BEFORE THE ODISHA ELECTRICITY REGULATORY COMMISSION,
BIDYUT NIYAMAK BHAWAN.
PLOT No-4, CHUNOKOLI, SHAILASHREE VIHAR, BHUBANESWAR-751021

File No TPSODL/Regulatory /2023/85/5

IN THE MATTER OF: Application for approval of Capital Investment Plan for the FY 2024-25 & for FY 2025-26 in the Licensed Area of TP Southern Odisha Distribution Ltd.

And

IN THE MATTER OF: TP Southern Odisha Distribution Ltd. (Formerly Southco), Corporate Office, Kamapally, Courtpeta, Berhampur, Ganjam District, Odisha 760004. ***Petitioner***

AFFIDAVIT

I Vidyadhar Hari Wagle, aged about 56 years, S/o. Late Hari Prabhakar Wagle working as the Chief Regulatory Affairs, do hereby solemnly affirm and state as follows:

a) That, I am an authorized representative of the TPSODL, the Petitioner in the instant case and competent to swear this affidavit for and on behalf of the licensee.
b) That, I have gone through the contentions in this application and understood the contents thereof.
c) That, the facts stated in the application are true to the best of my knowledge and behalf.

Surendra Nath Patnaik NOTARY BERHAMPUR No. 4895 Time 4.00 P.M. Date 30/10/23

V.H.Wagle

Deponent

Verified that the contents of above affidavit are true and correct, no part it is false and nothing material has been concealed there-form.

Verified at Berhampur on this 30th day of October 2023

V.H.Wagle

Deponent

Identified by
30.10.2023
ADVOCATE

DECLARATION
The declarant has been identified by Sri S.R.Mohapatra Advocate of Bar Assn. solemnly affirmed before me on this the 30th day of OCT 2023 at 4.00 A.M./P.M. Contents having been read over and explained to the declarants who have perfectly understood the contents there and the theme of moving this affidavit.

S. N. Patnaik, NOTARY, BERHAMPUR (GM.)
30/10/23

October 31, 2023
File No TPSODL/Regulatory /2023/85/9448

Secretary
Odisha Electricity Regulatory Commission
Bidyut Niyamak Bhawan
Plot No 4, Chunokoli
Shailashree Vihar
Bhubaneshwar 751021

Dear Sir

Sub: Petition for Approval of the Capital Investment Plan for FY 2024-25 & FY 2025-26

We are through this submission filing a petition with the Hon'ble Commission for approval of the Capital Investment Plan for the FY 2024-25 & for FY 2025-26 . We request you to kindly consider the same.

We trust our submissions are in order

Yours faithfully

(Vidyadhar H Wagle)
Chief Regulatory Affairs

BEFORE THE ODISHA ELECTRICITY REGULATORY COMMISSION,
BIDYUT NIYAMAK BHAWAN.
PLOT No-4, CHUNOKOLI, SHAILASHREE VIHAR, BHUBANESWAR-751021

Case No: ____/2023

IN THE MATTER OF: Application for approval of Capital Investment Plan for the FY 2024-25 & for FY 2025-26 in the Licensed Area of TP Southern Odisha Distribution Ltd.

And

IN THE MATTER OF: TP Southern Odisha Distribution Ltd. (Formerly Southco Utility), Corporate Office, represented by its Chief Regulatory Affairs , Registered Officer at Kamapally, Coutpeta, Berhampur, Ganjam, Odisha 760004

….Petitioner

IN THE MATTER OF: All Concerned Stake Holders. Respondents

A. Background for Submission of the Petition

1. The Hon'ble Commission in order of Case No 83/2020 ("Vesting Order") had directed TPSODL to seek the approval of the Capital Expenditure Plan in line with the regulations. The extracts from the Vesting Order are as follows:

43. Capital investment plan

(d) TPSODL would be required to seek the Commission's approval on the detailed capital expenditure plan in line with the regulations. TPSODL shall satisfy the Commission that the capital expenditure plan submitted in line with regulations adheres to the capital expenditure plan submitted as part of the Bid.

2. Similarly, even the Odisha Electricity Regulatory Commission (Terms and Conditions for Determination of Wheeling Tariff and Retail Supply Tariff) Regulations 2022 ("Tariff Regulations") provide the following for approval of the Capital Investment

> *3.2.1. The Distribution Licensee shall submit detailed capital investment plan, financing plan and physical targets for each year of the Control Period for strengthening and augmentation of distribution network, meeting the requirement of load growth, reduction in distribution losses, improvement in quality of supply, reliability, metering, reduction in congestion, etc., to the Commission for approval, as a part of the Business Plan applicable for the entire control period and annual proposal for each year of the Control Period.*
>
> *3.2.2. The Distribution Licensee shall file a separate annual Capital Investment Plan comprising of capital investment plan, financing plan and physical targets for each year of the Control Period as per the timelines specified in* ***Annexure-I****.*

3. As per the Tariff Regulations, the proposal for Capital Investment Plan was required to be filed by 10th September 2023. However on the request of TPSODL , the Hon'ble Commission vide its letter No OERC/Engg-05/2023/1358 dated 21st September 2023 has granted time extension till 31st October 2023 to file the Capital Investment Plan proposal

4. In compliance of the Vesting order and Odisha Electricity Regulatory Commission (Terms and Conditions for Determination of Wheeling Tariff and Retail Supply Tariff) Regulations 2014 , we had filed the proposal for approval of the Capital Expenditure in FY 2021-22 under Case No 08 of 2021. The Hon'ble Commission in its order dated 18th September 2021 in the said matter approved a Capital Expenditure of Rs. 184.65 Cr against our proposal of Rs.408.47 Cr. Further, TPSODL had submitted a Petition under Case No 13 of 2022 for approval of the Capital Expenditure for FY 2022-23. The Hon'ble Commission had passed an order on 14th July 2022 and in the said order capital expenditure of Rs 294.82 Crores was approved against our submission of Rs 378.37 Crores.

5. Further, in line with the Tariff Regulations, TPSODL had submitted a petition under Case No. 05 of 2023 for approval of the Capital Expenditure for FY 2023-24. The Hon'ble Commission had passed an order on 19th June 2023 and in the same

had approved a capital expenditure of Rs 338.34 Crores against an amount of Rs 338.33 Crores proposed by TPSODL.

6. The Capital Expenditure under the above approvals is under progress in TPSODL. The Status of the capital expenditure under the approval is explained in this submission.

7. We are in this submission filing the proposal for Capital Investment for FY 2024-25 & FY 2025-26 for the approval of the Hon'ble Commission. We are also seeking an approval of the Hon'ble Commission to permit carrying forward (if any) of the capital expenditure approved for FY 2021-22, FY 2022-23 and also carry forward the Capex approved for FY 2023-24 into the FY 2024-25. The details of the various schemes are given in the following paragraphs.

A. Background

8. TPSODL receives electrical power at 33KV level from 37 numbers of 220/33KV or 132/33KV transmission substations located within and in the vicinity of TPSODL operational area. TPSODL distributes the power at 33KV / 11KV / 440V / 230V depending on the demand of the consumers.

9. One of the major challenges for TPSODL is the present network condition at some locations which are not compliant with the statutory guidelines and pose threat to safety of employees, public at large and animals. Further, the overhead lines are long, radial with undersized, worn out bare conductor having extremely long spans, having damaged, bent, tilted poles, poor joints, compromised safety clearances, and non-availability of guard wires in MV overhead feeders. The network therefore needs urgent investment to address the operational, commercial, and safety related challenges to improve the reliability of supply, customer services, and safety of staff, general public, and animals.

10. As explained in our earlier petitions, TPSODL has identified a number of other challenges related to Metering infrastructure, Customer Services, and Technology usage. These challenges are planned to be addressed through a systematic investment plan prepared by TPSODL, a part of which was proposed by TPSODL in our earlier petitions. Further, Tata Power who is a 51% Share Holder in TPSODL has also been an early implementer of latest technology in India and has perhaps the most number of standalone and integrated technology platforms in use. These

technologies have been instrumental in improving the overall performance of the company and also been able to deliver business benefit in terms of lowering losses and improving reliability and better management of the business and consumers.

11. The proposed Capex plan represents a justified and efficient level of total capital investment estimated by TPSODL to meet the service obligation; ensuring safe and reliable network, maintaining high level of service standards and to reflect upon the commitment of benchmark customer services through process improvement, capacity building and technology adoption.

B. Capital Expenditure proposal for FY 2024-25 & FY 2025-26

12. The summary of the Capital Expenditure proposed in this petition under various heads is as follows:

Table 1 : Capital Expenditure proposal for FY 2024-25 & FY 2025-26 (Rs Cr)- A

Capex Head	Sr No	Activity	FY 25	FY 26	Total
Statutory & Safety	1	Safety & Electrical Testing Equiment	12.83	3.21	16.05
	2	Cradle guard at major road crossings,Populated area,School area	1.68	1.78	3.46
	3	Fencing of Distribution substations (DSS), Switchyard & Boundary Wall at PSS	14.50	14.50	29.00
	4	Intermediate poles for vulnerable location	7.65	7.92	15.56
	5	4-Pole Arrangement for unsafe N-1	0.46	0.49	0.96
	6	**Sub Total- Statutory & Safety (1)**	**37.13**	**27.90**	**65.03**
Loss Reduction	7	LT Bare to ABC Conversion	4.22	4.26	8.48
	8	Feeder & DT Metering for Energy Audit	9.70	18.36	28.06
	9	GIS Integration	4.00	4.00	8.00
	10	**Sub Total- Loss Reduction (2)**	**17.92**	**26.62**	**44.54**
Network Reliability	11	PSS Refurbishment & SCADA Implementation	76.54	6.54	83.08
	12	Bus coupler arrangement in PSS	1.61	1.70	3.31
	13	Mitigation of Single /Old PTR			
	13	33 KV & 11 KV New Line for N-1 Connectivity	24.27	30.08	54.35
	14	Refurbishment of 33 KV & 11 KV Line	27.06	36.90	63.96
	15	Conversion of 33 KV & 11 Bare O/H to Covered Conductor	3.68	4.12	7.80
	16	33 KV & 11 KV UG Cable	7.05	1.98	9.03
	17	Installation of 33 KV & 11 KV Line AB Switch	9.37	9.93	19.30
	18	33 KV & 11 KV AutoRecloser & Sectionalizer	7.52	7.63	15.14
	19	33 KV & 11 KV RMU's	4.38	4.64	9.01
	20	33 KV & 11 KV FPI	3.52	3.74	7.26
	21	DSS Refurbishment - (AB Switch, HG Fuse, LA, Earthing, Plinth & DP Structure)	11.12	12.40	23.52
	22	Installation of LV protection at DSS-MCCB (All Required Ratings)	9.74	10.22	19.96
	23	River Crossing Infrastructure	1.87	3.18	5.05
	24	Balance Items			
	25	**Sub-Total Network Reliablity(3)**	**187.72**	**133.06**	**320.78**
Load Growth	26	33 / 11 KV New PSS 2X12.5 MVA & associated Lines (Om Bihar)	31.24	0.00	31.24
	27	33 / 11 KV New PSS 2X10 MVA PSS & associated Lines (Khalikote College)		33.21	33.21
	28	PTR Augmentation	13.00	8.70	21.70
	29	Augmentation / addition of Distribution Transformer and 11 KV Line Extension for New DTRs	21.95	22.96	44.91
	30	Augmentation and addition of LT ABC line	12.03	12.86	24.89
	31	**SubTotal- Load Growth(4)**	**78.22**	**77.73**	**155.95**

Table 2 : Capital Expenditure proposal for FY 2024-25 & FY 2025-26 (Rs Cr) - B

Capex Head	Sr No	Activity	FY 25	FY 26	Total
	32	End User IT Infrastructure	2.46	4.75	7.21
	33	Strengthen Network Connectivity	2.47	1.66	4.13
Technology Infrastructure	34	Augmentation of Data Center- additional Hardware and Software	8.48	5.29	13.77
	35	Augmentation of Disaster Recovery Centre- Hardware and Software	2.18	2.18	4.37
	36	**Sub Total -Technology Infrastructure(5)**	**15.59**	**13.88**	**29.48**
Civil & Admin Infracture	37	Restructuring/ refurbishment of Infrastructures at offices & Stores	21.00	5.00	26.00
	38	Development of Hostel building for Trainees	11.00	0.00	11.00
	39	Development of New Customer Relationship Centres	1.50	0.00	1.50
	40	Admin Infrastructures	1.54	0.81	2.35
	41	**Sub Total - Civil Infrastructure & Admin(6)**	**35.04**	**5.81**	**40.85**
Reduction of Carbon Foot Print	42	**Reduction of Carbon Foot Print- Roof Top Solar and Evs (7)**	2.00	1.50	**3.50**
Differential CAPEX to recover New Connections	43	**Differential CAPEX to recover New Connections(8)**	5.00	5.00	**10.00**
TOTAL in Rs. Cr.	44	TOTAL in Rs. Cr.	378.60	291.51	670.12

13. The Description of the various schemes shown in the table above is provided in **Chapter 4 Details of Capital Expenditure Schemes.**

C. Employee Costs and Interest During Construction to be capitalised

14. It is submitted that Employee Cost associated with the projects or capex schemes would also form a part of the Capex and would be eventually capitalized with the capital expenditure scheme. We wish to submit that the Employee Costs to be capitalized would in turn depend on the employees working on the scheme and the time spent by them on the same. Similarly, the Interest During Construction (IDC) is required to be worked out on the Debt Component (70%) of the Capex. This would depend on the quantum of the capital expenditure spread during the year and hence the estimation has not been made at present in this petition. However, we wish to submit that Interest During Construction amount would need to be added in addition to Hard Cost and Employee Cost to be capitalised.

15. Considering the Capitalisation for FY 2022-23, we have worked out the share of Employee Costs to be capitalized and also the IDC to be capitalized. The same are as shown in the table below:

Table 3 : Share of Employee Cost Capitalisation and Interest During Capitalisation for FY 2022-23

Sr No	Particulars	Rs Cr	% of Base Capitalisation
1	Base Capitalisation (i.e without EDC and IDC)	315.02	
2	Employee Cost Capitalisation (EDC)	28.37	9.0%
3	Interest During Construction	0.78	0.2%

16. On the basis of the above, the estimated capitalization from the above Capital Investment is as given in the table below:

Table 4 : Capitalisation including Soft Costs (Rs Cr)

Sr No	Particulars	FY 25	FY 26	Total
1	Capex without Employee Costs and IDC	378.60	291.51	670.12
	Add			
2	Employee Costs	34.10	26.25	60.35
3	IDC	0.94	0.72	1.66
4	**Total Including Employee Costs and IDC**	**413.64**	**318.49**	**732.13**

D. Basis for estimation of Cost

17. The estimation of capital costs for large number of items have been made on the basis of Cost Data Book (CDB) published by the Government of Odisha for various items. The new CDB is under discussion and finalization.

18. However, the CDB has been published by the Government of Odisha for the FY 2018-19. Subsequently, in the meeting dated 23rd November 2021, it was decided that 6% p.a towards escalation may be considered till the rates are revised. The relevant extracts from the Minutes of the meeting are as given below

> E. A Technical Committee to be constituted under the Chairmanship of EIC-cum- PCEI, to look into the revision of rates. EIC(Electricity) clarified that pending finalization of the rates, price escalation of 6% per year may be allowed.

19. Accordingly, the escalation rate of 6% p.a from FY 2018-19 i.e a total escalation of 30 % till FY 2024-25 has been considered for estimation of capital expenditure for items covered by the CDB. For items, which are not covered by the CDB, the rates discovered by TPSODL through the last competitive bidding conducted has been considered. The rates so discovered have been escalated suitably to reflect the present market conditions. The expenditure of items which do not have the reference of the Discovered rates since the same are being placed for the first time, budgetary quotes have been used. Further, additional escalation of 6% is considered for FY 2025-26 on Unit rates of FY2024-25.

20. For a few items where the above references are not available, engineering estimates have been made by TPSODL to arrive at the capital expenditure.

E. Proposed Funding of the Capex

21. The Capital Expenditure is proposed to be funded through a Debt to Equity mix in the ratio of 70:30. The Debt raised for this Capital Expenditure would be long term debt and the Equity would be subscribed by Tata Power and Gridco in the ratio of 51% and 49% respectively. Further, Gridco is expected to subscribe to its share of 49% through transfer of assets owned by the Government i.e make contribution in kind and Tata Power would subscribe in the form of cash to the extent of its share of 51%. Accordingly, since cash resources need to be raised in the form of cash to meet the expenditure, the resources need to be raised additionally for compensating the Gridco Equity in Kind. Accordingly, the Debt and Equity required for meeting the capital expenditure (without considering employee cost and IDC that would be capitalized is as follows:

Table 5 : Proposed funding of Capital Expenditure

Sr No	Particulars	FY 25	FY26	Total
1	A. Proposed Capex Plan –	413.64	318.49	732.13
2	B. Add- GRIDCO capex (in Kind) (i.e. equivalent to GRIDCO share of 49% in 30% Equity) @ 17.23 % of Sr No 1	71.28	54.89	126.17
3	Total Capex (A+B)	484.92	373.37	858.29
	Funding of the above Capex			
4	70% through Debt	339.4	261.4	600.81
5	30% through Equity	145.5	112.0	257.49
5a	TPC share @ 51%	74.193	57.126	131.32
5b	GRIDCO share @ 49%	71.28	54.89	126.17

F. Comparison with Capital Investment proposed in the Vesting Order

22. As per the Vesting Order for TPSODL, it is required to incur certain trajectory of Capital Expenditure. Based on the same, it had proposed the Capital Investment proposal for FY 2021-22, FY 2022-23 and for FY 2023-24 . Continuing the same it has now proposed the capital expenditure for FY 2024-25 and for FY 2025-26 . The extracts of the Vesting Order relating to the minimum Capital Expenditure is as follows:

Table 1: Capital Expenditure Commitment by TPCL

Capex Commitment (INR Cr)					
FY22	**FY23**	**FY24**	**FY25**	**FY26**	**Total**
227	316	241	233	150	**1,166**

Table 2: TPCL Cumulative Capital Expenditure for 5 years

Cumulative Capex Expenditure (INR Cr)				
Upto 31-Mar-2022	**Upto 31-Mar-2023**	**Upto 31-Mar-2024**	**Upto 31-Mar-2025**	**Upto 31-Mar-2026**
227	543	783	1,016	1,166

23. The progress of the Capital Expenditure till 31st March 2026, including the quantum proposed in this petition would be as follows:

Table 6 : Comparison of Capital Expenditure vis a vis commitments in the Vesting Order

Sr No	Particulars	Value
1	Capital Expenditure approval for FY 2021-22	184.65
2	Capital Expenditure approval for FY 2022-23	294.83
3	Capital Expenditure approval for FY 2023-24	338.34
4	Capital Expenditure proposed for FY 2024-25	378.60
5	Capital Expenditure proposed for FY 2025-26	291.51
6	Capital Expenditure propsosed for improvement of Reliability in Berhampur City	69.05
	Total	**1557.0**

24. As can be seen from the above, the expenditure proposed to be incurred by TPSODL by 31st March 2026 is higher than commitment made by TPSODL in the vesting order

25. We wish to submit that we would be completing the approved schemes above by the end of FY 2025-26. We have in Section **3.2 Major achievements by TPSODL in the last & Current Financial Year** presented the various initiatives undertaken by TPSODL in the previous years

G. Board Approval

26. The Capital Investment Plan of TPSODL for FY 2024-25 and FY 2025-26 was put up to the Board in the meeting dated 20th October 2023 for their approval. The proposal was discussed and approved. However as the minutes are under finalization, the Certified True Copy (CTC)of the Resolution on this item is yet to be issued. We shall submit the same as soon as the it is prepared.

H. Prayers to the Hon'ble Commission

27. TPSODL prays for the following to the Hon'ble Commission

i. Approve the Capital Expenditure plan and breakup as proposed **in Table 1 : Capital Expenditure proposal for FY 2024-25 & FY 2025-26 (Rs Cr)- A** and **Table 2 : Capital Expenditure proposal for FY 2024-25 & FY 2025-26 (Rs Cr) - B**

ii. Approve the carry forward of the capital expenditure of the schemes approved commenced from FY 2021-22 to FY 2023-24

iii. Allow Employee Cost and Interest During Construction based on actuals to be capitalised over and above the amount of Costs as shown in **Table 3** and **Table 4.**

iv. Pass any other orders as the Hon'ble Commission may think appropriate

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1 Need for Capital Expenditure in FY 2024-25 & FY 2025- 26

1. TP Southern Odisha Distribution Limited (TPSODL) is incorporated as a joint venture of The Tata Power Company (51%) and the Government of Odisha (49%) under the Public-Private Partnership (PPP) model. TPSODL commenced its operations on 1st January,2021 on the basis of the Vesting Order issued dated 28.12.2021 by the Hon'ble Odisha Electricity Regulatory Commission (OERC). TPSODL took over the license to distribute electricity in the southern part of Odisha, which was earlier served by erstwhile Southco Utility, through a competitive bidding process.

2. The business of TPSODL utility is governed by the provisions of license issued by Hon'ble (OERC) for distribution and retail supply of electricity in Southern Odisha. The Hon'ble OERC regulates the working of the entire power sector of Odisha state, including determination of tariff chargeable to end consumers and establishing performance norms. The core business activities of TPSODL are summarized as follows:

- Operation and Maintenance of distribution network
- Expansion of distribution network
- Electricity supply and after sales services
- Connection of new customers to the distribution network
- Meter reading, billing, and revenue collection
- Customer complaint resolution
- Restoration of power after interruptions
- General customer care including provision of information on services
- Customer sensitization on energy efficiency, energy losses and safety

3. As per the Vesting Order as well as the OERC (Terms and Conditions for determination of Wheeling Tariff and Retail Supply Tariff) Regulations 2014, TPSODL is required to submit the annual Capital Investment (or "Capex") proposal for approval of the Hon'ble Commission. The CAPEX proposals for the FY 2021-22, FY 2022-23 & FY 2023-24 were submitted by TPSODL and same was approved by the Hon'ble commission under Case No 08 of 2021, under Case No 13 of 2022 and under Case No. 05 of 2023 for Rs. 184.65, Rs. 294.82 & Rs. 338.34 Cr respectively. The schemes are under execution.

4. We are in this petition submitting the Capex proposals for FY 2024-25 of **Rs 378.60 Cr** and for FY 2025-26 of **Rs. 291.5**1 **Cr** for consideration of the Hon'ble Commission. The document covers the details of the network assets, the inherent challenges in line with the safety & statutory requirements and the proposed action plan to mitigate the above challenges to achieve the performance parameters as per the stipulations provided by various authorities. The present petition covering the Capex proposal for FY 2024-25 and 2025-26 is prepared under following major heads:

   a. Statutory & Safety
   b. Loss Reduction
   c. Reliability
   d. Load Growth
   e. Infrastructure- Technology
   f. Infrastructure -Civil and Admin
   g. Green Infrastructure-Roof Top Solar & EV
   h. Differential CAPEX to recover New Connections

1.1. Geographical Information

5. TPSODL has a wide geographical area of 48,751 Sq KM. spread across 8 districts of Odisha state namely Ganjam, Gajapati, Boudh, Kandhamala, Rayagada, Koraput, Nabarangpur and Malkangiri and serves the consumer base of about 22.75 Lakhs. For operational simplicity the area is divided into 6 Circles viz. City, Berhampur, Aska, Bhanjanagar, Jeypore & Rayagada Circles. In order to have the smooth operation of electrical network and to provide satisfactory services to its consumers, above circles are further sub divided into 19 Divisions and 51 Sub-division. The details of the various Circles , Divisions, Subdivisions are provided in **Annexure 1 : Details of TPSODL** (Table 64 : Details of Circles and Divisions of TPSODL).

6. The Glossary of Terms is attached as **Annexure 2 : Glossary of** Terms

1.2. Network Information

7. TPSODL receives electrical power at 33kV level from 37 nos. of Grid Substations (GSS) out of which 6 nos of GSSs are rated at 220/132/33kV, 6 nos. at 220/33kV

and 25 nos. at 132/33kV located within and in the vicinity of TPSODL operational area. TPSODL distributes the power at 33kV / 11kV / 440V / 230V depending on the demand of the consumers. The existing OPTCL Grid Substation in TPSODL are as provided in **Table 65 : List of Grid Substations (GSS) of OPTCL in TPSODL**

1.3. Distribution Network

8. At present, there are 147 numbers of 33 kV feeders with a combined circuit length of approximately 4061.69 Ckt. KMs supplying power to 250 numbers of 33/11kV Primary Substations. The 33kV supply is stepped down to 11kV level through 554 numbers of 33/11kV power transformers at these primary substations. Further, nearly 910 numbers of 11 kV feeders emanates from the 33/11 kV primary substations having cumulative length of approximately 45400 Ckt. KMs and supply power to HT consumers connected at 11 kV level and LT customers connected to 11/0.415 kV & 11/0.230 kV distribution substations. 58494 numbers of distribution transformers are installed in all six circles. The length of the LT network is approximately 45400. KMs. These LT feeders supply power to three-phase and single-phase consumers. The information is summarized in the table below.

Table 7: Details of Assets of TPSODL as on 30th June 2023

S.No	Description		City	Berhampur	Aska	Bhanjanagar	Raygada	Jeypore	Total
1	No of 33/11kv S/S	No	20	31	22	46	57	74	250
2	No.of 33/11KV PowerTrans	No	47	74	59	100	112	162	554
3	No.of 33/.4 kv Distribution Transformer	No	16	28	16	28	22	66	175
4	No.of 11/.4 kv Dist.Transformer	No	2549	5369	4251	13422	9108	23795	58494
5	33KV LINES	Ckt Km	149	395	245	981	822	1469	4062
6	11 KV LINES	Ckt Km	1252	3553	2772	12079	8302	17442	45400
7	LT.LINES BARE CONDUCTOR	Ckt Km	70	1093	705	1521	2740	2559	8688
8	LT LINE AB CABLE	Ckt Km	1094	3484	1716	7187	3987	13741	31209

1.4. Key Challenges

9. TPSODL had presented the key Challenges of the network in our earlier CAPEX proposals i.e for FY 2021- 22, FY 2022-23 and for FY 2023-24 and the same challenges continue to exist to a large extent. It is submitted that the legacy network handed over to TPSODL was in a poor state, lacked compliance with respect to maintaining safe clearances, especially the ground clearances of the 33 KV & 11 KV network as required by the statutory guidelines. While the long spans of the network, at road crossings, public places and near schools etc. are unsafe for the employees, general public, children and animals, these pose the challenges in maintaining the reliable

power supply to our customers. We are detailing the individual network segments in the different sections below

1.4.1. 33KV Lines

10. 33kV feeders are the main source of power supply from Transmission Substation (TS) to Primary substations (PSS) and some of the distribution transformers (33/0.415 KV) connected on 33 KV lines. We have the following observations on 33 kV feeders.

    a. Most of the 33 KV feeders have long lengths and are radially connected. The long overhead feeders are prone to faults and it is difficult to identify the location of the fault. Many of the feeders pass through the dense forest and attending the faults becomes possible during day time only. These leads to the high network downtime and affects the SAIDI.

    b. At many of the locations these lines are working on damaged, bent and tilted poles which affect the performance and life of the asset as well are unsafe for the general public. Due to the above condition, the capacity of many of the 33 KV feeders has dropped down due to undersized & worn-out bare conductors especially in the main sections of the feeders. Beside this, long span and poorly executed multiple joints are the cause of the high technical losses and conductor snapping causing accidents.

    c. Most of the locations of feeders do not have guard wire beneath conductors. This becomes critical when these feeders pass through the public places viz, markets, schools, hospitals etc., as snapping of the conductor can cause injuries to a larger section of people. Cradle guard below the lines at such place can avoid such accidents.

    d. We observed serious violation of the ROW of our 33 KV & 11 KV feeders for maintaining safe clearance as per statutory requirements. We have seen construction of building, houses, shops below 33 kV & 11kV overhead lines at many locations both in urban and rural areas. The horizontal clearances are also observed violated by creating extended balconies. We have started issuing the notice to the concerned building owners to remove the encroachment of the ROW of our lines for safety as well operation & maintenance point of view. The close vertical or horizontal distance from ground or nearby buildings are very

unsafe, especially during rainy season. Any leakage of electricity can cause accidents including deaths. This needs a serious resolution mechanism.

e. Poles are not provided at appropriate distance having long spans which lead to cascading failure in case of speedy winds and cyclones. A proper designed span length and type of poles can avoid such failure.

1.4.2. 33/11 kV Primary Substations (PSS)

11. Primary Substations or PSS transform 33 kV voltage to 11kV level. There are one or more 33 kV feeders supplying power to the PSS. The 33 kV voltage is stepped down to 11kV through power transformers of various capacities viz. 1.6 MVA, 3.15 MVA, 5 MVA, 7.5 MVA, 8 MVA, 10 MVA. At many of the PSS the Power Transformers, breakers, CT, PT are not appropriately maintained and are facing various issues as mentioned below.

i. In PSS, the connection between the outdoor yard equipment and busbar are done with the poor jointing methods leading to hotspots which add to the technical losses. The technical losses due to poor jointing can be reduced significantly by using the latest wedge connectors.

ii. Study and analysis show that some of the existing 33/11KV PSS are already overloaded or approaching the overload limit. It is anticipated that some of PTRs in the existing PSS may be overloaded in next 2-3 years and few PTR are more than 30 years old.

iii. In few of the PSS there is the problem with the boundary wall which need to be repaired, reconstructed to avoid the any kind of fatal accident and theft.

iv. Earthing system is most important for safety & protection of men and equipment. It is submitted that earthing system in some of the PSS is in very bad condition and ineffective.

v. Many circuit breakers and CTs are lying bypassed since long time due to damaged condition. This is another major threat for protection failure for the equipment. The failure of the substation equipment can result in substantial revenue loss.

vi. Battery and battery chargers are necessary for all the PSS for backup supply for necessary operation during breakdown. Unavailability of the backup DC supply

makes the basic protection system ineffective. Battery Chargers and Batteries were found defective or inadequate in some of the PSS and needs replacement.

vii. Many of the PSS are facing operational issues due to damaged/unviability of the line isolators, Ab switches and LAs.

viii. Need replacement of old or damaged conductor in the Busbar, rusted or damaged structure of PSS, insulators in few PSS to avoid the unsafe operations of the PSS.

1.4.3. 11 kV Feeders

12. The following are some of the constraints faced in 11 KV Network

i. 11kV feeders connect a Primary substation (PSS) to the distribution transformers which supplies the electricity to the end customers through LT network. As per the asset details provided in the document, TPSODL has 910 nos. of 11 KV feeders. We have identified following observations on the 11 kV feeders.

ii. Most of the feeders are radially connected and have longer length compared to the standard engineering practices. Some of the feeders are more than 100 Ckt. km long. The long overhead feeders are prone to faults. It is always difficult to inspect the feeder after occurrence of a fault leading to high equipment downtime and SAIDI.

iii. At many of the locations these feeders are installed on damaged, bent and tilted poles which is unsafe for the asset as well as the general public. There had been no revision of the conductor sizes since their installation even after the load growth every year. As such many of these feeders are observed with undersized & worn-out bare conductor, having extremely long spans, multiple and poorly executed joints and compromised safety clearances.

iv. These feeders also pass through the crowded public places, especially in urban areas. There have been incidents of injuries and fatality, in past, due to conductor snapping at such places. Most of the above critical locations of feeders do not have guard wire beneath conductors, even in urban areas, to provide safety to the public against injuries and electrocution due to conductor snapping.

v. We observed encroachment on RoW i.e., houses / structures constructed below the overhead feeders at many locations both in urban and rural areas. These situations

create violation of the desired safety clearances as per the electricity act and become potential source of accidents.

vi. The installation of majority of poles is not appropriate to the standards. It is observed that the poles are not installed with appropriate depth and compacting of the soil is not done. Such poles are mostly affected during speedy winds, cyclones and toppling of one pole may lead to collapse of a considerable length of the feeder.

1.4.4. AGEING EFFECT ON ELECTRICAL NETWORK

13. In the current distribution system, most of existing electrical infrastructure is becoming aged due to the delayed replacement of older components, increased equipment loading and scarce maintenance. This leads to higher losses because of derating, multiple joints etc. and also results into high no's of tripping due to conductor snapping, PTR/DTR failures etc.

1.4.5. Cyclone or Storm effect on Electrical Network

14. Southern Odisha with long coastal belt has been experiencing frequent cyclones/ high speed Wind Storms which severally affects/ damages distribution infrastructure. It has been observed that the impact of cyclones progressively decreases while moving from sea towards land area and in most of the cases, the damage of infrastructure is mostly limited to about 60 km from the coastline. The major impact is in the form of damage of towers / poles of distribution lines, damage of substation equipment & structure, flooding of sub-stations, snapping of conductors etc.

1.4.6. Need of River Crossing Tower

15. Few of 33KV & 11KV Lines are passing over the rivers & lakes through single and double pole structures even for river span higher than 150 mtrs. In many of these places, due to high sag, during high flood situation clearance from river bed reduces leading to forced outages of these lines affecting large number of customers.

1.4.7. Distribution Substations (DSS)

16. TPSODL has three types of distribution substations according to voltage levels i.e. 33/0.415 kV, 11/0.415 kV and 11/0.230 kV. The substations are plinth mounted as well as pole mounted.

17. The DSS are provided protection with HT fuses on primary side whereas, at most of the places, the secondary protection is not provided. At places, Kit Kat fuses are installed for protection on secondary side, but most of the above fuses are by-passed leading to no protection at secondary side of the DTR. At many places the thick aluminum wires, without proper design calculations, are used in place of the fuses. These situations are similar to no protection on the secondary side of the distribution transformer and in case of the fault in the LT lines, the fault may be arrested at HT fuse of the DTR. These situations can be avoided by providing LT protection on the secondary side of the DTR. In some cases, HT fuse and AB switch are bypassed which is compromising the life of the equipment.

1.4.8. LT Network

18. LT feeders emanate from DTR secondary side and serve the electrical energy to the end customers. There was no effective LT feeder protection system in place on the secondary side of most of the DSS. In place of LT Fuse box/MCCB box; aluminum wire was used as fuses on the secondary side of the distribution substations at almost all substations. These fuse units are installed at very low height and many of them have free access which is very unsafe. This needs a requirement of the appropriate protection system and fencing of the DSS to eliminate the access of the general public or animal. The rating of the aluminum wires, used as fuses is not appropriate to the rating of the DTR, and thus compromising the life of the distribution transformer, in case of fault in the LT network. This is a potential safety threat to general public at large and animals

1.4.9. Earthing

19. Earthing of the electrical installation is very important for safety of the men, animal and equipment. It is observed that the earthing installations are not done with appropriate depth and therefore the earth resistance values in many of the locations are coming too high. The above earth resistances are not effective enough to provide the required protection against faults. The poor earthing can lead to the chances of serious injuries including fatal accidents beside breakdown of the equipment.

1.4.10. Feeder Meter

20. In TPSODL, there are 147 numbers of 33 kV feeders which feed total 250 nos of PSS and nearly 910 numbers of 11 kV feeders emanates from these PSS which feeds total 58494 nos. of DTR. Currently since not all the 33KV and 11KV feeders are metered, and the consumer-wise mapping to respective feeders for various categories of consumers is not updated / accurate, it is difficult to generate accurate energy audit reports to get specific insights about the distribution network to identify areas of high loses and theft and enable corrective action. A good and effective Energy Audit system would need all the 33KV and 11KV outgoing feeders as well as Distribution Transformers to be metered with relevant metering system. This would allow TPSODL to have a very comprehensive and effective EA system which would help TPSODL, as corrective actions can be planned & implemented to ensure that technical and financial losses are minimized

1.4.11. Civil Infrastructure & office Administration

21. The office buildings, in general, are very old which need strengthening through major civil works such as refurbishments/ restructuring / rebuilding. Infrastructure of the offices need revamping and major civil works are to be addressed for ensuring conducive work environment for Employees and consumers visiting the offices. Substantial investment is required to address the above stated challenges and to safe guard the assets, public & animals from the accident and ensuring statutory compliant network.

22. Besides, TPSODL is also planning to improve the office infrastructure through revamping and other civil interventions. These activities are urgently needed to provide conducive work environment to TPSODL employees and all consumers visiting TPSODL offices. Many of the office buildings are very old and need urgent strengthening to avoid mishap.

1.4.12. Pictorial representation of Network Challenges:

Picture 1 : PSS Refurbishment Required (A)



Picture 2 : PSS Refurbishment Required (B)



Picture 3 : **HT and LT Line Refurbishment, Augmentation & Intermediate Pole required (A)**



Picture 4 : **HT and LT Line Refurbishment, Augmentation & Intermediate Pole required (B)**



Picture 5 : DSS Refurbishment, DSS LTDB & DSS Fencing Required (A)



Picture 6 : DSS Refurbishment, DSS LTDB & DSS Fencing Required (B)



Picture 7 : Building Civil Work, DSS Damage Plinth & New Plinth Work,& PSS Boundry wall Required (A)



Picture 8 : Building Civil Work, DSS Damage Plinth & New Plinth Work,& PSS Boundry wall Required (B)



2 Proposed CAPEX Plan for FY 2024-25 & FY 2025-26

23. As per the Vesting Order for TPSODL, it is required to incur certain trajectory of Capital Expenditure. Based on the same , it had proposed the Capital Investment proposal for FY 2021-22, FY 2022-23 and FY 2023-24. Continuing the trend to meet the requirement of the network, providing efficient consumer services and also addressing the above challenges, it has now proposed the capital expenditure for FY 2024-25 & FY 2025-26. The extracts of the Vesting Order relating to the Capital Expenditure is as follows:

Table 1: Capital Expenditure Commitment by TPCL

Capex Commitment (INR Cr)					
FY22	**FY23**	**FY24**	**FY25**	**FY26**	**Total**
227	316	241	233	150	**1,166**

Table 2: TPCL Cumulative Capital Expenditure for 5 years

Cumulative Capex Expenditure (INR Cr)				
Upto 31-Mar-2022	**Upto 31-Mar-2023**	**Upto 31-Mar-2024**	**Upto 31-Mar-2025**	**Upto 31-Mar-2026**
227	543	783	1,016	1,166

24. As per the above tables TPSODL has to submit a plan for a cumulative value of Rs. 1556.97 Cr up to FY 23-24. The Hon'ble commission approved Rs. 184.6 Cr. for the FY 21-22, Rs. 294.82 Cr. for the FY 22-23 & Rs. 338.34 Cr. for the FY 23-24. As TPSODL has a significant network asset spread across vast geographical area, it requires a huge investment to meet the desired expectation of the various stakeholders. We have gone through the detailed analysis of the loading of the network equipment, customer expectations, Load flow studies for 33 & 11 KV Network with 5 Yrs Load growth, inputs from the divisional teams and identified the priority projects to be considered within the allocated CAPEX amount in the vesting order.

2.1 Summary of Capital Expenditure

25. As mentioned earlier, TPSODL has proposed the Capital Investment Plan for FY 24-25 & FY 25-26 under eight (8) major heads with the objectives of ensuring compliance to the Statutory & safety, reducing AT&C loss, providing reliable power supply, meeting expected load growth, reduction of Carbon footprint, ensuring best customer services to the consumers through extending technology infrastructure and creating good office for staff and its customers. TPSODL proposes Capital Expenditure of **Rs 378.60 Crore** for FY 2024-25 & **Rs 291.51 Crore** for FY 2025-26 with the intention that the proposed projects will contribute in achieving the performance targets mentioned in the vesting order. The breakup of Capital Expenditure under various schemes is provided in the table below :

Table 8 : Summary of the Capital Expenditure for FY 2024-25 & FY 2025-26

Sr No	Capex Head	FY 25	FY 26	Total
a	b	c	d	e=c+d
1	Statutory & Safety	37.1	27.9	65.0
2	Loss Reduction	17.9	26.6	44.5
3	Network Reliability	187.7	133.1	320.8
4	Load Growth	78.2	77.7	155.9
5	Technology Infrastructure	15.6	13.9	29.5
6	Civil & Admin Infrastructure	35.0	5.8	40.8
7	Reduction of Carbon Foot Print-Roof Top Solar and Evs	2.0	1.5	3.5
8	Differential CAPEX to recover New Connections	5.0	5.0	10.0
9	**TOTAL in Rs. Cr.**	**378.6**	**291.5**	**670.1**

26. The above project cost is exclusive of Employee Cost & Interest During Construction (IDC) and therefore these cost capitalized will be over and above the value of proposed capex plan.

27. The Bill of Quantities required for augmentation/addition/modification of network is provided in **Annexure 3 : Bill of Quantities (Separately Attached).**

3 Progress of Capex approved for FY2021-22, FY2022-23, and FY2023-24

28. As mentioned earlier, the Hon'ble Commission had approved capital expenditure for three years of operation viz FY 2021-22, FY 2022-23, and FY 2023-24. This chapter covers the progress of Capital Expenditure for the three years above.

3.1 Capitalization Schedule for FY 2021-22, FY 2022-23 & FY 2023-24

29. The Hon'ble Commission has approved Capital Expenditure for FY 2021-22, FY 2022-23 and FY 2023-24 We are putting our best efforts to complete maximum projects before close of the financial year of FY 2023-24 however due to constraints of the vast geographical area it will be challenging to complete all the projects under CAPEX FY23-24, approved by Hon'ble Commission.

Table 9 Progress of Capital Expenditure of Schemes approved for FY 2021-22, FY 2022-23 & FY 2023-24

Year	OERC Approved	Amount Capitalised	CWIP	Total CAPEX
FY 21-22	184.65	183.44	0.44	183.88
FY 22-23	294.82	270.41	15.85	286.26
FY 23-24	338.33	9.88	38.08	47.96
Total	**817.80**	**463.73**	**54.37**	**518.10**

30. We therefore request the Hon'ble Commission to kindly permit carry forward of the expenditure not incurred but approved for FY 2023-24 to FY 2024-25.

3.2 Major achievements by TPSODL in the last & Current Financial Year

31. After commencement of operation on 1st January 2021, TPSODL have initiated various activities to improve the performance parameters in Reliability, AT&C, Safety, Technology and building or strengthening infrastructure. Some of the major activities completed till 30.09.2023 are mentioned below.

