.	2.868	E	2.87
14	Annunciator Panel	1 No.	1.145	E	1.15
15	Earthing, Painting & Yard lighting	1 Set	10.00	Set	10.00
16	Fire fighting equipment	1 Set		LS	3.00
17	VHF Communication	1 Set		LS	2.40
18	P & T phone	1 No.		E	0.10
19	SCADA			LS	20.00
20	Scientific instruments			LS	5.00
21	T & P materials and Furniture			LS	4.00
22	33 kv, 1x630 sqmm XLPE cable with accessories			LS	10.00
23	11 kv, 1x630 sqmm XLPE cable with accessories			LS	10.00
24	Cost of materials				246.72

ESTIMATE FOR ESTABLISHMENT OF SANTHOSAPURAM 33/11 KV INDOOR SS WITH 2X8 MVA POWER TRANSFORMERS IN CHENNAI EDC/SOUTH II OF KANCHIPURAM REGION					
Sl. No	DESCRIPTION	QTY	RATE	PER	AMOUNT in Lakh
25	Contingencies @ 1%				2.47
26	Sub total				249.19
27	Labour and Transport charges @ 15%				37.38
28	GST on labour & transport @ 18%				6.73
29	Sub total				293.29
30	8 MVA, 33/11 KV power transformer with OLTC	2 Nos.	88.374	E	176.75
31	Labour & Transport for trs including GST	2 Nos.	8.00	E	16.00
32	Earthing	2 Nos.	0.55	E	1.10
33	Sub total				487.14
34	Establishment & supervision charges @ 15 %				73.07
35	11 kV capacitor bank 2.4 MVAR	1 Set	27.008	Set	27.01
36	Total for Electrical works				587.22
37	Gross & Nett				837.22

**ERECTION OF 33 KV FEEDER UG CABLE & 11 KV LINK LINES TO
SANTHOSAPURAM 33/11 KV INDOOR SS**

Sl. No.	Description	QTY		Rate in Lakhs	PER	Amount in Lakhs
1	Laying of 33 kV, 1x630 sq.mm. UG cable from Madambakkam SS to proposed Santhosapuram 33/11 kV SS					
	a. by Trenchless method	2	kms	121.61	km	243.23
	b. by open cut method	0.4	kms	179.97	km	71.99
2	Laying of 33 kV, 1x630 sq.mm. UG cable from the proposed Vengaivasal 33 kV SS to proposed Santhosapuram 33/11 kV SS					
	a. by Trenchless method	4.4	kms	121.61	km	535.10
	b. by open cut method	0.05	kms	179.97	km	9.00
3	Laying of 11 kV, 3x300 Sq.mm. UG cable for 11 kV link lines	8	kms	53.11	km	424.84
	Total (Gross and Nett)					1284.15

**Estimate for laying of 3 runs of 33 KV, 1x630 sq.mm XLPE (SC) cable for a Route
Length of 1 km. by Trenchless method**

SNO	DESCRIPTION	QTY	RATE	PER	AMOUNT
1	33 KV, 1X630 Sq.mm XLPE UG Cable	3 Kms	15.2356	km	45.71
2	PVC pipe 150 mm	540 Nos.	0.0105	Each	5.69
3	33 kV RCC Cover slab	1680 Nos.	0.0032	Each	5.29
4	33 KV, 1X630 Sq.mm HS Straight joint kits	3 Nos.	0.1038	Each	0.31
5	33 KV, 1X630 Sq.mm HS ID termination kits	3 Nos.	0.0564	Each	0.17
6	Cost of Materials				57.17
7	Contingencies 1%				0.57
8	Total cost of Materials				57.74
9	Labour and Transport	1 Km	37.00	Km	37.00
10	GST on labour & transport@18%				6.66
11	Sub total-1				101.40
12	Estt & supervision charges @ 15 %				15.21
13	Sub total-2				116.61
14	Road - cut charges **	1 Km	5.00	Km	5.00
15	Total (RATE FOR 1 Km)				121.61

Note ***: 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only.

2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.

**Estimate for laying of 3 runs of 33 KV, 1x630 sq.mm XLPE (SC) cable for a Route
Length of 1 Kms. by open cut method**

SNO	DESCRIPTION	QTY	RATE	PER	AMOUNT
1	33 KV, 1X630 Sq.mm XLPE UG Cable	3 Kms	15.2356	km	45.71
2	PVC pipe 150 mm	540 Nos.	0.0105	Each	5.69
3	33 kv RCC Cover slab	1680 Nos.	0.0032	Each	5.29
4	33 KV, 1X630 Sq.mm HS Straight joint kits	3 Nos.	0.1038	Each	0.31
5	33 KV, 1X630 Sq.mm HS ID termination kits	3 Nos.	0.0564	Each	0.17
6	Cost of Materials				57.17
7	Contingencies 1%				0.57
8	Total cost of Materials				57.74
9	Labour and Transport	1 Km	10.00	Km	10.00
10	GST on labour & transport@18%				1.80
11	Sub total-1				69.54
12	Estt & supervision charges @ 15 %				10.43
13	Sub total-2				79.97
14	Road - cut charges **	1 Km	100.00	Km	100.00
15	Total (RATE FOR 1 Km)				179.97

Note ***: 1) The road cut charges adopted in the above sample estimate is based on the Chennai EDC rates for estimate purpose only.
2) Hence the rates may be adopted as prevailing in the concerned area and considering the type of the road.

**Estimate for laying of 3 runs of 11 KV, 3x300 sq.mm XLPE (SC) cable for a Route Length
of 1 km using open cut method**

SNO	DESCRIPTION	QTY	RATE	PER	AMOUNT
1	11 KV, 3X300 Sq.mm XLPE UG Cable	1 Kms	19.29000	km	19.29
2	11 KV, 3X300 Sq.mm HS Straight joint kits	5 Nos.	0.05997	Each	0.30
3	11 KV V trough	1680 Nos.	0.00245	Each	4.12
4	PVC pipe 160 mm	180 Nos	0.01054	Each	1.90
5	11 KV, 3X300 Sq.mm HS OD termination kits	1 Nos.	0.02502	Each	0.025
6	11 KV, 3X300 Sq.mm HS ID termination kits	1 Nos.	0.02604	Each	0.026
	Cost of Materials				25.66
	Contingencies 1%				0.26
	sub total				25.92
	Labour and Transport charges	1 Km	10	Km	10.000
	sub total				35.92
	Estt & supervision charges @ 15 %				5.39
	sub total				41.31
	GST 18 % on Labour, Transport				1.800
	sub total				43.105
	Road - cut charges-corporation	1 Km	10.00	Km	10.00
	Total				53.11