3.2.1 33 KV Network

ACHIEVEMENT REPORT FOR 33KV NETWORKS FY 2022-23

a. Following activities completed for 33kV Lines: -

(i) Tree trimming – 3960 CKM
(ii) Insulator replacement – 1,620 Nos.
(iii) Intermediate pole installation – 165 Nos.

b. Following maintenance activity completed for PTR: -

(i) Faulty PTR replaced by repaired PTR – 11 Nos
(ii) Station transformer installed – 8 Nos.
(iii) PTR Overhauling: 40 Nos
(iv) Oil Top up – 148 Nos.
(v) Silica gel replaced – 209 Nos.
(vi) Breather replaced - 63 Nos.

c. Following activities for VCBs & CRP completed: -

(i) Installation of 33kV and 11kV VCBs completed – 138 Nos.
(ii) Overhauling activity of 33kV and 11kV VCBs completed – 390 Nos.
(iii) VCB maintenance, Indoor Switch Gear Maintenance and CRP trouble shooting activity - 912 Nos.

d. Following activities completed in PSS: -

(i) Si Coat Applied in 04 Nos of PSS as a pilot project. 09 Nos of Dehumidifier Installed in all 11kV Feeders Switchgear panel of Baulagam PSS. It was implemented for the first time in Odisha Discoms at Balia Pratapur PSS
(ii) CT repaired - 20 Nos.
(iii) CT installed- 135 Nos.
(iv) AB switch Maintenance – 286 Nos.
(v) New AB Switch Installed - 124 Nos.
(vi) New Battery charger Installation in PSS – 28 Nos.

e. Following Protection related activities completed: -

(i) OC EF Relay Replacement – 48 Nos
(ii) Relay coordination done – 524 Nos
(iii) Healthiness improvement of DC Supply of PSS – 66 Nos
(iv) O/C and E/F Relay Configuration Modification and Testing - 603 Nos

(v) Earth Pit Resistance value testing Done - 1972 Nos
(vi) Transformer Testing Done - 50 Nos
(vii) P2P Testing with GE SCADA along with Automation Team - 191 Nos
(viii) SCADA OV's Resolved of PSS's - 484 Nos
(ix) PDI Testing done of transformer using Ultrasound - 50 Nos
(x) New MTR Installation, Wiring & Testing - 219 Nos
(xi) Oil Sample DGA Test Carried out of PTR's - 37 Nos
(xii) CBM-Thermography Scanning of PSS Equipment & PQ Logger – 39 Nos

f. Implementation of SCADA in 33/11 KV PSS:

(i) NON ODSSP PSS SCADA integrated – 18 Nos
(ii) ODSSP PSS SCADA integrated – 82 Nos.

ACHIEVEMENT REPORT FOR 33KV NETWORKS APRIL'23 – till date

a. Following activities completed for 33kV Lines: -

(i) Tree trimming – 3016 CKM
(ii) Insulator replacement – 1,016 Nos.
(iii) Intermediate pole installation – 56 Nos.

b. Following maintenance activity completed for PTR: -

(i) Faulty PTR replaced by repaired PTR – 11 Nos
(ii) PTR Overhauling: 19 Nos
(iii) Oil Top up – 76 Nos.
(iv) Silica gel replaced – 221 Nos.
(v) Breather replaced - 23 Nos.

c. Following activities for VCBs & CRP completed: -

(i) Installation of 33kV and 11kV VCBs completed – 121 Nos.
(ii) Overhauling activity of 33kV and 11kV VCBs completed – 191 Nos.
(iii) VCB maintenance, Indoor Switch Gear Maintenance and CRP trouble shooting activity - 990 Nos.

d. Following activities completed in PSS: -

(i) CT installed- 203 Nos.
(ii) AB switch Maintenance – 607 Nos.
(iii) New AB Switch Installed - 40 Nos.
(iv) New Battery charger Installation in PSS – 36 Nos.

e. Following Protection related activities completed: -

(i) OC /EF Relay Replacement – 90 Nos
(ii) Numerical relay installation – 29 Nos
(iii) Relay coordination done – 299 Nos

f. Implementation of SCADA in 33/11 KV PSS:

(i) NON ODSSP PSS SCADA integrated – 07 Nos
(ii) ODSSP PSS SCADA integrated – 07 Nos
(iii) Healthiness improvement of DC Supply of PSS – 234 Nos
(iv) O/C and E/F Relay Configuration Modification and Testing - 506 Nos
(v) VCB and CT testing Done - "VCB- 247 Nos & CT- 556 Nos "
(vi) Earth Pit Resistance value testing Done - 116 Nos
(vii) Transformer Testing Done - 64 Nos
(viii) P2P Testing with GE SCADA along with Automation Team - 42 Nos
(ix) SCADA OV's Resolved of PSS's - 110 Nos
(x) PDI Testing done of transformer using Ultrasound - 115 Nos.
(xi) Oil Sample DGA Test Carried out of PTR's - 100 Nos.
(xii) CBM-Thermography Scanning of PSS Equipment & PQ Logger – 152 Nos.
(xiii) New SCADA CRPs taken into Service with Load – 213 Nos.

Few photographs for 33KV Network improvement

Picture 9 : **VCB INSTALLATION**



Picture 10 : Battery Charger Installation



Picture 11 : **PTR OVERHAULING**



Picture 12 : **PTR INSTALLATION**



Picture 13 : **NEW CRP INSTALLATION**





3.2.2 ACHIEVEMENT REPORT FOR 11KV & LT NETWORKS IN FY 2023-24

a. Additional KVA added in the Network.

i. Total 3731 KVA DTR capacity added in the network.

b. Replacement/Augmentation of transformer -

i. 1897 nos. of DTR replaced (Total Capacity- 97.94 MVA)
ii. 223 nos. of DTR augmented (Total Capacity- 15.45 MVA)

c. O&M Maintenance Achievements –

i. Patrolling and Maintenance of 11kV lines- Regular Tree trimming done – 11,096CKM
ii. Replacement of Sick/Undersized HT & LT Conductor/Cable – 299 CKM
iii. HT Intermediate Pole and LT Intermediate Pole Erected to attend the vulnerable location – 5,273 Nos.
iv. Replacement of Damaged HT Pole and LT Pole – 1,764 Nos.
v. Under 5T activity vegetation cleaning done - 11,759 Nos. of DSS

d. Activity done in PM of DSS, 11kV & LT network

i. DSS Maintenance Completed – 9042 Nos.
ii. New earthing added in the DSS, 11kV & LT network- 2570 Nos.
iii. DTR Oil leakage attended- 938 Nos. of DT
iv. 38,981 Nos. of DT's load monitored;
v. 2,370 DT's load balancing done out of 3,633.
vi. DT's LT protection improvement- MCCB Installed - 710 Nos. & Kit-Kat Fuse Installed – 3060 Nos.
vii. Nos. of LT feeder added in the network- 18 Nos. (4 CKM)
viii. Total 4142 No. of LT Pole Cleaning done to remove jumbling of service connections

ACHIEVEMENT REPORT FOR 11KV & LT NETWORKS APRIL'23 – till date

i. Total 1342 Nos. of faulty DTR replaced.
ii. Total 232 Nos. of DT Augmented in the network (Augmented Capacity – 15635 KVA).
iii. Tree trimming – 8667 CKM on 11kV feeders to reduce the no. of tripping's.
iv. Vegetation removal and Sub-station cleaning done for 5106 Nos. DSS
v. Total 1140 nos. of HT & 1270 nos. of LT Pole erected.
vi. 213 nos. of 11kV Line & DSS AB switch installed in 11kV feeders to enhance the reliability.
vii. 105 nos. of DD Fuse installed in 11kV feeders to enhance the reliability.
viii. Total 3345 nos. of 11kV AB Switch, 1617 nos. of 11kV HG Fuse replacement / repairing & 185 nos. of 11kV DD Fuse replacement / repairing has been done at site.
ix. 3225 Nos. of LA installed/replaced in DSS.
x. Total 429 Nos. of DT's Oil leakage attended at site.
xi. LT protection (MCCB – 137 Nos. & Kit-Kat Fuse – 1141 Nos.) installed at the DSS.
xii. Total 1332 Nos. of LT Pole Cleaning done to remove jumbling of service connections.
xiii. 603 Nos. of New Earthing added in the Network.

Few photographs for 11KV & LT Network Improvement

Picture 14: **HT Intermediate Pole Erection**



Picture 15: Earthing installation at DSS



Picture 16: **DSS Refurbishment**



Picture 17: MCCB Installation at LT Protection of DSS



Picture 18: MCCB and Kit-Kat Fuse installation at LT PROTECTION of DSS





3.2.3 Technology Infrastructure Work

3.2.4 Civil Infrastructure work

Projects completed for FY 2022- 23

i. Construction of Jeypore CRC
ii. Construction of CRC Rayagada
iii. Construction of Hinjilicut CRC
iv. 07nos. of fuse call center refurbishment
v. 960nos. of DTR fencing
vi. 04nos. of Southco office refurbishment completed (1Circle office, 1 Division office, 1 Sub-Division office, 1 Section office)
vii. 31nos. of Southco office refurbishment/ strengthened increasing its life. (2 Circle office, 4 Division office, 5 Sub-Division office, 20 Section office)
viii. New construction of 9 nos PSS and 28 (25 PSS and 3 APSCC) nos. Of PSS restructured for Scada.
ix. MRT lab building built
x. Gust House at Berhampur for senior Management staff restructured
xi. Cafeteria facility established at Ambagada Berhampur
xii. Corporate office extension to accommodate CEO and finance office
xiii. Construction of platforms & roads at Jeypore & Berhampur

Work in progress

i. Construction of DT work shop.

ii. Construction of one open shed at Berhampur Main store
iii. Remaining approach roads at Berhampur Main store
iv. DTR fencing works for approximate 860 numbers
v. Civil works for PSS restructuring work.
vi. Refurbishment of TPSODL offices 64 numbers
vii. Developing a HOTT at Ambagada
viii. Construction of Hostel Building
ix. Phase I works for Corporate office face uplift
x. Canteen for employees at corporate office

3.2.5 Achievements for improving Safety

32. TPSODL holds in deep reverence to the values of lives of its employees as well as public at lives. In order to achieve the goal making TPSODL free from accident & injuries and to develop a positive safety culture not only for its employees and employees of Business Associates but also for public at large.

a) SAFETY ACHIEVEMENT UNDER CAPEX FY-2022-23

33. During the financial year 2023 number of safety initiatives and action had been taken with prime focus to minimize the employee, public and animal incidents by ensuring safe workplace for employees and safe electricity supply to its consumers.

Sourcing & Deployment of Safety PPE's & Tools:

34. TPSODL safety & operation team conducted Hazard Identification and Risk Assessment (HIRA) by Core Committee Members and various Job Safety Analysis (JSA) workshop had been conducted to explore the hierarchy of risk control to reduce the incident rates and as part of risk control measures provision of PPE and safety tools made for all employees and business associates which was not available earlier. Apart from mandatory PPE's i.e., Safety helmet, Electrical safety shoes are enforced to the use of job specific PPEs like electrical safety hand gloves, full body harness with pole grab arrestor, electrical face visor, FR Jacket, Sensor based induction safety helmet, hand protection gloves like rubber & cotton type to ensure protection of the employees with strict guidelines for use by adhering the safe work practices with respect to risk assessment use of PPE matrix.

35. To strengthen the safe work partices and ensure safety and operational excellency the required safety PPE's , Safety Tools & Equipment's are procured and deployed at the site through CAPEX Budgets as provided in the table below

Table 10 : **Safety Initiatives/Procurement in FY 2022-23**

Sr.No	Item Description	Remarks
1	Neon Tester	For 33/ 11 Kv PSS and 11 KV Maintenance Team at each section level by considering the budget availability and field requirement.
2	Tree Pruner Battery Operated	For horizontal deployment of Technological intervention for quick and improve the safe tree trimming activity from ground level by considering the budget availability and field requirement.
3	Tree Pruner Manual	To strengthen and implement safe tree trimming activity with horizontal deployment of quick and safe tree trimming activity from ground level by ensuring the work at height safety control measures for the working crew.
4	Innovation Project (Pole Anchorage System)	Innovation project implementation for the Provision of Sample Fall Arrest Systems, Anchorage Point on Distribution Pole at TPSODL
5	Discharge Rod	To ensure line discharge and grounding for strengthening the safety zone creation prior working on electrical lines/ equipment's by enduring minimum 06 Discharge Rod at each PSS and 33 Kv O&M Work.
6	Porta Cabin	Safety and Skill Development Institute named as TSSDI (TPSDOL Safety & Skill Development Institute) at 03 division locations of City Circle. The TSSDI is dedicated for the employee and business associate's safety and skill development through advance classroom made of Porta Cabin training by TPSDI TtT certified training along with real-time practical demonstration on safety & skill development modules.
7	DP Structure of City Circle	Safety and skill development with real-time practical demonstration through model line and structures.
8	Civil Work of Practice Yard	Pratice Yard fencing and DP structure civil work.
9	DDT Simulator	As road safety and risk related to road journey is one of the major critical risk in our organization business and its road journey is a daily business need. To enhance the road safety interventions, we are continuously exploring various technological intervention and initiatives to minimize road related accidents. To address the issue and by considering the budget availability Defensive Driving Simulator technological intervention to improve the defensive driving skill for both four-wheeler and two-wheeler users through road safety capability building and real-time assessment for each driver and employee at each section and office location.
10	LED STREET LIGHT 120W	To improve the illumination level during emergency restoration and maintenance work and facilitating safe working environment for the working crew.
11	Universal FRP Stick	To strengthen the safety zone creation , test before touch and DO fuse replacement work by using universal type FRP stick by addressing the II. Transportation issue of multiple FRP stick for High voltage detection tester & Discharge Rod and introduction of new technological intervention for safety zone creation.
12	TESTING EQUIPMENT PORTABLE FOR FIELD	For low ground clearance and sagging measurement to address the vulnerable location rectification for converting unsafe to safe.
13	Earth Resistance Tester Manual	For earth resistance measurement to ensure the healthiness of earthing pits

b) <u>SAFETY ACHIEVEMENT UNDER CAPEX FY-2023-24 till date</u>

36. During the FY 24 the below mentioned safety PPE, Tools & Equipment are under execution to strengthen the safety management in an effective way required resources and support are taken up with the allotted budget of CAPEX FY 24.

Table 11 : **Safety Equipment procurement in FY 2023-24**

Sl No	Description	Unit	Qty
1	Fire Extinguisher ABC 9Kg	Nos	320
2	Fire Extinguisher CO2 4.5Kg	Nos	50
3	Fire Extinguisher CO2 9Kg	Nos	50
4	Fire Extinguisher Mechanical Foam 9Ltr	Nos	50
5	Fire Extinguisher Mechanical Foam 50Ltr	Nos	50
6	Fire Detection and Alarm System for offices, stores and control rooms	Nos	2
7	Ladder FRP 2 Fold 9 Mtr Length	Nos	150
8	PRESS FIT FUSE SUITABLE UP TO 33KV	Nos	1500
9	Rubber Mat	Nos	1524
10	AI -ML Based Remote safety monitoring	Nos	1
11	Discharge Rod for 11-33-66 KV	Nos	390
12	Universal FRP Rod for 11-33-66 KV	Nos	400
13	Industrial Neon Testor 11-33-66 KV	Nos	100
14	Water mist-based Fire Tender	Nos	1
15	Lux Meter	Nos	10
16	Shorting Clamp	Nos	350
17	Retractable fall arrester SS-10Mtr Lanyard	Nos	10
18	Arc Flash Suite (40 Cal/ Cm2)	Nos	100

Highlights of CAPEX Deployment Safety PPE, Tools Equipment's:

Picture 19: Use of Neon Testor and Discharge Rod



Picture 20: Defensive Driving Training Simulator and Use of Tree Trimmer



Picture 21: Porta Cabin for TPSODL Safety & Skill Development Institute



Picture 22: Rubber Mat and FRP Ladders





Picture 23: **AI -ML Based Remote safety monitoring**



4 Details of Capital Expenditure Schemes

4.1 STATUTORY & SAFETY

37. In Odisha, each Discom is exploring new techniques and strategies for enhancement of safety performance and developing new safety intervention to breed a safety culture amongst the employees by adopting robust technological safety measures and initiatives towards the aim of "Mission Zero Harm". In Discoms of Odisha, the electrical and work-at-height incidents including public and animal incidents are in large numbers due to various safety violations and various unsafe conditions. Therefore, each department in TPSODL is exploring the best way to minimize & prevent unwanted incidents and to "Save Lives & Property" by Observing "Electrical Safety".

38. Safety is a core value of TPSODL and it holds in deep reverence to the values of lives of its employees as well as public live. Accordingly, the following activities are considered in this head.

i. Provision of Safety Equipment and electrical Testing Equipment to workforce
ii. Network refurbishment for Safety enhancement

4.1.1 Safety Equipment and Tools

39. TPSODL team conducted Hazard Identification and Risk Assessment (HIRA) by Core Committee Members and various Job Safety Analysis (JSA) workshop had been conducted to explore the hierarchy of risk control to reduce the incident rates and as part of risk control measures, provision of safety tools were made for all employees which was not available earlier. For protecting employees by creating Safety Zone, modern tools like neon tester (high voltage detection tester), discharge rod, shorting clamps, portable ground and isolation rods are provided to all working team.

40. With the intervention of modern age technology and improvement strategy TPSODL is working proactively to source the best Safety Tools & Equipment, which can be used by employees to achieve the safety excellency.

4.1.1.1 Details of Safety Equipment:

41. With respect to the safety excellency journey and ensuring the safe work practices and maintain the workplace with required safety compliance below mentioned safety PPE, Tools & Equipment, Projects are proposed under CPAEX FY 25 & FY 26 Plan.

Table 12 : **Safety Equipment procurement in FY 2024-25**

Safety Budget (Capex) FY25					
Sl No	**Description**	**Unit**	**Qty**	**Unit rate (Rs)**	**Total Cost (Rs Cr)**
1	Ladder FRP Collasiable 06 Mtr Lenght	Nos	160	30000	0.48
2	Ladder FRP 2 Fold 9 Mtr Lenght	Nos	160	15000	0.24
3	HoTT (Hand on Technical Training) Center	Set	2	15000000	3.00
4	Discharge Rod for 11-33-66 KV	Nos	150	10000	0.15
5	Industrial Neon Testor 11-33-66 KV	Nos	50	17700	0.09
6	Arc Flash Suit	Nos	100	70,000	0.70
7	Emergency siren with hooter alram	Nos	20	6500	0.01
8	Portable LT DB Box with RCCB	Nos	50	5500	0.03
9	Electrical Rescue Stick	Nos	260	15000	0.39
10	PSC Pole Support System	Nos	150	15000	0.23
11	Fire Detection and Alarm System for offices, stores and control rooms	Nos	6	250000	0.15
12	Battery Operated Public Addresing System	Nos	20	12500	0.03
13	Press Fit Fuse Suitable up to 33KV	Nos	750	4260	0.32
14	Virtual Reality Training Headset with Training Module	Nos	16	85000	0.14
15	Shorting Clamp	Nos	600	6500	0.39
16	Fire Safety System at Store (Jeypore, Rayagada, Bhanjanagar)	Nos	3	200000	0.06
17	Safety Innovation Project	Nos	4	300000	0.12
18	Remote Monitoring System	Nos	1	32400000	3.24
	Grand Total (Rs Cr)				**9.7545**

Table 13 : **Safety Equipment procurement in FY 2025-26**

Sl No	Description	Unit	Qty	Unit rate (Rs)	Total Cost (Rs Cr)
1	HoTT (Hand on Technical Training) Center	Set	1	15000000	1.50
2	Discharge Rod for 11-33-66 KV	Nos	150	10000	0.15
3	Industrial Neon Testor 11-33-66 KV	Nos	50	17700	0.09
4	Rubber mat 33KV 3mm Thick	Nos	100	4000	0.04
5	Foldable Stretcher	Nos	300	8650	0.26
6	Arc Flash Suit	Nos	50	70000	0.35
7	Press Fit Fuse Suitable up to 33KV	Nos	1500	4260	0.64
8	Shorting Clamp	Nos	100	6500	0.07
9	Safety Innovation Project	Nos	4	300000	0.12
Grand Total					**3.21**

4.1.1.2 Provision of Electrical Testing Equipment

42. TPSODL has been agile in the adoption of latest technology in the power utility sector. Together with its culture of Consumer Service Excellence, Continuous Learning, Performance Orientation, Innovation and Empowerment, we propose to set benchmarks in accelerated reduction of AT&C losses, improve power reliability, enhance consumer satisfaction and improve employee productivity.

43. Every DISCOM has its own assets which are costly and these assets have to be inspected and maintained periodically to prevent sudden breakdown and its impact on the reliability and consumer satisfaction causing revenue loss to company. TPSODL does periodic maintenance of Lines and equipment and ensure its compliance at all levels to meet Performance Standards.

44. Testing of transformers, switchgear, and protective equipment in the Distribution System is being carried out at intervals for ensuring their serviceability, safety and efficiency.

45. TPSODL needs to maintain Apparatus, Switchgear and electric lines at all times conforming to suitable for being connected to the Distribution System in a safe and reliable manner. Hence Various Electrical Testing Equipment are needed by field staff during preventive maintenance as well as breakdown occurred due to fault in the system.

- **DTR Workshop Equipment**

46. Distribution transformer is one of the major and valuable assets in the power distribution utility. In TPSODL more than 55,000 DTRs are installed over large geographical area. Due to various reasons lots of DTRs are failing in regular intervals. Average failure rate of DTR are approximately FY wise 1800-1900 Nos. Presently the existing DTR work shop do not have adequate electrical equipment, tools & tackles, machinery and maximum repair capacity is limited to 60-70 nos. DTRs repairing per month. Hence it is taking more times for repairing failed DTRs which leads to unavailability of DTRs to restore power supply, increase in SAIDI & SAIFI and customer dissatisfaction. In order to mitigate the above situation, various type of Tools & Tackles is required for repairing and reconditioning of DTRs to enhance the repaired Capacity of DTRs. So, we can improve SAIDI & SAIFI and Customer Satisfaction and mitigate the Scarcity of DTRs. Required Electrical Tools & Tackles listed mentioned in below table –

Table 14 : **DT Workshop Equipment (FY 2024-25)**

SR No.	Name Of Material / equipment	UoM	Propose Quantity	Cost (Rs Cr)
1	Air Drying Oven(3x3x3) M	EA	1	0.30
2	LT Winding Machines	EA	1	0.05
3	HT Winding Machines	EA	1	0.04
4	HT Paper Wrapping Machine	EA	1	0.03
5	Tools & tackles(Wrenches, screw drivers, bolt cutter, Handling Equipment(D Shackles Slings , Hand pallet-4 , Cutter-2 , Grinder-2 , Bench wise-2)	EA		0.06
6	Oil Filter Machine	EA	1	0.10
7	Air Compressor	EA	1	0.01
8	Welding Machine	EA	1	0.02
9	Gas Brazing Set	EA	1	0.01
10	Shearing Machine	EA	1	0.02
11	Weighing Machine	EA	1	0.001
12	Oil storage tank	EA	1	0.08
13	Oil Leakage Test Pressure gauge meter	EA	4	0.001
	Total			**0.70**

- **Meter Testing Equipment**

47. As per OERC Distribution (Conditions of Supply) Code, Chapter 5 Section 111 (iii),

The licensee/Supplier shall also conduct periodical inspection/testing of the meters at site as per the following schedule or earlier: The licensee/supplier may instead of testing the meter at site can remove the meter and replace the same by a tested meter duly tested in an accredited test laboratory.

a) Single Phase Meters	*at least once every five years*
b) LT three Phase meters	*at least once every three years*
c) HT/EHT Meters including MDI	*at least once a year*

48. As per OERC Distribution (Conditions of Supply) Code, Chapter 5 Section 111 (vii),

The Licensee/Supplier shall inspect and check the correctness of meter within 07 working days of receiving the complaint.

Provided that before testing a consumer's meter, the licensee/supplier shall give 3 days advance notice, so that the consumer or authorized representative may be present at testing.

49. Owing to a wide geographical area of TPSODL (48,751 sq. km.) spread across 8 districts which has been bifurcated in to 6 circles,19 subdivisions and 51 subdivisions and scattered consumer base, this requirement has been made for testing equipment. Further, periodic testing of meters ensures accurate recording of energy input to the consumers and als oensures identification of faulty meters & associated equipment.

Table 15 : **Meter Testing Equipment**

SL. NO.	NAME OF ITEM	RANGE	Qty	UNIT Rate (Rs)	Total Cost (Rs Cr)
1	1PH ACCUCHECK (STANDARD METER)	1x240v with clamp on CT	51	38940	0.20
2	3PH LT ACCUCHECK (STANDARD METER)	3x240v with 400/5A clamp on CT	32	119156	0.38
3	3PH HT ACCUCHECK (STANDARD METER)	2X110V/3X63.5V, 1A/5A CLAMP ON CT	6	625518	0.38
4	CRIMPING TOOL		32	1770	0.01
4	CMRI FOR SMART METERS		30	42129	0.13
5	TRMS VALUE MEASURING CLAMP ON METER WITH HIGH ACCURACY AND BETTER INSULATION CLASS, HIGH RANGE	(0 - 200A/1000A)	12	10585	0.01
6	TRMS VALUE MEASURING CLAMP ON METER WITH HIGH ACCURACY AND BETTER INSULATION CLASS, LOW RANGE	(0-1A -5A)	12	10585	0.01
7	IR +PI VALUE MEASUREMENT IN STEPS OF 500 V TO 5KV, INSULATION TESTER(MEGGER)	500v-5KV	12	152220	0.18
9	PRIMARY CT INJECTION KIT WITH LOW AND HIGH CURRENT SETTING	1A-400A/800A	6	93796	0.06
10	PORTABLE PHANTOM LOAD KIT	0-230V AC PER PHASE,3X100AMP	10	313333	0.31
11	PORTABLE LOAD KIT		10	313333	0.31
12	3PH PORTABLE GENERATOR SET	5.5KVA	12	286504	0.34
13	LINE MAN TOOL KIT BAG		44	8555	0.04
15	DRILL MACHINCE AND CUTTER MACHINE FOR FABRICATION AND INSTALLATION OF METERS		44	4419	0.02
	Grand Total				**2.38**

Benefits of Safety Equipment:

50. Safety gadgets, equipment and tools protects its user against any physical harm or hazards that the workplace environment may present.

- It is important because it exists as a preventative measure for industries that are known to be more hazardous, like manufacturing, mining and Electricity.
- Use of safety equipment also increases the quality of your workday and reduce the Man-hour lost due to any kind of injuries or illness

51. TPSODL therefore proposes Capital expenditure for Safety and Electrical Testing Equipment as per the table below

Table 16 Capital Expenditure towards Safety Equipment and Testing Equipment

Sr. No.	Description of Projects	FY 25	FY 26	Total
1	Electrical Safety Equipment	9.75	3.21	12.97
2	Electrical Testing Equipment -DT Workshop	0.70		0.70
3	Electrical Testing Equipment -Meter Testing Equipment	2.38		2.38
4	**Total**	**12.83**	**3.21**	**16.05**

4.1.2 Network Refurbishment for Safety Enhancement

4.1.2.1 Cradle Guard (At Major Road crossings, in Populated area, School area.)

52. Risk Analysis and Risk Control is a major process to identify the factors that may affect the operation and consumer safety. At initial stage, vulnerable location had been identified and these locations were prioritized. These locations largely include substations fencing, putting intermediate pole, provision of cradle guard etc.

53. Cradle guards are provided in overhead MV/HV/LV feeders, by which a live conductor, when accidentally gets broken, is prevented to come in contact with public or animals and vehicles. With cradle guards in place, whenever a live conductor breaks, it first touches the cradle guard thus completing the electrical circuits necessary for the operation of the protection relays installed at substations. This in-turn trips the circuit breaker and danger to any living object is averted. At present, most of the network is overhead and there is no provision of guard or cradle wire installed beneath the overhead conductors for most of the feeders. This poses serious safety threat to the general public and possibility of conductor parting cannot be ruled out. In such a scenario, cradle guard will help in avoiding accidents caused by snapping of conductors of overhead MV feeders. TPSODL proposes to put in place the cradle wire/guard wire at public places, road crossings etc. The summary of the cost estimate is as follows:

Table 17 Capital Expenditure towards Installation of Cradle Guard

Sr. No.	Description of Projects	Location - FY 25	Location - FY 26	Unit Cost FY 25 (Rs Lakhs)	Unit Cost- FY 26 (Rs Lakhs)	FY 25 (Rs Cr)	FY 26 (Rs Cr)
1	Cradle Guard-33 KV	75	75	1.26	1.33	0.94	1.00
2	Cradle Guard-11 KV	75	75	0.98	1.04	0.74	0.78
3	**Total**					**1.68**	**1.78**

54. The Unit rate for Installation of Cradle Guard is provided in **Annexure 3 : Bill of Quantities**

4.1.2.2 Construction of Fencing for DSS and Boundary Wall for PSS

55. Distribution Substation are located at various scattered locations along the Road, public places, near the commercial areas etc catering the power supply requirement to the consumers. During the survey, it is observed that fencing is either damaged or do not exist for many DSS thus posing a safety threat to stray animals and public at large. Hence it is proposed for Construction of fencing for DSS, wherever required.

56. In addition, Distribution Substation (DSS) comprises of various equipment which perform specific task to ensure delivery of power supply at appropriate voltage to the end consumers. The main components are 11 kV Switching device, 11 kV Protection, Transformer, LV Protection, Earthing, fencing and O/G LV feeders. The most expensive equipment in the DSS is the Transformer and its life depends upon healthy condition of all other components be it LV Protection, HV Protection, Earthing or fencing. Thus, fencing is one of the most important parts which ensures overall first-hand protection of the transformer. Therefore, installation of fencing to safeguard the DSS equipment and to maintain safety clearances is one of the major needs.

57. At many of the places it was found that the condition of the Boundarywall for PSS was very bad or at certain places, the wall was not existing. Ensuring safety of People & equipment is verymuch needed for safe operation. Hence it is proposed for construction of Boundary wall of PSS, wherever required. In addition, there is a need at various PSS to provide gravelling, and fencing of switchyard area and improve the draining system inside the PSS.

Benefits:

58. The Benefits of DSS fencing/PSS Boundary Wall would be as follows:

- It will benefit by improving the safety of people, DSS equipment failure will be reduced, hence power cuts will decrease.
- Safety of general public and stray animals.

59. The summary of the cost estimate is as follows:

Table 18 Capital Expenditure towards Fencing of DSS and PSS

Sr No	Activity	UOM	Avg Estimated Cost per Unit Rs.	Quantity		Amount		Remarks
				FY25	FY26	Rs Cr	Rs Cr	
1	DTR Fencing	Rm	8600	7000	6580	6.02	5.66	Conventional Brick Masonry
2	DTR Fencing	Rm	7000	2800	2650	1.96	1.86	Chain link
3	DTR Fencing	Rm	3820	5300	6500	2.02	2.48	Barbed wire
4	**Sub Total**					**10.00**	**10.00**	
5	Boundary wall	Rm	16500	1818	1818	3.00	3.00	
6	Switchyard Development- Gravelling, Chain Link Fencing and Drainage at PSS	No	428570	35	35	1.5	1.5	
	Total					**14.50**	**14.50**	

4.1.2.3 Intermediate poles for unsafe to safe location

Existing Scenario

60. TPSODL spanning over a geographical area of sq.km has a vast network having 33 KV O/H Network of approximately 4062 Ckt. KMs, 11Kv O/H network of approximately 45400 Ckt Kms & LT O/H networks of 39896 CKMs. There have been several irregularities in the span length of these networks where the span length also found more than 70 m at some places. These large span lengths have resulted in:

- Sagging of conductors.
- Low ground clearances - vertical clearance of conductor from ground is lower than the permissible limits of 5.5 m (for LT Lines) and 5.8 m (for HT Lines).
- Accidents due to sagging & low ground clearances.

61. To overcome such scenarios, where the span length is on the higher side, it is of utmost importance to provide intermediate poles in between the spans. The addition of intermediate poles will address the issue of sagging, low ground clearances & accidents caused due to this. To ensure safe and reliable power supply to end consumers TPSODL proposes addition of intermediate poles in 33kV and 11kV lines in phased manner emphasizing critical areas such as schools, hospitals, markets and other key installations.

4.1.2.4 Four Pole Structure along with AB Switches for N-1 arrangement for feeders:

62. At present there are many 11kv feeders which can be interlinked with one another to enable N-1 arrangement through temporary arrangement by connecting Jumper in case of interruption occurs in any one of the feeders. Thereby the interrupted feeder can be back fed by another feeder to maintain reliability and restore the power supply to affected area fully or partially. But it takes long time as the field staff use to connect the jumpering to both the feeders by taking shutdown and safety zone creation for both the feeders. As a result, the consumers of both feeders are affected for long time. Besides taking long time it is also unsafe for operation.

63. Hence, we have proposed Four pole arrangement with AB switches to connect both the feeders to enable N-1 arrangement. This arrangement will enable efficient and safe operation and also help in quick restoration of supply by providing N-1 arrangement

64. The details of intermediate poles and four pole structures considered in FY2024-25 & FY 2025-26 proposal are given below:

Table 19: Capital Cost for providing Intermediary Poles

Sr. No.	Description of Projects	UOM	Unit Cost(in Rs.) for FY 2024-25	Unit Cost(in Rs.) for FY 2024-25	Qty FY 25	Qty FY 26	Amt -FY 25 (Rs Cr)	Amt -FY 26 (Rs Cr)
1	Intermediate poles for vulnerable location(33kv Line) -13 M WPB	Nos.	74639	79117.34	73	72	0.54	0.57
2	Intermediate poles for vulnerable location(33kv Line) -11 M WPB	Nos.	64101	67947.06	200	200	1.28	1.36
3	Intermediate poles for vulnerable location(33kv Line) -10 M PSC	Nos.	29922	31717.32	21		0.06	0.00
4	Intermediate poles for vulnerable location(11 kv Line) - 13 M WPB	Nos.	70931	75186.86	3		0.02	0.00
5	Intermediate poles for vulnerable location(11 kv Line) - 11 M WPB	Nos.	60392	64015.52	390	392	2.36	2.51
6	Intermediate poles for vulnerable location(11 kv Line) - 9 M WPB	Nos.	52450	55597	205	190	1.08	1.06
7	Intermediate poles for vulnerable location(11 kv Line) - 9 M PSC	Nos.	19056	20199.36	800	800	1.52	1.62
8	Intermediate poles for vulnerable location (LT Line) - 11 M WPB	Nos.	58162	61651.72	2		0.01	0.00
9	Intermediate poles for vulnerable location (LT Line) - 9 M PSC	Nos.	16826	17835.56	200	200	0.34	0.36
10	Intermediate poles for vulnerable location (LT Line) - 8 M PSC	Nos.	12865	13636.9	337	330	0.43	0.45
11	11 mtr. WPB 4-Pole Arrangement for unsafe N-1 connection	Nos.	464966	492863.96	10	10	0.46	0.49
	Total				**2241**	**2194**	**8.11**	**8.41**

4.1.2.5 Summary of Network Refurbishment for Safety Enhancement

65. Accordingly, TPSODL proposes Capital expenditure of **Rs 24.29 Cr**. for FY 2024-25 & **Rs 24.68 Cr**. For FY 2025-26 for Network Refurbishment for Safety Enhancement as below.

Table 20: Summary of Capital Expenditure towards Network Refurbishment for Safety (Rs Cr)

Sr No	Activity	FY 25	FY 26	Total
1	Cradle guard at major road crossings,Populated area, School area	1.68	1.78	3.46
2	Fencing of Distribution substations (DSS), Switchyard & Boundary Wall at PSS	14.50	14.50	29.00
3	Intermediate poles and 4 Pole Arrangement for vulnerable location	8.11	8.41	16.52
4	**Sub Total- Statutory & Safety (1)**	**24.29**	**24.68**	**48.98**

4.1.2.6 Summary of Expenditure under Safety

66. Considering the above estimates, the total estimated expenditure under Safety proposed for FY 2024-25 and FY 2025-26 is as follows:

Table 21: Capital Expenidture under Statutory amd Safety

Sr No	Activity	FY 25	FY 26	Total
1	Safety & Electrical Testing Equiment	12.83	3.21	16.05
2	Network Safety	24.29	24.68	48.98
3	**Sub Total- Statutory & Safety (1)**	**37.13**	**27.90**	**65.03**

4.2 LOSS REDUCTION

67. Technical & Non-Technical Losses (commercial) constitute the AT&C losses of the Distribution company. The technical losses are due to energy dissipated in the conductors of distribution line and equipment in Network System. Further, Technical losses are directly dependent on the network characteristics such as lengthy distribution lines, overloading of the Line, inadequate size of conductors, Unequal load distribution on 3 phases of the line, poor workmanship, old conductor having multiple joints.

68. More over in TPSODL, it is also observed that, meters are not installed on some of the Feeders & many Distribution Transformers leading to difficulties in Energy Accounting. As a result, it is not possible to determine energy input accurately and hence we are unable to measure AT&C losses at each level. Energy accounting provides the means to identify areas of leakages, wastage and inefficient energy usage Under this head, following activities are proposed:

- LT Bare to LT ABC Conversion
- Feeder Meter for Energy Audit including Metering for Energy Auditing at T-OFF and DT Metering
- GIS Integration

4.2.1 LT Bare Line to ABC conversion

69. In TPSODL, LT network plays important role of the Power supply distribution system and spread across TPSODL licensed area for power distribution. Presently Bare conductor is used for around 28 % LT network. These bare conductor lines are more subject to electricity theft through direct hooking and thus causing revenue leakage in the system. Hence bare to ABC conversion has been planned in theft prone areas from last few years to reduce thefts. A length of 54 Ckt Km is proposed in FY 2024-25 and in FY 2025-26 a length of 51 Ckt Km is proposed for bare to ABC

Conversion This will also help in preventing transient fault in LT network and improve safety.

Benefits:

70. By executing the proposals as made in this head, 415V network can be strengthened and we would be able to serve our consumers in much better way. Following benefits are envisaged from this investment:

- Reliable Power supply to the Consumers since bare conductor will get converted into insulated cable.
- Comparatively safer than the LT Bare conductor and eliminate the element of risk if one comes in close proximity.
- Simpler installation, as crossbars and insulators are not required.
- Suitable for congested lanes as well.
- Electricity theft will be difficult as hooking would not be possible.
- Less required maintenance and necessary inspections of lines.

71. Total estimated cost for LT Bare to AB Conversion proposed for FY 2024-25 & for FY 2025-26 is as given in the table below

Table 22 Capital Expenditure conversion of LT Bare ABC in FY 2024-25 & 2025-26

			Unit Cost (Rs Lakhs)		Quantity		Cost (Rs Cr)		
Sr. No.	Description of Projects	UOM	FY 25	FY 26	FY 25	FY 26	FY 25	FY 26	Total Amount(in Cr.)
1	LT Bare to ABC Conversion (95 sqmm)	CKM	9.83	10.42	15	15	1.47	1.56	3.04
2	LT Bare to ABC Conversion (50 sqmm)	CKM	7.21	7.65	26	26	1.88	2.00	3.87
3	LT Bare to ABC Conversion (35 sqmm)	CKM	6.64	7.04	13	10	0.86	0.70	1.57
	Total				**54**	**51**	**4.21**	**4.26**	**8.48**

72. The Unit rate for conversion from LT Bare to ABC is provided in Annexure 3 : Bill of Quantities

4.2.2 Feeder Meter for Energy Audit

73. As per the, Gazette Notification of the Government of India, Bureau of Energy Efficiency, Ministry of Power, Government of India issued for Conduct of Energy Audit in Electricity Distribution Companies under the purview of Energy Conservation Act, 2001, has released the following notifications:

- **Notification Number 18/1/BEE/DISCOM/2021 dated: 06th Oct 2021 (Mentioned in the annexure No- 9.2.7),** which requires TPSODL to install meters on all feeders and provides broad framework for conduct of Annual Energy Audit and Quarterly Periodic Energy Accounting with necessary Pre-requisites and reporting requirements to be met.
- **Notification Number 18/1/BEE/DISCOM/2022 dated: 28th Oct 2022)** which requires TPSODL to install meters on all Distribution transformer above 25KVA for conduct of Annual Energy Audit and Quarterly Periodic Energy Accounting with necessary Pre-requisites and reporting requirements to be met.

74. We need to also install boundary meters for the accurate energy computation of Division/Sub-division wise Losses so that we can get to the true picture of loss prone area and accordingly take steps to minimize the loss.

75. As per section 5 of above-mentioned notification, one of the pre-requisites is to ensure the installation of functional meters for all consumers, transformers and feeders and verification of accounted energy flow submitted by electricity distribution company at all applicable voltage levels of the distribution network.

76. The notification(**18/1/BEE/DISCOM/2021)** provides us the Trajectory for Meter Installation under first schedule, which states "100% Communicable Feeder Metering integrated with AMI, by 31st December 2022 along-with replacement of existing non-communicable feeder meters "and the notification (18/1/BEE/DISCOM/2022) provides us the Trajectory for Meter Installation under first schedule, which states "All Distribution Transformers above 25KVA shall be metered with communicable meters by December 2023". As per Section 7 of above-mentioned notification (**18/1/BEE/DISCOM/2021)**, manner to conduct energy audit includes verification of accounted energy flow submitted by TPSODL at all applicable voltage levels of the distribution network.

77. As per these regulations, TPSODL shall conduct an annual energy audit for every financial year and submit the annual energy audit report to the Bureau of Energy Efficiency (BEE) and respective State Designated Agency and also be made

available on the website of TPSODL within a period of four months from the expiry of the relevant financial year.

78. TPSODL would need feeder metering and DSS metering to ensure the complete distribution network is metered at all receiving as well as sending end. This would enable TPSODL to generate energy audit reports feeder-wise for all the feeders. These reports will provide detailed information about electricity consumption by different categories of consumers & the transmission and distribution losses in various sub-divisions, divisions and circles.

79. Currently since not all the 33KV and 11KV feeders are metered, and the consumer-wise mapping to respective feeders for various categories of consumers is not updated / accurate, it is difficult to generate accurate energy audit reports to get specific insights about the distribution network to identify areas of high loses and theft and enable corrective action (as required).

80. A good and effective Energy Audit system would need all the 33KV and 11KV outgoing feeders as well as Distribution Transformers to be metered with relevant metering system. This would allow TPSODL to have a very comprehensive and effective EA system which would help TPSODL, as corrective actions can be planned & implemented to ensure that technical and financial losses are minimized.

81. Energy accounting would consider all energy inflows at various voltage levels in the distribution network, including renewable energy generation (solar) and open access consumers, as well as energy consumption by the end consumers. Energy audit would help TPSODL to identify areas of high loss and pilferage, and thereafter focused efforts to take corrective action; as well as help to take informed decisions about augmenting the network after insights about overloaded network segments.

Benefits:

a. To help develop comprehensive energy accounting system to quantify and determine actual losses in the power distribution system, segregated across technical and commercial losses.
b. Identify areas of leakage, theft, wastage or inefficient use, thereby further helping to reduce high Transmission and Distribution (T&D) losses.

c. To enable TPSODL to undertake targeted efficiency improvement activities to reduce T&D losses in target areas / customer segments.
d. Identification of overloaded feeders, sections / DTRs of the network for necessary capacity additions in future.
e. It can provide insights for TPSODL to further prioritize energy capital investments and help budget more accurately to achieve maximum results.
f. Energy Audit monitoring system would enable TPSODL to assess correct and accurate distribution loss levels
g. Appropriate corrective actions can be planned & implemented to ensure that technical and financial losses are minimized

Table 23 Investment for FY 2023-24 Road Map of Energy Audit Programme

				Qty		Unit Price (Rs Lakhs)		Cost (Rs Cr)	
Sr No	Voltage	Particulars	Units	FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	33KV	Smart Metering for 33KV Outgoing Feeder from Primary Sub-Station (PSS) without DP	No	81		1.70		1.38	0.00
2	33KV	Smart Metering for 33KV Outgoing Feeder from Primary Sub-Station (PSS) with DP		89		2.07		1.84	0.00
3	33KV	33KV Consumer Metering for Energy Auditing at T-OFF	No	0	140		2.20	0.00	3.07
4	440V	Smart Metering in Distribution Transformer equal & above 25KVA	No	3340	7885	0.11	0.11	3.77	8.89
5	440V	10Core 2.5Sqmm Control Cable for Smart Metering in Distribution Transformer	Mtr	16700	39425	0.00	0.00	0.55	1.30
6	440V	Ring type current transformer (CT) for Smart Metering in Distribution Transformer	No	13360	31540	0.02	0.02	2.16	5.10
7		**Total**						**9.70**	**18.36**

4.2.3 GIS for Asset Mapping

82. GIS has been implemented for 3 circles (i.e City, Aska and Berhampur) and GIS system is also live for users of these circles. Presently Implementation of GIS in rest of 3 circles (Bhanjanagar, Rayagada and Jeypore) is in progress and will be completed in FY 2023- 24. GIS system is also integrated with external systems like Energy Audit (UDS), Cyme, ADMS and billing database (FG).

83. To make GIS system more useful to multiple departments and GIS database updated as per execution of new Capex works on field, we are proposing the following schemes to be implemented in FY 2024-25 and FY 2025-26. The details of schemes and associated estimated cost inclusive taxs are tabulated below for FY 25 and FY 26.

Table 24 Expenditure proposed for GIS in FY 2024-25 & 2025-26

Sr No	Scheme	Scheme Description	FY 25	FY 26
1	Software Application Development	Development of new applications for emerging business requirements from multiple departments in Mobile, Web and Desktop platform.	0.50	1.00
2	Survey, Mapping, Digitization & Migration of New Assets added across TPSODL	Mapping of New Assets which are implemented as part of Capex Works across 6 circles of TPSODL	3.00	3.00
3	GIS-SAP Integration	Integration of PM module with GIS system for 6 circles of TPSODL	0.50	
4		**Total**	**4**	**4**

Benefits:

- New GIS applications which will be developed in FY-25 & FY-26 as per emerging business requirements from multiple departments will increase their productivity on field and within office.
- GIS system will help to serve customer for better resolution of complaints
- GIS system will help O&M team for reliability of network.
- GIS-SAP Integration will help DOS & STS teams for schedule maintenance of Assets & managing their assets and Finance Team for Fixed Asset Register.
- GIS System will help NEP team for load analysis, analysis of low voltage and calculation of technical loss through GIS & Cyme Integration.
- GIS system will help PSCC and Automation team to provide visibility of 33 KV network to 11 KV to consumer meter point through GIS & ADMS integration.
- GIS System will enable mapping of all the assets & customers, enables quick services in case of breakdown of network.
- GIS applications will aid in collection, monitoring and management and consequently reduce the commercial losses.

4.2.4 Summary of Capital Expenditure for FY 2024-25 & 2025-26 under Loss Reduction category:

84. The summary of the Expenditure under Loss Reduction Category is as given in the Table below

Table 25 Summary of Capital Expenditure under Loss Reduction (Rs Cr)

Sr No	Activity	FY 25	FY 26	Total
1	LT Bare to ABC Conversion	4.21	4.26	8.48
2	Feeder & DT Metering for Energy Audit	9.70	18.36	28.06
3	GIS Integration	4.00	4.00	8.00
4	**Sub Total- Loss Reduction (2)**	**17.92**	**26.62**	**44.53**

4.3 NETWORK RELIABILITY

85. Reliability of a power distribution system is the ability to deliver uninterrupted service to customer. Distribution system reliability indices can be presented in many ways to reflect the reliability of individual customers, feeders and system-oriented indices related to substation. TPSODL have 147 numbers of 33 KV feeders emanating from 37 Nos. of GSS having total length of 4062 CKM. These feeders are connecting directly or by tapping/LILO to 250 numbers of 33/11kV Primary Substations.

86. Further, 910 numbers of 11KV feeders are emanating from these PSS which are spread across 48,751 Sq. KM of vast distribution area of TPSODL which are feeding supply to about 22.75 lakhs of consumer. Large nos. of these feeders are lengthy.

87. Most faults that occur on overhead lines are transient faults caused by lightning and tree branches touching the live line conductor. The transient fault caused by lightning results in damage to insulators if lightning arresters are not provided or not working. Transient faults caused by tree branches interfering with line conductor are removed immediately by operation of a protection relay.

88. Regular inspection of feeders followed by tree trimming helps to minimize transient faults and in most cases trial recloser are found to be successful in feeder with higher transient fault. However, each time the feeders are tripped due to transient fault, all customers connected to the feeder experience outage. Utilities at times find it difficult to identify the exact reason of the fault. In a long distribution feeder with many unprotected branches, it becomes difficult to identify the faulty and healthy sections of the feeder. TPSODL has planned few auto reclosers, sectionalizes, and fault passage indicators to improve the reliability of overhead feeders in Capex FY24 and FY25 proposals. Apart from installing the above stated equipment, it is also planned to introduce AB switches at 33kV & 11kV long feeders so as to sectionalize

at the appropriate location for any planned / unplanned shutdown thereby reducing the no. of affected consumers.

89. As discussed earlier, most of the LT feeders emanating from 11/0.415/0.230kV distribution substations don't have protection. As a result, fault in any one LT circuit is likely to affect the supply of all customers connected on the same DTR. Also, isolation facility (with the help of MCBs or Fuses) is not available to segregate LT feeders. To overcome this situation, TPSODL is planning to provide Molded Case Circuit Breakers (MCCB) on LT feeders for control and protection of the feeder. Various initiatives proposed to improve the reliability of power supply in 11kV and downstream network are given below TPSODL intends to implement the following actions in phased manner to improve the reliability of power supply

i. Refurbishment of 33/11kV Primary Substations (Station Transformer & Bus coupler arrangements at PSS, PSS Earthing Enhancement)
ii. PSS Refurbishment for SCADA implementation in Conventional Non ODSSP PSS
iii. Upgradation of 33 KV & 11 KV Line
iv. 33 & 11 KV New Lines for reliable power supply
v. Conversion of 33 & 11KV Bare O/H to Covered Conductor
vi. UG Cabling work at few span of 33KV & 11KV Line
vii. Installation of 33&11KV Autorecloser, Sectionaliser, Communicable, Non Communicable FPI & RMU.
viii. DSS Refurbishment (Replacement of damaged AB Switch, HG Fuse, LA, Earthing, Plinth & DP) & Installation of LV protection at DSS.
ix. Installation of DP, 4 Pole & PC Type Tower for River Crossing

90. In addition, TPSODL has carried out the Load flow Studies considering on five-year load growth. The Network Analysis and actions planned have been based on the five-year load growth. The Load Flow study report is attached as **Annexure 4 : Load Flow Study Report.**

4.3.1 Refurbishment of 33/11kV Primary Substations Station and SCADA Implementation

91. The Scope of work for the scheme is divided into 3 categories:

- Revamping/Retrofitting/addition of components in Conventional old Non ODSSP PSS.
- Civil works in Old Non ODSSP PSS
- Automation of old Non ODSSP PSS

92. SCADA implementation will help in better network management triggered by remote operations & monitoring of the sub-stations. To harness the remote management capabilities of these sub-stations, they should be integrated to SCADA. With this, all the sub-stations shall be connected to a centralized control center for the purpose of remote monitoring, control & operations. SCADA implementation shall not only help in efficiently managing the load but also reduce the system downtime.

93. TPSODL has planned to automate all Primary Substations (PSS) and monitor them remotely through a SCADA center in a phased manner. PSS constructed recently under ODSSP scheme are compatible for integration with SCADA however older PSS (Non ODSSP) are not compatible for SCADA integration. To make these PSS ready for SCADA integration, additional upgradation activities need to be undertaken for PSS equipment such as upgradation of old Control Relay Panels (CRP) with state-of-the-art CRP panels, replacement of defective/obsolete equipment, installation of transformer monitoring units, RMUs, isolators, FPI, FRTUs and RTUs for remote monitoring and control by the SCADA system The benefits of SCADA implementation are as below:

- Quick decision making for restoration of faults
- FACT based energization/ restoration
- Centralized PSCC taking all the decisions for charging/ restoration
- Human intervention free system at sub-station level
- The unmanning substation provided required manpower for manning other stations as per statutory requirement
- Safety for operators/ public who were visiting sub-stations for complaint/ operation/ commercial purposes.

94. Primary substation automation requires replacement of 33 / 11 KV control and relay panel with new panels fitted with state-of-art IEDs and data concentrator. These stations shall be equipped with devices to make all control, monitoring and

protection signal available at remote control Centre for efficient control and monitoring of electrical network.

95. TPSODL proposes to cover automation of all conventional PSS complete by FY 25. Phase wise Automation plan of total Non ODSSP PSS is as follows:

Table 26 Planning of SCADA at various PSS in FY 2024-25

PSS SCADA Work Year Wise Proposal						
S. No.	Phases	Substation Type	Nos of PSS for SCADA implementation			Total Nos of Substation Covered
			Urban	Rural	NAC	
1	Phase 1 FY 21-22	ODSSP	0	80	0	80
		Conventional	10	0	0	10
2	Phase 2 FY 22-23	ODSSP	0	19	0	19
		Conventional	13	0	22	35
3	Phase 3 FY 23 -24	ODSSP	0	0	0	0
		Conventional	0	31	20	51
4	Phase 4 FY 24-25	ODSSP	0	0	0	0
		Conventional	0	59	0	59
		TOTAL	**23**	**189**	**42**	**254**

96. TPSODL has undertaken Automation of Conventional PSS in last three years and plan to complete 195 PSS by FY 2023-24 balance 59 nos of PSS automation is planned in FY2024-25 as given below

Table 27 List of PSS where PSS refurbishment will be carried out in FY 2024-25

PSS Refurbishment Electrical Works Under CAPEX FY 2024-25			
S.No.	Circle	Division	PSS Name
1	Bhanjanagar	BOED	Charichak
2	Bhanjanagar	BOED	Janapank
3	Bhanjanagar	BNED	Bhanjanagar
4	Bhanjanagar	BNED	K. B. Pur
5	Bhanjanagar	BNED	Sorada
6	Bhanjanagar	BNED	Tilisingi
7	Bhanjanagar	PED	Chakapada
8	Bhanjanagar	PED	Kalinga
9	Bhanjanagar	PED	Kotagada
10	Bhanjanagar	PED	Sankarakhola
11	Bhanjanagar	PED	Tikabali
12	Bhanjanagar	PED	Tumudibandha
13	Berhampur	GNED	KANHEIPUR
14	Berhampur	GNED	Humma
15	Rayagada	RED Rayagada	DANGA SARADA
16	Rayagada	RED Rayagada	HATA MUNIGUDA
17	Rayagada	RED Rayagada	KUMAR DHAMUNI
18	Rayagada	RED Rayagada	MITS MEGA FOOD PARK
19	Rayagada	RED Rayagada	NUAPADA
20	Rayagada	RED Rayagada	SORISAPADAR
21	Rayagada	RED Rayagada	THERUBALI
22	Rayagada	GED Gunupur	BIKRAMPUR
23	Rayagada	GED Gunupur	GUMUDA
24	Rayagada	GED Gunupur	MINAJHOLA
25	Rayagada	GED Gunupur	RAMANAGUDA
26	Rayagada	GED Gunupur	UKKUMBA
27	Rayagada	PKED	BRAHMANIGAM
28	Rayagada	PKED	CHHELIGADA
29	Rayagada	PKED	GARABANDHA
30	Rayagada	PKED	GUMMA
31	Rayagada	PKED	MOHANA
32	Rayagada	PKED	RAIGADA
33	Rayagada	PKED	UPALADA
34	Jeypore	JED	B.SINGPUR
35	Jeypore	JED	BAIPARIGUDA
36	Jeypore	JED	DANGAGUDA
37	Jeypore	JED	KUNDRA
38	Jeypore	JED	KUSUMI
39	Jeypore	KED	ANALA BADI
40	Jeypore	KED	BANDHUGAON
41	Jeypore	KED	BILEIGUDA
42	Jeypore	KED	DASMANTPUR
43	Jeypore	KED	KAKRIGUMA
44	Jeypore	KED	KOLAB NAGAR
45	Jeypore	KED	NARAYANAPATNA
46	Jeypore	KED	POTTANGI
47	Jeypore	MED	Chitrakonda
48	Jeypore	MED	K.M.GUMMA
49	Jeypore	MED	KHAIRAPUT
50	Jeypore	MED	KORUKONDA
51	Jeypore	MED	MV.79
52	Jeypore	MED	PANDRIPANI
53	Jeypore	NED	DABUGAON
54	Jeypore	NED	JHARIGAM
55	Jeypore	NED	KOSAGUMUDA
56	Jeypore	NED	NANDAHANDI
57	Jeypore	NED	PAPADAHANDI
58	Jeypore	NED	TANDAGUDA
59	Jeypore	NED	TENTULIKHUNTI

97. Detailed site visit has been carried out and scope of work for these 58 nos. of old PSS is captured. Further, Automation of 01 no. of PSS (planned to shifted under shifting work by NHAI) to be taken up later.

Scope of work:

4.3.1.1 Revamping / Retrofitting/addition of components in Conventional Non ODSSP PSS:

98. Capital investment is proposed to replacethe faulty / defective equipment and addition of components at these substations. These substations are manned at present and operation is being taken care by the substation operators stationed at these primary substations.

99. All these PSS are proposed to be revamped, automated and shall be remotely monitored by SCADA Centre. Circuit breakers, CRP, Isolator, AB Switch, CTs/PTs, DCDB, ACDB, Battery and Chargers are found defective or Nonfunctional at some of the PSS. These defective equipment needs to be replaced. There are many PSS at which few equipment such as Isolators, Battery Chargers etc need to be added. The existing earthing system is in very bad condition. This puts the basic protection system at bay and there are chances of major damage to substation capital intensive equipment if the defects are not attended / addressed urgently. To make these 59 nos. substations operational from SCADA, certain refurbishment jobs are considered at ànt PSS (based on specific requirement identified for each PSS through site visits) which includes:

- Replacement/addition of 33KV and 11 KV Circuit Breakers.
- Replacement/addition of 33KV Indoor/Outdoor Control & Relay Panel
- Replacement/addition of 33KV and 11KV CT, PT
- Replacement/addition of 33KV and 11KV Isolator, AB Switches, LA.
- Addition of Transformer monitoring units (TMU) for 5 MVA & Above PTRs
- Replacement/addition of Battery and Battery Charger.
- Replacement/addition of DCDB/ACDB.
- Earthing System revamping
- Replacement/addition of Mounting Structure
- Control/Power Cables

Benefits of Refurbishment of substations:

- Improvement of voltage profile.
- Reduction in number of outages
- Increase in vertical clearances
- Reduction in equipment downtime
- Reduction in unserved energy
- Enhanced reliability of power supply
- Reduction in number of accidents.
- Ease of Operation and Operational flexibility

Station Transformer at PSS

100. Station transformers steps down the voltage from 33KV to 415V and supply the power to the electrical auxiliaries present in the substations. Station or Auxiliary transformer is used to supply low voltage for AC power system inside substation such as lighting, air conditioners and DC battery chargers etc The KVA ratings of station transformers are normally 100 KVA and it is connected to the 33 KV Main /Transfer Bus bar in the Grid substation with required protection & control.

101. In few of the TPSODL PSS, Auxiliary transformers are old and in damaged conditions or connected at 11KV with rating 11/.433 KV which is not too reliable due to the frequent tripping of the 11KV feeders. Hence, it is proposed to install or replace Station Transformers at **10 Nos** PSS.

102. The Unit Rate for the station transformer is Rs 9.11 Lakh. The detailed Unit Rate computation is provided in **Annexure 3 : Bill of Quantities** Accordingly, the capital expenditure proposed under this category is **Rs 0.91 Crores**.

Earthing of PSS

103. In an electrical installation, earthing system play important role for proper working of the power distribution system, and protection of human beings against electric shock. Metal frame of all power distribution equipment are connected with the general mass of the earth which is always at zero potential. It's worth mentioning that the general mass of the earth doesn't have any resistance. In case the earthing of any power equipment or network becomes weak or defective due to corroded connections or damaged connection, clearance of fault may take more time and

putting stress on the equipment connected in the network. During the site visits, it is observed that at some of the places proper earthing was not evident and at some of the 33/11KV primary substation, earthing is not adequate. Further the condition of earthing in old installations is observed to be bad due to depletion of earthing electrodes/spikes and connections. Therefore, there is urgent need to strengthen the earthing system to ensure safety of man and material. TPSODL proposes to strengthen the earthing system by introducing new earthing pits in some of the PSS as part of refurbishment activity. This will enhance life not only of equipment but shall also help in proper functioning of protection relays.

104. The estimated cost of earthing at 42 PSS in two years i.e FY 2024-25 and FY 2025-26 is estimated to be Rs 1.02 Crores for each year

Summary of PSS Refurbishment (Electrical)

105. Based on the above estimates, the cost of Refurbishment in the two years is as given in table below

Table 28 Cost for PSS Refurbishment (Electrical)

S.No.	Description of projects	UOM	Qty		Unit Rate (Rs Lakhs)		Cost (Rs Cr)	
			FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	PSS Refurbishment Electrical Works	Nos of PSS	58				61.39	
2	Station Transformer	Nos of PSS	10		9.11		0.91	0.00
3	PSS Earthing Enhancement	Nos of PSS	21	21	4.86	4.86	1.02	1.02
4	**Total**						**63.32**	**1.02**

4.3.1.2 Civil works in Old Non ODSSP PSS:

106. At many 33/11 KV primary substations, PSS buildings are either in bad condition failing to provide weather proof environment to house the operating personnel & valuable equipment's. These structures need immediate attention with major repairs to existing PSS structures or new structure where existing PSS are beyond repairs. Further considering terrain, TPSODL is prone to natural disaster, water logging at switch yard & its periphery is one of the reasons for degradation of outdoor panels & costly Substation equipment. Hence complete overhauling of the drainage system at these PSS are the need of the hour. The metal gravelling at some PSS also needs

to be done. In order to optimize Civil cost for Automation purpose, it is plan to use outdoor CRP in 42 nos rural PSS there by eliminating requirement of civil works.

107. Civil works are planned in 16nos of Urban PSS as given below:

- Control Room Building renovation.
- Drainage System to eliminate water logging in switchyard and other areas
- Switchyard development and spreading of gravels
- Cable Trench for Cable laying from switchyard to control room

Table 29 Cost for PSS Refurbishment (Electrical) in FY 2024-25

S. No.	Item	MOU	QTY	Cost -FY 25
1	Civil works in Non-ODSSP PSS for SCADA	Nos of PSS	16	3.23
	Total			**3.23**

4.3.1.3 SCADA Implementation with Automation of conventional PSS & DSS

108. TPSODL has made significant progress on implementation of SCADA and brought 115 PSS till date on SCADA which enables operators to monitor & control the PSS and network from Power System Control Centre (PSCC). TPSODL plans to bring 150 PSS (out of about 254) on SCADA by the end of FY 24, out of which 55 PSS will be conventional PSS and 95 are ODSSP PSS.

109. It is planned to Automate balance 59 conventional PSS and integrate these PSS with centralized SCADA for remote monitoring, control and real time operations from Power System Control Centre in FY 2025 – 2026.

110. Proposed Remote Terminal Unit (RTU) shall communicate with the SCADA System through ethernet switches over IEC 60870-5-104 protocol for real time status of the switchyard and other accessories in the substation. All IEDs/Relays communicate on IEC 61850 protocol with RTU which optimizes the hard-wired signals so that copper wiring is reduced to a large extent.

111. At few of the PSS locations the control rooms are very small in area and the space is insufficient to accommodate the CRP and RTU panels inside control room.

Additional new building construction for rural substations is a costly as well as time taking proposition. To expedite the PSS automation as well as adopting a cost-effective method to house the RTU and Auxiliary power DBs, Kiosks are proposed to be installed at PSS along with outdoor CRP for each bay which will reduce the LT power and control cabling significantly. It is proposed to cover automation of all conventional PSS over next 2 years and complete the SCADA implementation for all PSS by FY26.

112. TPSODL has taken up ADMS (Advanced Distribution Management System) implementation by integrating GIS (Geographical Information System) using GIS adapter. GIS data of three circles has already been integrated with ADMS and further modeling and integration is planned to be completed in FY25.

113. TPSODL has planned to implement distribution automation for RMUs / Autoresclosers & Sectionalizers at DSS as well as for the 11kV network which are proposed to be commissioned at critical locations in the distribution network. These equipment are proposed to be integrated with ADMS which will provide 11kV network visibility for remote monitoring and control.

114. Distribution Automation, SCADA & ADMS with integration of GIS will derive benefits of Outage Management System by integrating CIS (Customer Information System) & Smart Metering system (MDMS). These integrated systems will significantly improve operational efficiency, safety, system reliability and reduce the losses as well as down time of network equipment in TPSODL's power distribution system.

115. Accordingly following is being proposed:

Table 30 Proposal for Automation

Proposal for SCADA & Automation				
S. No.	Item	Unit Rate Rs Lakhs	QTY	Amount in Rs Cr
A	FY 2024-25			
1	SCADA implementation for Non ODSSP PSS	15	59	8.85
2	Implementation of Distribution Automation (RMUs /ARCs/FPIs)	0.02	90	0.018
3	RTU accessories	4	28	1.12
	Total			**9.99**
B	FY 2025-26			
6	Implementation of Distribution Automation (RMUs /ARCs/FPIs)	0.02	110	0.022
7	Replacement of obsolete equipment like network switches and RTUs at 45 number of PSS	10	45	4.5
8	Setting up a system at PSCC end for Remote relay parameterization & fetching Disturbance Records	100	1	1
	Total			**5.52**

*** The Unit rates are inclusive of taxes and are taken from either competitively discovered rates in FY 23/24 and against which orders have been placed or prevailing market rates. We have taken reasonable escalation in the unit rates to accommodate the unknown developments and semi-conductor crisis that is affecting the industry currently.*

Benefits:

116. The higher level of automation in the distribution network will ensure quick detection of fault, segregation of faulty equipment and restoration of supply through SCADA. The integrated SCADA & Automation systems will significantly improve operational efficiency, safety, system reliability and reduce the losses as well as down time of network equipment in TPSODL's power distribution system.

4.3.1.4 Summary of Cost of PSS Refurbishment and SCADA Implemenation:

117. The summary of the cost of PSS Refurbishment and SCADA implementation is as given in the table below

Table 31 Summary of PSS Refurbishment and SCADA implemenation

S.No.	Description of projects	Cost (Rs Cr)	
		FY 25	FY 26
1	PSS Refurbishment -Electrical Works	63.32	1.02
2	PSS Refurbishment- Civil Works	3.23	
3	SCADA Automation	9.99	5.52
4	**Total**	**76.54**	**6.54**

4.3.2 Bus coupler arrangements at PSS

118. Bus coupler is a device which is used to couple one bus to the other without any interruption in power supply and without creating hazardous arcs. Presently most of the PSS have individual PTR supplying respective feeders without bus couplers. in case of any PTR failure or long outage, supply is extended to affected 11KV lines from other available PTR by way of temporary jumper arrangement. This is time consuming and also require outage of other PTR in service with unnecessary shutdown to consumers fed from healthy PTR.

119. Bus coupler arrangements at PSS provide additional flexibility, continuity of supply and permits periodic maintenance without total shut-down. In the event of fault/ outage of one PTR, its load can be fed from closing bus coupler without taking outage of other PTR.

120. Keeping to the view of Berhampur city and other urban city areas feeding critical loads like Hospitals, health institutions, Govt. institutions, schools, water supply, defense, telecom services, administrative services, etc. & including industrial load, it is very essential to provide uninterrupted power supply (without disconnecting any 11kV feeders). Hence 11KV bus coupler arrangement at PSS is proposed in few critical PSS in Urban areas as listed below.

Table 32 Capital Expenditure for Bus- coupler Arrangement for FY 2024-25 & FY 2025-26

Bus coupler arrangements at PSS						
S No.	Circle	Division	PSS	Qty	Unit Cost(Rs. Cr.)	Amt (Rs Cr)
1	City	BED-I	Ambapua	1	0.146	0.15
2	City	BED-I	Narendrapur	1	0.146	0.15
3	City	BED-I	Good Shed	1	0.146	0.15
4	City	BED-II	Corporation Road	1	0.146	0.15
5	City	BED-II	Lochapada	1	0.146	0.15
6	City	BED-II	Ambagada	3	0.146	0.44
7	Berhampur	PSED	Pandia Junction	1	0.146	0.15
8	Berhampur	GNED	Chatrapur	2	0.146	0.29
			Sub Total(FY 2024-25)			**1.61**
9	Aska	AED-I	Aska	2	0.155	0.31
10	Aska	AED-II	Buguda	3	0.155	0.46
11	Bhanjanagar	BOED	Boudh	2	0.155	0.31
12	Rayagada	GED	Gunupur	2	0.155	0.31
13	Jeypore	KED	Sunabeda	2	0.155	0.31
			Sub Total(FY 2025-26)			**1.70**
			Total			**3.31**

Advantages

- If any fault occurs, shifting the load from one PTR to another without shutdown to consumers fed from other PTR.
- The cost of repair and maintenance is less.
- It is very easy to shift the load on any other buses.

4.3.3 33 & 11 KV New Lines for reliable power supply

4.3.3.1 33kV New line

121. In TPSODL, 33kV network is the back bone of power supply system and spread across vast area of TPSODL and connected with various 33/11kV PSS from where the power is transformed at 11kV for further distribution. 33kV network is lengthy and radial in nature at most of the places.

122. To summarize, we found following issues which needs to be address to strengthen the existing network.

- Lengthy and radial connectivity of the network.
- Absence of N-1 redundancy at least to critical installations.

- Circuit capacity restricted to lower size of conductor in existing line.

123. Due to lack of alternate source, it is not possible for the field teams to transfer the load during shutdown of radial feeder and thus all consumers connected to the affected feeders remain out of service till the field team locate and repair the fault.

124. During considering the proposal for 33kV new line, for providing cyclone resilient infrastructure within 0-60 km of the coastal belt, it is considered Rebar Lacing Pole (RLP) pole with a span of 50 mtr and beyond 60 km from the coastal belt, a 13 mtr WPB pole with a span of 40 mtr is considered. In all 16 New Lines have been proposed. The following lines have been considered in the Capital Investment Plan

Sr No	01
Circle-Division	City-BED-I
Existing 33 kV Feeder Name	Bhanjbihar-Tisco
Location From	Bhanjbihar PSS (linking from 33kV TISCO Fdr)
Location To	Gopalpur PSS
Considered Length (CKM)	7.0 (4 KM UG & 3 KM OH Line)
No. of Bay required	02
Project Cost (Cr.)	6.15
Proposed Conductor (Sq.mm) & type of pole	148 Sq mm OH Line with RLP Pole & 630 Sq mm UG Cable
Considered Year	2025
Technical Justification	Gopalpur PSS is currently fed through Bhanjavihar PSS through a radial line and serves critical tourist area feeding premium hotels, parks and eco-resorts. This area is growing at a rapid pace creating a surge in demand during festival seasons. Bhanjavihar PSS is having separate source feeders from Narendpur GSS and Chatrapur GSS however due to radial line from Bhanjavihar to Gopalpur PSS, power supply to critical tourist area near Gopalpur is interrupted during any fault on

	Gopalpur feeder. So, to provide N-1 power supply to Gopalpur PSS, a new 33kV line of 7Ckm (4Ckm in UG cable and 3Ckm in OH line) is proposed between Bhanjavihar and Gopalpur PSS.

Sr No	02
Circle-Division	Aska-AED-II
Existing 33 kV Feeder Name	Paikajamuna- K.S Nagar
Location From	Aska New (Charimile) GSS
Location To	Paikajamuna PSS
Considered Length (CKM)	10.0
No. of Bay required	-
Project Cost (Cr.)	3.56
Proposed Conductor (Sq.mm) & type of pole	148 sqmm with RLP Pole
Considered Year	2025
Technical Justification	33kV Paikajamuna and KS Nagar feeders are both radial feeders from the 132/33kV Aska old GSS and feeding power supply to Paikajamuna and KS Nagar PSS respectively. The peak load of the 33kV KS Nagar and Paikajamuna feeders is 156A and 96A respectively. A new 33kV link line of approx. 7Ckm is proposed from KS Nagar PSS to Paikajamuna PSS to convert above feeders from radial to ring network. After this proposals, N-1 capability will be available for both above PSS.

Sr No	03
Circle-Division	Aska-AED-II
Existing 33 kV Feeder Name	K.S Nagar-Paikajamuna
Location From	Paikajamuna PSS
Location To	K S Nagar PSS

Considered Length (CKM)	7.0
No. of Bay required	02
Project Cost (Cr.)	3.35
Proposed Conductor (Sq.mm) & type of pole	148Sqmm with RLP
Considered Year	2026
Technical Justification	Paikajamuna and KS Nagar PSS are supplying to HT and LT consumers like 3 phase agriculture pumps, HT industrial consumers such as Rice Mill, Stone Crusher etc. Since both these PSs are connected with Aska old GSS, during any fault on the Aska old GSS, power supply is interrupted to above agricultural and Industrial consumers. Hence to avail back up power supply for above consumers from nearby Aska new (Charimile) GSS, a new 10 CKM 33kV link line with 148sqmm AAAC conductor is proposed from Aska New (Charimile) GSS to Paikajamuna PSS.

Sr No	04
Circle-Division	Aska-GSED
Existing 33 kV Feeder Name	Old Chikiti-Digapahandi
Location From	Digapahandi Feeder Cut Point
Location To	Chikiti Feeder (Near Digapahandi GSS)
Considered Length (CKM)	0.3
No. of Bay required	-
Project Cost (Cr.)	0.11
Proposed Conductor (Sq.mm) & type of pole	148sqmm with RLP
Considered Year	2025
Technical Justification	Digapahandi PSS is getting radial power supply from Digapahandi GSS with a 33kV feeder length of 1 Ckm. There is another Chikiti feeder from Digapahandi GSS which is moving nearby to Digapahandi PSS. This Chikiti feeder is having interconnection with Chikiti GSS.

	It is proposed to construct a new link line of 0.3Ckm (Appx) with 148sqmm AAAC from Digapahandi Feeder Cut Point - Chikiti Feeder (Near Digapahandi GSS). With this proposal, during Digapahandi GSS outage, Digapahandi PSS will be able to avail supply from Chikiti GSS.

Sr No	05
Circle-Division	Berhampur-HED
Existing 33 kV Feeder Name	Podingi Feeder
Location From	Podingi PSS
Location To	Near Podingi PSS
Considered Length (CKM)	0.2
No. of Bay required	01
Project Cost (Cr.)	0.41
Proposed Conductor (Sq.mm) & type of pole	148sqmm with RLP
Considered Year	2025
Technical Justification	Currently, Podingi & MJ Pur PSS are getting power supply from 33KV Podingi feeder emanating from Hinjli GSS. MJ Pur PSS is tapped from above Podingi feeder at a location 200mtr before Podingi PSS. It is proposed to convert this tap connection into LILO connection by constructing a new 200 Mtr link line between tap point to Podingi PSS and one more bay at Podingi PSS. After this proposal, forced shutdown to Podingi PSS can be avoided during fault on line feeding MJ Pur PSS.

Sr No	06
Circle-Division	Bhanjnagar-BNED
Existing 33 kV Feeder Name	Banka- Balipadar
Location From	Banka DP AB Switch Khirapalli
Location To	Banka PSS

Considered Length (CKM)	2.0
No. of Bay required	01
Project Cost (Cr.)	0.85
Proposed Conductor (Sq.mm) & type of pole	148sqmm with WPB Pole
Considered Year	2025
Technical Justification	Banka PSS is currently fed from Bhanjanagar GSS through Belaguntha PSS. Similarly, Balipadar PSS is being fed from Aska new GSS. A link line between Balipadar PSS to Banka PSS is available through a tap connection on Belaguntha – Banka line at a location 2km before Banka PSS. It is proposed to construct a new 2Ckm link line from this tapping point to Banka PSS to convert tap connection into LILO connection. This will help improve reliability for Banka and Belguntha PSS by restricting interruption to only affected line.

Sr No	07
Circle-Division	Bhanjnagar-BNED
Existing 33 kV Feeder Name	K.B Pur- Balisira
Location From	K.B Pur PSS
Location To	Balisira PSS
Considered Length (CKM)	0.0
No. of Bay required	01
Project Cost (Cr.)	0.32
Proposed Conductor (Sq.mm)	-
Considered Year	2025
Technical Justification	KB Pur PSS has its incoming power source from Bhanjanagar GSS and Balisira PSS has its incoming power source from Aska Old GSS. There is a 33 KV link line available between KB Pur PSS & Balisira PSS. This link line is also feeding HT consumer. This link line is connected through a tap connection to Bhanjanagar – K B Pur line outside KB Pur PSS. It is proposed to convert this tap connection into LILO connection by adding one

	bay at KB Pur PSS for the interconnecting line. This will help improve reliability of power supply to KB Pur and Balisira PSS.

Sr No	08
Circle-Division	Jaypore-NED
Existing 33 kV Feeder Name	Beheda-Umarkote
Location From	Mendhabeda Location near Umerkote PSS
Location To	Beheda PSS
Considered Length (CKM)	12.0
No. of Bay required	01
Project Cost (Cr.)	3.5
Proposed Conductor (Sq.mm) & type of pole	148sqmm with WPB Pole
Considered Year	2025
Technical Justification	33KV Beheda feeder originates from Umerkote GSS having present peak load of around 376 A. This feeder is feeding power supply to Beheda PSS & Raighar PSS. Area around Raigarh PSS is experiencing significant load growth due to additional Agricultural load. Beheda feeder load is expected to reach 450 A in next one year. There is another 33kV Umerkote feeder originating from Umerkote GSS (total length of the feeder 8Ckm) having existing conductor Size of 100 Sqmm which is planned for upgradation to 148 sqmm in SACI & in this CAPEX proposal. This feeder delivers power to Umerkote PSS having peak load 168 A. There is an existing defunct line/ old line from Umerkote PSS to Mendhabeda Location having approx. line length of 8Ckm. To reduce 33kV overloading of Beheda feeder, it is proposed to

	construct a link line of approx. 12Ckm from Mendhabeda Location near Umerkote PSS to Beheda PSS. After this proposal approx. 140A load of Beheda feeder will be permanently diverted to Umerkote feeder and there will be availability of N-1 arrangement for both Umerkote and Beheda feeders at Beheda PSS.

Sr No	09
Circle-Division	Jaypore-NED
Existing 33 kV Feeder Name	Dubugam-Umarkote
Location From	Dabugam PSS
Location To	Jhaliguda Chhak
Considered Length (CKM)	6.0
No. of Bay required	01
Project Cost (Cr.)	2.02
Proposed Conductor (Sq.mm) & type of pole	148sqmm with WPB Pole
Considered Year	2026
Technical Justification	33kV Dabugam feeder is getting power supply from Dabugam GSS having present peak load of 52A and feeding power supply to Dabugam PSS. Likewise, there is another 33kV Umerkote feeder originates from Umerkote GSS and delivers power to Umerkote PSS having peak load 168 A. Both above feeders are radial feeders. There is already defunct dead 33kV line from Umerkote PSS to Dabugam PSS. It is proposed to construct 6km line between Umerkote and Dabugaum PSS to provide ring connectivity and avail N-1 power supply.

	After this proposal, both Dabugam & Umerkote PSS can avail alternate power supply from another GSS source (Umerkote GSS & Dabugam GSS)

Sr No	10
Circle-Division	Jaypore-KED
Existing 33 kV Feeder Name	Laxmipur-Kakriguma
Location From	Kakiriguma PSS
Location To	Anlabadi PSS
Considered Length (CKM)	18.0
No. of Bay required	02
Project Cost (Cr.)	5.73
Proposed Conductor (Sq.mm) & type of pole	148sqmm with WPB Pole
Considered Year	2026
Technical Justification	Kakiriguma PSS is getting supply from Podagada GSS through Kakiriguma feeder and Anlabadi PSS is getting power supply from Sunabeda GSS through 33kV Laxmipur feeder. Anlabadi PSS is having radial connectivity. There is old defunct line between Kakiriguma PSS to Anlabadi PSS. It is proposed to construct new line between Kakiriguma PSS to Anlabadi PSS using old line RoW to enable N-1 capability for both Kakriguma and Anlabadi PSS during emergency condition.

Sr No	11
Circle-Division	Jaypore-KED
Existing 33 kV Feeder Name	Nandapur-Sunuki
Location From	Sunabeda PHD Office
Location To	TVS Showroom
Considered Length (CKM)	3.0
No. of Bay required	-
Project Cost (Cr.)	0.79

Proposed Conductor (Sq.mm) & type of pole	148sqmm with WPB Pole
Considered Year	2025
Technical Justification	33kV Nandapur feeder is getting power supply from Sunabeda GSS and feeding 4 nos. of PSS namely Beleiguda, Nandapur, Padua & Lamtaput PSS. This is a radial feeder. There is another 33kV Sunki feeder from Sunabeda GSS which is passing near to Beleiguda PSS. This Sunki feeder also has N-1 connectivity with 33kV Kunduli feeder from Potangi GSS. To avail N-1 power supply to Beleiguda, Nandapur, Padua & Lamtaput PSS from Sunki & Kunduli feeders, it is required to construct 2 small 1.5 Ckm 33kV link lines (total 3Ckm) between Sunabeda PHD Office and TVS Showroom location to Bileiguda PDSS with LILO arrangement. After construction of this line with one 4 pole structure with 3 nos. breaker (Nandapur line, Kunduli line, Beleiguda PSS incommer), the Sunki feeder will LILO at at Bileiguda PSS. With this N-1 connectivity, reliability of power supply will increase for 5 nos of PSS i,e for Beleiguda, Nandapur, Padua, Lamtaput & Kunduli PSS.

Sr No	12
Circle-Division	Jaypore-JED
Existing 33 kV Feeder Name	Boriguma-Jaynagar-III
Location From	Near Randhapalli
Location To	Dangaguda PSS
Considered Length (CKM)	8.0
No. of Bay required	02
Project Cost (Cr.)	2.93
Proposed Conductor (Sq.mm) & type of pole	148sqmm with WPB Pole
Considered Year	2026

Technical Justification	33kV Boriguma feeder and Jeynagar-3 feeder emanates from Jayanagar GSS. Jeynagar-3 radial feeder is feeding power supply to New Bus Stand & Dangaguda PSS and 33kV Boriguma feeder is feeding Randhapalli PSS. Randapalli PSS will also get connected with Boriguma GSS shortly after which Randapalli PSS will avail supply from both Jayanagar GSS and Boriguma GSS. A new 3kV link line of 8Ckm length is proposed between Randhapalli PSS and Dangaguda PSS to feed backup power supply to New Bus Stand & Dangaguda PSS during emergency condition.

Sr No	13
Circle-Division	Bhanjnagar-PED
Existing 33 kV Feeder Name	Kalinga-Medical
Location From	33 Kv Kalinga Feeder Near Medical College
Location To	33 Kv Medical College Feeder
Considered Length (CKM)	1
No. of Bay required	-
Project Cost (Cr.)	0.27
Proposed Conductor (Sq.mm) & type of pole	148 sqmm with WPB Pole
Considered Year	2026
Technical Justification	33kV Kalinga feeder from Phulbani GSS is feeding Sankarakhola, Tikabali PSS and Kalinga PSS. Kalinga feeder is also having interconnection with G.Udayagiri GSS near Taikabali PSS. A new Medical College is being constructed at Phulbani which will be connected with Phulbani GSS with 33kV line. Above Kalinga feeder is passing close to upcoming medical college. To provide alternate power supply to the important customer - Medical College, a new link line of around 1Ckm length is proposed between

	Medical College feeder and Kalinga feeder. After implantation of this proposal, Medical College will avail N-1 power supply through Kalinga 33kV feeder with connectivity with both Phulbani and G.Udayagiri GSS.

Sr No	14
Circle-Division	Bhanjnagar-BOED
Existing 33 kV Feeder Name	Boudh-Manmunda
Location From	Goutampalli Tapping point
Location To	Janapank PSS
Considered Length (CKM)	0.3
No. of Bay required	01
Project Cost (Cr.)	0.4
Proposed Conductor (Sq.mm) & type of pole	148 sq mm with WPB Pole
Considered Year	2025
Technical Justification	33kV Boudh feeder from Boudh GSS is feeding power supply to Boudh and Janapank PSS. Boudh-Janpank line is also extended to Baunsuni PSS through a tap connection at location around 300 mtrs from janapank PSS. This extention line to Baunsuni is also feeding Hilung mega lift connection. If any fault occurs on this extension line, Janapank PSS is also getting forced shutdown. A new link line of 0.3Ckm from tap point to Janapank PSS with one no. of bay at Janapank PSS is proposed to convert this tap connection to LILO connection. After implantation of this proposal, reliability power supply will improve for Janapank PSS.

Sr No	15
Circle-Division	Aska-GSED
Existing 33 kV Feeder Name	Chikiti Feeder
Location From	Dekhali Tapping point
Location To	Dekhali PSS

Considered Length (CKM)	0.6
No. of Bay required	01
Project Cost (Cr.)	0.58
Proposed Conductor (Sq.mm) & type of pole	148sqmm with RLP
Considered Year	2026
Technical Justification	33kV Chikiti feeder from Digapahandi GSS is feeding power supply to Dekhali and Nuapada PSS & 33 KV Kalingadola MegaLift. Dekhali PSS is getting supply through a tap connection at location around 600 mtrs. There is an connectivity with Chikiti feeder at Chikiti PSS. If any fault occurs on this extension line, PSS is also getting forced shutdown and power interruption experience in Megalift also. A new link line of 0.6Ckm from tap point to Dekhali PSS with one no. of bay at Dekhali PSS is proposed to convert this tap connection to LILO connection. After implantation of this proposal, reliability power supply will improve for Dekhali PSS.

Sr No	16
Circle-Division	Rayagada-PKED
Existing 33 kV Feeder Name	Parlakhemundi Feeder
Location From	R.Udyagiri Tapping point
Location To	R.Udaygiri PSS
Considered Length (CKM)	0.5
No. of Bay required	01
Project Cost (Cr.)	0.48
Proposed Conductor (Sq.mm) & type of pole	148sqmm with WPB Pole
Considered Year	2026
Technical Justification	33kV Paralakemundi feeder from Mohana GSS is feeding power supply to Chandragiri, Cheligada, R.Udayagiri and Badapada PSS. Chandragiri PSS is getting supply through a tap connection at location around 500 mtrs. If any fault occurs on this extension line, PSS is getting forced shutdown and power interruption experience in other PSS also. A new link line of 0.5Ckm from tap point to

	R.Udayagiri PSS with one no. of bay at R.Udayagiri PSS is proposed to convert this tap connection to LILO connection. After implantation of this proposal, reliability power supply will improve for R.Udayagiri PSS.

4.3.3.2 11 kV New line

125. In TPSODL, 11kV feeders are important asset for a distribution utility which are feeding to various 11/0.415kV DSS from where the power is distributed to end consumers. There are 45400 Ckt. KMs of 11kV feeders under its operational area. As per the site survey it is found that most of the 11kV network are lengthy and radial in nature.

126. Due to lack of alternate PSS or 11kV feeder/ it is not possible for the field teams /to transfer the load during shutdown of radial feeder and thus all consumers connected to the affected feeders remain out of service till the field team locate and repair the fault. Analyzing the above view, it needs to be planned 11kV new line in phased manner for critical 11KV feeder to provide N-1 arrangement.

127. During considering the proposal for 11kV new line, for providing cyclone resilient infrastructure within 0-60 km of the coastal belt, it is considered RLP pole with a span of 50 mtr and beyond 60 km from the coastal belt, a 11 Mtr WPB pole with a span of 50 mtr is considered. In all there are 73 new lines have been proposed. The Various lines that have been proposed are as follows:

Sr No	1
Circle-Division	Aska-GSED
Existing 11 kV Feeder Name	Jakra Dumla
Location From	Dekhali PSS
Location To	Jakar Village
Considered Length (CKM)	0.85
No. of Bay required	-
Project Cost (Cr.)	0.23
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP

Considered Year	2025
Technical Justification	11 kV Jakra Dumla Feeder (Length-90 Ckm, Load-60 Amps., Consumers-3513) emanates from 33/11 kV Dekhali PSS. Owing to the length, there is frequent tripping as well as low voltage at tail end of the feeder. The feeder supplies power to some of the industrial loads which are affected for long duration due to tripping. So, a new line 0.8 Ckm. utilizing existing spare 11 kV bay at Dekhali PSS is proposed for Load Bifurcation. On New line 30 Amps and approx.100 consumers will be diverted from existing Jakra Dumla Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.

Sr No	2
Circle-Division	Aska-GSED
Existing 11 kV Feeder Name	Dengausta-Ankorada
Location From	Nabrangpur
Location To	Sundhipalli
Considered Length (CKM)	2.5
No. of Bay required	-
Project Cost (Cr.)	0.71
Proposed Conductor (Sq.mm) & type of pole	100 sqmm with RLP
Considered Year	2026
Technical Justification	Dengausta Feeder emanates from Pudamari PSS. Peak load of the feeder is 142Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 60 CKM. Ankorada feeder emanates from Digapahandi PSS. Peak load of the feeder is 40Amps and conductor size in Trunk line 80sq.mm and Branches 34 sq.mm. Length of the feeder is 8 CKM.

	For improving system reliability by N-1 arrangement link line 2.5 CKM is proposed from Nabrangpur to Sundhipalli. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	3
Circle-Division	Bhanjanagar-BNED
Existing 11 kV Feeder Name	Gamundi-Bhanjanagar Town
Location From	Lodge Raj Palace
Location To	Mochishahi DSS
Considered Length (CKM)	0.4
No. of Bay required	-
Project Cost (Cr.)	0.07
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Gamundi town feeder originates from Bhanjanagar PSS having length of 14CKm & Peak load of feeder is 131Amps. Total 3680 Nos of Consumer connected on the feeder. Bhanjanagar Town feeder which gives Power Supply to industrial customers within town area and also rural Consumers. This result into shutdown of urban customers. Hence to mitigate issue urban load need to be shifted. There is another feeder from same PSS, Bhanjanagar Town feeder (length 8CKM, conductor size 55&80 Sq.mm). Peak load of Bhanjanagar Town feeder is 178Amps.

	Hence load from Gamundi feeder to Bhanjangar Town Feeder will be shifted via new link line of 0.4 CKM from Lodge Raj palace to Mochishahi DSS. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	4
Circle-Division	Aska-GSED
Existing 11 kV Feeder Name	Chikti NAC-Pitatali
Location From	Dhangar
Location To	Dhangar
Considered Length (CKM)	0.5
No. of Bay required	-
Project Cost (Cr.)	0.14
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Chikti NAC Feeder emanates from Chikti PSS. Peak load of the feeder is 68Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 22 CKM. Pitatali feeder emanates from Pitatali PSS. Peak load of the feeder is 54Amps and conductor size in Trunk line 80sq.mm and Branches 34 sq.mm. Length of the feeder is 6 CKM. For improving system reliability by N-1 arrangement link line 0.5 CKM is proposed from Dhangar Location-1 to Dhangar Location-2. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	5
Circle-Division	Aska-AED-II
Existing 11 kV Feeder Name	Athagada Patna-K S Nagar Town
Location From	Fire Station KS Nagar
Location To	Taratarini Bike Store
Considered Length (CKM)	0.5
No. of Bay required	
Project Cost (Cr.)	0.14
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026
Technical Justification	KS Nagar town Feeder emanates from KS Nagar PSS. Peak load of the feeder is 143 Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 14 CKM. Athagada feeder emanates from Budhamba PSS. Peak load of the feeder is 30 Amps and conductor size 55sq.mm .Length of the feeder is 8 CKM. K S Nagar town feeder is supplying to consumer like Bank, Division office, Police Station, K S Nagar Court etc. So looking for the continuous power supply it is required to make N-1 arrangement between K S Nagar town feeder and Athagada feeder. For improving system reliability by N-1 arrangement link line 0.5 CKM is proposed from Fire Station KS Nagar-Taratarini Bike Store. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	6
Circle-Division	Aska-AED-II
Existing 11 kV Feeder Name	Sialia-Athagada Patna

Location From	Badagola Shiv Temple
Location To	Badagola Main Road
Considered Length (CKM)	1.2
No. of Bay required	-
Project Cost (Cr.)	0.34
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Sialia Feeder emanates from K S Nagar PSS. Peak load of the feeder is 125Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 24 CKM. Athagada Patna feeder emanates from Budhamba PSS. Peak load of the feeder is 30Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 8 CKM. For improving system reliability by N-1 arrangement link line 1.2 CKM is proposed from Badagola Shiv Temple to Badagola Main Road. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	7
Circle-Division	Jeypore-NED
Existing 11 kV Feeder Name	Nabarangpur No-II
Location From	Chutiaguda PSS
Location To	Majhiguda Chhak
Considered Length (CKM)	2
No. of Bay required	
Project Cost (Cr.)	0.34
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2025

Technical Justification	Nabarangpur town-II feeder originates from Nabarangpur PSS having length of 41 CKm & Peak load of feeder is 152Amps. Total 8193 Nos of Consumer connected on the feeder. Nabarangpur town -II which gives Power Supply to Hospital, Block office, School, industrial customers within town area and also rural Consumers. Feeder passes through forest area and encounter frequent tripping. This result into shutdown of urban customers. To mitigate these issue urban load need to be Segregated. So, a new line 2 Ckm. from Chutiaguda PSS Utilizing spare bay is proposed for Load Bifurcation by shifting the urban load only to the newly created feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	8
Circle-Division	Jeypore-NED
Existing 11 kV Feeder Name	B Maliguda
Location From	Nuaguda
Location To	Govindalaya
Considered Length (CKM)	2
No. of Bay required	
Project Cost (Cr.)	0.36
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	B.Maliguda feeder originates from Nabarangpur PSS having length of 120 CKm & Peak load of feeder is 70 Amps. Total 4268 Nos of Consumer connected on the feeder. B.Maliguda which gives

	Power Supply to Hospital, Block office, School, industrial customers within town area and also rural Consumers. Feeder passes through forest area and encounter frequent tripping. This result into shutdown of urban customers. Hence to mitigate the issue, urban load need to be shifted. There is another feeder Saruguda feeder (length 19CKM, conductor size 34Sq.mm) from Dangarbjeja PSS , Peak load of Saruguda feeder is 27 AMP. Hence load from B.Maliguda feeder to Saruguda will be shifted via new link line of 2 CKM from Nuaguda tapping point to Govindalaya . This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	9
Circle-Division	Jeypore-NED
Existing 11 kV Feeder Name	Jatabal
Location From	Mausima Temple
Location To	RWSS Point
Considered Length (CKM)	1
No. of Bay required	-
Project Cost (Cr.)	0.18
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB
Considered Year	2026
Technical Justification	Jatabal feeder originates from Dabugam PSS having length of 75 CKm & Peak load of feeder is 43 Amps. Total 4268 Nos of Consumer connected on the feeder. Jatabal which gives Power Supply to Hospital, Block office, School, industrial customers within town area and also rural Consumers. Due to rural load encounter frequent tripping.

	This result into shutdown of urban customers. Hence to mitigate the issue, urban load need to be shifted. There is another feeder from Same PSS ,Dabugam Town feeder (length 9CKM, conductor size 34Sq.mm). Peak load of Dabugam Town feeder is 30 AMP. Hence load from Jatabal feeder to Dabugam Town will be shifted via new link line of 1 CKM from Mausima Temple Point tapping point to RWSS Point. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	10
Circle-Division	Jeypore-NED
Existing 11 kV Feeder Name	DNK
Location From	Dadhiguda
Location To	Sanabharandi
Considered Length (CKM)	2
No. of Bay required	
Project Cost (Cr.)	0.36
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	DNK feeder originates from Umerkote PSS having length of 12 CKm & Peak load of feeder is 78 Amps. Total 3450 Nos of Consumer connected on the feeder. DNK which gives Power Supply to Hospital, Block office, School, industrial customers within town area and also rural Consumers. Feeder passes through forest area and encounter frequent tripping.

	This result into shutdown of urban customers. Hence to mitigate issue urban load need to be shifted. There is another feeder from same PSS ,Bharandi feeder (length 212 CKM, conductor size 80+55+34Sq.mm). Peak load of Bharandi feeder is 132 AMP. Hence load from DNK feeder to Bharandi will be shifted via new link line of 2 CKM from Dadheiguda tapping point to Sanabharandi . This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	11
Circle-Division	Jeypore-MED
Existing 11 kV Feeder Name	Kamwada
Location From	Bandiguda
Location To	MV-120
Considered Length (CKM)	1.5
No. of Bay required	
Project Cost (Cr.)	0.27
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Kamwada feeder originates from MV-27 PSS having length of 65CKm & Peak load of feeder is 55Amps. Total 2912 Nos of Consumer connected on the feeder. Kamwada gives Power Supply to Block office, School, industrial customers and also rural Consumers. Feeder crosses river to feed supply MV-119, MV-120 villages and encounter frequent tripping. This result into shutdown of entire feeder and takes long time to restore the feeder. Hence to mitigate issue MV-119 & MV-120 villages' load

	need to be shifted. There is another feeder from Balimela PSS, Ayappa feeder (length 35CKM, conductor size 34Sq.mm). Peak load of Ayappa is feeder is 32 AMP. Hence load from Kamwada feeder to Ayappa will be shifted via new link line of 1.5 CKM from Bandiguda to MV-120. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	12
Circle-Division	Jeypore-MED
Existing 11 kV Feeder Name	Malkangiri Town & DNK
Location From	Canal Square
Location To	Ashirbad Colony
Considered Length (CKM)	1.5
No. of Bay required	
Project Cost (Cr.)	0.27
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Malkangiri Town Feeder emanates from Malkangiri PSS. Peak load of the feeder is 100Amps and conductor size in 100sq.mm. Length of the feeder is 7.5 CKM. DNK feeder emanates from Malkangiri PSS. Peak load of the feeder is 130Amps and conductor size in 100 sq.mm. Length of the feeder is 7 CKM. For improving system reliability by N-1 arrangement link line 1.5 CKM is proposed from Canal Square to Ashirbad Colony. During exigency condition one feeder load can be shifted supplied from another feeder.

	This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	13
Circle-Division	Jeypore-MED
Existing 11 kV Feeder Name	Kotameta
Location From	Pandripani PSS
Location To	Near Town
Considered Length (CKM)	2.5
No. of Bay required	
Project Cost (Cr.)	0.43
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2025
Technical Justification	11 kV Kotameta Feeder (Length-134 Ckm, Load-100 Amps., Consumers-3964) emanates from 33/11 kV Pandripani PSS. Owing to the length, there is frequent tripping as well as low voltage at tail end of the feeder. The feeder supplies power to town area as well as rural area and some of the industrial loads which are affected for long duration due to tripping. So, a new line 2.5 Ckm. (from existing bay at PSS) from Pandripani PSS is proposed for Load Bifurcation. On New line 45 Amps and approx.1500 consumers will be diverted from existing Kotameta Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.

Sr No	14
Circle-Division	Jeypore-KED
Existing 11 kV Feeder Name	Koraput-1
Location From	Ramu garage

Location To	Traffic Square
Considered Length (CKM)	1
No. of Bay required	-
Project Cost (Cr.)	0.17
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2025
Technical Justification	Koraput-1 feeder originates from Koraput Old PSS having length of 40CKm & Peak load of feeder is 185Amps. Total 5900 Nos of Consumer connected on the feeder. Koraput-1 feeder which gives Power Supply to Hospital, Block office, School, industrial customers within town area and also rural Consumers. Feeder passes through forest & hilly area and encounter frequent tripping. This result into shutdown of urban customers. Hence to mitigate issue urban load need to be shifted. There is another feeder from same PSS, Koraput-2 feeder (length 60 CKM, conductor size 55Sq.mm). Peak load of Koraput-2 is feeder is 120 AMP. Hence load from Koraput-1 feeder to Koraput-2 feeder will be shifted via new link line of 1 CKM from Ramu Garage to Traffic Square. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	15
Circle-Division	Jeypore-KED
Existing 11 kV Feeder Name	Chapper & Koraput-1
Location From	MMR hotel
Location To	Medical hostel
Considered Length (CKM)	2
No. of Bay required	-

Project Cost (Cr.)	0.36
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Chapper Feeder emanates from Koraput Old PSS. Peak load of the feeder is 25Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 40 CKM. Koraput-1 feeder emanates from Koraput Old PSS. Peak load of the feeder is 185Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 40 CKM. For improving system reliability by N-1 arrangement link line 02 CKM is proposed from MMR hotel to Medical hostel. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	16
Circle-Division	Jeypore-KED
Existing 11 kV Feeder Name	Beleiguda(Beleiguda PSS) & Semiliguda(Sunabeda PSS)
Location From	Semiliguda SBI
Location To	Semiliguda Chakk
Considered Length (CKM)	0.5
No. of Bay required	0
Project Cost (Cr.)	0.09
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Beleiguda Feeder emanates from Beleiguda PSS. Peak load of the feeder is 55Amps and conductor size in Trunk line 55sq.mm and Branches 34

	sq.mm. Length of the feeder is 145 CKM. Semiliguda feeder emanates from Sunabeda PSS. Peak load of the feeder is 119Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 95 CKM. For improving system reliability by N-1 arrangement link line 0.5 CKM is proposed from Semiliguda SBI to Semiliguda Chakk. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	17
Circle-Division	Jeypore-KED
Existing 11 kV Feeder Name	Subai
Location From	Bileiguda PSS
Location To	Janiguda
Considered Length (CKM)	3
No. of Bay required	1
Project Cost (Cr.)	0.76
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2025
Technical Justification	11 kV Subai Feeder (Length-145 Ckm, Load- 65 Amps., Consumers-6300) emanates from 33/11 kV Bileiguda PSS. Owing to the length, there is frequent tripping as well as low voltage at tail end of the feeder. The feeder supplies power to some of the industrial loads which are affected for long duration due to tripping. So, a new line 3 Ckm. along with additional new 11 kV bay at Bileiguda PSS is proposed for Load Bifurcation. On New line

	20 Amps and approx.1000 consumers will be diverted from existing Subai Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.

Sr No	18
Circle-Division	Jeypore-KED
Existing 11 kV Feeder Name	Koraput-1
Location From	Koraput Old PSS
Location To	Jaganath Mandir
Considered Length (CKM)	0.07
No. of Bay required	1
Project Cost (Cr.)	0.28
Proposed Conductor (Sq.mm)	UG-70Mtr-3CX400
Considered Year	2026
Technical Justification	11 kV Koraput-1 Feeder (Length-40 Ckm, Load-185 Amps., Consumers-5900) emanates from 33/11 kV Koraput Old PSS. Owing to the length, there is frequent tripping as well as low voltage at tail end of the feeder. The feeder supplies power to some of the industrial loads which are affected for long duration due to tripping. There is an idle line whic is existing near to PSS. So, to utilise the existing uncharged feeder, a new line using UG Cable 0.07 Ckm. along with additional new 11 kV bay at Koraput Old PSS is proposed for Load Bifurcation. On New line 50 Amps and approx.1000 consumers will be diverted from existing Koraput-1 Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.

Sr No	19
Circle-Division	Rayagada-RED
Existing 11 kV Feeder Name	Muniguda&New Hope

Location From	Near Cinema Hall
Location To	Jogo Colony
Considered Length (CKM)	0.5
No. of Bay required	
Project Cost (Cr.)	0.09
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Muniguda Feeder emanates from Muniguda PSS. Peak load of the feeder is 110Amps and conductor size in Trunk line 55sq.mm and Branches 55 sq.mm. Length of the feeder is 15 CKM. New Hope feeder town feeder emanates from Muniguda PSS. Peak load of the feeder is 15Amps and conductor size in Trunk line 55sq.mm and Branches 55 sq.mm. Length of the feeder is 5 CKM. For improving system reliability by N-1 arrangement link line 0.5 CKM is proposed from Near Cinema Hall to Jogo Colony. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	20
Circle-Division	Gunupur-GED
Existing 11 kV Feeder Name	Court
Location From	Gunupur PSS
Location To	New Bus Stand
Considered Length (CKM)	1
No. of Bay required	1
Project Cost (Cr.)	0.42
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2026

Technical Justification	11 kV Court Feeder (Length-52 Ckm, Load- 194 Amps., Consumers- 6094) emanates from 33/11 kV Gunupur PSS. Owing to the length, there is frequent tripping as well as low voltage at tail end of the feeder. The feeder supplies power to some of the Commercial loads which are affected for long duration due to tripping. So, a new line 1 Ckm. along with additional new 11 kV bay at Gunupur PSS is proposed for Load Bifurcation. On New line 94 Amps and approx. 2800 consumers will be diverted from existing Court Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.

Sr No	21
Circle-Division	Jeypore-JED
Existing 11 kV Feeder Name	Hadia-Ambaguda
Location From	Kumpliput Medical
Location To	Ambaguda
Considered Length (CKM)	0.3
No. of Bay required	0
Project Cost (Cr.)	0.05
Proposed Conductor (Sq.mm)	100
Considered Year	2026
Technical Justification	Ambaguda feeder originates from Randapalli 33/11 kv PSS having length of 100CKm & Peak load of feeder is 90 Amps. Total 3500 Nos of Consumer connected on the feeder. Ambaguda feeder which gives Power Supply to Hospital, School, industrial customers within town area and also rural Consumers. Feeder passes through forest & hilly area and encounter frequent tripping.

	There is another feeder from same PSS, Hadia (length 80 CKM, conductor size 55Sq.mm). Peak load of Koraput-2 is feeder is 10 AMP. For improving system reliability by N-1 arrangement link line 0.3 CKM is proposed from Kumliput medical to Ambaguda. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	22
Circle-Division	Jeypore-JED
Existing 11 kV Feeder Name	Jeypore Town-1 & Koraput
Location From	Purnagarh Chowk
Location To	Boys Hostel Back side
Considered Length (CKM)	0.8
No. of Bay required	0
Project Cost (Cr.)	0.14
Proposed Conductor (Sq.mm)	100
Considered Year	2026
Technical Justification	Jeypore Town -1 Feeder emanates from Old control room PSS. Peak load of the feeder is 170 Amps and conductor size in Trunk line 80sq.mm and Branches 55 sq.mm. Length of the feeder is 5 CKM. Koraput feeder emanates from Old Control room PSS. Peak load of the feeder is 60 Amps and conductor size in Trunk line 80 sq.mm and Branches 55sq.mm. Length of the feeder is 3 CKM. For improving system reliability by N-1 arrangement link line 0.8 CKM is proposed from Purnagaraha Chowk to Boys hostel Back side.

	During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders
Sr No	23
Circle-Division	Jeypore-JED
Existing 11 kV Feeder Name	Umri
Location From	New Bus Stand PSS
Location To	AIR Feeder Four Pole
Considered Length (CKM)	0.2
No. of Bay required	1
Project Cost (Cr.)	0.28
Proposed Conductor (Sq.mm)	100
Considered Year	2025
Technical Justification	11 kV Umri Feeder (Length-25 Ckm, Load- 100 Amps., Consumers-2000) emanates from 33/11 kV New bus stand PSS. Owing to the length, there is frequent tripping as well as low voltage at tail end of the feeder. The feeder supplies power to some of the industrial loads , Medical and Other Govt Organization which are affected for long duration due to tripping. So, a new line 0.2Ckm. along with additional new 11 kV bay at Randhapalli PSS is proposed for Load Bifurcation. On New line 40 Amps and approx.800 consumers will be diverted from existing Umri Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.
Sr No	24
Circle-Division	Jeypore-JED

Existing 11 kV Feeder Name	Barniput PSS
Location From	Dandaguda PSS
Location To	Balliguda Village
Considered Length (CKM)	0.25
No. of Bay required	0
Project Cost (Cr.)	0.05
Proposed Conductor (Sq.mm) & type of pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	11 kV Barniput Feeder (Length-17 Ckm, Load- 40 Amps., Consumers-2500) emanates from 33/11 kV Dangaguda PSS. The feeder supplies power to some of the industrial loads which are affected for long duration due to tripping Since line passing through forest area. Hence a link line is proposed to divert the load from Barniput PSS to Balliguda Village to minimize the power interruption. This proposal will improve the reliability in the region & enhance customer satisfaction.

Sr No	25
Circle-Division	Rayagada-PKED
Existing 11 kV Feeder Name	Antaraba-Baghmari
Location From	Jalibadi
Location To	Bhaliasahi
Considered Length (CKM)	4
No. of Bay required	
Project Cost (Cr.)	1.14
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Antaraba feeder originates from Chandragiri PSS having length of 250 CKm & Peak load of feeder is 45Amps. Total 5000 Nos of Consumer connected

	on the feeder. Antaraba which gives Power Supply to Hospital, Block office, School, industrial customers within town area and also rural Consumers. Feeder passes through forest area and encounter frequent tripping. This result into shutdown of urban customers. Hence to mitigate the issue urban load need to be shifted. There is another feeder from same PSS, Baghmari feeder (length 11CKM, conductor size 34Sq.mm). Peak load of Baghmari feeder is 8AMP. Hence load from Antaraba feeder to Baghmari will be shifted via new link line of 4 CKM from Jalibadi tapping point to Bhaliasahi. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.
Sr No	26
Circle-Division	Rayagada-PKED
Existing 11 kV Feeder Name	Town 2-Town 3
Location From	Grid Road-Om
Location To	Shanti Colony DSS
Considered Length (CKM)	0.9
No. of Bay required	
Project Cost (Cr.)	0.24
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2025
Technical Justification	Town 2 Feeder emanates from Parlakhemundi Old PSS. Peak load of the feeder is 100Amps and conductor size in Trunk line 55sq.mm & 80sq.mm and Branches 55 sq.mm. Length of the feeder is 7 CKM. Town 3 feeder emanates from Parlakhemundi Old PSS. Peak load of the feeder is 55Amps and conductor size in Trunk line 55sq.mm

	& 80sq.mm and Branches 55 sq.mm. Length of the feeder is 5CKM. For improving system reliability by N-1 arrangement link line 0.9 CKM is proposed from Grid Road OM to Shanti Colony DSS. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders
Sr No	27
Circle-Division	Rayagada-PKED
Existing 11 kV Feeder Name	Town 2-Town 1
Location From	Pada DSS
Location To	Ghasi ST
Considered Length (CKM)	2
No. of Bay required	
Project Cost (Cr.)	0.54
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2025
Technical Justification	Town 2 Feeder emanates from Parlakhemundi Old PSS. Peak load of the feeder is 100Amps and conductor size in Trunk line 55sq.mm & 80sq.mm and Branches 55 sq.mm. Length of the feeder is 7 CKM. Town 1 feeder emanates from Parlakhemundi Old PSS. Peak load of the feeder is 140Amps and conductor size in Trunk line 80sq.mm and Branches 34 sq.mm. Length of the feeder is 3CKM. For improving system reliability by N-1 arrangement link line 2 CKM is proposed from Pada DSS to Ghasi ST. During exigency condition

	one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders
Sr No	28
Circle-Division	Aska-AED-1
Existing 11 kV Feeder Name	Sheregada
Location From	Saroda Road S/S
Location To	Kalasandharpur Canal Road
Considered Length (CKM)	0.3
No. of Bay required	-
Project Cost (Cr.)	0.09
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Sheregada feeder originates from Aska PSS having length of approx. 25 CKM & Peak load of feeder is 90amps. Supplying to 3898 consumers. Existing 11kV feeder running over residential area at sorada road and there is no scope of erection for intermidiate poles to maintain ground clearance resulting very critical unsafe conditions. To avoid low ground clearance , necessary link line required to divert the existing route from Saroda Road S/S-Kalasandharpur Canal Road. This proposal will improve the reliability in the area & enhance customer satisfaction

Sr No	29
Circle-Division	Berhampur-HED
Existing 11 kV Feeder Name	Gandala new -Gandala
Location From	Gandala new
Location To	Gandala
Considered Length (CKM)	0.3
No. of Bay required	
Project Cost (Cr.)	0.08
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2025
Technical Justification	Gandala Feeder emanates from Gandala PSS. Peak load of the feeder is 70Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 20 CKM. For improving system reliability by N-1 arrangement link line 0.3 CKM is proposed from Gandala PSS to Gandala Village. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	30
Circle-Division	Berhampur-PSED
Existing 11 kV Feeder Name	B.Sarsing-Baragaon
Location From	B.Sarsing
Location To	Baragaon
Considered Length (CKM)	1.8
No. of Bay required	
Project Cost (Cr.)	0.51
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Bhutasarsinghi Feeder emanates from Pandia Junction PSS. Peak load of the feeder is 150Amps and conductor size in Trunk line 80 & 55 sq.mm and Branches 34 sq.mm. Length of the feeder is 65.36 CKM. Baragaon Feeder

	emanates from Balia Pratapur PSS. Peak load of the feeder is 80 Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 28.34 CKM. For improving system reliability by N-1 arrangement link line 1.8 CKM is proposed from Dhobalapalli to Chingudighai. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders
Sr No	31
Circle-Division	Berhampur-PSED
Existing 11 kV Feeder Name	Talasara-New Angaragaon
Location From	Talasara
Location To	New Angaragaon
Considered Length (CKM)	2
No. of Bay required	-
Project Cost (Cr.)	0.57
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Talasara Feeder emanates from Sumandala PSS. Peak load of the feeder is 25Amps and conductor size in Trunk line 55 sq.mm and Branches 34 sq.mm. Length of the feeder is 19.01 CKM. New Angargaon Feeder emanates from Sumandala PSS. Peak load of the feeder is 65Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 43.10 CKM. For improving system reliability by N-1 arrangement link line 2 CKM is proposed from Salabana to Sandhamula. During exigency condition one feeder load can be shifted supplied from another feeder.

	This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	32
Circle-Division	Berhampur-PSED
Existing 11 kV Feeder Name	Talasara-Mundula
Location From	Talasara
Location To	Mundula
Considered Length (CKM)	1.5
No. of Bay required	
Project Cost (Cr.)	0.43
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Talasara Feeder emanates from Sumandala PSS. Peak load of the feeder is 25Amps and conductor size in Trunk line 55 sq.mm and Branches 34 sq.mm. Length of the feeder is 19.01 CKM. Mundula Feeder emanates from Beguniapada PSS. Peak load of the feeder is 20 Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 28.49 CKM. For improving system reliability by N-1 arrangement link line 1.5 CKM is proposed from Paikapada to Gunjabala. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	33
Circle-Division	Berhampur-PSED
Existing 11 kV Feeder Name	Ranjhali-Jamuni
Location From	Ranjhali
Location To	Jamuni
Considered Length (CKM)	0.7
No. of Bay required	
Project Cost (Cr.)	0.20
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Ranjahalli Feeder emanates from Taratarini PSS. Peak load of the feeder is 20Amps and conductor size in Trunk line 100 sq.mm and Branches 55 sq.mm. Length of the feeder is 13.95 CKM. Jamuni Feeder emanates from Taratarini PSS. Peak load of the feeder is 55 Amps and conductor size in Trunk line 100sq.mm and Branches 55 sq.mm. Length of the feeder is 24.36 CKM. For improving system reliability by N-1 arrangement link line 0.7 CKM is proposed from Mukundapur to Near Ranjahalli Bridge. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	34
Circle-Division	Berhampur-GNED
Existing 11 kV Feeder Name	Mill
Location From	Rambha PSS
Location To	Saraswati Vidya mandir
Considered Length (CKM)	4.5

No. of Bay required	0
Project Cost (Cr.)	1.21
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2025
Technical Justification	11 kV Mill Feeder (Length-30 Ckm, Load-120 Amps., Consumers-4932) emanates from 33/11 kV Rambha PSS. Owing to the length, there is frequent tripping as well as low voltage at tail end of the feeder. The feeder supplies power to some of the industrial loads which are affected for long duration due to tripping. So, a new line 4.5 Ckm. is proposed for Load Bifurcation. On New line 45 Amps and approx. 650 consumers will be diverted from existing Mill Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.

Sr No	35
Circle-Division	Berhampur-GNED
Existing 11 kV Feeder Name	KP Gada
Location From	Malud PSS
Location To	Malud market
Considered Length (CKM)	3.5
No. of Bay required	0
Project Cost (Cr.)	0.99
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026

Technical Justification	11 kV KP Gada Feeder (Length-45.17 Ckm, Load- 120 Amps., Consumers-3414) emanates from 33/11 kV Malud PSS. Owing to the length, there is frequent tripping as well as low voltage at tail end of the feeder. The feeder supplies power to some of the industrial loads which are affected for long duration due to tripping. So, a new line 3.5 Ckm. is proposed for Load Bifurcation. On New line 30 Amps and approx.700 consumers will be diverted from existing KP Gada Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.

Sr No	36
Circle-Division	Berhampur-PSED
Existing 11 kV Feeder Name	Solaghara
Location From	PSS
Location To	Govindapur Village
Considered Length (CKM)	0.35
No. of Bay required	0
Project Cost (Cr.)	0.09
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2025
Technical Justification	11 kV Solaghara Feeder (Length-26.74 Ckm, Load- 55 Amps., Consumers- 2900) emanates from 33/11 kV Taratarini PSS. Owing to the lengthy feeder, there is frequent tripping as well as low voltage at tail end of the feeder.

	The feeder supplies power to some of the industrial loads which are affected for long duration due to tripping. So, a new line 0.35 Ckm. is proposed for Load Bifurcation. On New line 15 Amps and approx.630 consumers will be diverted from existing Solaghara Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.
Sr No	37
Circle-Division	Berhampur-GNED
Existing 11 kV Feeder Name	Kanehipur-Naryani
Location From	Srikanta swain baglapur
Location To	Laxmanpur
Considered Length (CKM)	1.5
No. of Bay required	0
Project Cost (Cr.)	0.43
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Kanehipur feeder originates from Kanehipur PSS having length of 35.92CKm & Peak load of feeder is 160Amps. Total 7315 Nos of Consumer connected on the feeder. Kanehipur Feeder which gives Power Supply to Hospital, Block office, School, industrial customers within town area and also rural Consumers. Feeder passes through forest area and encounter frequent tripping. This result into shutdown of urban customers. Hence to mitigate issue urban load need to be shifted. There is another feeder from same PSS, Narayani feeder (length 18.06CKM, conductor size 80/55Sq.mm). Peak load of Narayani feeder is 75 AMP.

	Hence load from Kanehipur feeder to Narayani Feeder will be shifted via new link line of 1.5 CKM from Srikanta swain baglapur to Laxmanpur. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	38
Circle-Division	Berhampur-HED
Existing 11 kV Feeder Name	Kurula-Konkarda
Location From	Adapada PSS(Kurula Feeder)
Location To	Near Adapada PSS(Konkarda Feeder)
Considered Length (CKM)	0.6
No. of Bay required	0
Project Cost (Cr.)	0.17
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Konkarada feeder originates from Adapada PSS having length of 12CKm & Peak load of feeder is 133Amps. This feeder emanates from PTR-3 rated 3.15 MVA which is loaded 80.44% There is another feeder from same PSS, Kurula feeder (length 27CKM, conductor size 55/34Sq.mm). Peak load of Kurula feeder is 58 AMP. This feeder originates from 5 MVA PTR-1 loaded at 22.1%. To mitigate the loading of PTR-3 Swapping of feeders is proposed by link lines which will reduce the loading of PTR-3 and PTR-1 to 35% and 50.68% respectively. The above said proposal will improve the reliability of system. .

Sr No	39
Circle-Division	Berhampur-HED
Existing 11 kV Feeder Name	Saru
Location From	Ramachandrapur
Location To	Ramachandrapur
Considered Length (CKM)	0.35
No. of Bay required	0
Project Cost (Cr.)	0.10
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Saru feeder originates from Hinjli PSS having length of 23CKm & Peak load of feeder is 65Amps. Total 5817 Nos of Consumer connected on the feeder. Saru Feeder which gives Power Supply to PHD Water supply, School, industrial customers within town area and also rural Consumers. The feeder crosses the pond and has a 260-meter span that is hazardous and prone to accidents, making it difficult to operate and maintain the existing line during the breakdown. This result into shutdown of urban customers. Hence to mitigate issue the existing 11kV Line need to be shifted fo approx. length of 0.35CkM. This proposal will improve the reliability in the area & enhance customer satisfaction

Sr No	40
Circle-Division	Berhampur-HED
Existing 11 kV Feeder Name	Hinjili Town-Burupada
Location From	Hinjili Town
Location To	Burupada
Considered Length (CKM)	0.7
No. of Bay required	
Project Cost (Cr.)	0.19

Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2025
	Hinjli Town Feeder emanates from Hinjli PSS. Peak load of the feeder is 135Amps and conductor size in Trunk line 55sq.mm and Branches 55 sq.mm. Length of the feeder is 10 CKM. Burupada Feeder emanates from Hinjli PSS. Peak load of the feeder is 20 Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 11 CKM.
Technical Justification	For improving system reliability by N-1 arrangement link line 0.7 CKM is proposed from Nuagada DSS to MCC Building. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	41
Circle-Division	Berhampur-PSED
Existing 11 kV Feeder Name	Solagarha
Location From	Taratarini Main Gate
Location To	Temple
Considered Length (CKM)	3
No. of Bay required	-
Project Cost (Cr.)	0.77
Proposed Conductor (Sq.mm) & Type of Pole	99(Covered Conductor) with WPB
Considered Year	2025
Technical Justification	Taratarini Temple is getting supply from Solaghara 11 kv feeder through Distribution transformer via. LT line of length 3CKM.This LT line Passes through trees resulting into interrupted power supply to Temple. A new 11Kv 03 CKM link line is proposed from Solaghara

	feeder to Taratarini Temple through alternative route. Hence this will improve the reliability power supply to important Taratarini Temple.

Sr No	42
Circle-Division	City-BED-1
Existing 11 kV Feeder Name	NH Ankuli-Lanjipalli
Location From	Byepass petrol pump
Location To	Lanjipalli square
Considered Length (CKM)	2
No. of Bay required	
Project Cost (Cr.)	0.54
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2025
Technical Justification	NH Ankuli Feeder emanates from Goodshed PSS. Peak load of the feeder is 239Amps and conductor size in Trunk line 100 sq.mm and Branches 55/34 sq.mm. Length of the feeder is 15.1 CKM. Lanjipalli Feeder emanates from Goodshed PSS. Peak load of the feeder is 260Amps and conductor size in Trunk line 100sq.mm and Branches 55 sq.mm. Length of the feeder is 7.3 CKM. For improving system reliability by N-1 arrangement link line 2cKm is proposed from Byepass petrol pump to Lanjipalli square. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	43
Circle-Division	City-BED-1

Existing 11 kV Feeder Name	Karapalli-Old Gopalpur
Location From	Barjis pentha
Location To	parbatipur chaka
Considered Length (CKM)	0.2
No. of Bay required	
Project Cost (Cr.)	0.05
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2025
Technical Justification	Karapalli Feeder emanates from Bhanjabihar PSS. Peak load of the feeder is 82Amps and conductor size in Trunk line 100 sq.mm and Branches 55/34 sq.mm. Length of the feeder is 13.6 CKM. Old Gopalpur Feeder emanates from Bhanjabihar PSS. Peak load of the feeder is 8 Amps and conductor size in Trunk line 95sqmm XLPE AB Cable & 80sq.mm and Branches 55 sq.mm. Length of the feeder is 4.5 CKM. For improving system reliability by N-1 arrangement link line 0.2cKm is proposed from Barjis pentha to parbatipur chaka. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	44
Circle-Division	City-BED-2
Existing 11 kV Feeder Name	Gandhinagar no 2
Location From	Gandhinagar 4th Lane DSS near
Location To	Jananisabha 250 KVA
Considered Length (CKM)	0.3
No. of Bay required	
Project Cost (Cr.)	0.08
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP

Considered Year	2025
Technical Justification	Gandhinagar-2 Feeder emanates from NK Nagar PSS. Peak load of the feeder is 35Amps and conductor size in Trunk line 100 and 80 sq.mm and Branches 55/34 sq.mm. Length of the feeder is 08.2 CKM. For improving system reliability by N-1 arrangement link line 0.3cKm is proposed from Gandhinagar 4th Lane DSS near to Jananisabha 250 KVA. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	45
Circle-Division	City-BED-3
Existing 11 kV Feeder Name	Sasanpadar-Town
Location From	Randha Chowk
Location To	Sasanpadar
Considered Length (CKM)	0.6
No. of Bay required	
Project Cost (Cr.)	0.16
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2025
Technical Justification	Sasanpadar Feeder emanates from Mantridi Golanthara PSS. Peak load of the feeder is 80Amps and conductor size in Trunk line 80 sq.mm and Branches 55 sq.mm. Length of the feeder is 41.8 CKM. Town Feeder emanates from Mantridi Golanthara PSS. Peak load of the feeder is 98 Amps and conductor size in Trunk line 100sq.mm and Branches 55 sq.mm. Length of the feeder is 10.8 CKM.

	For improving system reliability by N-1 arrangement link line 0.6cKm is proposed from Randha Chowk to Sasanpadar. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	46
Circle-Division	City-BED-3
Existing 11 kV Feeder Name	Sumandi-Golanthara
Location From	Sorola Junction 250 KVA DTR
Location To	Jagapur near suresh hospital 16 KVA DTR
Considered Length (CKM)	1.3
No. of Bay required	
Project Cost (Cr.)	0.35
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2025
Technical Justification	Sumandi Feeder emanates from Jagapur PSS. Peak load of the feeder is 25Amps and conductor size in Trunk line 80 sq.mm and Branches 55/34 sq.mm. Length of the feeder is 13.5 CKM. Golanthara Feeder emanates from Jagapur PSS. Peak load of the feeder is 17 Amps and conductor size in Trunk line 80sq.mm and Branches 55 sq.mm. Length of the feeder is 10 CKM. For improving system reliability by N-1 arrangement link line 1.3cKm is proposed from Sorola Junction 250 KVA DTR to Jagapur near suresh hospital 16 KVA DTR. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	47
Circle-Division	City-BED-1
Existing 11 kV Feeder Name	Ankuli-Dura
Location From	Gopalpur NH over bridage one side
Location To	NH over bridage other side
Considered Length (CKM)	0.3
No. of Bay required	
Project Cost (Cr.)	0.08
Proposed Conductor (Sq.mm) & type of pole	100sqmm with RLP
Considered Year	2025
Technical Justification	Ankuli Feeder emanates from Ankuli PSS. Peak load of the feeder is 248mps and conductor size in Trunk line 80 sq.mm and Branches 55/34 sq.mm. Length of the feeder is 7 CKM. Dura Feeder emanates from Dura(Ramchandrapur) PSS. Peak load of the feeder is 58 Amps and conductor size in Trunk line 100sq.mm and Branches 55 sq.mm. Length of the feeder is 7.8 CKM. For improving system reliability by N-1 arrangement link line 0.3cKm is proposed from Gopalpur NH over bridage one side to NH over bridage other side. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	48
Circle-Division	City-BED-2
Existing 11 kV Feeder Name	Old Berhampur
Location From	Ambagada PSS

Location To	Petrol Pump
Considered Length (CKM)	1
No. of Bay required	1
Project Cost (Cr.)	0.52
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with RLP
Considered Year	2025
Technical Justification	11 kV Old Berhampur Feeder (Length-11.17 Ckm, Load- 335 Amps.) emanates from 33/11 kV Ambagada PSS. Owing to the length, there is frequent tripping as well as low voltage at tail end of the feeder. The feeder supplies power to some of the industrial loads which are affected for long duration due to tripping. So, a new line 1 Ckm. is proposed for Load Bifurcation. On New line 90 Amps and approx. 600 consumers will be diverted from existing Old Berhampur Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.

Sr No	49
Circle-Division	City-BED-1
Existing 11 kV Feeder Name	NH-Ankuli
Location From	Goodshed PSS
Location To	Central store
Considered Length (CKM)	1.6
No. of Bay required	1
Project Cost (Cr.)	0.68
Proposed Conductor (Sq.mm)& Type of Pole	100sqmm with RLP

Considered Year	2025
Technical Justification	11 kV NH-Ankuli Feeder (Length-15.1Ckm, Load- 239 Amps., Consumer-5000) emanates from 33/11 kV Goodshed PSS. Owing to the length, there is frequent tripping as well as low voltage at tail end of the feeder. The feeder supplies power to some of the industrial loads which are affected for long duration due to tripping. So, a new line 1.6 Ckm. With additional bay is proposed for Load Bifurcation. On New line 120 Amps will be diverted from existing NH Ankuli Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.

Sr No	50
Circle-Division	City-BED-3
Existing 11 kV Feeder Name	Luchapada
Location From	PSS
Location To	Sriramnagar Ab switch
Considered Length (CKM)	3
No. of Bay required	
Project Cost (Cr.)	1.00
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with RLP
Considered Year	2025
Technical Justification	11 kV Luchapada Feeder (Length-11.3cKm, Load- 272 Amps.,) emanates from 33/11 kV Nimakhandi PSS. Owing to the length, there is frequent tripping as

	well as low voltage at tail end of the feeder. The feeder supplies power to some of the industrial loads which are affected for long duration due to tripping. So, a new line 3 Ckm. is proposed for Load Bifurcation. On New line 90 Amps will be diverted from existing Luchapada Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction

Sr No	51
Circle-Division	City-BED-1
Existing 11 kV Feeder Name	Ambapua
Location From	Wine shop DSS side
Location To	Bajaj bajpayee DSS
Considered Length (CKM)	0.15
No. of Bay required	0
Project Cost (Cr.)	0.04
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with RLP
Considered Year	2025
Technical Justification	Ambapua feeder originates from Ambapua PSS having length of 11.4 CKm & Peak load of feeder is 194Amps. Ambapua Feeder which gives Power Supply to customers within town area. The feeder crosses the busy crowded area that is hazardous and prone to accidents, also, it is difficult to maintain the existing line during the breakdown. In respect to the safety point of view this line needs to be re-route. Hence to mitigate issue the existing 11kV Line need to be diverted approx. length of 0.15ckM.

	This proposal will improve the reliability in the area & enhance customer satisfaction.

Sr No	52
Circle-Division	City-BED-2
Existing 11 kV Feeder Name	City Hospital
Location From	1.Raj Vihar (In front Of Truck Union) 2.Ambagada 3.Subham Bihar
Location To	1.Dhanamera Street 2.City Hospital 3. Harsha Bihar
Considered Length (CKM)	4.3
No. of Bay required	0
Project Cost (Cr.)	1.15
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with RLP
Considered Year	2025
Technical Justification	City Hospital feeder originates from Ambagada PSS having length of 7.9Km & Peak load of feeder is 262Amps. City Hospital Feeder which gives Power Supply to customers within town area. The feeder crosses the busy crowded area that is hazardous and prone to accidents, also, it is difficult to maintain the existing line during the breakdown. In respect to the safety point of view this line needs to be re-routed. Hence to mitigate issue the existing 11kV Line need to be diverted approx. length of 4.3ckM. This proposal will improve the reliability in the area & enhance customer satisfaction.

Sr No	53
Circle-Division	City-BED-2
Existing 11 kV Feeder Name	HIG
Location From	1.DAV School 2. NK Nagar PSS
Location To	1.Police Station 2. HIG Tapping
Considered Length (CKM)	3.62
No. of Bay required	0
Project Cost (Cr.)	0.97
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with RLP
Considered Year	2025
Technical Justification	HIG feeder originates from NK Nagara PSS having length of 11.9Km & Peak load of feeder is 130Amps. HIG Feeder which gives Power Supply to customers within town area. The feeder crosses the busy crowded area that is hazardous and prone to accidents, also, it is difficult to maintain the existing line during the breakdown. In respect to the safety point of view this line needs to be re-routed. Hence to mitigate issue the existing 11kV Line need to be diverted approx. length of 4.62ckM. This proposal will improve the reliability in the area & enhance customer satisfaction.

Sr No	54
Circle-Division	City-BED-2
Existing 11 kV Feeder Name	Gossinuagaon
Location From	1.LIC 2.Chowk 3.DAV School 4.DAV School interlinking of line & 1 Span
Location To	1. Nehru Link DAVSchool 2. 500kVA LIC S/S 3. New Police station
Considered Length (CKM)	5.91

No. of Bay required	0
Project Cost (Cr.)	1.68
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Gosaninuagaon feeder originates from NK Nagara PSS having length of 6.2Km & Peak load of feeder is 384Amps. Gosaninuagaon Feeder which gives Power Supply to customers within town area. The feeder crosses the busy crowded area that is hazardous and prone to accidents, also, it is difficult to maintain the existing line during the breakdown. In respect to the safety point of view this line needs to be re-routed. Hence to mitigate issue the existing 11kV Line need to be diverted approx. length of 5.91ckM. This proposal will improve the reliability in the area & enhance customer satisfaction.

Sr No	55
Circle-Division	City-BED-3
Existing 11 kV Feeder Name	Bhairabhi
Location From	Golanthara Biswantathpur road end pole /Khotasingh
Location To	Bhairabi OTDC 25 KVA DTR/ Mantridi
Considered Length (CKM)	0.7
No. of Bay required	0
Project Cost (Cr.)	0.19
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with RLP
Considered Year	2025

Technical Justification	Bhairabhi feeder originates from Mantridi Golanthara PSS having length of 18.1Km & Peak load of feeder is 52Amps. Bhairabhi Feeder which gives Power Supply to customers within town area. The feeder crosses the busy crowded area also this feeder passes from water logging area that is hazardous and prone to accidents. In respect to the safety point of view this line needs to be re-routed. Hence to mitigate issue the existing 11kV Line need to be diverted approx. length of 0.7ckM. This proposal will improve the reliability in the area & enhance customer satisfaction.

Sr No	56
Circle-Division	City-BED-3
Existing 11 kV Feeder Name	Haldiapadar
Location From	Ralab Main Road near 63 KVA DTR /Haldipadar Chowk
Location To	Ralab road 100 KVA
Considered Length (CKM)	0.5
No. of Bay required	0
Project Cost (Cr.)	0.13
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with RLP
Considered Year	2025
Technical Justification	Haldiapadar feeder originates from Kanisi PSS having length of 31.7Km & Peak load of feeder is 173Amps. Haldiapadar Feeder which gives Power Supply to customers within town area. The feeder crosses the busy crowded area that is hazardous and prone to accidents. In respect to the safety point of view this line needs to be re-routed. Hence to mitigate issue the existing 11kV Line need to be diverted approx. length of 0.5ckM.

	This proposal will improve the reliability in the area & enhance customer satisfaction.

Sr No	57
Circle-Division	Aska-GSED
Existing 11 kV Feeder Name	N.K Pentha
Location From	Dhepasankarkhali Village
Location To	Dhepasankarakhali 16 KVA DSS
Considered Length (CKM)	0.2
No. of Bay required	-
Project Cost (Cr.)	0.06
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with RLP
Considered Year	2026
Technical Justification	N.K Pentha feeder originates from Bhismagiri PSS having length of 90CKm & Peak load of feeder is 62Amps. Total 7047 Nos of Consumer connected on the feeder. N.K Pentha Feeder which gives Power Supply to rural Consumers. The 11kv NK Pentha Feeder passing through dense forest area for which breakdown occurs maximum time in this section Many times of issue raise by Villagers for linking of 11kv NK pentha feeder from Dhepasankarakahli Village to Dhepasankarkhali 16 kva for reducing interruption & Reliable power supply for Consumers. This result into shutdown to Rural customers. Hence to mitigate issue the existing 11kV Line need to be diverted of approx. length of 0.2Ckm. This proposal will improve the reliability in the area & enhance customer satisfaction.

Sr No	58
Circle-Division	Aska-GSED
Existing 11 kV Feeder Name	Dengausta
Location From	Singipur 63 Kva DSS
Location To	Harina 100 Kva DSS
Considered Length (CKM)	1.1
No. of Bay required	-
Project Cost (Cr.)	0.31
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with RLP
Considered Year	2026
Technical Justification	Dengausta feeder originates from Podamari PSS having length of 60CKm & Peak load of feeder is 142Amps. Total 8290 Nos of Consumer connected on the feeder. Dengausta Feeder which gives Power Supply to small Industries, Urban and rural Consumers. The 11kv Dengausta Feeder passing through dense bamboo forest and mango garden, for which breakdown occurs maximum time in this section. Many times isuues raise by Villagers for linking of 11kV Dengausta feeder from Singipur 63kva to Harina 100kva for reducing interruption & Reliable power supply for village B.Adhikariguda. This result into shutdown to Urban & Rural customers. Hence to mitigate issue the existing 11kV Line need to be shifted of approx. length of 1.1Ckm. This proposal will improve the reliability in the area & enhance customer satisfaction.

Sr No	59
Circle-Division	Bhanjnagar-BNED
Existing 11 kV Feeder Name	Brahmanpadar-Badangi
Location From	Kupati Tapping point
Location To	Billupada Tapping Point
Considered Length (CKM)	0.4
No. of Bay required	-
Project Cost (Cr.)	0.07
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Brahamanpadar Feeder emanates from Gallery PSS. Peak load of the feeder is 06 Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 08 CKM. Badangi feeder emanates from Gallery PSS. Peak load of the feeder is 16Amps and conductor size in Trunk line 55sq.mm and Branches 34 sq.mm. Length of the feeder is 34 CKM. For improving system reliability by N-1 arrangement link line 0.4 CKM is proposed from Kupati Tapping point to Billupada tapping point. During exigency condition one feeder load can be shifted supplied from another feeder. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders

Sr No	60
Circle-Division	Bhanjnagar-BNED
Existing 11 kV Feeder Name	Gangapur- K.B Pur
Location From	K.B Pur Main Road
Location To	Harijan Sahi
Considered Length (CKM)	0.5
No. of Bay required	-
Project Cost (Cr.)	0.09

Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Gangapur feeder originates from K.B pur PSS having length of 26CKm & Peak load of feeder is 41Amps. Total 2914 Nos of Consumer connected on the feeder. Gangapur feeder which gives Power Supply to rural Consumers. Feeder passes through forest area and encounter frequent tripping. This result into shutdown of urban customers. Hence to mitigate issue urban load need to be shifted. There is another feeder from same PSS, K.B Pur feeder (length 16CKM, conductor size 55Sq.mm). Peak load of K.B Pur feeder is 73 Amps. Hence load from K.B. Pur feeder to Gangapur Feeder will be shifted via new link line of 0.5 CKM from K.B Pur main Road to Harijan Sahi. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	61
Circle-Division	Bhanjnagar-BNED
Existing 11 kV Feeder Name	Belaghunta Town - Ambapua
Location From	PHD Pump
Location To	Chidhiaplli
Considered Length (CKM)	1.5
No. of Bay required	-
Project Cost (Cr.)	0.27
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Belaghunta town feeder originates from Belaghunta PSS having length of 20CKm & Peak load of feeder is 94Amps. Total 3794 Nos of

	Consumer connected on the feeder. Belaghunta feeder which gives Power Supply to industrial customers within town area and also rural Consumers. Feeder passes through forest area and encounter frequent tripping. This result into shutdown of urban customers. Hence to mitigate issue urban load need to be shifted. There is another feeder from same PSS, Ambapua feeder (length 55CKM, conductor size 55 Sq.mm). Peak load of Ambapua town feeder is 30Amps. Hence load from Belaghunta Town feeder to Ambapua Feeder will be shifted via new link line of 1.5 CKM from PHD Pump to Chidhiapalli DSS. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	62
Circle-Division	Bhanjnagar-BNED
Existing 11 kV Feeder Name	Nuagaon-Jilundi
Location From	Saluapalli
Location To	Kushapalli
Considered Length (CKM)	0.8
No. of Bay required	-
Project Cost (Cr.)	0.14
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Nuagam feeder originates from Belaghunta PSS having length of 75CKm & Peak load of feeder is 88Amps. Total 5798 Nos of Consumer connected on the feeder. Nuagam feeder which gives Power Supply to industrial customers within town area

	and also rural Consumers. Feeder passes through forest area and encounter frequent tripping. This result into shutdown of urban customers. Hence to mitigate issue urban load need to be shifted. There is another feeder from Govindpur PSS, Jilundi feeder (length 10CKM, conductor size 55 Sq.mm). Peak load of Jilundi feeder is 52Amps. Hence load from Nuagam feeder to Jilundi Feeder will be shifted via new link line of 0.8 CKM from Saluapalli to Kushapalli DSS. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	63
Circle-Division	Bhanjnagar-BOED
Existing 11 kV Feeder Name	Udaypur-Manikpur
Location From	Udaypur
Location To	Malliku
Considered Length (CKM)	2.0
No. of Bay required	-
Project Cost (Cr.)	0.36
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Udaypur feeder originates from Kantamal PSS having length of 26CKm & Peak load of feeder is 08Amps. Total 306 Nos of Consumer connected on the feeder. Udaypur feeder which gives Power Supply to rural Consumers. Feeder passes through forest area and encounter frequent tripping. This result into shutdown of urban customers. Hence to mitigate issue urban load need to be shifted. There is another feeder from Ghantapada

	PSS, Manikpur feeder (length 150CKM, conductor size 34 Sq.mm). Peak load of Manikpur feeder is 27Amps. Hence load from manikpur feeder to Udaypur Feeder will be shifted via new link line of 02 CKM from Udaypur to Malliku DSS. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	64
Circle-Division	Bhanjnagar-PED
Existing 11 kV Feeder Name	Linapada-Adabadi
Location From	Near HP Gas office Sankarakhola
Location To	Near Adabadi Pond Sankarkhola
Considered Length (CKM)	2.0
No. of Bay required	-
Project Cost (Cr.)	0.36
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Linapada feeder originates from Sankharkhola PSS having length of 170CKm & Peak load of feeder is 46Amps. Total 1478 Nos of Consumer connected on the feeder. Linapada feeder which gives Power Supply to industrial customers within town area and also rural Consumers. Feeder passes through forest area and encounter frequent tripping. This result into shutdown of urban customers. Hence to mitigate issue urban load need to be shifted. There is another feeder from same PSS, Adabadi feeder (length 70CKM, conductor size 34 Sq.mm). Peak load of Adabadi feeder is 35Amps.

	Hence load from Linapada feeder to Adabadi Feeder will be shifted via new link line of 02 CKM from Near HP Gas Office Sankarakhola to Near Adabadi Pond Sankarakhola. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	65
Circle-Division	Bhanjnagar-PED
Existing 11 kV Feeder Name	Bataguda-Simanbadi
Location From	Samargaon
Location To	Asuadisha
Considered Length (CKM)	8.0
No. of Bay required	-
Project Cost (Cr.)	1.45
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Bataguda feeder originates from Balliguda PSS having length of 138CKm & Peak load of feeder is 15Amps. Total 1868 Nos of Consumer connected on the feeder. Bataguda feeder which gives Power Supply to Hospital, Block office, School, industrial customers within town area and also rural Consumers. Feeder passes through forest area and encounter frequent tripping. This result into shutdown of urban customers. Hence to mitigate issue urban load need to be shifted. There is another feeder from Daringbadi PSS, Simanbadi feeder (length 205CKM, conductor size 34 Sq.mm). Peak load of Simanbadi feeder is 45Amps.

	Hence load from Simanbadi feeder to bataguda Feeder will be shifted via new link line of 08 CKM from Samargaon to Asuadisha. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	66
Circle-Division	Bhanjnagar-PED
Existing 11 kV Feeder Name	Dasingbadi-Rukanbadi
Location From	Coffee Plant Parampanga
Location To	Landapanga-ITI college
Considered Length (CKM)	2.5
No. of Bay required	-
Project Cost (Cr.)	0.45
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Dasingbadi feeder originates from Daringbadi PSS having length of 240CKm & Peak load of feeder is 40Amps. Total 4468 Nos of Consumer connected on the feeder. Dasingbadi feeder which gives Power Supply to Hospital, Block office, School, industrial customers within town area and also rural Consumers. Feeder passes through forest area and encounter frequent tripping. This result into shutdown of urban customers. Hence to mitigate issue urban load need to be shifted. There is another feeder from Same PSS, Rukanbadi feeder (length 22CKM, conductor size 55 Sq.mm). Peak load of Rukanbadi feeder is 55Amps. Hence load from Dasingbadi feeder to rukanbadi Feeder will be shifted via new link line of 2.5 CKM

	from Coffee Plant parampanga to Landapanga ITI college. This proposal will improve the reliability in the area & enhance customer satisfaction and will also create N-1 arrangement among two feeders.

Sr No	67
Circle-Division	Bhanjnagar-BOED
Existing 11 kV Feeder Name	Town-2
Location From	Boudh PSS
Location To	Depo office back side
Considered Length (CKM)	1.5
No. of Bay required	1
Project Cost (Cr.)	0.51
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2025
Technical Justification	11 kV Town-II Feeder (Length-21Ckm, Load-160 Amps., Consumers-8000) emanates from 33/11 kV Boudh PSS. Owing to the length, there is frequent tripping as well as low voltage at tail end of the feeder. The feeder supplies power to some of the industrial loads which are affected for long duration due to tripping. So, a new line 1.5 Ckm. along with additional new 11 kV bay at Boudh PSS is proposed for Load Bifurcation. On New line 50Amps and approx.2500 consumers will be diverted from existing Town-II Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.

Sr No	68
Circle-Division	Bhanjnagar-PED
Existing 11 kV Feeder Name	Mandakia

Location From	Raikia PSS
Location To	Panganaju AB Switch
Considered Length (CKM)	2.0
No. of Bay required	1
Project Cost (Cr.)	0.59
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2025
Technical Justification	11 kV Mandakia Feeder (Length-95 Ckm, Load- 75 Amps., Consumers-2637) emanates from 33/11 kV Raikia PSS. Owing to the length, there is frequent tripping as well as low voltage at tail end of the feeder. The feeder supplies power to some of the industrial loads which are affected for long duration due to tripping. So, a new line 2.0 Ckm. along with additional new 11 kV bay at Raikia PSS is proposed for Load Bifurcation. On New line 30 Amps and approx.1100consumers will be diverted from existing Mandakia Feeder. This proposal will improve the reliability in the region & enhance customer satisfaction.

Sr No	69
Circle-Division	Bhanjnagar-BNED
Existing 11 kV Feeder Name	Gangapur-Sankadodanda
Location From	Tokaganda PHD
Location To	Dandipadar
Considered Length (CKM)	1.0
No. of Bay required	-
Project Cost (Cr.)	0.18
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026

Technical Justification	Gangapur feeder originates from Bhanjnagar PSS having length of 37CKm & Peak load of feeder is 40Amps. Total 4278 Nos of Consumer connected on the feeder. Gangapur Feeder which gives Power Supply to rural Consumers. Sankadodanda feeder originates from Lalsingh PSS having length of 30CKm & Peak load of feeder is 40Amps. Total 1658 Nos of Consumer connected. Sankadodanda Feeder which gives Power Supply to rural Consumers. The feeder crosses the River and forest areaand hence field staff are facing difficulty to operate and maintain the existing line during the breakdown. This result into shutdown of Rural customers. To avoid River Crossing & Forest Area We Will Link the Line and Shift the Load Of Dandipadar of Sankadonda feeder from Lalsingi PSS To Toka Ganda Phd of Gangapur feeder from Bhanjnagar PSS Hence to mitigate issue the existing 11kV Line need to be shifted of approx. length of 1.0CKm. This proposal will improve the reliability in the area & enhance customer satisfaction.

Sr No	70
Circle-Division	Bhanjnagar-BNED
Existing 11 kV Feeder Name	Kullad
Location From	Golapada Square
Location To	Betara
Considered Length (CKM)	1.0
No. of Bay required	-

Project Cost (Cr.)	0.18
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Kullad feeder originates from Bhanjnagar PSS having length of 42CKm & Peak load of feeder is 70Amps. Total 3237 Nos of Consumer connected on the feeder. Kulada Feeder which gives Power Supply to PHD Water supply, School, industrial customers within town area and also rural Consumers. The Feeder Line at present is going through agricultural land and forest area where practice of Boar hunting is going on due to which field staff is facing difficulty during patrolling and to operate and maintenan the feeder due to paddy field.This result into shutdown of urban & Rural customers. Thus after linking we will avoid the paddy field and forest area and will be easy for maintenance and patrolling During the Breakdown Hence to mitigate issue the existing 11kV Line need to be shifted of approx. length of 1.0CKm. This proposal will improve the reliability in the area & enhance customer satisfaction.

Sr No	71
Circle-Division	Bhanjnagar-BNED
Existing 11 kV Feeder Name	Jilundi
Location From	Bodapoda (Agulasahi)
Location To	Bodapoda (Nuasahi)
Considered Length (CKM)	0.7
No. of Bay required	-
Project Cost (Cr.)	0.13

Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Jilundi feeder originates from Govindpur PSS having length of 10CKm & Peak load of feeder is 51Amps. Total 4388 Nos of Consumer connected on the feeder. Jilundi Feeder which gives Power Supply to PHD Water supply, School, industrial customers within town area and also rural Consumers. The feeder crosses the Paddy Field making it difficult to operate and maintain the existing line during the breakdown. This result into shutdown of Rural customers. Hence to mitigate issue the existing 11kV Line need to be diverted of approx. length of 0.7CKm. This proposal will improve the reliability in the area & enhance customer satisfaction.

Sr No	72
Circle-Division	Bhanjnagar-BOED
Existing 11 kV Feeder Name	Manikpur
Location From	Srimal
Location To	Simlijhor
Considered Length (CKM)	2.0
No. of Bay required	-
Project Cost (Cr.)	0.36
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026

Technical Justification	Manikpur feeder originates from Ghantapada PSS having length of 150CKm & Peak load of feeder is 27Amps. Total 2352 Nos of Consumer connected on the feeder. Manikpur Feeder which gives Power Supply to town area and also rural Consumers. As Malikud is supplied from sirmal to Simlijhor through Malikud feedetr. But nearby feeder is Udaypur. If Malikud village to be fed from nearby udaypur feeder then we have to link sirmal to similijor. So a link line is proposed for connecting the two villages sirimal & simlijhor. Hence to mitigate issue the existing 11kV Line need to be shifted of approx. length of 2.0 Ckm. This proposal will improve the reliability in the area & enhance customer satisfaction.

Sr No	73
Circle-Division	Bhanjnagar-BOED
Existing 11 kV Feeder Name	Janapanka
Location From	Budhipadar Bara Sahi
Location To	Mukundpur petrol pump
Considered Length (CKM)	0.5
No. of Bay required	-
Project Cost (Cr.)	0.09
Proposed Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Janpanka feeder originates from Janapanka PSS having length of 92CKm & Peak load of feeder is 52Amps. Total 3544 Nos of Consumer connected on the feeder. Janpanka Feeder which gives Power Supply to town area and also rural Consumers. Currently mukundpur is getting supply from 6 km 11 kv line which is creating difficulty in attending

the breakdown for respective village and it takes time to restore the supply. So, proposal to link the village from nearby location to avoid public hindrance and availing reliable power supply.

This result into shutdown of Urban & Rural customers. Hence to mitigate issue the existing 11kV Line need to be shifted of approx. length of 0.5Ckm.

This proposal will improve the reliability in the area & enhance customer satisfaction.

128. The Cost of construction of new 33 KV and 11 KV Lines is as follows:

Table 33 : Capital Investment for establishment of new 33 KV and 11 KV lines

			Unit Cost- (Rs Lakhs)		Quantity		Cost (Rs Cr)	
Sr. No.	Description of Projects	UOM	FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	New 33 KV Line 148 Sqmm RLP	Ckm	35.56	37.69	13.50	7.60	4.80	2.86
2	New 33 KV Line 148 Sqmm WPB	Ckm	26.43	28.02	17.32	33.45	4.58	9.37
3	New 33 KV Bay at PSS H-Pole	Nos.	33.72	35.74	3.00	3.00	1.01	1.07
4	New 33 KV Bay at PSS WPB	Nos.	32.26	34.20	4.00	6.00	1.29	2.05
5	11 KV New Lines for reliable power supply 100 Sqmm RLP	Ckm	26.80	28.41	29.20	28.17	7.82	8.00
6	11 KV New Lines for reliable power supply 100 Sqmm WPB	Ckm	17.04	18.07	13.20	35.72	2.25	6.45
7	11 KV New Line with 100sqmm Covered Conductor	Ckm	25.58	27.12	3.00		0.77	0.00
8	11 KV Bay	Nos	24.94	26.44	7.00	1.00	1.75	0.26
	Total						**24.27**	**30.08**

4.3.4 Upgradation of 33 KV & 11 KV Line

129. The 33kV or 11kV feeders are important assets for a distribution utility which connects various substations and provide power to end consumers. TPSODL has

nearly 4062 Ckt. KMs of 33kV and 45400 Ckt. KMs of 11kV feeders under its operational area.

130. During site visits, it has been observed that conductor of multiple sizes is used in different section which restricts the circuit capacity. This also leads to conductor heating and high losses. Hence it is required to increase the conductor size for such lines to meet loading as well as load growth for next 5-10 years.

131. 33kV and 11kV lines considered for Conductor Upgradation based on Under size Conductor &Under Voltage due to Line losses. Input also taken into consideration from load flow studies carried out for 33kV and 11kV Lines.

132. Load flow (LF) is one of the most important parts to study and analyze the power system operation. The purpose of Load Flow is to understand how power distribution network behaves while power flows around the electrical network. Carrying out a load flow study assists the engineer in Designing & Operation team whether the network is Operating Efficiently or not and what mitigation plan can help in mitigating the network inadequacies. The load flow study in TPSODL was carried out (with help of CYME Dist. Software) to understand how power flows around the electrical network and what are the deficiencies which need to be attended to ensure reliable and Quality power supply to the consumers. We have also considered the inputs from field teams for section of the lines which are having under size conductor and same has been considered based on cost benefit analysis.

133. We have identified total 121 lines (25 nos of 33kV and 96 nos of 11kV) for conductor upgradation. Some other issues such as tilted poles, damage insulators are observed in identified lines and strengthening measures are also planned for these lines. Based on the same, the 33 KV Lines and 11 KV lines proposed to be upgraded is as given in tables below

4.3.4.1 Upgradation /Refurbishment of 33 KV Lines

Sr No	01
Circle-Division	City-BED-III
Existing 33 kV Feeder Name	Kanisi Feeder

Location From	Haldiapadar 4 Pole Structure (Auto Nagar)
Location To	Kanisi PSS
Considered Length (CKM)	3.0
No. of Bay required	-
Project Cost (Cr.)	0.48
Proposed Conductor (Sq.mm) & Type of Pole	148sqmm with
Considered Year	2025
Technical Justification	The 33kV Kanisi feeder emanates from Berhampur (Ambagada) GSS having total feeder length 15Ckm. It provides power supply to Kanisi PSS and having present peak load 137 A. There are 2 nos. interconnecting 33kV feeders namely Chikiti feeder, Berhampur-II and MKCG Express feeder. 33kV Chikiti feeder emanates from Ambagada GSS and having present peak load 137 A and provides power supply to Lathi, Mantridi, Jagapur PSS and 33kV industrial consumers. Likewise, 33kV Berhampur-II feeder emanates from Ambagada GSS and having present peak load 195 A and provides power supply to NK Nagar PSS. Both Chikiti and Berhampur II feeders have N-1 interconnectivity with Kanisi feeder, so Chikiti or Berhampur-II feeder load is diverted to Kanisi feeder during emergency. During this condition, around 246A power flows through Kanisi feeder. Kanisi feeder also has an interconnection with Medical Express feeder. Kanisi feeder can also feed Goodshed, Ankuli New Medical PSS through 33kV MKCG Express feeder, which has a current peak load of 156A . Out of total 15Ckm of Kanisi feeder, approx. 12Ckm section is with conductor size of 148 sqmm, however, a small section of only 3 Ckm from

	Haladiapadar tapping point to Kanisi PSS is old with conductor size of 100sqmm. This 100 sqmm section limits line capacity during N-1 condition to any of these above feeders (MKCG Express, Berhampur-II or Chikiti). So, this undersized section needs to be upgraded to 148sqmm. This will result in reduction of power interruption during emergency condition. During upgradation as explained above it is also planned to strengthen the section of the line by providing intermediate poles & stay set.

Sr No	02
Circle-Division	City-BED-III
Existing 33 kV Feeder Name	Chikiti Feeder
Location From	Ambagada GSS
Location To	Hadakhandi Road Lathi Tapping point
Considered Length (CKM)	2.5
No. of Bay required	-
Project Cost (Cr.)	0.40
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2025
Technical Justification	The 33kV Chikiti feeder emanates from Berhampur (Ambagada) GSS having total feeder length of approx. 33Ckm. It provides power supply to Lathi, Mantridi, Jagapur PSS and 33kV industrial consumers. This feeder is having present peak load 227 A with conductor size of 100 sqmm. The 2.5Ckm section between Ambagada GSS to Hadakhandi Road Lathi tapping point. Also, Chikiti feeder has 2 nos. interconnections with Kanisi feeder from Ambagada GSS and another 33kV Chikiti-2 feeder from Chikiti GSS. Present peak load of Kanisi feeder is 137A and Chikiti-2 feeder is 97A. Additionally, around 10

	MVA load growth (of IISER Berhampur 7 MVA & IOCL Sihala 5 MVA & IDCO load -2 MVA) is also expected in the area which will be primarily fed directly from Narendrapur or Chikiti GSS but will have back up interconnections with Chikiti feeder. In the view providing back up N-1 connectivity to Kanisi, Chikiti 2 or industrial feeders, 100 sqmm section of Chikiti feeder need to be upgraded to 148sqmm to cater to additional load. During upgradation as explained above it is also planned to strengthen the section of the line by providing intermediate poles & stay set.

Sr No	03
Circle-Division	City-BED-I
Existing 33 kV Feeder Name	Narendrapur Feeder
Location From	Narendrapur GSS
Location To	Narendrapur PSS
Considered Length (CKM)	0.5
No. of Bay required	-
Project Cost (Cr.)	0.08
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2025
Technical Justification	The 33kV Narendrapur feeder emanates from Narendrapur GSS having total feeder length 0.5Ckm. It provides power supply to Narendrapur PSS and having present peak load 55 A. 33kV conductor size is 100 sqmm conductor which is derated due to age & having multiple joints experiencing conductor snapping many times. 33kV Narendrapur feeder also has an interconnectivity with 33kV Bhanjavihar feeder near Narendrapur PSS. 33kV Bhanjavihar feeder

	feeds power supply to Bhanjavihar, Dura and Gopalpur PSS. 33kV Narendrapur feeder need to be strengthened for providing uninterrupted supply to Narendrapur PSS and also for providing backup to Bahnjavihar feeder during emergency condition. Hence above section of 0.5Ckm with 100 sqmm conductor is planned to be upgraded to 148sqmm. This will result in reduction of power interruption during emergency condition. During upgradation as explained above it is also planned to strengthen the section of the line by providing intermediate poles & stay set.

Sr No	04
Circle-Division	City-BED-I
Existing 33 kV Feeder Name	Ambapua Feeder
Location From	Narendrapur GSS
Location To	Ambapua PSS
Considered Length (CKM)	2.5
No. of Bay required	-
Project Cost (Cr.)	0.4
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2025
Technical Justification	The 33kV Ambapua feeder emanates from Narendrapur GSS having present peak load of 166 A. It provides power supply to Ambapua, Bidyutpuri & Medical PSS. Conductor size for this Ambapua feeder is 100 sqmm which is also derated due to age & multiple joints. At Medical PSS, this Ambapua feeder is having 3 nos. interconnections with 33kV feeders namely

	Medical feeder (127A), Medical Express feeder (156A) and Lochapada feeder (152A). Due to lower size and aged conductor, Ambapua feeder is unable to cater Medical or Medical Express feeder load during emergency. Presently during emergency, Medical or Medical Express feeder load is diverted to Lochapada feeder causing overloading of Amagada GSS requiring loadshedding during peak loading condition in Summer season. Hence 33kV Ambapua feeder 2.5Ckm line section with 100 sqmm conductor from Narendrapur GSS to Ambapua PSS need to be upgraded to 148sqmm. This will result in reduction of loading in Ambagada GSS and can provide N-1 power supply during emergency condition. During upgradation as explained above it is also planned to strengthen the section of the line by providing intermediate poles & stay set.

Sr No	05
Circle-Division	Aska-AED-I
Existing 33 kV Feeder Name	Soroda feeder (Dharakote)
Location From	Aska old GSS
Location To	Aska Bus Stand 4PoleStructure, Baslisara Tapping Point
Considered Length (CKM)	5.0
No. of Bay required	-
Project Cost (Cr.)	0.84
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2026

Technical Justification	The 33kV Soroda (Dharakote) feeder emanates from Aska Old GSS having total feeder length of approx. 24Ckm. This feeder supplies power to Dharakote, Balisira, Khariguma & Jahada PSS, two Megalift connections at Haripur & Patapur and Janhibili PHD connection. This feeder is having present peak load 216 A in normal condition and 269A. during peak operating condition. (During peak load requirement of Janhibill PHD & Megalift is high). 33kV Soroda feeder is having mixed conductor size of 100 sqmm and 80sqmm which is also derated due to age & multiple joints. To avoid overloading condition, the trunk section from Aska Old GSS to Aska Bus Stand 4P Str for Balisira tapping point of 5Ckm needs to upgraded to 148sqmm.During upgradation as explained above it is also planned to strengthen the section of the line by providing intermediate poles & stay set.

Sr No	06
Circle-Division	Aska-AED-II
Existing 33 kV Feeder Name	K.S Nagar
Location From	Aska old GSS
Location To	K.S Nagar PSS
Considered Length (CKM)	6.5
No. of Bay required	-
Project Cost (Cr.)	1.03
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2025

Technical Justification	33kV K S Nagar feeder emanates from Aska College Sq GSS. This feeder supplies to K S Nagar PSS. Feeder peak load is 168 amps with conductor size 100sqmm and length of 6.7 ckm. Conductor is very old and is derated due to multiple joints. The survey of the line has shown that many poles, stays sets, and V cross arms are in damaged condition causing frequent interruptions. This 33 KV feeder is passing through agriculture land & longer span length with low ground clearance. Hence in order to improve reliability and meet future load growth, feeder need to be strengthened by upgrading to 148sqmm. This will result in reduction of power interruption during emergency condition. During upgradation as explained above it is also planned to strengthen the section of the line by providing intermediate poles & stay set.

Sr No	07
Circle-Division	Berhampur-GNED
Existing 33 kV Feeder Name	Tisco Feeder
Location From	Chatarpur GSS
Location To	Ramchandrapur PSS
Considered Length (CKM)	4.0
No. of Bay required	-
Project Cost (Cr.)	0.64
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2025
Technical Justification	33kV TISCO feeder emanates from Chatrapur GSS and having present peak load 112 A. It provides power supply to Ramchandrapur PSS, Gopalpur Port and HT consumers such as Penna Cement, Tata Tea etc. TISCO feeder is having 100 sqmm

	conductor which is derated due to age & multiple joints. Due to old aged conductor and degradation due to saline effect, conductor snapping is experienced many times. TISCO feedr is also having interconnection with Bhanjavihar feeder which has present peak load is 102A. There is also a plan to construct 33kV link line to connect Bhanjvihar feeder to MES (important customer). 33kV MES has a present peak load of 26A and expected to add approx. 30A (1.6 MVA) very soon. Analysing above situation, TISCO feeder need to be strengthened by upgrading to 148sqmm to improve reliability of supply to existing customers and provide backup supply to Bhanjavihar feeder during emergency condition. During upgradation as explained above it is also planned to strengthen the section of the line by providing intermediate poles & stay set. This will result in reduction of power interruption and provide quality power supply.

Sr No	08
Circle-Division	Berhampur-PSED
Existing 33 kV Feeder Name	Ballia Feeder
Location From	Pursottampur GSS
Location To	Narsinghpur Chakk, Four Pole Structure at Taratarini main Road
Considered Length (CKM)	0.8
No. of Bay required	-
Project Cost (Cr.)	0.13
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2025

Technical Justification	33kV Balia feeder emanates from Purusottampur GSS having currently peak load of 101A, conductor size of 100 sqmm and with total feeder length of approx. 8 Ckm. This feeder is feeding power supply to Balia Pratapur & Khandadeuli PSS. Out of total feeder length, trunk section of 0.8Ckm from Purusottampur GSS to Narsinghpur Chakk, Four Pole Structure at Taratarini main Road is having 100 sqmm conductor which is derated due to age & multiple joints. A new 33kV link line from Balia Pratapur PSS to Kodala PSS is considered in CMPDP scheme. With this new interconnecting line, Kodala & Beguniapada PSS with load of around 157A load is planned to be diverted from 33kV Budhamba feeder & Khalikote feeder to 33kV Balia feeder. Considering future requirement of feeding Kodala and Beguniapada PSS load, existing 100 sqmm section need to be upgraded to 148sqmm to avoid overloading. During upgradation as explained above it is also planned to strengthen the section of the line by providing intermediate poles & stay set.

Sr No	09
Circle-Division	Bhanjanagar-BOED
Existing 33 kV Feeder Name	Boudh Feeder
Location From	Boudh PSS
Location To	Janpanka PSS
Considered Length (CKM)	13.0
No. of Bay required	-
Project Cost (Cr.)	1.97
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026

Technical Justification	33kV Boudh feeder from Boudh GSS provides power supply to Boudh and Janapank PSS. 33kV line length from Boudh PSS to Janapank PSS is 13 km & Current loads on this feeder is 40 A. 33kV conductor size is having 55 sqmm conductor which is derated due to age & multiple joints. Few large-scale industries load of around 900 KW are planned to be added in this feeder. There is also N-1 connectivity from Janapank PSS to Baunsuni PSS (33kV Manmunda feeder). Baunsuni PSS is having peak load of 80A. Analysing above situation, Boudh feeder from Boudh GSS is planned to be strengthened by upgrading to 100sqmm with which it will be able to feed backup power supply to Bausuni PSS during emergency condition. During upgradation it is also planned to strengthen the section of the line by providing intermediate poles & stay set. This will result in reduction of power interruption and provide quality power supply.

Sr No	10
Circle-Division	Bhanjanagar-BNED
Existing 33 kV Feeder Name	Belaghuntha Feeder
Location From	4 Pole Structure at G Nuagaon
Location To	Belaghuntha PSS
Considered Length (CKM)	7.0
No. of Bay required	-
Project Cost (Cr.)	1.11
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2025

Technical Justification	Bhanjnagar feeder is getting supply from Bhanjnagar GSS having feeder length 15 Ckm with present peak load 224A. This feeder is having mix sizes of conductor of 100 &148 sqmm. The trunk section (Bhanjanagar GSS 4 pole str. to Jamapalii 4P Str. - 8.5km) has 148 sqmm conductor. As per the consideration of the current peak load and continuous increase in load demand the balance conductor of length 7Km (4Pole Str at G Nuagaon to Belaguntha PSS) needs to be upgraded from 100sqmm to 148sqmm. During upgradation as explained above it is also planned to strengthen the section of the line by providing intermediate poles & stay set. In addition to technical loss reduction, it will help to reduce tripping & improve maintenance of the same in required location.

Sr No	11
Circle-Division	Bhanjanagar-BNED
Existing 33 kV Feeder Name	K.B Pur Feeder
Location From	Bhanjanagar GSS
Location To	K.B Pur PSS
Considered Length (CKM)	5.0
No. of Bay required	-
Project Cost (Cr.)	0.71
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2025
Technical Justification	KB Pur feeder is getting supply from Bhanjnagar GSS having present peak load 61A. This feeder is having mix sizes of conductor with 55 & 100 sqmm. Out of total feeder length, approx. 5Ckm is having 55 sqmm size of conductor. There is a N-1 connectivity from KB Pur feeder to Balisira PSS. Present peak load of Balisira PSS is

	around 60A. In order to provide back up supply to Balisira PSS, it is planned to strengthen and upgrade 5Ckm section of the K B Pur feeder having 55sqmm conductor to 100sqmm. During upgradation as explained above it is also planned to strengthen the section of the line by providing intermediate poles & stay set. This will result in reduction of power interruption and provide quality power supply.

Sr No	12
Circle-Division	Bhanjanagar-PED
Existing 33 kV Feeder Name	Boudh Feeder
Location From	Phulbani GSS
Location To	Charichak PSS
Considered Length (CKM)	35.0
No. of Bay required	-
Project Cost (Cr.)	5.29
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	33kV Purunakatak feeder emanates from Boudh GSS and is feeding power supply to Charichak PSS, Chatrang PSS & Rambhikata PSS. Presently total peak load of the Purunakatak feeder is around 83 A & additional 190A is planned to be added shortly. Further additional load is also expected to be added on Puranakatak feeder in near future for Railway line works & Water supply work of RWSS. 33kV Boudh feeder from Phulbani GSS provides N-1 connectivity to Purunakatak feeder through Charichak PSS with 35Ckm line having mix sizes of conductor with 55 & 80 sqmm. During emergency condition at Boudh GSS, this N-1 feeder feeds power supply to all PSS & 33kV

	consumers of Purunakatak feeder resulting into overloading and conductor snapping. Analysing the current situation as well as future load growth prospects, there is need to upgrade the conductor size of Boudh feeder from Phulbani GSS to 100 sq. mm to strengthen the network. After this upgradation proposal, Charichak PSS & Chatrang PSS load will be permently diverted from Purunakatak feeder to Boudh feeder.

Sr No	13
Circle-Division	Bhanjanagar-BOED
Existing 33 kV Feeder Name	Boudh Feeder
Location From	Boudh GSS
Location To	Boudh PSS
Considered Length (CKM)	8.0
No. of Bay required	-
Project Cost (Cr.)	1.27
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2025
Technical Justification	33kV Boudh feeder from Boudh GSS is having present peak load is approx. 195A. This feeder supplies power to Boudh & Janapank PSS and Hilung Megalift. 33kV conductor size is having 80sqmm and also the conductor is derated due to age & multiple joints. In the view of present peak load and considering future load growth, trunk section from Boudh GSS to Boudh PSS of 8Ckm needs to be upgraded to 148sqmm to avoid overloading condition. Also after upgradation, there will be possibility to provide backup power supply or load diversion from Manmunda feeder (Baunsuni PSS & some of

	the Megalift load). During upgradation as explained above it is also planned to strengthen the section of the line by providing intermediate poles & stay set.

Sr No	14
Circle-Division	Jeypore-NED
Existing 33 kV Feeder Name	Beheda Feeder
Location From	Beheda PSS
Location To	Raighar PSS
Considered Length (CKM)	18.0
No. of Bay required	-
Project Cost (Cr.)	2.86
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2025
Technical Justification	33kV Beheda feeder emanates from Umerkote GSS and is feeding power supply to Beheda & Raighar PSS. 33kV line length from Beheda to Raighar PSS is approx. 18Ckm with conductor size of 100sqmm and feeder is derated due to age & multiple joints. 33kV peak load of this section is 313A with additional load expected in the area for Agricultural requirements. Presently with existing infrastructure, the system is already overloaded for which technical losses will be more & snapping may happen any time. Hence existing network need to be upgraded from 100 Sqmm to 148 Sqmm along with Intermediate poles, V cross arm, Stay, Isolator. This proposal will help in reduction of technical loss, better System Strengthening and for improving reliability.

Sr No	15
Circle-Division	Jeypore-NED

Existing 33 kV Feeder Name	Nabrangpur Feeder
Location From	Near Nabrangpur GSS
Location To	Nabrangpur PSS
Considered Length (CKM)	6.0
No. of Bay required	-
Project Cost (Cr.)	0.95
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2025
Technical Justification	33kV Nabarangpur feeder emanates from Nabarangpur GSS and is feeding power supply to Nabarangpur, Chutiaguda, Sanamasigaon & Chalanguda PSS and some of the important consumers in Nabarangpur town like Collector Office, SP Office, Water Treatment & Intake station and Mangalam Timber Pvt Ltd. Total length of the line from Nabarangpur GSS to Nabarangpur PSS is approx. 6.73Ckm with mix conductor size of 100 Sqmm (6Ckm) & 148Sqmm (0.73Ckm). Presently Peak load of Nabarangpur feeder is around 306 A. The existing section of 100 Sqmm conductor size is old aged with multiple joints. The feeder is already overloaded with present peak load & also experiences frequent snapping due to under sized of conductor. As per the load growth pattern & to reduce over loading causing frequent snapping, 6Ckm section needs to be upgraded from 100 sqmm to 148sqmm. During upgradation, it is also planned to strengthen the section of the line by providing intermediate poles & stay set.

Sr No	16
Circle-Division	Jeypore-NED
Existing 33 kV Feeder Name	Umarkote Feeder
Location From	Umarkote GSS
Location To	Jharigaon Road towards Umerkote PSS
Considered Length (CKM)	5.0

No. of Bay required	-
Project Cost (Cr.)	0.84
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2026
Technical Justification	33kV Umerkote feeder emanates from Umerkote GSS having present peak load of 168A and feeding power supply to Umerkote PSS and number of 33kV consumers namely M/S Barbarik Project Ltd, Oneness Cattle & Poultry Feeds etc. Total feeder length is approx. 8Ckm and its conductor size of 100 sqmm which is also derated due to age & multiple joints. Load diversion is planned from 33kV Beheda feeder to Umerkote feeder by proposing a 33kV link line to reduce feeder overloading of Beheda feeder during peak condition. After implantation of this proposal, around 140A load will be diverted to Umerkote feeder. To cater additional load after this load diversion proposal, 100 sqmm section from Umerkote GSS to Jharigaon Road towards Umerkote PSS need to be upgraded to 148sqmm. During upgradation it is also planned to strengthen the section of the line by providing intermediate poles & stay set.

Sr No	17
Circle-Division	Jeypore-NED
Existing 33 kV Feeder Name	Kotpad Feeder
Location From	Kosagumuda
Location To	Kotpad
Considered Length (CKM)	17.0
No. of Bay required	-
Project Cost (Cr.)	2.57
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole

Considered Year	2026
Technical Justification	Presently Kotpad PSS is getting power supply from Jayanagar GSS through 33kV Boriguma feeder with around 33Ckm long line. In SACI scheme, Kotpad PSS is going to get power supply from newly commissioned Boriguma GSS. After this SACI proposal, 33kV distance will reduce from 33Ckm to 6 Ckm from Boriguma GSS to Kotpad PSS. 33kV Kodinga feeder originates from Dabugam GSS feeding power supply to Kodinga & Kosagumuda PSS. Kosagumuda PSS is the tail end PSS and 33kV line length from Dabugam GSS is approx. 39Ckm. Kosagumuda PSS Peak load is approx. 111A and with additional HT industrial load at Bamuni and agricultural and village electrification load at Kosagumuda, total projected load at Kosagumuda will be around 295A. There is a 33kV link connectivity from Kosagumuda to Kotpad PSS having approx. distance of 17Ckm. And with interconnection of Kotapad with Boriguma GSS, distance from Boriguma GSS to Kosagumuda PSS will be around 33Ckm. Normal power feed to Kosagumuda PSS will be from Boriguma GSS. 33kV conductor size of above link line between Kosagumuda and Kotpad PSS is having 34Sq mm conductor which is very old having multiple joint and few tilted poles. To enable load diversion of Kosagumuda PSS from Kodinga feeder to Kotpad feeder, 34 sqmm need to be upgraded to 148sqmm. During upgradation it is also planned to strengthen the section of the line by providing intermediate poles & stay set.

Sr No	18
Circle-Division	Jeypore-KED

Existing 33 kV Feeder Name	Laxmipur Feeder
Location From	Laxmipur PSS - Anwesha Hostel
Location To	Gechela - Sanapetamunda
Considered Length (CKM)	16.0
No. of Bay required	-
Project Cost (Cr.)	2.42
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	Laxmipur feeder is a radial feeder which emanates from Laxmipur GSS feeding power supply to Laxmipur, Narayanpatna, Bandhugaon & Kumbariput PSS. One no. new PSS under ODSSP-IV (Almounda PSS) will also be connected to this line. 33kV line length from Bandhugaon to Narayanpatna PSS is approx. 26Ckm. Out of total 26Ckm, 10Ckm line is already strengthened under CAPEX Remaining 16Ckm line is very old with mixed conductor size of 55 & 80 sqmm. Also, this 33kV feeder is passing through dense forest & hilly terrain because of which restoration of the breakdown takes long time. The survey of the site indicated many poles are damaged besides stays sets, and V cross arms are also in broken condition. Due to poor condition of the 33 KV line frequent interruptions take place. Remaining 16Ckm section of Laxmipur feeder need to be strengthened by upgrading to 100sqmm to improve reliability of supply. During upgradation it is also planned to strengthen the section of the line by providing intermediate poles & stay set. This will result in reduction of power interruption and provide quality power supply.

Sr No	19
Circle-Division	Jeypore-KED
Existing 33 kV Feeder Name	Koraput Feeder

Location From	Sunabeda GSS
Location To	Sunabeda PSS
Considered Length (CKM)	3.0
No. of Bay required	-
Project Cost (Cr.)	0.51
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2026
Technical Justification	33kV Koraput feeder emanates from Sunabeda GSS feeding power supply to Sunabeda, Koraput & Kolab PSS and 33kV consumers like raw water works, clear water works, admo & dhh koraput, sln mch kpt oxygen plant and sln medical college & hospital. 33kV peak load of this feeder is approx. 150A. There is another OMP feeder from Sunabeda GSS having peak load of 88A. There is interlinking line between above two feeders. 33kV Koraput feeder section between Sunabeda GSS to Sunabeda PSS is 3Ckm long with mixed size of conductor of 80 & 100 sqmm. To provide N-1 capability, existing section of 3Ckm line need to be strengthened by upgrading to 148sqmm to be able to feed OMP feeder during emergency condition. During upgradation it is also planned to strengthen the section of the line by providing intermediate poles & stay set. This will result in reduction of power interruption and provide quality power supply.

Sr No	20
Circle-Division	Jeypore-MED
Existing 33 kV Feeder Name	Chitrakonda Feeder
Location From	Balimela GSS
Location To	Balimela PSS
Considered Length (CKM)	3.0

No. of Bay required	-
Project Cost (Cr.)	0.45
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	33kV Chitrakonda feeder emanates from Balimela GSS and feeding power supply to Balimela, Chitakoda & Badapada and 33kV consumers namely BSF TUNNEL CAMP, ARCELORMITTAL NIPPON STEEL & LARGE INDUSTRY WW1. 33kV peak load of this feeder is approx. 150A. 33kV line Balimela GSS to Balimela PSS is 3Ckm which is having mixed size of conductor of 55& 80 sqmm which is old and aged conductor. Hence this 3Ckm line section need to be strengthened by upgrading to 100sqmm. During upgradation it is also planned to strengthen the section of the line by providing intermediate poles & stay set. This will result in reduction of power interruption and provide quality power supply.

Sr No	21
Circle-Division	Rayagada-GED
Existing 33 kV Feeder Name	Dambosora Feeder (Gunpur GSS)
Location From	Shano river
Location To	SP Guda chak
Considered Length (CKM)	1.5
No. of Bay required	-
Project Cost (Cr.)	0.24
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2025

Technical Justification	Previously Dambosora PSS was getting power supply from Akhusingh GSS. After construction of 33kV line proposal, planned under CAPEX FY23, now Dambosora PSS is getting power supply from Gunupur GSS. After the site survey it is found that approx. 1.5Ckm section from Shano River to SP Guda chak is a common 33kV line from both Akhusingh GSS & Gunupur GSS. This common 33kV line is having conductor size is 55 sqmm which is old aged having multiple joints with tilted poles and experiencing many conductor snapping incidences This small section of 1.5Ckm line need to be strengthened by upgrading to 148sqmm. During upgradation it is also planned to strengthen the section of the line by providing intermediate poles & stay set. This will result in reduction of power interruption and provide quality power supply. Also, during outage of Gunupur GSS, this line will help to feed Bikrampur, Jaltar, Gunupur PSS from Akhusingh GSS without any interruption of power supply due to lower size of conductor or conductor snapping.

Sr No	22
Circle-Division	Rayagada-PKED
Existing 33 kV Feeder Name	Back Feeding from Raigada To Jeerang
Location From	Raigada
Location To	Jeerang
Considered Length (CKM)	10.0
No. of Bay required	-
Project Cost (Cr.)	1.51
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026

Technical Justification	Jeerang PSS is getting power supply from Mohana GSS with 33kV line length of 110Ckm through 33kV Paralakhemundi feeder. This long line is also passing through dense forest & hilly terrain because of which restoration post breakdown takes long time. There are some important tourism places near Jeerang which are experiencing frequent power interruptions. There is one more PSS nearby at Raigada which is getting power supply from Paralakhemundi GSS at approx. 25Ckm through Upalada feeder. There is also one 10Ckm long connecting line from Jeerang PSS to Raigada PSS having conductor size 80/100 sqmm which old aged, multiple joints with tilted poles. This line is currently dead and not in service. This 10Ckm interconnecting line is planned to be strengthened by upgrading to 100sqmm. Due to this arrangement, Jeerang PSS will be feed from Paralakhemundi GSS and 33kV feeder distance will reduce from 110 Ckm to 35Ckm. During upgradation it is also planned to strengthen the section of the line by providing intermediate poles & stay set. This will result in reduction of power interruption and provide quality power supply.

Sr No	23
Circle-Division	Rayagada-PKED
Existing 33 kV Feeder Name	Kasinagar Feeder
Location From	Budura
Location To	Gouri
Considered Length (CKM)	5.0
No. of Bay required	-
Project Cost (Cr.)	0.76

Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026
Technical Justification	33kV Kasinagar feeder emanates from Paralakhemundi GSS feeding power supply to Kasinagar, Karada & Khandava PSS. 33kV line length from Kasinagar to Khandava PSS is approx. 18Ckm. Out of total 18Ckm, 13Ckm line is already strengthened through earlier CAPEX proposals. Balance 5Ckm line is very old with conductor size of 34 sqmm. The survey of the site reveals that many poles are damaged besides stays sets, and V cross arms are also in broken condition. Due to poor condition of the 33 KV line, frequent interruptions are taking place. This remaining 5Ckm line need to strengthen by upgrading to 100sqmm to improve reliability. During upgradation it is also planned to strengthen the section of the line by providing intermediate poles & stay set. This will result in reduction of power interruption and provide quality power supply.

Sr No	24
Circle-Division	Jeypore-JED
Existing 33 kV Feeder Name	Borigumma Feeder
Location From	Nuagam Tapping Point
Location To	Kusumi Pss
Considered Length (CKM)	6.0
No. of Bay required	-
Project Cost (Cr.)	0.88
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Considered Year	2026

Technical Justification	33kV Boriguma feeder emanates from Jayanagar GSS is feeding power supply to Randapalli, Jamunda, Boriguma, B Singpur, Kamta, Kotpad, Kusumi & SB Nuagaon PSS. Out of total feeder, Kusumi & SB Nuagaon PSS are fed through 13Ckm line from Nuagam tapping point to Kusumi PSS. This line is with 34 sqmm of conductor. 6Ckm section of the above line between Nuagam tapping point to Kusumi PSS is very old having multiple joints resulting into frequent interruptions. Hence, in order to improve reliability for Kusumi & SB Nuagaon PSS, upgradation of above 6Ckm section to 100sqmm is proposed.

Sr No	25
Circle-Division	Jeypore-MED
Existing 33 kV Feeder Name	Malkangiri Pandripani Feeder
Location From	MV-11
Location To	Malkangiri PSS
Considered Length (CKM)	5.5
No. of Bay required	-
Project Cost (Cr.)	0.87
Upgraded Conductor (Sq.mm) & Type of Pole	148sqmm with WPB Pole
Considered Year	2025
Technical Justification	33kV Malkangiri feeder emanates from Malkangiri GSS having present peak load 175A and feeding power supply to Malkangiri, Pandripani, Padmagiri PSS & important 33kV consumers namely Collector Office, Blood Bank & DRDA. The trunk section from Malkangiri GSS to Malkangiri PSS is approx. 10Ckm. Existing conductor is mixed size of 80 &100 Sqmm which is

	very old and aged conductor. Out of total feeder length, 4.5Ckm from Malkangiri GSS to MV 11 is already planned for upgradation to 148 sqmm. Remaining 5.5Ckm need to be strengthened by upgrading to 148sqmm During it is also planned to strengthen the section of the line by providing intermediate poles & stay set. This will result in reduction of power interruption and provide quality power supply.

4.3.4.2 Upgradation/Refurbishment of 11 kV Line:

Sr No	1
Circle-Division	Aska-AED-1
11 kV Feeder Name	Aska Bus stand
Considered Length (CKM)	1
Peak Load (Amp.)	115
Existing Conductor (Sq.mm)	80+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.10
Location From-To	1) PNB Bank-Medical 4 Pole
Considered Year	2026
Technical Justification	Aska bus stand feeder emanates from Aska PSS. Total length of the feeder is 10 Ckm. Supplying to approx. 3588 nos. of consumers. Peak load of the feeder is 115 Amps. Hence to meet current load and considering the future load growth, refurbishment and upgradation of only part of section with conductor size of 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	2
Circle-Division	Aska-AED-1
11 kV Feeder Name	Mundamurai
Considered Length (CKM)	1
Peak Load (Amp.)	135
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	1.10
Location From-To	1) PSS-ITI Dhaugam
Considered Year	2025
Technical Justification	Mundamurai feeder emanates from Dharakote PSS .Total length of the feeder is 30 Ckm. Supplying to approx.4779 nos. of consumers.Peak load of the feeder is 135 Amps. Hence to meet current load and considering the future load growth, refurbishment and upgradation of only part of Trunk line with conductor size of 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	3
Circle-Division	Aska-AED-1
11 kV Feeder Name	College square
Considered Length (CKM)	4.5
Peak Load (Amp.)	137
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.41
Location From-To	1.College Square-Hariom Nagar 2.Gollapalli-Kharia 3.Kharia-Humki
Considered Year	2025

Technical Justification	College square feeder emanates from Nuagaon .Total length of the feeder is 40 Ckm. Supplying to approx.4690 nos. of consumers.Peak load of the feeder is 137 Amps. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	4
Circle-Division	Aska-AED-1
11 kV Feeder Name	Bhetanai
Considered Length (CKM)	4.5
Peak Load (Amp.)	125
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.44
Location From-To	1.Bhetanai Shiva Mandir -Dorabandha DP 2.Bhetanai Hazahuda line DP -Badakholi Line AB Switch 3.Badagada LI 3 Cut Point-LI4. 4.Badagada LI 1 Cut Point-LI 1
Considered Year	2026
Technical Justification	Bhetanai feeder emanates from Nuagaon PSS .Total length of the feeder is 68 Ckm. Supplying to approx.4328 nos. of consumers.Peak load of the feeder is 125 Amps. Hence considering the future load growth and to avoid frequent conductor snapping due to ageing of conductor, upgradation of only part of trunk section with conductor size of 55&34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	5
Circle-Division	Aska-AED-1
11 kV Feeder Name	Nuagam
Considered Length (CKM)	1.5
Peak Load (Amp.)	140
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.15
Location From-To	1.Babanpur High School-Babanpur OLIC
Considered Year	2026
Technical Justification	Nuagam feeder emanates from Nuagaon PSS .Total length of the feeder is 4 Ckm. Supplying to approx.2752 nos. of consumers.Peak load of the feeder is 140 Amps. There are large nos. of conductor joints observed which Causes frequent conductor snapping. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 55&34 sq.mm size to 100 sq.mm is proposed under identified section.

Sr No	6
Circle-Division	Aska-AED-2
11 kV Feeder Name	K.S.Nagar Town
Considered Length (CKM)	5.7
Peak Load (Amp.)	143
Existing Conductor (Sq.mm)	80+55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.56
Location From-To	1.SBI Square-Narayanpur Sasan 2.SBI Square-Ambasekharapur 3.IB Square-IB Bangala 4.Tanti Sahi-PHD section Office 5.KS Nagar Police Station -KS Nagar Fire Station

	6.Gudialli Square-Bandevi ITI
Considered Year	2026
Technical Justification	K.S.Nagar Town feeder emanates from K.S.Nagar PSS. Total length of the feeder is 15 ckm supplying to approx.4714 nos. consumer like College, Block Office, Govt. Hospital etc. Peak load of the feeder is 143 amps. There are large nos. of conductor joints which causes frequent conductor snapping. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 55&34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	7
Circle-Division	Aska-AED-2
11 kV Feeder Name	Barida
Considered Length (CKM)	0.4
Peak Load (Amp.)	89
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.04
Location From-To	1.New Barida Feeder Main Line -RWSS Tapping Point Balipali
Considered Year	2026
Technical Justification	Barida feeder emanates from K.S Nagar PSS .Total length of the feeder is 10.80 Ckm. Supplying to approx. 3787 nos. of consumers.Peak load of the feeder is 89 Amps. There are large nos. of conductor joints which causes frequent conductor snapping. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of

	section with conductor size of 34 sq.mm size to 80 sq.mm is proposed under identified section.

Sr No	8
Circle-Division	Aska-AED-2
11 kV Feeder Name	Buguda Town
Considered Length (CKM)	7
Peak Load (Amp.)	156
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.64
Location From-To	1. Biranchi Narayan School to Budhakhola Gate 2.Vegitable Market to Balipindi sahi 3.Buguda Chhaka to Kadapada
Considered Year	2025
Technical Justification	Buguda Town feeder emanates from Buguda PSS. Total length of the feeder is 29.50 ckm supplying to approx.3878 nos. consumer like Police Station, Block Office, Govt. Hospital etc. Peak load of the feeder is 156 amps. There are large nos. of conductor joints which causes frequent conductor snapping. Hence to meet current load and considering future load growth, upgradation of only part of trunk of the line with 34 sq.mm &55sqmm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	9
Circle-Division	Aska-AED-2
11 kV Feeder Name	Karachulli
Considered Length (CKM)	1.6
Peak Load (Amp.)	110
Existing Conductor (Sq.mm)	80+55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole

Project Cost (Cr.)	0.15
Location From-To	1.Near Biranchinarayan School HTA2301-104/3-HTA2301-104/27
Considered Year	2025
Technical Justification	Karchulli feeder emanates from Buguda PSS. Total length of the feeder is 193 ckm. supplying to approx.8526 nos. consumer like Public water supply, Industrial consumer. Peak load of the feeder is 110 amps. There are large nos. of conductor joints which causes frequent conductor snapping. Hence to meet current load and considering future load growth,upgradation of only part of section of the line with 55&34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	10
Circle-Division	Aska-AED-2
11 kV Feeder Name	Sialia
Considered Length (CKM)	2
Peak Load (Amp.)	125
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.19
Location From-To	1.Bagadagola Shiva Temple-Adarsha Vidyalaya
Considered Year	2026
Technical Justification	Sialia feeder emanates from K.S Nagar PSS. Total length of the feeder is 24 ckm. supplying to approx.3661nos. consumer. Peak load of the feeder is 125 amps. There are large nos. of conductor joints which causes frequent conductor snapping. Hence to meet current load and considering future load growth,upgradation of only part of trunk section of the line with 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to

	conductor upgradation line strengthening is also planned.

Sr No	11
Circle-Division	Aska-AED-2
11 kV Feeder Name	Kaniary
Considered Length (CKM)	2
Peak Load (Amp.)	98
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.18
Location From-To	1. Kaniary Chaka-Mathatentulia PHD
Considered Year	2026
Technical Justification	Kaniary feeder emanates from Paikajamuna PSS. Total length of the feeder is 32 ckm. supplying to approx.2689 nos. consumer. Peak load of the feeder is 98 amps. There are large nos. of conductor joints which causes frequent conductor snapping. Hence to meet current load and considering future load growth,upgradation of only part of section of the line with 34 sq.mm size to 80 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	12
Circle-Division	Aska-GSED
11 kV Feeder Name	Digapahandi Town
Considered Length (CKM)	3.5
Peak Load (Amp.)	130
Existing Conductor (Sq.mm)	80+34+55
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.32

Location From-To	1.Digapahandi PSS-SR petrol pump 2.EssarPetrolPump-Stadium 3. Police Station-Gandhi Chak
Considered Year	2025
Technical Justification	Digaphandi feeder emanates from Digaphandi PSS. Total length of the feeder is 11 ckm. supplying to approx. 5666 nos. consumer .Peak load of the feeder is 130 amps. There are large nos. of conductor joints which causes frequent conductor snapping. Hence to meet current load and considering future load growth,upgradation of only part of section of the line with 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	13
Circle-Division	Aska-GSED
11 kV Feeder Name	Patrapur
Considered Length (CKM)	5
Peak Load (Amp.)	90
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.45
Location From-To	1.Patrapur PSS-Bus stand
Considered Year	2026
Technical Justification	Patrapur feeder emanates from Patrapur PSS .Total length of the feeder is 5 Ckm. Supplying to approx. 2554 nos. of consumers. Peak load of the feeder is 90 Amps. There are large nos. of conductor joints observed which causes frequent conductor snapping. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 34

	sq.mm size to 80 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	14
Circle-Division	Berhampur-GNED
11 kV Feeder Name	Matikhalo
Considered Length (CKM)	5
Peak Load (Amp.)	110
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.29
Location From-To	1.Community Health Centre-S. Anjiapalli 2. Sanaarjapalli
Considered Year	2025
Technical Justification	Matikhalo feeder emanates from Ramchandrapur PSS .Total length of the feeder is 9 Ckm. Supplying to approx. 864 nos. of consumers. Peak load of the feeder is 110 Amps. There are large nos. of conductor joints observed which causes frequent conductor snapping. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 55&34 sq.mm size to 80 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	15
Circle-Division	Berhampur-GNED
11 kV Feeder Name	Langleshwar
Considered Length (CKM)	6
Peak Load (Amp.)	80
Existing Conductor (Sq.mm)	55+34

Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.35
Location From-To	1. Bhejiput 4pole-Narayani Chakk
Considered Year	2025
Technical Justification	Langleshwar feeder emanates from Kanheipur PSS .Total length of the feeder is 48.39 Ckm. Supplying to approx. 1971 nos. of consumers.Peak load of the feeder is 80 Amps. There are large nos. of conductor joints observed which Causes frequent conductor snapping. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 34 sq.mm size to 80 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	16
Circle-Division	Berhampur-HED
11 kV Feeder Name	Adapada
Considered Length (CKM)	2
Peak Load (Amp.)	105
Existing Conductor (Sq.mm)	34+55
Upgraded Conductor (Sq.mm) & Type of Pole	100 sqmm with WPB Pole
Project Cost (Cr.)	0.19
Location From-To	1.PSS-Patharpuji
Considered Year	2026
Technical Justification	Adapada feeder emanates from Adapada PSS. Total length of the feeder is 24 ckm. supplying to approx.2490 nos. consumer .Peak load of the feeder is 105 amps. Hence to meet current load and considering future load growth,upgradation of only part of trunk section of the line with 55& 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor

	upgradation line strengthening is also planned addition to conductor upgradation line strengthening is also planned.

Sr No	17
Circle-Division	Berhampur-HED
11 kV Feeder Name	Sheragada Town
Considered Length (CKM)	3
Peak Load (Amp.)	85
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100 sqmm with WPB Pole
Project Cost (Cr.)	0.29
Location From-To	1.PSS-4 Square
Considered Year	2026
Technical Justification	Sheragada Town feeder emanates from Sheragada PSS .Total length of the feeder is 10 Ckm. Supplying to approx. 4906nos. of consumers.Peak load of the feeder is 85 amps. There are large nos. of conductor joints observed which Causes frequent conductor snapping. Hence considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	18
Circle-Division	Berhampur-HED
11 kV Feeder Name	Dhabalpur
Considered Length (CKM)	5
Peak Load (Amp.)	90
Existing Conductor (Sq.mm)	34

Upgraded Conductor (Sq.mm) & Type of Pole	100 sqmm with WPB Pole
Project Cost (Cr.)	0.49
Location From-To	1.PSS-RWSS Dhabalpur
Considered Year	2026
Technical Justification	Dhabalpur feeder emanates from Sheragada PSS .Total length of the feeder is 46 Ckm. Supplying to approx.4494 nos. of consumers.Peak load of the feeder is 90 amps. There are large nos. of conductor joints observed which Causes frequent conductor snapping. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	19
Circle-Division	Berhampur-PSED
11 kV Feeder Name	Pandia
Considered Length (CKM)	3
Peak Load (Amp.)	130
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100 Sq Mm with PSC Pole
Project Cost (Cr.)	0.21
Location From-To	1.Panderkhali-Kolasingi
Considered Year	2026
Technical Justification	Pandia feeder emanates from Pandia Junction PSS. Total length of the feeder is 65.36 Ckm. Supplying to approx. 7482nos. of consumers. Peak load of the feeder is 130 amps. There are large nos. of conductor joints observed which causes frequent conductor snapping. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to

	overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 55&34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	20
Circle-Division	Berhampur-PSED
11 kV Feeder Name	Badabaragam
Considered Length (CKM)	6
Peak Load (Amp.)	80
Existing Conductor (Sq.mm)	55+34+22
Upgraded Conductor (Sq.mm)	80
Project Cost (Cr.)	0.54
Location From-To	1.Baragaon tapp-talasikula 2.Chingudi Tapping-Singipur
Considered Year	2026
Technical Justification	Badabaragam feeder emanates from Pratapur Junction PSS .Total length of the feeder is 7 Ckm. Supplying to approx.2830 nos. of consumers.Peak load of the feeder is 80 amps. There are large nos. of conductor joints observed which Causes frequent conductor snapping. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of34& 22 sq.mm size to 80 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	21
Circle-Division	Bhanjanagar-BNED
11 kV Feeder Name	Nuagaon
Considered Length (CKM)	6.4
Peak Load (Amp.)	87
Existing Conductor (Sq.mm)	34

Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.57
Location From-To	1.Belguntha PSS-Kushapalli
Considered Year	2026
Technical Justification	Nuagaon feeder emanates from Belaguntha PSS .Total length of the feeder is 75 Ckm. Supplying to approx.5798 nos. of consumers.Peak load of the feeder is 87 amps. There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 34 sq.mm size to 80 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	22
Circle-Division	Bhanjanagar-BNED
11 kV Feeder Name	Belguntha Town
Considered Length (CKM)	2.5
Peak Load (Amp.)	80
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.22
Location From-To	1.Bellaguntha PSS-Chidiapalli
Considered Year	2026
Technical Justification	Belguntha Town feeder emanates from Belaguntha PSS . Total length of the feeder is 13.20 Ckm. Supplying to approx. 3794 nos. of consumers. Peak load of the feeder is 80 amps. There are large nos. of conductor joints observed which Causes frequent conductor snapping. Hence to meet current load and considering the future load growth and to avoid frequent

	conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 55sq.mm size to 80 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	23
Circle-Division	Bhanjanagar-BOED
11 kV Feeder Name	Town-2
Considered Length (CKM)	6
Peak Load (Amp.)	160
Existing Conductor (Sq.mm)	55
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.55
Location From-To	1.PSS-DRDA
Considered Year	2025
Technical Justification	Town-2 feeder emanates from Boudh PSS .Total length of the feeder is 21Ckm. Supplying to approx.3000 nos. of consumers. Peak load of the feeder is 160 Amps. .Hence to meet current load and considering the future load growth, upgradation of only part of trunk section with conductor size of 55 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	24
Circle-Division	Bhanjanagar-BOED
11 kV Feeder Name	Town-1
Considered Length (CKM)	2.5
Peak Load (Amp.)	109
Existing Conductor (Sq.mm)	55
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.24

Location From-To	1.PSS-Bapulli Forest Gate
Considered Year	2026
Technical Justification	Town-1 feeder emanates from Boudh PSS .Total length of the feeder is 17 Ckm. Supplying to approx. 3000nos. of consumers.Peak load of the feeder is 109 Amps. Hence to meet current load and considering the future load growth, upgradation of only part of trunk section with conductor size of 55 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	25
Circle-Division	Bhanjanagar-BOED
11 kV Feeder Name	Sulia
Considered Length (CKM)	10
Peak Load (Amp.)	117
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with PSC Pole
Project Cost (Cr.)	0.65
Location From-To	1.Polsaguda-Guabagal
Considered Year	2025
Technical Justification	Sulia feeder emanates from Kantamal PSS .Total length of the feeder is 222.71 Ckm. Supplying to approx.5817nos. of consumers.Peak load of the feeder is 117 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	26
Circle-Division	Bhanjanagar-PED
11 kV Feeder Name	Balliguda High School
Considered Length (CKM)	1.5
Peak Load (Amp.)	120
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with PSC Pole
Project Cost (Cr.)	1.Balliguda PSS-Balliguda High School
Location From-To	0.10
Considered Year	2025
Technical Justification	Balliguda High School emanates from Balliguda PSS .Total length of the feeder is 12 Ckm. Supplying to approx. 5316nos. of consumers.Peak load of the feeder is 120 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	27
Circle-Division	Bhanjanagar-PED
11 kV Feeder Name	College Feeder
Considered Length (CKM)	5
Peak Load (Amp.)	90
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.49
Location From-To	1.Phulbani PSS-Peonpada Junction
Considered Year	2026

Technical Justification	College feeder emanates from Phulabani PSS .Total length of the feeder is 12 Ckm. Supplying to approx.2902nos. of consumers.Peak load of the feeder is 90 Amps. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	28
Circle-Division	Bhanjanagar-PED
11 kV Feeder Name	Bazar Feeder
Considered Length (CKM)	7
Peak Load (Amp.)	115
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.68
Location From-To	1.Phulbani PSS-Madikunda Chock
Considered Year	2026
Technical Justification	Bazar feeder emanates from Phulabani PSS .Total length of the feeder is 16 Ckm. Supplying to approx. 3463nos. of consumers.Peak load of the feeder is 115 Amps. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 55& 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	29

Circle-Division	City-BED-1
11 kV Feeder Name	Ambapua
Considered Length (CKM)	5.9
Peak Load (Amp.)	196
Existing Conductor (Sq.mm)	80+55
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.54
Location From-To	1)Muglee square-Gopal pur jn bridge 2)Bimanagar-Kalinga nagar square 3)PSS-Police colony
Considered Year	2025
Technical Justification	Ambapua feeder emanates from Ambapua PSS .Total length of the feeder is 11 Ckm. Supplying to approx. 4392nos. of consumers.Peak load of the feeder is 196 Amps. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 55 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	30
Circle-Division	City-BED-1
11 kV Feeder Name	Ajodhya nagar
Considered Length (CKM)	3
Peak Load (Amp.)	95
Existing Conductor (Sq.mm)	80+55
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.29
Location From-To	Fuse call center-Nidan
Considered Year	2026

Technical Justification	Ajodhya nagar feeder emanates from Bidyutpuri Colony PSS .Total length of the feeder is 5 Ckm. Supplying to approx.1939 nos. of consumers.Peak load of the feeder is 95 amps. There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 55 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	31
Circle-Division	City-BED-1
11 kV Feeder Name	Lanjipalli
Considered Length (CKM)	4.6
Peak Load (Amp.)	260
Existing Conductor (Sq.mm)	100+55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.42
Location From-To	1.Gurukul Entrance school-Lanjipaali Police Outport
Considered Year	2025
Technical Justification	Lanjipaali feeder emanates from Goodshed PSS .Total length of the feeder is 5 Ckm. Supplying to approx.1939 nos. of consumers.Peak load of the feeder is 260 Amps. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 55 and 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	32
Circle-Division	City-BED-1
11 kV Feeder Name	Siddharth Nagar
Considered Length (CKM)	2.5
Peak Load (Amp.)	174
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.23
Location From-To	1.Vijay Vihar Tapping-Nanda Factory Bhabhinpur Road 2. Vijay Vihar Padia 500kVA DSS-Vijay Vihar 2nd ,3rd 4 lane
Considered Year	2025
Technical Justification	Siddharthnagar feeder emanates from Old Medical PSS .Total length of the feeder is 8.5 Ckm. Supplying to approx.4173 nos. of consumers.Peak load of the feeder is 174 amps. There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 55 and 34 sq.mm size to 100 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	33
Circle-Division	City-BED-1
11 kV Feeder Name	Komapalli
Considered Length (CKM)	1.2
Peak Load (Amp.)	138
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.12

Location From-To	1.New bus stand check -Asok nager souchalaya
Considered Year	2026
Technical Justification	Kamapalli feeder emanates from Medical PSS .Total length of the feeder is 4.60 Ckm. Supplying to approx. 314 nos. of consumers.Peak load of the feeder is 138 Amps. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	34
Circle-Division	City-BED-1
11 kV Feeder Name	Haripur
Considered Length (CKM)	6
Peak Load (Amp.)	267
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.55
Location From-To	1.Agraharam Village 2.Jai Jagannath Hatchery- 3.Gopal Hatchery & Balaram Sahu Hatchery 4..Haripur square to Gopal Krushna 5.Hatchery & Balaram Sahu Hatchery and Badaputi Village
Considered Year	2025
Technical Justification	Haripur feeder emanates from Gopalpur PSS .Total length of the feeder is 28 Ckm. Supplying to approx. 3163nos. of consumers.Peak load of the feeder is 267 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to

	overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 55&34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	35
Circle-Division	City-BED-2
11 kV Feeder Name	Gandhinagar-2
Considered Length (CKM)	5.5
Peak Load (Amp.)	352
Existing Conductor (Sq.mm)	80+55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.51
Location From-To	1.Gandhi Nagar 10Th Line Ab Switch-Bila Sahi Chak 2.Regalia Appartment -Tank Road
Considered Year	2025
Technical Justification	Gandhinagar-2 feeder emanates from N K Nagar PSS .Total length of the feeder is 8 Ckm. Supplying to approx. 7709 nos. of consumers.Peak load of the feeder is 352Amps. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 80+55sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	36
Circle-Division	City-BED-2
11 kV Feeder Name	City Hospital(Amagada)
Considered Length (CKM)	1.2
Peak Load (Amp.)	250
Existing Conductor (Sq.mm)	100+80+55+34+22

Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.11
Location From-To	1.Aska Road To Martha Petta Dtr 2.Phulasundari Sahi To Tapping Point 3.Gouda Sahi To Tapping Point
Considered Year	2025
Technical Justification	City Hospital(Amagada) feeder emanates from Ambagada PSS .Total length of the feeder is 13.43 Ckm. Supplying to approx. 7350 nos. of consumers.Peak load of the feeder is 250 Amps. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of55,34& 22 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	37
Circle-Division	City-BED-2
11 kV Feeder Name	Old Berhampur
Considered Length (CKM)	2
Peak Load (Amp.)	335
Existing Conductor (Sq.mm)	80+55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.18
Location From-To	1.Haridakhandi kali mandir line AB switch-laxmi vihar 3rd line 2.Haridakhandi Kali Mandir-Sukunda Chhak
Considered Year	2025
Technical Justification	Old Berhampur feeder emanates from Ambagada PSS .Total length of the feeder is 15.42 Ckm. Supplying to approx. 9990 nos. of consumers.Peak load of the feeder is 335 Amps. Hence to meet current load and considering the

	future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of conductor size 80,55 and 34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	38
Circle-Division	City-BED-2
11 kV Feeder Name	Gossinuagaon
Considered Length (CKM)	6.1
Peak Load (Amp.)	384
Existing Conductor (Sq.mm)	80+55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.56
Location From-To	NK Nagar PSS-Police station
Considered Year	2025
Technical Justification	Gossinuagaon feeder emanates from N K Nagar PSS .Total length of the feeder is 17.33 Ckm. Supplying to approx. 7955 nos. of consumers.Peak load of the feeder is 384 Amps. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 80+55+34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	39
Circle-Division	City-BED-2
11 kV Feeder Name	Ballipada
Considered Length (CKM)	13
Peak Load (Amp.)	173
Existing Conductor (Sq.mm)	55+34

Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	1.27
Location From-To	1.Amgada-Narayanpur Indranibas
Considered Year	2026
Technical Justification	Ballipada feeder emanates from Ambagada PSS .Total length of the feeder is 73.63 Ckm. Supplying to approx. 5137 nos. of consumers.Peak load of the feeder is 173 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 55&34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	40
Circle-Division	City-BED-3
11 kV Feeder Name	Haldiapadar
Considered Length (CKM)	9
Peak Load (Amp.)	137
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.88
Location From-To	1. Banugam-Ralab road 2.NH Khand-Burukudi
Considered Year	2026
Technical Justification	Haldiapadar feeder emanates from Kanisi PSS .Total length of the feeder is 35 Ckm. Supplying to approx.7605 nos. of consumers.Peak load of the feeder is 137 Amps. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of

	conductor size of 55&34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	41
Circle-Division	City-BED-3
11 kV Feeder Name	Nimakhandi
Considered Length (CKM)	5
Peak Load (Amp.)	178
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.46
Location From-To	1.Nimakhandi-Jagdalpur
Considered Year	2025
Technical Justification	Nimakhandi feeder emanates from Nimakhandi PSS .Total length of the feeder is 22.82 Ckm. Supplying to approx. 2940 nos. of consumers.Peak load of the feeder is 178 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of conductor size 55&34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	42
Circle-Division	City-BED-3
11 kV Feeder Name	Sasanpadar
Considered Length (CKM)	4.7
Peak Load (Amp.)	80
Existing Conductor (Sq.mm)	80+55+34

Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with PSC Pole
Project Cost (Cr.)	0.32
Location From-To	1.Chelia Chakka-Chelia 2.Railway Crossing-Sunadei 3.Sunadei-Panhama Temple 4.Phula Bada-Panada
Considered Year	2026
Technical Justification	Sasanpadar feeder emanates from Mantridi Golanthara PSS .Total length of the feeder is 28.25 Ckm. Supplying to approx. nos. of 4230 consumers.Peak load of the feeder is 80 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 55& 34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned

Sr No	43
Circle-Division	City-BED-3
11 kV Feeder Name	Tulu
Considered Length (CKM)	3.9
Peak Load (Amp.)	190
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.38
Location From-To	PSS-Tulu Road
Considered Year	2026

Technical Justification	Tulu feeder emanates from Kanisi PSS .Total length of the feeder is 63 Ckm. Supplying to approx.6999 nos. of consumers.Peak load of the feeder is 190 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only trunk section with conductor size of 55& 34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	44
Circle-Division	Jeypore-JED
11 kV Feeder Name	Jeypore Town
Considered Length (CKM)	2
Peak Load (Amp.)	120
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.18
Location From-To	Gandhi Park-Court Line
Considered Year	2025
Technical Justification	Jeypore Town feeder emanates from New Bus stand PSS .Total length of the feeder is 10 Ckm. Supplying to 3575 nos. of consumers.Peak load of the feeder is 120 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	45
Circle-Division	Jeypore-JED
11 kV Feeder Name	Borriguma Town
Considered Length (CKM)	2
Peak Load (Amp.)	110
Existing Conductor (Sq.mm)	34+55
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.18
Location From-To	PSS-Borrigumaa Chakka
Considered Year	2025
Technical Justification	Borigumma Town feeder emanates from Borigumma PSS .Total length of the feeder is 24 Ckm. Supplying to 4500 nos. of consumers.Peak load of the feeder is 110 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of Trunk section with conductor size of 55&34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	46
Circle-Division	Jeypore-JED
11 kV Feeder Name	Kotpad
Considered Length (CKM)	2
Peak Load (Amp.)	80
Existing Conductor (Sq.mm)	34+55
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.18
Location From-To	PSS-Mirchi Street
Considered Year	2026

Technical Justification	Kotpad feeder emanates from Kotpad PSS .Total length of the feeder is 13 Ckm. Supplying to approx. 4702 nos. of consumers.Peak load of the feeder is 80 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 34 sq.mm size to 80 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	47
Circle-Division	Jeypore-JED
11 kV Feeder Name	Lingrajnagar
Considered Length (CKM)	6
Peak Load (Amp.)	80
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.54
Location From-To	Irrigation Colony To -Ektaguda
Considered Year	2026
Technical Justification	Lingrajnagar feeder emanates from New Bus Stand PSS .Total length of the feeder is 172 Ckm. Supplying to approx. nos. of 7679 consumers.Peak load of the feeder is 80 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 34 sq.mm size to 80 sq.mm is proposed under identified section.

Sr No	48
Circle-Division	Jeypore-KED
11 kV Feeder Name	Koraput No1
Considered Length (CKM)	9
Peak Load (Amp.)	185
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.88
Location From-To	1.Koraput Old PSS-Pujariput 2.Jagannath temple-Railway 4 Pole 3.Medical-Janiguda
Considered Year	2026
Technical Justification	Koraput No1 feeder emanates from Koraput Old PSS .Total length of the feeder is 40 Ckm. Supplying to nos. of 5792 consumers.Peak load of the feeder is 185 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of trunk section with conductor size of 55&34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	49
Circle-Division	Jeypore-KED
11 kV Feeder Name	Koraput No2
Considered Length (CKM)	6
Peak Load (Amp.)	120
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.58
Location From-To	1.PSS-Gandhinagar Chakk 2.Gindichia temple-Circle Jail

Considered Year	2026
Technical Justification	Koraput No2 feeder emanates from Koraput old PSS .Total length of the feeder is 50 Ckm. Supplying to approx. nos. of 2001 consumers.Peak load of the feeder is 120 Amps. Hence considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	50
Circle-Division	Jeypore-NED
11 kV Feeder Name	Chatabeda
Considered Length (CKM)	7
Peak Load (Amp.)	112
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with PSC Pole
Project Cost (Cr.)	0.48
Location From-To	Raighar PSS-Near Chhatabeda DNK
Considered Year	2026
Technical Justification	Chatabeda feeder emanates from Raighar PSS .Total length of the feeder is 165 Ckm. Supplying to approx. of 3508 consumers.Peak load of the feeder is 112 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth upgradation of conductor size of 34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	51
Circle-Division	Jeypore-NED

11 kV Feeder Name	Sukhigaon
Considered Length (CKM)	5
Peak Load (Amp.)	84
Existing Conductor (Sq.mm)	34+80
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.30
Location From-To	Biriguda -Sukhigaon
Considered Year	2026
Technical Justification	Sukhigaon feeder emanates from Beheda PSS .Total length of the feeder is 61 Ckm. Supplying to approx. nos. of 3985 consumers.Peak load of the feeder is 84 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 34 sq.mm size to 80 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	52
Circle-Division	Jeypore-NED
11 kV Feeder Name	Chutiaguda
Considered Length (CKM)	3
Peak Load (Amp.)	80
Existing Conductor (Sq.mm)	34+55
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with PSC Pole
Project Cost (Cr.)	0.21
Location From-To	PSS-Chutiagada
Considered Year	2026

Technical Justification	Chutiaguda feeder emanates from Chutiaguda PSS .Total length of the feeder is 15 Ckm. Supplying to approx. 1685nos. of consumers.Peak load of the feeder is 80 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only trunk section with conductor size of 55& 34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	53
Circle-Division	Jeypore-NED
11 kV Feeder Name	Nabrangpur Town-1
Considered Length (CKM)	7
Peak Load (Amp.)	162
Existing Conductor (Sq.mm)	80+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with PSC Pole
Project Cost (Cr.)	0.48
Location From-To	Vigilance office-Women office
Considered Year	2026
Technical Justification	Nabrangpur Town-1 feeder emanates from Nabrangpur PSS .Total length of the feeder is 68 Ckm. Supplying to approx. 8027 nos. of consumers.Peak load of the feeder is 162 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of Trunk section with conductor size of 80&34 sq.mm size to 100 sq.mm is proposed under identified

	section.In addition to conductor upgradation line strengthening is also planned

Sr No	54
Circle-Division	Jeypore-NED
11 kV Feeder Name	SILATI
Considered Length (CKM)	6
Peak Load (Amp.)	84
Existing Conductor (Sq.mm)	34+80
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.37
Location From-To	Hirapur -Nuaguda
Considered Year	2026
Technical Justification	Silati feeder emanates from Adhikariguda PSS .Total length of the feeder is 62 Ckm. Supplying to approx. 5142nos. of consumers.Peak load of the feeder is 84 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 34 sq.mm size to 80 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	55
Circle-Division	Rayagada-RED
11 kV Feeder Name	Muniguda-Town
Considered Length (CKM)	7
Peak Load (Amp.)	140
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.64

Location From-To	1.Munmiguda PSS to Bus stand 2.Brahaman Samaj to Pariya
Considered Year	2025
Technical Justification	Muniguda-Town feeder emanates from Muniguda PSS .Total length of the feeder is 15 Ckm. Supplying to approx. 5951nos. of consumers.Peak load of the feeder is 140 Amps. Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 34 sq.mm size to 100 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	56
Circle-Division	Jeypore-MED
11 kV Feeder Name	DNK
Considered Length (CKM)	2
Peak Load (Amp.)	130
Existing Conductor (Sq.mm)	80+100
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.19
Location From-To	Ashirbad Colony-DRDA
Considered Year	2026
Technical Justification	DNK feeder emanates Malkangiri PSS .Total length of the feeder is 7 Ckm. Supplying to approx.3231 nos. of consumers.Peak load of the feeder is 130 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping. Hence to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 80 sq.mm size to 100 sq.mm is proposed under identified section.In addition to

	conductor upgradation line strengthening is also planned

Sr No	57
Circle-Division	Jeypore-MED
11 kV Feeder Name	Balimela Town
Considered Length (CKM)	1.8
Peak Load (Amp.)	110
Existing Conductor (Sq.mm)	80+55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.11
Location From-To	SBOI DSS-Nala Chakk
Considered Year	2026
Technical Justification	Balimela Town feeder emanates Balimela PSS .Total length of the feeder is 6.9 Ckm. Supplying to approx.2200nos. of consumers.Peak load of the feeder is 110 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 55& 34 sq.mm size to 80 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	58
Circle-Division	Bhanjanagar-BOED
11 kV Feeder Name	Bamanda
Considered Length (CKM)	3
Peak Load (Amp.)	87
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.18

Location From-To	PSS-Radhanagar
Considered Year	2026
Technical Justification	Bamanda feeder emanates from Boudh PSS .Total length of the feeder is 42 Ckm. Supplying to approx. 4003nos. of consumers.Peak load of the feeder is 87 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of section with conductor size of 34 sq.mm size to 80 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned.

Sr No	59
Circle-Division	Bhanjanagar-BNED
11 kV Feeder Name	College
Considered Length (CKM)	0.7
Peak Load (Amp.)	123
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.06
Location From-To	Lande sahi Cut-RK nagar
Considered Year	2025

Sr No	60
Circle-Division	Jeypore-MED
11 kV Feeder Name	Sikhapally
Considered Length (CKM)	4
Peak Load (Amp.)	110
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.30
Location From-To	1. MV-17-Tulsiware
Considered Year	2026
Technical Justification	Sikhapally feeder emanates from Bodili PSS .Total length of the feeder is 160 Ckm. Supplying to approx. 2562 Nos of consumers.Peak load of the feeder is 110 Amps.There are large nos. of conductor joints observed which Causes frequent conductor snapping.Hence to meet current load and considering the future load growth and to avoid frequent conductor snapping due to overload and ageing of conductor, upgradation of only part of trunk section with conductor size of 34 sq.mm size to 80 sq.mm is proposed under identified section.In addition to conductor upgradation line strengthening is also planned Identified section in addition to conductor upgradation line/ strengthening is also planned.

Sr No	61
Circle-Division	AED 1-Aska
11 kV Feeder Name	Rugumu
Considered Length (CKM)	7.8
Peak Load (Amp.)	55
Existing Conductor (Sq.mm)	55
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.66
Location From-To	1. Dharakote-Rugmu
Considered Year	2025

Technical Justification	Rugumu feeder emanates From Dharakote PSS .Total length of the feeder is 35 Ckm. Supplying to approx. 6835 Nos of consumers.Peak load of the feeder is 55 Amps. It is observed that part of section is of 55 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Dharakote to Rugmu.There are also issues observed such as tilted pole,low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation(55 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	62
Circle-Division	AED 1-Aska
11 kV Feeder Name	Bardaballi
Considered Length (CKM)	8
Peak Load (Amp.)	60
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.68
Location From-To	1. Khariguma-Janibili
Considered Year	2025
Technical Justification	Baradabili feeder emanates From Khariguma PSS .Total length of the feeder is 36 Ckm. Supplying to approx. 3931 nos. of consumers.Peak load of the feeder is 60 Amps. It is observed that part of section is of 55 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Khariguma to Janibili.There are also issues observed such as tilted pole,low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation(34 and 55 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	63
Circle-Division	Aska-AED-2
11 kV Feeder Name	A. Kardabadi
Considered Length (CKM)	1
Peak Load (Amp.)	56
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.08
Location From-To	1. Kalamba -Sunakhera
Considered Year	2025
Technical Justification	A. Kardabadi feeder emanates From Kalamba PSS .Total length of the feeder is 25 Ckm. Supplying to approx.4761 nos. of consumers.Peak load of the feeder is 56 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between sectionKalamba - Sunakhera.There are also issues observed such as tilted pole,low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	64
Circle-Division	Aska-AED-2
11 kV Feeder Name	Badamahuri
Considered Length (CKM)	0.15
Peak Load (Amp.)	27
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.01
Location From-To	1. Rishipur Village Entry-Rishipur Village Exit
Considered Year	2026

Technical Justification	Badamahuri feeder emanates From Budhamba PSS .Total length of the feeder is 16 Ckm. Supplying to approx. 2224 Nos of consumers.Peak load of the feeder is 27 Amps. It is observed that part of section is of 55 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Rishipur Village Entry-Rishipur Village Exit.There are also issues observed such as tilted pole,low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	65
Circle-Division	Berhampur-HED
11 kV Feeder Name	Kurula
Considered Length (CKM)	0.22
Peak Load (Amp.)	58
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.02
Location From-To	1. Adapada PSS-Near Adapada PSS
Considered Year	2026
Technical Justification	Kurula feeder emanates from Adapada PSS. Total length of the feeder is 26 Ckm.Peak load of the feeder is 58 amps.There are large nos. of conductor joints which causes frequent conductor snapping In addition to that partial load of Konkarda feeder having existing 133 amps required to be shifted on Kurula feeder.Hence to meet current load and considering future load growth,upgradation of only part of trunk section of the line with 34 sq.mm size to 80 sq.mm is proposed under identified section. In addition to conductor upgradation line strengthening is also planned.

Sr No	66

Circle-Division	Berhampur-HED
11 kV Feeder Name	Badakhandi
Considered Length (CKM)	2
Peak Load (Amp.)	70
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.18
Location From-To	1. PSS-Pochlimarg
Considered Year	2026
Technical Justification	Badakhandi feeder emanates from Hinjili PSS. Total length of the feeder is 40 ckm.Peak load of the feeder is 70 amps.It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section PSS-Pochlimarg.There are also issues observed such as tilted pole,low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation (34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	67
Circle-Division	Berhampur-PSED
11 kV Feeder Name	Jamuni
Considered Length (CKM)	2
Peak Load (Amp.)	55
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.17
Location From-To	1.PSS to Khajipalli road
Considered Year	2026
Technical Justification	Jamuni feeder emanates From Taratarini PSS .Total length of the feeder is 19.50 Ckm. Supplying to approx.approx. 3804 Nos of consumers. Peak load of the feeder is 55 Amps. It is observed that

	part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section PSS to Khajipalli road. There are also issues observed such as tilted pole, low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	68
Circle-Division	Berhampur-PSED
11 kV Feeder Name	Dhankupada
Considered Length (CKM)	1.2
Peak Load (Amp.)	30
Existing Conductor (Sq.mm)	80+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.11
Location From-To	1.Birpur AB Switch-Birpur 250kVA DSS
Considered Year	2026
Technical Justification	Dhankupada feeder emanates from Chirkipada PSS. Total length of the feeder is 19.50 Ckm. Supplying to approx.approx. 3351 no's of consumers. Peak load of the feeder is 30 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Birpur AB Switch-Birpur 250kVA DSS.There are also issues observed such as tilted pole,low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	69
Circle-Division	Berhampur-PSED
11 kV Feeder Name	Rumagada
Considered Length (CKM)	0.8

Peak Load (Amp.)	67
Existing Conductor (Sq.mm)	80+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.07
Location From-To	1. Maltiwadi High school Tapping-100kVA
Considered Year	2026
Technical Justification	Rumugada feeder emanates from Hatiota PSS .Total length of the feeder is 16 Ckm. Supplying to approx.2539 no's of consumers. Peak load of the feeder is 67 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Maltiwadi High school Tapping-100kVA.There are also issues observed such as tilted pole,low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	70
Circle-Division	Berhampur-PSED
11 kV Feeder Name	New Angargaon
Considered Length (CKM)	2
Peak Load (Amp.)	65
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.17
Location From-To	1. Dahiki chakka-Salia dam
Considered Year	2025
Technical Justification	New Angargaon feeder emanates from Sumandala (Sankuda) PSS. Total length of the feeder is 49.06 Ckm. Supplying to approx.approx. 2212 Nos of consumers. Peak load of the feeder is 65 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between

	section Dahiki chakka to Salia dam. There are also issues observed such as tilted pole,low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation (34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	71
Circle-Division	Bhanjanagar-BNED
11 kV Feeder Name	Lunijhola
Considered Length (CKM)	5
Peak Load (Amp.)	65
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.29
Location From-To	1. BD Pur PSS-Lunijhola
Considered Year	2026
Technical Justification	Lunijhola feeder emanates from B D Pur PSS . Total length of the feeder is 19 Ckm. Supplying to approx.2554 Nos of consumers. Peak load of the feeder is 65 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section B D Pur PSS to Lunijhola. There are also issues observed such as tilted pole,low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	72
Circle-Division	Bhanjanagar-BNED
11 kV Feeder Name	J.N Prasad Town
Considered Length (CKM)	3
Peak Load (Amp.)	32
Existing Conductor (Sq.mm)	34

Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.18
Location From-To	JN Prasad PSS-Police station
Considered Year	2026
Technical Justification	J.N Prasad Town feeder emanates from J N Prasad PSS .Total length of the feeder is 10 Ckm. Supplying to approx. 1936 Nos of consumers. Peak load of the feeder is 32 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section J N Prasad PSS to J.N Prasad Town. There are also issues observed such as tilted pole,low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	73
Circle-Division	Bhanjanagar-PED
11 kV Feeder Name	Tikabali Town
Considered Length (CKM)	5
Peak Load (Amp.)	42
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.3
Location From-To	Hatapada-Reliance Tower
Considered Year	2026
Technical Justification	Tikabali Town feeder emanates from Tikabali PSS .Total length of the feeder is 70 Ckm. Supplying to approx. 2039 Nos of consumers.Peak load of the feeder is 42 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Hatapada-Reliance Tower.There are also issues observed such as tilted pole,low clearance due to high span,damaged

	insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	74
Circle-Division	City-BED-1
11 kV Feeder Name	Boxipally
Considered Length (CKM)	3
Peak Load (Amp.)	72
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	100sqmm with WPB Pole
Project Cost (Cr.)	0.27
Location From-To	1.ODRP Boxipally
Considered Year	2026
Technical Justification	Boxipalli feeder emanates from Gopalpur PSS .Total length of the feeder is 18 Ckm. Supplying to approx. 2816 Nos of consumers.Peak load of the feeder is 72 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section ODRP Boxipalli.There are also issues observed such as tilted pole,low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 100 Sqmm) is planned under identified section.

Sr No	75
Circle-Division	City-BED-1
11 kV Feeder Name	Raghunathpur
Considered Length (CKM)	3
Peak Load (Amp.)	70
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm)	100
Project Cost (Cr.)	0.29
Location From-To	1.Narendrapur PSS-Pokdibandha Junction

	2.Pokdibandha Junction-Ganjan Dhabha
Considered Year	2026
Technical Justification	Raghunathpur feeder emanates from Narendrapur PSS .Total length of the feeder is 22 Ckm. Supplying to approx. 1927 Nos of consumers.Peak load of the feeder is 70 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Narendrapur PSS-Pokdibandha Junction and Pokdibandha Junction-Ganjan Dhabha. There are also issues observed such as tilted pole,low clearance due to high span,damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 100 Sqmm) is planned under identified section.

Sr No	76
Circle-Division	City-BED-1
11 kV Feeder Name	Tangnapalli
Considered Length (CKM)	4.5
Peak Load (Amp.)	60
Existing Conductor (Sq.mm)	55
Upgraded Conductor (Sq.mm)	100
Project Cost (Cr.)	0.41
Location From-To	1)Tanganapalli Chowk To Paitari 2)Tanganapalli Chowk To Klorofeel School
Considered Year	2025
Technical Justification	Tanganapalli feeder emanates from Narendrapur PSS .Total length of the feeder is 30 Ckm. Supplying to approx. 4745 Nos of consumers. Peak load of the feeder is 60 Amps. It is observed that part of trunk section is of 55 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Tanganapalli Chowk To Paitari and Tanganapalli Chowk To Klorofeel School. There are also issues observed such as tilted pole, low clearance due to

	high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 100 Sqmm) is planned under identified section.

Sr No	77
Circle-Division	City-BED-3
11 kV Feeder Name	Sorola
Considered Length (CKM)	9.35
Peak Load (Amp.)	60
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.54
Location From-To	1.Kaitha junction- Kn Pentha 2.Kumarbandha -Ramayapatna 3.Eligapadia to BadaBiswanthpur-100 KVA S/s 4.Biswanthpur in Siva Mandir-Sana Biswanthpur -100 KVA S/s 5.Santosi maa Mandira-Katuru 100 KVA DP 6.Dunga Sahi 100 KVA-Nua Sahi Cut Point 7.Jhatipadara cut point-Jhatipadara poltry farm 8.Eligapadia-Bahadurpentha village
Considered Year	2025
Technical Justification	Sorola feeder emanates from Jagapur PSS .Total length of the feeder is 90 Ckm. Supplying to approx. 11149 Nos of consumers. Peak load of the feeder is 60 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between mentioned section. There are also issues observed such as tilted pole, low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	78
Circle-Division	City-BED-3

11 kV Feeder Name	Golanthara
Considered Length (CKM)	7
Peak Load (Amp.)	17
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.40
Location From-To	1.Randha -Jugadai 2.Haripur 100 KVA S/s-Laxmi Factory 3.NH road crossing-BPCL 4.Surula JN-Station Road 63 KVA S/s
Considered Year	2026
Technical Justification	Golanthara feeder emanates from Jagapur PSS .Total length of the feeder is 6.78 Ckm. Supplying to approx. 675 Nos of consumers. Peak load of the feeder is 17 Amps. It is observed that part of trunk section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between mentioned location. There are also issues observed such as tilted pole, low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	79
Circle-Division	City-BED-3
11 kV Feeder Name	Lathi
Considered Length (CKM)	5
Peak Load (Amp.)	73
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.42
Location From-To	1. Lathi Village - Bendaliya
Considered Year	2025
Technical Justification	Lathi feeder emanates from Lathi PSS .Total length of the feeder is 40.66 Ckm. Supplying to approx.

	3304 Nos of consumers. Peak load of the feeder is 73 Amps. It is observed that part of trunk section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Lathi Village - Bendaliya. There are also issues observed such as tilted pole, low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	80
Circle-Division	City-BED-3
11 kV Feeder Name	Sukunda
Considered Length (CKM)	5
Peak Load (Amp.)	60
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.42
Location From-To	Lathi-Raghunathpur
Considered Year	2025
Technical Justification	Sukunda feeder emanates from Lathi PSS .Total length of the feeder is 69.32 Ckm. Supplying to approx. 2829 Nos of consumers. Peak load of the feeder is 20 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Lathi to Raghunathpur. There are also issues observed such as tilted pole, low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	81
Circle-Division	City-BED-3
11 kV Feeder Name	Sumandi/Suvani

Considered Length (CKM)	1
Peak Load (Amp.)	25
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.06
Location From-To	1. K.Suvani plotting -Swargadwara sahi
Considered Year	2025
Technical Justification	Sumandi/Suvani feeder emanates from Jagapur PSS .Total length of the feeder is 11.73 Ckm. Supplying to approx. 3619 Nos of consumers. Peak load of the feeder is 25 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section JK.Suvani plotting - Swargadwara sahi. There are also issues observed such as tilted pole, low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	82
Circle-Division	Jeypore-JED
11 kV Feeder Name	Brahmingaon
Considered Length (CKM)	5
Peak Load (Amp.)	46
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.29
Location From-To	1.Old Control Room -Dimla
Considered Year	2025
Technical Justification	Brahmingaon feeder emanates from Old Control Room PSS .Total length of the feeder is 35 Ckm. Supplying to approx. 2022 Nos of consumers. Peak load of the feeder is 46 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and

	multiple joint between section Old Control Room to Dimla. There are also issues observed such as tilted pole, low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	83
Circle-Division	Jeypore-JED
11 kV Feeder Name	Sariguda
Considered Length (CKM)	5
Peak Load (Amp.)	50
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.45
Location From-To	1. Ranaspur-Janiguda
Considered Year	2026
Technical Justification	Sariguda feeder emanates from B Singhpur PSS .Total length of the feeder is 150 Ckm. Supplying to approx. 4553 Nos of consumers. Peak load of the feeder is 50 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Ranaspur-Janiguda. There are also issues observed such as tilted pole, low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	84
Circle-Division	Jeypore-KED
11 kV Feeder Name	Champi
Considered Length (CKM)	3
Peak Load (Amp.)	40
Existing Conductor (Sq.mm)	55+34+22

Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.25
Location From-To	1.PSS-Jholaguda Square
Considered Year	2025
Technical Justification	Champi feeder emanates from Laxmipur PSS .Total length of the feeder is 50 Ckm. Supplying to approx. 3046 Nos of consumers. Peak load of the feeder is 40Amps. It is observed that part of section is of 22 and 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section PSS-Jholaguda Square. There are also issues observed such as tilted pole,low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34&22 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	85
Circle-Division	Jeypore-KED
11 kV Feeder Name	Dasmantpur Town
Considered Length (CKM)	3
Peak Load (Amp.)	30
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.27
Location From-To	1. Block office -College
Considered Year	2026
Technical Justification	Dasmantpur Town feeder emanates from Dasmantpur (RGGVY) PSS .Total length of the feeder is 7 Ckm. Supplying to approx. 3143 Nos of consumers. Peak load of the feeder is 30 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section DBlock office -College. There are also issues observed such as tilted pole,low clearance

	due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	86
Circle-Division	Jeypore-KED
11 kV Feeder Name	Chapper
Considered Length (CKM)	0.4
Peak Load (Amp.)	25
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.02
Location From-To	1.Khilapt(Umri) 2.Pandi1 3.Pandi3& 4.Pangipadar
Considered Year	2026
Technical Justification	Chapper feeder emanates from Koraput Old PSS .Total length of the feeder is 35 Ckm. Supplying to approx. 4892 Nos of consumers. Peak load of the feeder is 25 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Khilapt(Umri), Pandi1, Pandi3, and Pangipadar. There are also issues observed such as tilted pole,low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	87
Circle-Division	Jeypore-KED
11 kV Feeder Name	Bileiguda/Semiliguda Town Feeder
Considered Length (CKM)	4
Peak Load (Amp.)	55

Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.36
Location From-To	1. Beleiguda PSS -Damonjodi Chak of Town bileiguda & Semiliguda
Considered Year	2025
Technical Justification	Bileiguda/Semiliguda Town feeder emanates from Bileiguda PSS . Total length of the feeder is 227 Ckm. Supplying to approx. 12321 Nos of consumers. Peak load of the feeder is 55 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Beleiguda PSS -Damonjodi Chak of Town bileiguda & Semiliguda. There are also issues observed such as tilted pole, low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	88
Circle-Division	Jeypore-KED
11 kV Feeder Name	Bileiguda/Semiliguda Town Feeder
Considered Length (CKM)	4
Peak Load (Amp.)	55
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.36
Location From-To	Iapar, Phulband, Haldibad, Chikalmari, Kamlajhola, Bhairaguda, Badliguda, Bangruguda, R K Maliguda, Tentuliguda, Rajnaguda, Aligaon, Nuaput, Alamguda,
Considered Year	2025
Technical Justification	Bileiguda/Semiliguda Town feeder emanates from Bileiguda PSS . Total length of the feeder is 227 Ckm.

	Supplying to approx. 12321 Nos of consumers. Peak load of the feeder is 55 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between mentioned section There are also issues observed such as tilted pole,low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	89
Circle-Division	Jeypore-KED
11 kV Feeder Name	Khairput Town
Considered Length (CKM)	2
Peak Load (Amp.)	30
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.12
Location From-To	1.Khairput PSS- Khairput Medical
Considered Year	2026
Technical Justification	Khairput Town feeder emanates from Khairaput PSS .Total length of the feeder is 3.25 Ckm. Supplying to approx. 944 Nos of consumers. Peak load of the feeder is 30 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Khairput PSS-Khairput Medical. There are also issues observed such as tilted pole,low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	90
Circle-Division	Rayagada-GED
11 kV Feeder Name	Dhepaguda

Considered Length (CKM)	8
Peak Load (Amp.)	35
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.46
Location From-To	1. Poding line near A.B. Switch-jaipaga cut point
Considered Year	2025
Technical Justification	Dhepaguda feeder emanates from Gudari PSS .Total length of the feeder is 85 Ckm. Supplying to approx. 3379 Nos of consumers. Peak load of the feeder is 35 Amps. It is observed that 34 Sq.mm conductor is used for the line and there is frequent conductor snapping due to ageing and multiple joint between section Poding line near A.B. Switch-jaipaga cut point. There are also issues observed such as tilted pole, low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation (34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	91
Circle-Division	Rayagada-GED
11 kV Feeder Name	Gudari Town
Considered Length (CKM)	8
Peak Load (Amp.)	75
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole
Project Cost (Cr.)	0.68
Location From-To	1. Gudari PSS-Siriguda
Considered Year	2025
Technical Justification	Gudari Town feeder emanates from Gudari PSS .Total length of the feeder is 350 Ckm. Supplying to approx. 2998 Nos of consumers. Peak load of the feeder is 75 Amps. It is observed that there is frequent conductor snapping due to ageing and multiple joint between section Gudari PSS-

	Siriguda .There are also issues observed such as tilted pole,low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	92
Circle-Division	Rayagada-GED
11 kV Feeder Name	Jaganathpur
Considered Length (CKM)	9
Peak Load (Amp.)	40
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.52
Location From-To	1. Bikrampur PSS-Pogodabali
Considered Year	2025
Technical Justification	Jagnathpur feeder emanates from Bikrampur PSS .Total length of the feeder is 120 Ckm. Supplying to approx. 11398 Nos of consumers. Peak load of the feeder is 40 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Bikrampur PSS-Pogodabali. There are also issues observed such as tilted pole,low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	93
Circle-Division	Rayagada-GED
11 kV Feeder Name	Suludi
Considered Length (CKM)	4
Peak Load (Amp.)	26
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole

Project Cost (Cr.)	0.34
Location From-To	1. Gogopadu-sursapadar
Considered Year	2025
Technical Justification	Suludi feeder emanates from Ramanaguda PSS .Total length of the feeder is 51 Ckm. Supplying to approx. 1200 Nos of consumers. Peak load of the feeder is 26 Amps. It is observed that part of trunk section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Gogopadu-sursapadar. There are also issues observed such as tilted pole,low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	94
Circle-Division	Rayagada-PKED
11 kV Feeder Name	Brijkote
Considered Length (CKM)	8
Peak Load (Amp.)	45
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.49
Location From-To	Brijkote-Ulliapada
Considered Year	2026
Technical Justification	Brajkote feeder emanates from Adava PSS . Total length of the feeder is 45 Ckm. Supplying to approx. 6288 Nos of consumers. Peak load of the feeder is 45 Amps. It is observed that part of section is of 55 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Brijkote To Ulliapada. There are also issues observed such as tilted pole, low clearance due to high span, damaged insulators etc. Hence network

	refurbishment and upgradation(55 Sqmm Size To 80 Sqmm) is planned under identified section.

Sr No	95
Circle-Division	Rayagada-PKED
11 kV Feeder Name	Sambalpur
Considered Length (CKM)	10
Peak Load (Amp.)	25
Existing Conductor (Sq.mm)	55+34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with PSC Pole
Project Cost (Cr.)	0.61
Location From-To	1.Tandiguda chaka -Bastriguda
Considered Year	2026
Technical Justification	Sambalpur feeder emanates from R. Udaygiri PSS .Total length of the feeder is 100 Ckm. Supplying to approx. 3279 Nos of consumers. Peak load of the feeder is 25 Amps. It is observed that part of section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Tandiguda chaka to bastriguda.There are also issues observed such as tilted pole,low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation(34 Sqmm. Size To 80 Sqmm) is planned under identified section.

Sr No	96
Circle-Division	Rayagada-RED
11 kV Feeder Name	DP Camp
Considered Length (CKM)	5
Peak Load (Amp.)	20
Existing Conductor (Sq.mm)	34
Upgraded Conductor (Sq.mm) & Type of Pole	80sqmm with WPB Pole80
Project Cost (Cr.)	0.45
Location From-To	1. Therubali PSS to Gujalpadu

Considered Year	2026
Technical Justification	DP Camp feeder emanates from Therubali PSS .Total length of the feeder is 4 Ckm. Supplying to approx. 1763 Nos of consumers. Peak load of the feeder is 20 Amps. It is observed that part of trunk section is of 34 Sq.mm conductor and there is frequent conductor snapping due to ageing and multiple joint between section Therubali PSS to Gujalpadu. There are also issues observed such as tilted pole, low clearance due to high span, damaged insulators etc. Hence network refurbishment and upgradation (34 Sqmm Size To 80 Sqmm) is planned under identified section.

134. The Summary of the expenditure for FY 2024-25 & FY 2025-26 proposed for Upgradation of the Lines is as given in the table below

Table 34 Summary of Expenditure on Refurbishment/Upgradation of Lines:

		Unit Cost- (Rs Lakhs)		Quantity (Ckt Km)		Cost (Rs Cr)	
Sr. No.	Description of Projects	FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	Upgradation of 33 KV Line 100 Sqmm WPB 13 mtr	14.26	15.12	5	104.8	0.71	15.85
2	Upgradation of 33 KV Line 148 Sqmm WPB 13 mtr	15.90	16.86	65.8	13	10.46	2.19
3	Upgradation of 11 KV Line 100 Sqmm WPB 11 mtr	9.20	9.75	89.57	92.27	8.24	9.00
4	Upgradation of 11 KV Line 80 Sqmm WPB 11 mtr	8.46	8.97	43.9	49.48	3.71	4.44
5	Upgradation of 11 KV Line 100 Sqmm PSC 11 mtr.	6.49	6.87	11.5	24.7	0.75	1.70
6	Upgradation of 11 KV Line 80 Sqmm PSC 11 mtr	5.75	6.10	55.35	61.2	3.18	3.73
	Total					**27.06**	**36.90**

4.3.5 Conversion of 33 KV /11 KV Bare O/H Conductor to Covered Conductor: -

135. Few lines have been identified where there is a requirement of convert Overhead bare conductor to Covered Conductor to improve reliability of power distribution lines. It also provides safety against accidental contacts and reduce outages significantly.

Benefits with Covered Conductors: -

- Protects the aluminium conductor from corrosion.
- Reducing faults caused by tree contacts and enhance the reliability.
- Upgrade the voltage/current without changing the phase distance.
- Lower life cycle cost compared with bare conductor.

Table 35 : Capital Investment for coversion to Covered Conductor

		Unit Cost (Rs Lakhs)		Proposed Qty (Ckt Km)		Cost	
Sr. No.	Description of Projects	FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	Conversion of 33 KV Bare O/H to Covered Conductor 159 Sqmm	30.34	32.16	6.3	7	1.91	2.25
2	Conversion of 11 KV Bare O/H to Covered Conductor 100 Sqmm	17.67	18.73	10	10	1.77	1.87
3	Total			16.3	17.0	3.68	4.12

4.3.6 Construction of 33 KV and 11 KV Underground Cables: -

136. We have considered 33 KV underground cable of 6 Ckt Km towards 4 Ckt Km for Banjavihar Gopalpur feeder to address the RoW Issue and 2 Ckt Km for Railway Crossing need. Futher, 3 Ckt Km of 11 KV Underground Cable is planned in cases of PTR augmentation and to facilitate swapping of 11KV feeder inside of the PSS. The proposed investment in the scheme is as follows:

Table 36 : Capital Investment for Underground Cable

		Unit Cost (Rs Lakhs)		Proposed Qty (Ckt Km)		Cost (Rs Cr)	
Sr. No.	Description of Projects	FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	33 KV UG 1X 630 Sqmm	110.31	116.93	5	1	5.52	1.17
2	11 KV UG 3X 400 Sqmm	76.80	81.40	2	1	1.54	0.81
3	Total					7.05	1.98

4.3.7 33 KV & 11 KV Line AB Switch

137. AB switch is an essential element of any overhead power line, used to connect or disconnect the power system when tripped, for maintenance, to isolate the faulty section, and to restore the supply to healthy section to improve reliability.

Benefits:

- The major advantage of installing AB switches in 33kV and 11kV feeders is that field engineers would have flexibility to isolate the section locally instead of switching off entire feeder.
- In case of any tripping, maintenance engineer can isolate the faulty section and restore the supply of remaining consumers thereby improving the reliability.

138. It is proposed to install 11 and 33kV AB Switches as per following details.

Table 37 : Capital Expenditure for 11 KV and 33 KV AB Switches

Sr. No.	Description of Projects	Unit Cost- (Rs Lakhs)		Quantity (Ckt Km)		Cost (Rs Cr)	
		FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	Installation of 33 KV Line AB Switch	3.70	3.93	35.00	35.00	1.30	1.37
2	Installation of 11 KV Line AB Switch	2.69	2.85	300.00	300.00	8.07	8.55
	Total			**335**	**335**	**9.37**	**9.93**

4.3.8 Installation of Auto reclosure / Sectionalizers: -

139. Auto-reclosures are very efficient in minimizing outages from transient faults on overhead feeders. When installed along with Sectionalizers, they can isolate the faulty sections of the feeder while re- energizing the rest of the feeders. In case of very long circuits, the sectionalizers can also be connected in series.

140. TPSODL currently has a large number of very long overhead feeders. Moreover, it is observed that multiple 11kV feeders are controlled through single 11kV breaker or AB switch in some primary substation. Fault in any 11kV feeder or maintenance activity in 11kV breaker at primary substation affects the supply of consumers connected on all 11kV feeders controlled from that breaker. In order to improve reliability of power supply at such substations, installation of auto-recloser, sectionalizers and Ring Main Units (RMU) is being proposed in phase manner.

Auto-Recloser and Sectionalizer Benefits: -

- Continuity of power supply for the consumers resulting in less complaints from citizens.
- Reduce the time of power supply disconnection in cases of transient faults.
- Reduce the unsold energy due to faults.

- Reduce the cost of manpower operating in managing disconnected lines.
- Maximum utilization of the network components.
- Event Log and Remote control.
- Reduce cost of fault finding.

4.3.9 Ring Main Unit

141. TPSODL is also planning to install RMUs to improve reliability.

RMU- Benefits:

- The major advantage of Ring Main Units is the safety they provide to the operators. Like the operation of switching devices with interlocking system requires less knowledge and effort.
- Working with IEDs allows remote operation. SCADA implementation is easy with smart Ring main units.
- The space occupied by RMUs is less as they are Gas Insulated Switchgear.
- The time taken for installation and commissioning of RMUs is very less. RMUs require less maintenance.

4.3.10 Installation of FPI on 33 KV & 11 Line: -

142. Fault Passage Indicator (FPIs): Installation of overhead Fault Passage Indicators (O/H FPIs) is proposed for faster identification and restoration of faults on long 33 KV and 11kV feeders with multiple sections., FPIs are proposed for installation on 33 KV and 11 KV Line

FPI - Benefits

- Easy fault identification.
- Easy to install, even on live network.
- Detects both short circuit and low current earth faults.
- Indicates both permanent and transient faults.
- Highly visible red flash light.
- Reduction in supply restoration time by 1-2 hrs.

Reduction in unserved Energy Enhancing customer satisfaction

143. The total Capital Expenditure on the above protection and isolation equipment is as follows:

Table 38 : Capital Expenditure for ARC, Sectionalisor , RMU and FPI

Sr. No.	Description of Projects	Unit Cost- (Rs Lakhs)		Quantity (No/Set)		Cost (Rs Cr)	
		FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	AutoRecloser 33 KV	21.97	23.29	5	5	1.10	1.16
2	Sectionalizer 33 KV	21.97	23.29	10	10	2.20	2.33
3	AutoRecloser 11 KV	11.83	12.54	13	12	1.54	1.50
4	Sectionalizer 11 KV	10.33	10.95	26	24	2.68	2.63
A	**Total - Auto Reclosure and Sectionaliser**			**54**	**51**	**7.52**	**7.63**
5	33 KV RMU 4 Way	48.15	51.04	5	5	2.41	2.55
6	11 KV RMU 4 Way	19.68	20.86	10	10	1.97	2.09
B	**Total - RMU**			**15**	**15**	**4.38**	**4.64**
7	33 KV FPI Communicable	2.19	2.32	10	10	0.22	0.23
8	11 KV FPI Communicable	1.99	2.11	40	40	0.80	0.84
9	33 KV FPI Non Communicable	0.56	0.59	100	100	0.56	0.59
10	11 KV FPI Non Communicable	0.56	0.59	350	350	1.95	2.07
C	**Total FPI**			**500**	**500**	**3.52**	**3.74**
	Grand Total			**569**	**566**	**15.42**	**16.00**

4.3.11 DSS Refurbishment and Installation of LV protection at DSS

4.3.11.1 DSS Refurbishment (Replacement of damaged AB Switch, HG Fuse, LA, Earthing, Plinth)

144. Distribution Substation (DSS) comprises of various equipment which perform specific task to ensure delivery of power supply at appropriate voltage to the end consumers. Main components are 11 kV Switching device, 11 kV Protection, Distribution Transformer, LV Protection, Earthing, fencing and O/G LV feeders. The most expensive equipment in the DSS is Distribution Transformer and its life depends upon healthy condition of all other components be it LV Protection, HV Protection, Earthing or fencing. The age of Distribution Transformer can be enhanced by ensuring healthiness of all other components.

145. In our preliminary site visits, it is observed that many of the existing DSS are in shabby condition with damaged or ill-maintained HT & LT protection equipment. Many connections at pole mounted or plinth mounted substations are in very bad condition which not only cause high technical loss but also give rise to undue interruptions. The Aluminum lug / sockets used in DTRs and other equipment in the substations are observed to be of inadequate size and proper crimping of lugs

with the help of crimping tools found missing at almost all places. This is resulting into generation of hotspots and failure of connections.

146. Refurbishment/Life Enhancement of DSS helps in addressing the above-mentioned issues. It will improve the reliability of power system and will also ensure safety. TPSODL proposes following activities under Refurbishment of Distribution Substation:

- Replacement / provision of AB switch, DD Fuse units, LA as per the requirement in DSS.
- Provision of new / additional earthing in all DSS as per site requirement.
- Carry out civil works like DSS Plinth as per site requirement.

4.3.11.2 LV protection at DSS

147. Analysis of distribution transformer's failure data for the last few years suggest that effective HV & LV protection might have reduced the transformer failure. For example, if there is no effective protection on LV side, during fault on the load side, the fault current will pass through the transformer for a longer duration till the fault is isolated by upstream network. Since the magnitude of the fault current is high, it is likely to produce mechanical and thermal stresses in the transformer causing pre-mature failure of the transformer.

148. During site visit it was observed that there are no LT Protection at DTR secondary side so any fault occurred during in LT shifts to 11kV System and tripping 11kV feeder. The Tripping on 11kV feeders impacts reliability indices SAIFI and SAIDI and all connected consumers are also affected due to shut down.

149. In order to reduce the effect of LT fault on 11kV System, it is recommended to install the MCCB on these Distribution Substations.

Benefits

- Refurbishment of DSS helps in improving the overall efficiency and safety by removing all old joints with new one, crimping of Lugs through Crimping tool, new earthing of the substation, replacement of faulty AB switches and corn out jumpers.

- Reliable power supply to consumers
- Ease of operation to the field teams
- Enhance Customer delight.
- Safety to workforce and improve operation efficiency
- Safety of the Equipment in DSS and reduces its failure rate.
- Effective LT protection will help in localizing the fault on LT networks and avoid fuse burning on HT side of the DTR

150. It is proposed to undertake DSS refurbishment and LT protection measures as per below details.

Table 39 : Capital Investment towards DSS Refurbishment and LV Protection in FY 25 and FY 26

Sr. No.	Description of Projects	Unit Cost- (Rs Lakhs)		Quantity (No/Set)		Cost (Rs Cr)	
		FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
A	**DSS Refurbishment**						
1	DSS Refurbishment - AB Switch 200A	0.34	0.36	650	650	2.19	2.32
2	DSS Refurbishment - AB Switch 400A	0.43	0.45	100	100	0.43	0.45
3	DSS Refurbishment - HG Fuse 200A	0.27	0.28	600	600	1.59	1.69
4	DSS Refurbishment - HG Fuse 400A	0.37	0.39	100	100	0.37	0.39
5	DSS Refurbishment - LA	0.07	0.08	1000	1000	0.71	0.76
6	DSS Refurbishment - Earthing	0.07	0.07	2600	2517	1.74	1.78
7	DSS Refurbishment - Plinth	0.38	0.40	280	278	1.06	1.12
8	DSS Refurbishment with Pole & Structure Only 11 mtr WPB	1.61	1.70	70	81	1.13	1.38
9	DSS Refurbishment with Pole & Structure Only 11 mtr PSC	0.95	1.00	200	250	1.89	2.51
	Total					**11.12**	**12.41**
B	**LV Protection at DSS**						
10	Installation of LV protection at DSS-MCCB for 10 KVA 1- ph	0.20	0.21	7		0.01	0.00
11	Installation of LV protection at DSS-MCCB for 16 KVA 1- Ph	0.20	0.22	71	71	0.14	0.15
12	Installation of LV protection at DSS-MCCB for 16 KVA 3- Ph	0.20	0.22	46	45	0.09	0.10
13	Installation of LV protection at DSS-MCCB for 25 KVA	0.37	0.39	183	183	0.67	0.72
14	Installation of LV protection at DSS-MCCB for 63 KVA	0.70	0.74	268	268	1.86	1.98
15	Installation of LV protection at DSS-MCCB for 100 KVA	0.83	0.88	482	482	3.98	4.22
16	Installation of LV protection at DSS-MCCB for 250 KVA	1.68	1.78	97	97	1.63	1.73
17	Installation of LV protection at DSS-MCCB for 315 KVA	1.94	2.06	19	19	0.37	0.39
18	Installation of LV protection at DSS-MCCB for 500 KVA	2.67	2.83	33	33	0.88	0.93
19	Installation of LV protection at DSS-LT ACB 400 AMps for 630 KVA	4.55	4.82	2		0.09	0.00
	Total					**9.74**	**10.22**

4.3.12 River Crossing

151. TPSODL area being prone to frequent natural disasters viz. cyclone, flooding, etc. and Major of the distribution license area of TPSODL falls near the coastal belt. During site visits, it was observed that some of the 33 & 11kV lines are crossing river through poles/ DP/ Old tower with more sag which is below permissible level.

152. Presently river crossing arrangement is done through a 9mtr/11mtr PSC and RS joist pole even for higher Span length from 100 mtr to 400 mtr. Due to higher span length, the conductor requires more sag for stringing. This creates less ground clearances and sometimes flood water touches the conductor during flood situation. During some scenarios, feeder needs to be isolated resulting into forced shutdown for long duration to consumers.

153. Hence there is need to maintain and strengthen these feeders to improve the reliability and safety. We have proposed upgradation of river crossing infrastructure as below

- River Crossing to be done by Double Pole / Four Pole at 100 – 200 mtr river crossing
- River Crossing to be done by PC+6 Tower at 200-400 mtr river crossing

Table 40 : Capital Expenditure in FY 2024-25 & FY 2025-26 towards River Crossing

Sr. No.	Description of Projects	Unit Cost- (Rs Lakhs)		Quantity (Set)		Cost (Rs Cr)	
		FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	Double Pole River Crossing	8.11	8.59	6	6	0.49	0.52
2	Four Pole River Crossing	12.53	13.28	2	2	0.25	0.27
3	PC Type Tower River Crossing	113.30	120.10	1	2	1.13	2.40
	Total			**9**	**10**	**1.87**	**3.18**

4.3.13 Summary of CAPEX requirement for Network Reliability

154. Based on the above, the Capital Expenditure proposed for Network Reliability is as follows:

Table 41 : Capital Expenditure towards Network Reliability

Sr No	Activity	FY 25	FY 26	Total
1	PSS Refurbishment & SCADA Implementation	76.54	6.54	83.08
2	Bus coupler arrangement in PSS	1.61	1.70	3.31
3	33 KV & 11 KV New Line for N-1 Connectivity	24.27	30.08	54.35
4	Refurbishment/Upgradation of 33 KV & 11 KV Line	27.06	36.90	63.96
5	Conversion of 33 KV & 11 Bare O/H to Covered Conductor	3.68	4.12	7.80
6	33 KV & 11 KV UG Cable	7.05	1.98	9.03
7	Installation of 33 KV & 11 KV Line AB Switch	9.37	9.93	19.30
8	33 KV & 11 KV AutoRecloser & Sectionalizer	7.52	7.63	15.14
9	33 KV & 11 KV RMU's	4.38	4.64	9.01
10	33 KV & 11 KV FPI	3.52	3.74	7.26
11	DSS Refurbishment - (AB Switch, HG Fuse, LA, Earthing, Plinth & DP Structure)	11.12	12.41	23.52
12	Installation of LV protection at DSS-MCCB (All Required Ratings)	9.74	10.22	19.96
13	River Crossing Infrastructure	1.87	3.18	5.05
	Sub-Total Network Reliablity(3)	**187.72**	**133.06**	**320.78**

4.4 LOAD GROWTH

155. The load of TPSODL is expected to grow in the near future. Hence in order to meet this load growth, both network infrastructure needs to be extended, strengthened or augmented so that new connection can be released timely. Some of the connections can be released from the existing network and some may require augmentation/addition/extension before release of new connection. Hence for carrying out network extension & augmentation, we propose expenditure under this head to consider load growth, network extension, augmentation & addition to be carried out to cater to the new demand. The following related works are proposed under Load Growth: -

- New 33/11 KV Primary Sub-Stations
- Augmentation of Power Transformers (PTR)
- Augmentation & addition of Distribution Transformers (DTR)
- Augmentation & addition of LT ABC line

Benefit:

- New PSS will meet unprecedented load growth in Urban Areas
- Better availability of materials on time to meet load growth
- Faster will be process of providing new connection hence more will be the customer satisfaction.

- Life of the assets will be enhanced.
- Reliability of the system will improve.
- Failure of assets will be reduced.

4.4.1 New 33 KV/11 KV PSS

4.4.1.1 PSS at Om Bihar

156. Proposed 33/11kV Om Bihar PSS (2X12.5 MVA) in Berhampur City Proposal: Construction of 33/11kV Primary Substation with 2X12.5 MVA power transformer with construction of 33kV incoming line from 33/11 KV N.K Nagar PSS and LILO arrangement of 33 KV Kanisi feeder emanating from 132/33 KV Ambagada GSS along with construction of 5 nos. of 11kV feeders and one spare 11kv Bay.

Objective:

157. To ensure reliable power supply to the consumers to meet the increasing load demand due to prospective loads. The main thrust is laid to meet the load growth in City area and minimize interruption of power supply to the consumers as well as availability of alternate power supply.

Existing Scenario (summer'23):

158. Presently the areas namely Gosaninuagaon & Gandhinagar are availing power supply from existing 33/11kV N. K Nagar substation (through 11kV Gosaninuagaon, Gandhi Nagar-1, Gandhi Nagar-2 feeders) & 33/11 kV Kanisi substation (through 11 KV Haldiapadar feeder). 11kV Gosaninuagaon feeder of 33/11kV NK Nagar PSS is having length of 15.1 Ckm (trunk and spur lines) which carries 7.4 MVA of peak load. This feeder caters to areas mainly Gosaninuagaon, Kaushik Nagar, Nehru Nagar, etc feeding 7980 No. of consumers of city Berhampur.

159. Similarly, 11kV Gandhi Nagar-II feeder of 33/11kV N.K Nagar PSS is having length of 8.67 Ckm (trunk and spur lines) carries 6.63 MVA of peak load. This feeder caters power supply to areas mainly Gandhi Nagar, Prem Nagar, N.K Nagar, Sai Complex, Ambika Nagar area feeding 7723 No. of consumers in city area.

160. Further, 11 kV Haldiapadar feeder emanating from 33/11 KV Kanisi PSS having length of 35.4 Ckm (trunk and spur lines) carries 3.14 MVA of peak load. This feeder caters power supply to areas mainly OM Vihar & Haldiapadar feeding 7964no. of consumers.

161. In recent years, Gosaninuagaon & Om Vihar & Haldiapadar area have witnessed substantial increase in actual load demand due to addition of new residential as well commercial loads. Space constraint at existing 33/11 KV N.K Nagar PSS also limits the augmentation of PTR to higher rating. Recently frequent breakdowns also occurred due to overloading in existing system. Hence The new PSS is proposed at the Om Vihar which is at load center to improve the reliability of the city area also considering expected load growth in near future.

- **33 KV Feeders and PSS Details: -**

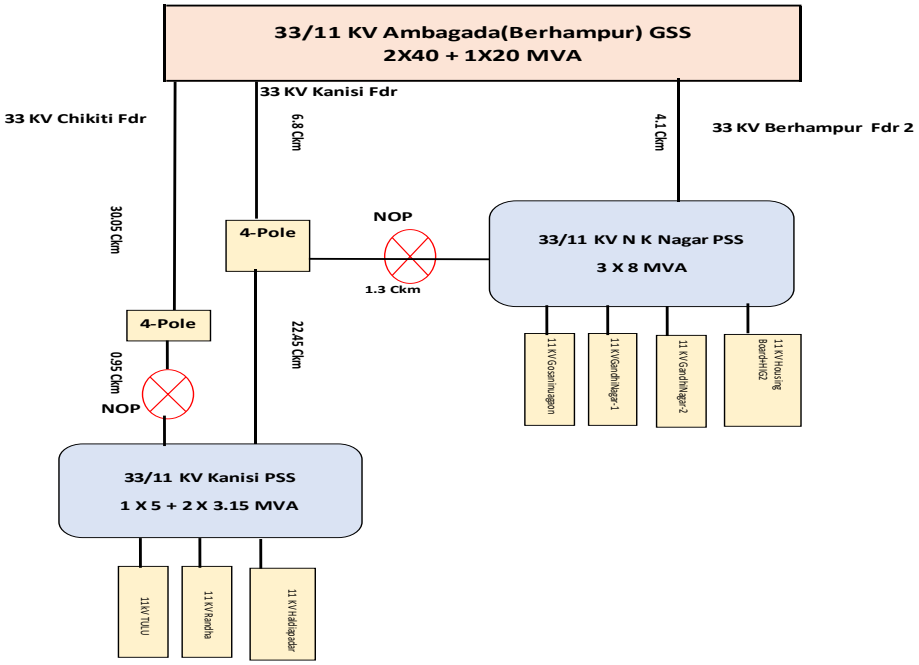
Table 42 : 33 KV Feeder Details of the Existing PSS

Sr No	Name of Grid	Name of 33kV Feeder	Size of conductor	Name of 33/11kV PSS
1	132/33KV BERHAMPUR GSS	33KV Berhampur-2	100 Sqmm	N.K Nagar
2	132/33KV BERHAMPUR GSS	33KV Kanisi	100,80,55 Sqmm.	Kanisi

Table 43 Details of Existing PSS

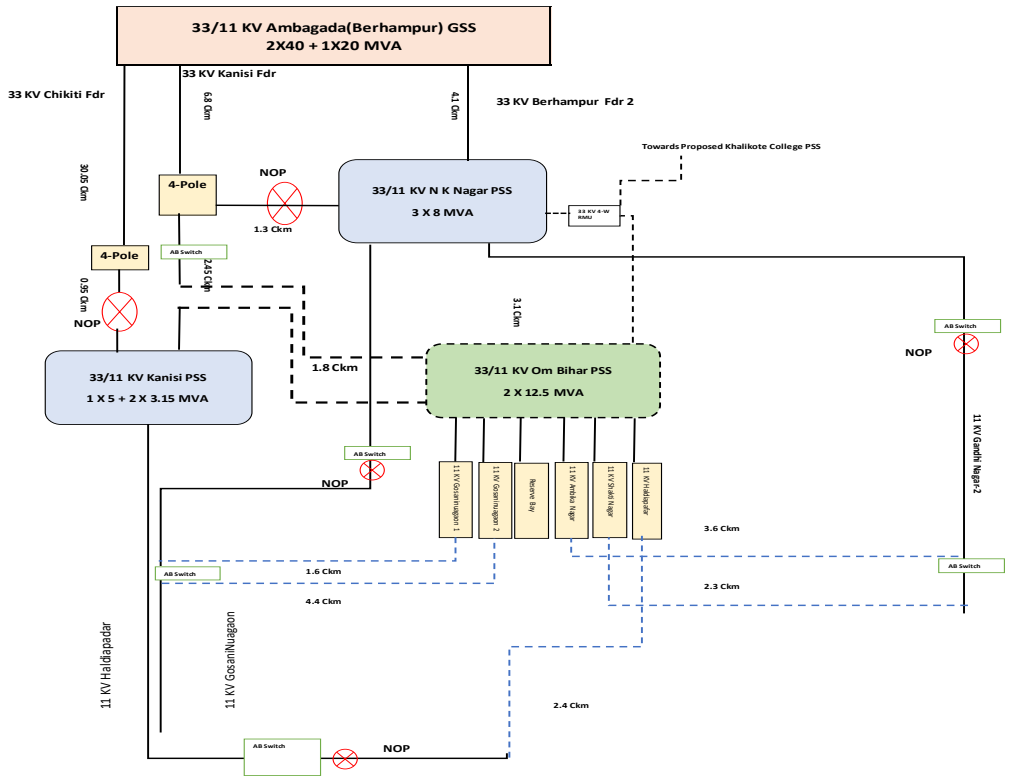
Sr No	PSS Name	PTR Rating (in MVA)	Loading of PTR	11kV Feeder Name	Size of conductor	Length (in kM)
1	N.K Nagar	8	87%	Housing 'Board	80,55 Sqmm.	7.75
2	N.K Nagar			Gandhi Nagar1	100,55,34 Sqmm.	10.1
3	N.K Nagar	8	82.90%	Gandhi Nagar2	100,55,34 Sqmm.	9
4	N.K Nagar	8	104%	Gosaninuagaon	100,80,55,34 Sqmm.	19
5	N.K Nagar			HIG	55 Sqmm.	2.5
6	Kanisi	5	77.78%	Tulu	100, 55 Sqmm	63
7	Kanisi	3.15	45.36%	Randha	55, 34 Sqmm.	18.5
8	Kanisi	3.15	99.67%	Haldia Padar	55, 34 Sqmm.	35

Picture 24: Existing Configuration of NK Nagar and Kanisi PSS



- **Proposed Scenario with commissioning of 33/11kV Om Vihar PSS:**

Picture 25: Proposed configuration for Om Vihar PSS



162. The 33KV Source1 of New 33/11 KV Om Vihar PSS is proposed to be connected from 33/11 KV N.K Nagar PSS by laying UG cable of 3.1 Ckm through RMU. Further, 33kv Source 2 will be connected to existing 33 kV Kanisi feeder (emanating from 132/33 KV Berhampur GSS) through LILO arrangement by laying 1.8 Ckm of UG cable from Om Vihar 4-Pole structure. 5 nos. 11 kV new feeders will be created by laying link line of total 14.31 Ckm. using UG Cable to shift the load from existing 11kv feeders. The Details of the new PSS configuration are as follows:

Table 44 Details of Proposed PSS at Om Vihar

Sr No	PSS Name	Proposed PTR Rating (in MVA)	Proposed 11kV Feeder Name	Proposed Connected Load considering furture Load growth (MVA)	Proposed 11 KV Link Line Length (in kM)	Existing 11 KV feeder to be linked (for segregation)
1	Proposed O M Vihar	12.5	Gosaninuagaon 1	8.5	1.6	Gosaninuagaon (NK Nagar PSS)
2	Proposed O M Vihar		Gosaninuagaon 2	4.8	4.4	Gosaninuagaon (NK Nagar PSS)
3	Proposed O M Vihar		Spare			
4	Proposed O M Vihar	12.5	Ambikanagar	5.8	3.6	GandhiNagar-2 (NK Nagar PSS)
5	Proposed O M Vihar		Shakti Nagar	2.1	2.3	GandhiNagar-2 (NK Nagar PSS)
6	Proposed O M Vihar		Haldiapadar	1.2	2.4	Haldiapadar (Kanisi PSS)

- **Scope and Cost of Proposed Om Vihar PSS**

163. The detailed scope of the proposed new PSS including 33 KV and 11 KV Cables with one RMU is as given below

Table 45 Details Scope with Cost Estimates

Abstract of Estimate for 2X12.5 MV Om Vihar PSS planned in FY 25					
Sl. No.	**Description**	**UoM**	**Qty**	**Rate (Rs Cr)**	**Amount in Rs. Cr.**
1	Construction of 33 / 11 KV PSS 2X12.5 MVA	Nos.	1	14.36	14.36
2	Laying of 33kV underground cable with 3R, 1CX630sqmm Cable	Ckm	4.9	1.10	5.41
3	Laying of 11kV underground cable with 1R, 3X300sqmm Cable	Ckm	14.31	0.77	10.99
4	33 KV RMU at N.K Nagar PSS	Nos.	1	0.48	0.48
	TOTAL in Rs. Cr.				**31.24**

4.4.1.2 Proposed 33/11kV Khalikote College PSS (2X10 MVA) in Berhampur City

Background

164. Existing Scenario (summer'23): Presently the areas namely Old Bus-Stand , TATA Benz, & Hillpatna areas are availing power supply from existing 33/11kV Medical substation (through 11kV Old Bus-stand , TATA Benz & City Hospital feeders) & 33/11 kV Goodshed substation (through Hillpatna feeders) respectively.

- 11kV Old Bus-Stand feeder of 33/11kV Medical PSS is having length of 4.93 Ckm (trunk and spur lines) and carries 4.25 MVA at its peak load. This feeder caters power supply to areas mainly Annapurna Market, Khalikote College etc feeding 2265 nos. consumers.

- 11 KV TATA Benz feeder of 33/11 KV Medical PSS is having length 9.58 Ckm (trunk and spur lines) & carries 5.22 MVA at its peak load. This feeder caters to Ashok Nagar, TATA Benz & Giri Rd. etc areas feeding 5089 nos. consumers.

- 11kV City Hospital feeder of 33/11kV Medical PSS is having length 7.91 Ckm (trunk and spur lines) & carries 5.03 MVA at its peak load. This feeder caters

power supply to areas mainly Golapalli Street, City Hospital, etc. areas feeding 5868 nos. consumers.

- 11kV Hillpatna of 33/11kV Goodshed PSS is having length 6.11 Ckm (trunk and spur lines) & carries 3.33 MVA at its peak load. This feeder caters power supply to Hillpatna area feeding 2216 no. of consumers.

165. In recent years, the areas served by Medical PSS have witnessed substantial increase in actual load demand due to addition of new residential as well commercial loads. The medical PSS is already housing 5 nos. Power Transformers & space constraint also limits the augmentation/addition of PTR to higher rating. Space constraint at 33/11 KV Goodshed PSS also restricts the augmentation/addition of PTR to higher rating. Recently frequent breakdowns also occurred due to overloading in existing system. Hence a new PSS is proposed near Khalikote College which would be located near load center to improve the reliability of the city area and also considering expected load growth in near future. The details of the configuration is as given below:

- **33 KV Feeder Details: -**

Table 46 Details of 33 KV Feeders

Sr No	Name of Grid	Name of 33kV Feeder	Size of conductor	Name of 33/11kV PSS
1	220/132/33 KV Narendrapur GSS	33KV Medical	100 Sqmm	Medical
2	220/132/33 KV Narendrapur GSS	33KV Ambapua	100 Sqmm	Medical
3	132/33KV BERHAMPUR GSS	33KV Luchapada	100 Sqmm	Medical
4	220/132/33 KV Narendrapur GSS	33KV Medical Express	232,148 Sqmm.	Goodshed
5	132/33KV BERHAMPUR GSS	33KV Kanisi	100,80,55 Sqmm.	Goodshed

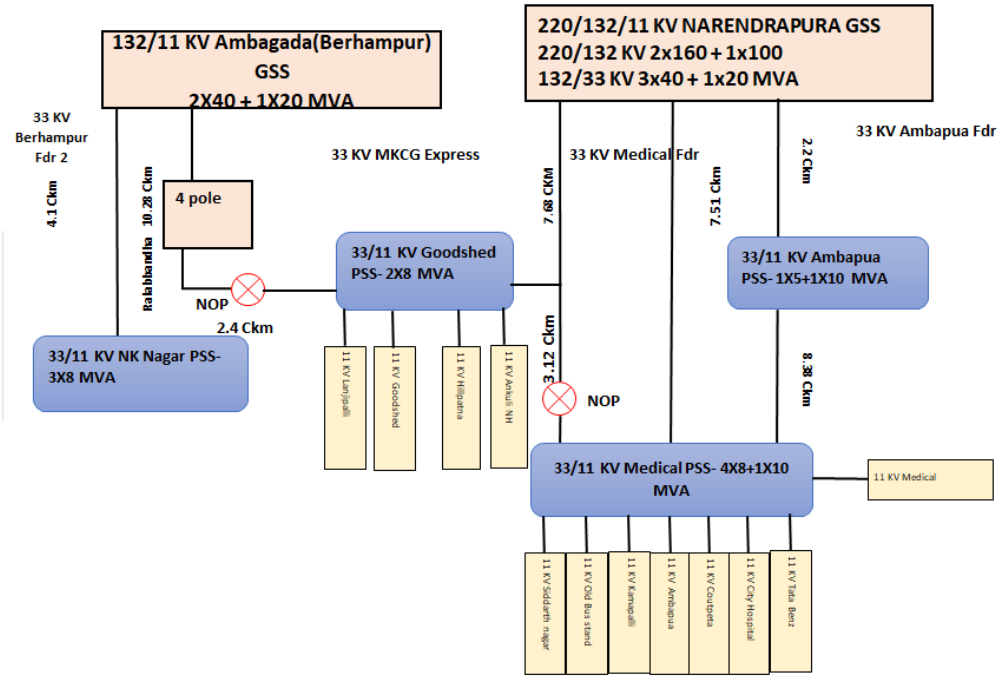
- **Details of Existing PSS: -**

Table 47 Details of 33/11 KV Medical and Goodshed PSS

Sr No	PSS Name	PTR Rating (in MVA)	Loading of PTR	11kV Feeder Name	Fdr Capacity (MVA)	Size of conductor	Length (in CkM)
1	Medical	8	87.50%	Siddharth Nagar	4.97	100 ,80 ,55 & 34 sqmm	8.89
2	Medical			Old Bus stand	4.97	100,80,55 & 34 SQMM	4.93
3	Medical	8	65.10%	Kamapalli	4.97	100,80,55 & 34 SQMM	3.79
4	Medical	8	78%	Ambapua	4.97	100,80 & 55 SQMM	1.37
5	Medical			Courtpeta	4.97	100,80,55 & 34 SQMM	9.01
6	Medical	10	95.40%	City Hospital	4.97	100,80,55 & 34 SQMM	7.91
7	Medical			Tata Benz	4.97	100,55 & 34 Sqmm.	9.58
8	Medical	8	7.14%	Medical	4.97	100 & 34 Sqmm.	3.78
9	Goodshed	8	49.19%	Hillpatna	4.97	100,55 & 34 Sqmm.	6.11
10	Goodshed			Goodshed	4.97	80 Sqmm	2
11	Goodshed	8	133.13%	Lanjipalli	4.97	100,80 & 55 Sqmm	7.78
12	Goodshed			Ankuli NH	3.6	55 Sqmm	16.39

- **33 kV Connectivity of existing PSS :**

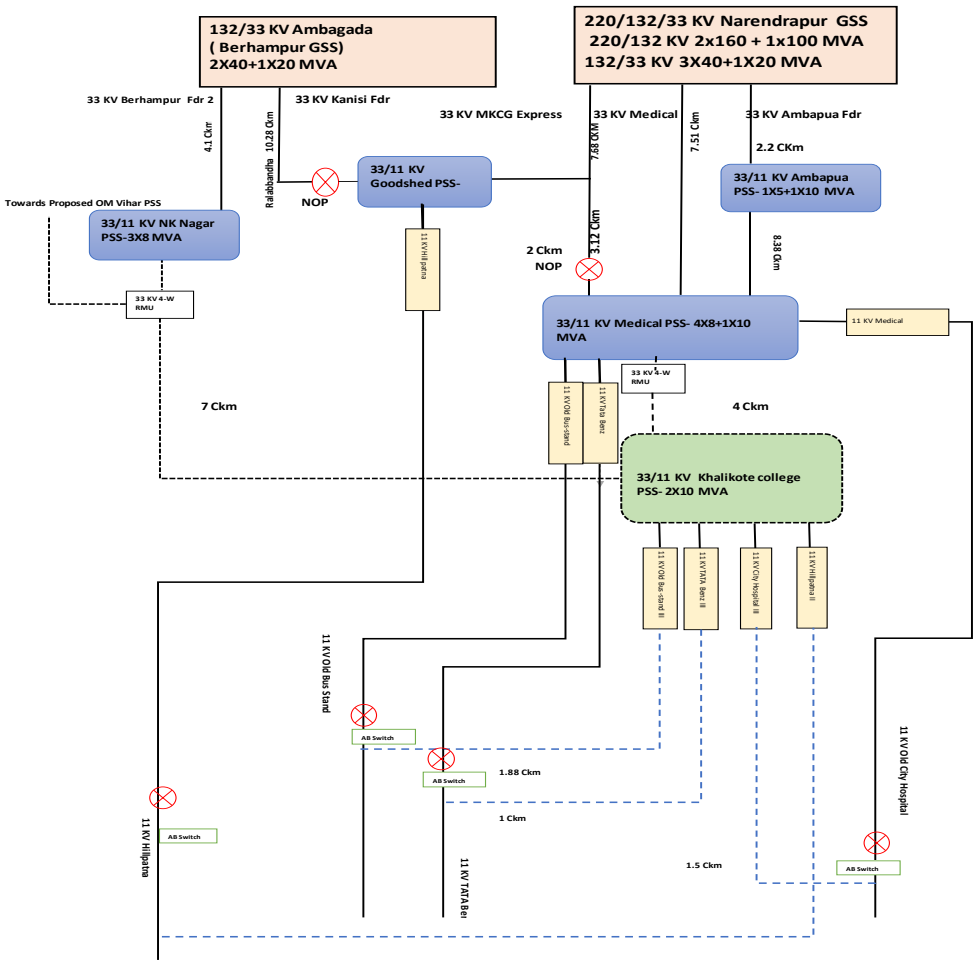
Picture 26: Existing configuration Medical and Goodshed PSS



- **Proposed Scenario with commissioning of 33/11kV Khalikote College PSS:**

33 KV Connectivity of proposed Khalikote College PSS:

Picture 27: Proposed configuration at Khalikote College PSS



166. The 33KV Source 1 of new 33/11 KV Khalikote College PSS is proposed to be connected to 33 kV Medical feeder emanating from 220/132/33 KV Narendrapur GSS by laying UG cable of 4 Ckm through RMU near Medical Main gate. 33kv Source 2 will be connected to 33/11 kV NK Nagar PSS by laying 7 Ckm of UG cable. 4 nos. 11 kV new feeders will be created by laying link line of of total 6.38 Ckm. UG Cable to shift the load from existing 11kv feeders.

- **Detailed Scope of Work and cost estimates at Khalikote College PSS**

167. The details of the scope of Work and the cost estimates are as follows:

Table 48 Scope of Work at Khalikote College PSS

Sr No	PSS Name	Proposed PTR Rating (in MVA)	Proposed 11kV Feeder Name	Proposed Connected Load considering furture Load growth (MVA)	Proposed Link Line Length (in CkM)	Existing 11 KV feeder to be linked (for segregation)
1	Proposed Khalikote College PSS	10	Old Bus-stand III	1.5	1.88	Old Bus-Stand (Medical PSS)
2	Proposed Khalikote College PSS		TATA Benz III	3	1	TATA Benz (Medical PSS)
3	Proposed Khalikote College PSS	10	City Hospital III	3	1.5	City Hospital (Medical PSS)
4	Proposed Khalikote College PSS		Hillpatna II	2	2	Hillpatna (Goodshed PSS)

Table 49 Cost Estimates for Khalikote College PSS

Abstract of Estimate for 2X10 MVA PSS at Khalikote College planned in FY 26					
Sl. No.	Description	UoM	Qty	Unit Rate (Rs Cr)	Amount (Rs Cr)
1	Construction of 33 / 11 KV PSS 2 X 10 MVA	Nos.	1	14.29	14.29
2	Laying of 33kV underground cable with 3R, 1CX630sqmm Cable	Ckm	11	1.17	12.86
3	Laying of 11kV underground cable with 1R, 3X300sqmm Cable	Ckm	6.38	0.81	5.19
4	New 33 KV Bay at NK Nagar PSS	Nos.	1	0.36	0.36
5	33 KV RMU at Medical PSS	Nos.	1	0.51	0.51
TOTAL in Rs. Cr.					33.21

4.4.2 Augmentation of Power Transformer

168. To avoid any overloading issues, TPSODL has undertaken the assessment of the loading of the Power Transformers and found that some of the Power Transformers are overloaded & to meet the estimated peak load, it is required to augment few of the overloaded Transformers. (Considering the current peak and load growth for the next five years).

169. To carry out the detailed Study of the power transformer loadings, inputs were collected from each of the 33/11 kV substations and loading pattern of PTR were analyzed. Future load growth has also been considered and Power Transformers with peak load more than 80% capacity have been identified for planning of mitigation strategies. In some of the PSS, % loading on Power Transformers is not uniform. Though one transformer is overloaded, other transformer is partly loaded. In such cases, it is planned to shift load from overloaded transformer to other

transformer with lower % load. Augmentation of Power Transformer is planned where spare capacity is not available with other Transformers in the same PSS. Existing PTR freed after Augmentation will be reused at other location of PSS for mitigation of overloaded/old PTR after necessary testing & minor life-enhancement measures as per requirement. 15 nos. of released PTR are planned in FY 25 & FY 26 for reuse at other PSS & Rs. 2.68 Cr. (Unit cost of Rs. 17.38 lacs/PTR) is proposed for shifting, Civil works & installation cost of relocated PTR. This will help in Cost optimization. The augmentation of PTR will help consumers as below:

Benefit

- Reduce over-burdening of existing PTRs thereby reducing forced outages.
- Optimization of PTR loading.
- Reduction of technical loss.
- Reduction of PTR failure which is costly asset.
- Improve the operational efficiency.
- Reliable power supply by ensuring N-1 capacity at PSS level.

The details of PTRs to be augmented are as follows:

Table 50 Cost Estimates for Augmentation of PTRs

A	**Details of PTR Augmentation**								
1	CITY	BED-II	AMBAGADA PSS	7.5	12.5	26		2.25	0.00	2.25
2	CITY	BED-II	AMBAGADA PSS	5	12.5	25	2.12		2.12	-
3	JEYPORE	NED	NABARANGPUR	5	10	25	1.93		1.93	-
4	ASKA	AED-I	ASKA PSS	5	8	25	1.57		1.57	-
5	JEYPORE	KED	SUNABEDA PSS	3.15	8	26		1.67	0.00	1.67
6	RAYAGADA	RED	AUTONAGAR PSS	5	8	26		1.67	0.00	1.67
7	BERHAMPUR	BED-III	KANISI PSS	3.15	8	25	1.57		1.57	-
8	JEYPORE	KED	KORAPUT OLD PSS	3.15	8	25	1.57		1.57	-
9	JEYPORE	MED	MALKANGIRI PSS	3.15	5	25	1.11		1.11	-
10	RAYAGADA	RED	MUNIGUDA PSS	3.15	5	25	1.11		1.11	-
11	ASKA	AED-II	BUGUDA PSS	3.15	5	26		1.18	0.00	1.18
12	BHANJANAGAR	BoED	BAUNSUNI PSS	1.6	3.15	25	0.61		0.61	-
13	JEYPORE	MED	KORUKUNDA PSS	1.6	3.15	26		0.65	0.00	0.65
	TOTAL Cost								**11.61**	**7.41**
B	**Released PTR Relocation**									
				FY 25	**FY 26**					
14	PTRs released		No of PTRs	8	7		0.17	0.18	1.39	1.29
C	**Cost of PTR Augmentation= A+B**								**13.00**	**8.70**

Justification for augmentation of Power Transformers

Sr No	1 and 2

Circle-Division	City-BED-II
PSS Name	AMBAGADA
Augmentation From - To	PTR 1 - 5 MVA TO 12.5 MVA and PTR 2 - 7.5 MVA TO 12.5 MVA
Scheme Planned in FY	PTR 1 - 25, PTR 2 - 26
Total cost of scheme (Lacs)	211.9 & 224.62
Technical Justification	"**Existing Scenario:** Ambagada PSS has 3 nos. of PTR of (1 nos. of 5 MVA, 7.5 MVA & 10 MVA each). 5 MVA PTR- 1, is feeding 2 nos. feeder with combined loading of 3.49 MVA (11kv Balipada 3.3MVA, 11kv Auto nagar 0.19MVA) & loaded at 69.8% (91.22% considering 5 years load growth) 7.5 MVA PTR - 2, is feeding 2 nos. feeder with combined loading of 5.58 MVA (11 kv City hospital 4.99 MVA, 11KV Dedicate feeder 0.59 MVA) & loaded at 75% (98% considering 5 years load growth) 10 MVA PTR -3, is feeding 3 nos. feeder with combined loading of 10.11 MVA (11kv Old berhampur 6.3 MVA, 11 kv Aska road 3.7 MVA, Aska road PHD 0.11 MVA) & loaded at 100.11% (130.83% considering 5 year load growth). The PTR 3 is overloaded with current peak load and in future both the PTR 2 & 3 are expected to be overloaded. This PSS serves Berhampur City Area. The present N-1 capacity of Ambagada PSS is 153.44% (The capacity of the PTRs excluding highest rating PTR to supply whole peak load of the PSS). **Proposed Scenario** To mitigate overloading of PTR 3 the following has been proposed :- Augmentation of PTR 1: 5 MVA to 12.5 MVA & shifting of approx 3 MVA load of 11 kv old berhampur feeder from PTR 3 to PTR 1. 11 KV New Link line is considered in proposed CAPEX for bifurcatiuon & shifting of 11 KV Old Berhampur feeder.

	Augmentation of PTR 2: 7.5 MVA to 12.5 MVA is also planned in FY 26 along with shifting of 2.3 MVA load from PTR 3 to PTR 2. After above proposal the loading of PTR 1 ,PTR 2 & PTR 3 becomes 52%, 62.24% & 51.11% respectively and N-1 capacity of Ambagada PSS also become 78.3% based on current peak load.

Sr No	3
Circle Division	Jeypore - Nabrangpur
PSS Name	NABRANGPUR
Augmentation From - To	5 MVA TO 10 MVA
Scheme Planned in FY	25
Total cost of scheme (Lacs)	193.31
Technical Justification	"**Existing Scenario:** 8 MVA PTR- 1, is feeding 2 nos. feeder with combined loading of 6.8 MVA (11kv Nabrangpur Town no-I 3.4 MVA, 11kv Nabrangpur Town II- 3.4 MVA & loaded at 85% (137% considering 5 years load growth) 5 MVA PTR - 2, is feeding 3 nos. feeder with combined loading of 3.1 MVA (11 kv B. Maliguda 1.33 MVA, 11 Kv S. Maliguda 0.57 MVA, 11 Kv Kenduguda 1.2 MVA) & loaded at 62% (99.85% considering 5 years load growth). The PTR 1 is overloaded with current peak load and in future both the PTRs is expected to be overloaded The present N-1 capacity of Nabrangpur PSS is 173% which is not meeting contingency condition as per current scenario. The PSS serves Nabrangpur Town area. **Proposed Scenario** To mitigate overloading of PTR 1 the following has been proposed :- Augmentation of PTR 2 : 5 MVA to 10 MVA & swapping of 11kV Nabrangpur Town-2 & 11kV B.Maliguda Feeder among their respective PTR. Link Line for shifting of partial load of 11kV Town-02 Feeder ie.., 0.6mVA Load is planned

	in Proposed CAPEX, Which will further improve the N-1 capacity of the PSS. After above proposal overloading of PTR 1 & PTR 2 is mitigated as per current peak load as well as considering load growth in future. This proposal will also improve N-1 capacity of the PSS to 108.75% based on current peak load.

Sr No	4
Circle Division	Aska AED-1
PSS Name	ASKA
Augmentation From - To	5MVA TO 8MVA
Scheme Planned in FY	25
Total cost of scheme (Lacs)	157.46
Technical Justification	"**Existing Scenario:** Aska PSS has 3 nos. PTR of (2 nos. of 8 MVA & 1 no. 5 MVA rating). 8 MVA PTR-1, is feeding 11 kv Aska bus stand with peak load of 2.86 MVA , & loaded at 36%(40.73% considering 4 years load growth) 8 MVA PTR 2 is feeding 3 nos. feeders with combined loading of 5.62 MVA (11 kv Jokabandha 1.72 MVA,11 kv Medical 1 MVA, 11 kv Sheragada 2.9 MVA) & loaded at 70.25% (79.48% considering 5 years load growth). 5 MVA PTR 3 is feeding 11 kv Gangapur with peak load of 4.42 MVA , & loaded at 88.5%(100.12 % considering 5 years load growth). The PTR is also old aged (more than 30 years old). PTR-3 is overloaded and is very old. The present N-1 capacity of Aska PSS is 98.78%. This PSS serves ASKA Town area. The PTR 3 is overloaded with current peak load and in future both the PTR 2 & 3 are expected to be overloaded. **Proposed Scenario** To mitigate overloading of PTR 3 the following has been proposed :- Augmentation of PTR 3: 5 MVA to 8 MVA.

	After above proposal the loading of PTR 3 becomes 55.25% and N-1 capacity of Aska PSS becomes to 80.25% based on current Peak Loading.

Sr No	5
Circle Division	Jeypore- KED
PSS Name	SUNABEDA
Augmentation From - To	3.15 TO 8 MVA
Scheme Planned in FY	26
Total cost of scheme (Lacs)	166.91
Technical Justification	"**Existing Scenario:** Sunabeda PSS has 3 nos. of PTR of (2 nos. of 3.15 MVA, 1 no. of 5 MVA rating). 3.15 MVA PTR- 1, is feeding 3 nos. feeder with combined loading of 2.58 MVA (11kv Jodaguda 0.97 MVA, 11kv Raw water 1.14 MVA, 11 kv Central University 0.47 MVA) & loaded at 82% (109.73% considering 5 years load growth) 5 MVA PTR - 2, is feeding 2 nos. feeder with combined loading of 3 MVA (11 kv Similiguda 1 MVA, 11KV NAD 2 MVA) & loaded at 60% (80.30% considering 5years load growth) 3.15 MVA PTR -3, is feeding 2 nos. feeder with combined loading of 1.26 MVA (11kv NAC Rular 0.6 MVA, 11 kv NAC town 0.66MVA) & loaded at 41% (54.86% considering 5 year load growth).The PSS is also feeding Sunabeda and damanjodi township including HAL. The present N-1 capacity of Sunabeda PSS is 95% The PTR 1 is overloaded with current peak load. **Proposed Scenario** To mitigate overloading of PTR 1 the following has been proposed :- Augmentation of PTR 1 : 3.15 MVA to 8 MVA and shifting of 0.6mVA Load of Billiguda Town Feeder from Billiguuda PSS on PTR-1.

	After above proposal the over loading of PTR 1 will be mitigated and This proposal will also improve N-1 capacity for PSS to 73.61% based on current peak Loading.

Sr No	6
Circle Division	Raygada-RED
PSS Name	AUTONAGAR
Augmentation From - To	5 MVA TO 8 MVA
SCHEME PLANNED IN FY	26
Total cost of scheme (Lacs)	166.91
Technical Justification	"**Existing Scenario:** Autonagar PSS has 3 nos. of PTR of (1 nos. of 7.5 MVA , 1 nos. of 5 MVA, 1 no. of 8 MVA rating). 7.5 MVA PTR- 1, is feeding 2 nos. feeder with combined loading of 8.94 MVA (11kv Town no. IV 7.23 MVA, 11kv Kerada 1.71 MVA) & loaded at 119.39% (192.27% considering 5 years load growth) 5 MVA PTR - 2, is feeding 1 nos. feeder with load of 1.96 MVA (11 kv J K Pur 1.96 MVA) & loaded at 39.25% (63.21% considering 5 years load growth) 8 MVA PTR -3, is feeding 1 no. feeder with load of 7.33 MVA (11kv Town no. III 7.33 MVA & loaded at 91.69% (147.66% considering 4 year load growth) The PTR 1 & 3 are overloaded with current peak load. The present N-1 capacity of Autonagar PSS is 146% and feeding Rayagada town area. **Proposed Scenario** To mitigate overloading of PTR 1 & 3 the following has been proposed :- Augmentation of PTR 1 : 5 MVA to 8 MVA and shifting of 1.5 MVA and 0.5 MVA from PTR 1and PTR 3 respectively to PTR 2.

	After above proposal the loading of PTR 1, PTR 2 & PTR 3 comes to 86% 50% & 85.5% respectively and will also cater expected loading in near future. This proposal will also improve N-1 capacity for PSS 117.1% Raniguda PSS under ODSSP Ph -3 (Work in Progress) will also cater partial load of Autonagar PSS.

Sr No	7
Circle Division	City - BED III
PSS Name	KANISI
Augmentation From - To	3.15 MVA TO 8 MVA
SCHEME PLANNED IN FY	25
Total cost of scheme (Lacs)	157.46
Technical Justification	"**Existing Scenario:** Kanisi PSS has 3 nos. of PTR of 5 MVA and 2nos. of 3.15 MVA rating 5MVA PTR- 1, is feeding 1 no. feeder with loading of 3.89 MVA (11kv Tulu 3.89 MVA) & loaded at 77.78% (101.65% considering 5 years load growth) 3.15 MVA PTR- 2, is feeding 1 no. feeder with loading of 2 MVA (11kv Randha 2 MVA) & loaded at 63.5% (83 % considering 5 years load growth) 3.15 MVA PTR- 3, is feeding 1 no. feeder with loading of 3.14 MVA (11kv Haldiapadar 3.14 MVA) & loaded at 99.67% (130.26% considering 5 years load growth). The PTR 3 is overloaded with current peak load.The present N-1 capacity of Kanisi PSS is 143.4%Kanisi PSS Feeds Berhampur city area. **Proposed Scenario** To mitigate overloading of PTR 3 the following has been proposed :- Augmentation of PTR 3 : 3.15 MVA to 8 MVA. After above proposal the loading of PTR 3 comes to 40.63% and N-1 capacity of Kanisi PSS also becomes to 110%.

Sr No	8
Circle Division	Jeypore-KED
PSS Name	KORAPUT OLD
Augmentation From - To	3.15 MVA TO 8 MVA
SCHEME PLANNEED IN FY	25
Total cost of scheme (Lacs)	157.46
Technical Justification	"**Existing Scenario:** Koraput Old PSS has 3 nos. of PTR (2 nos. 5 MVA & 1 no. of 3.15 MVA rating) 5 MVA PTR- 1, is feeding 11 kv Koraput no.1 feeder with peak load of 4.3 MVA & loaded at 86% (117.82% considering 5 years load growth) 5 MVA PTR- 2, is feeding 11 Kv Koraput no. 2 feeder with peak load of 2.57 MVA & loaded at 51.4% (70.42% considering 5 years load growth) 3.15 MVA PTR- 3, is feeding 2 nos. feeder with combined loading of 1.2 MVA (11kv Coffee Board 0.7 MVA, 11kv Chapper 0.5 MVA) & loaded at 38% (52.06% considering 5 years load growth) also this PTR is aged and greater than 30years old. The present N-1 capacity of Koraput Old pss is 99%. This is the only PSS serving Koraput Town area.The PTR 1 is overloaded with current peak load. There will be higher load growth/enhancement in future as per the the development in the koraput town area. **Proposed Scenario** Hence, to mitigate overloading of PTR 1, the following has been proposed: - Augmentation of PTR 3 : 3.15 MVA to 8 MVA & shifting of approx. 2 MVA from PTR 1 to PTR 3 . After above proposal the loading of PTR 1 be comes 66% respectively.

	The N-1 capacity of Koraput old PSS also improves to 80.1%

Sr No	9
Circle Division	Jeypore - MED
PSS Name	MALKANGIRI
SCHEME IN FY	25
Augmentation From - To	3.15 MVA TO 5 MVA
Total cost of scheme (Lacs)	111.01
Technical Justification	"**Existing Scenario:** Malkangiri PSS has 4 nos. of PTR of (3 nos. of 5 MVA, 1 no. of 3.15 MVA rating). 5 MVA PTR- 1, is feeding 2 nos. feeder with combined loading of 3.22 MVA (11kv Malkangiri town 1.9 MVA, 11kv Challanguda 1.33 MVA) & loaded at 65% (77.20% considering 5 years load growth) 5 MVA PTR - 2, is feeding 2 nos. feeder with combined loading of 3.29 MVA (11 kv MV-7 3.2 MVA, 11KV Education Feeder 0.09 MVA) & loaded at 67% (79.57% considering 5 years load growth) 3.15 MVA PTR -3, is feeding 1 no. feeder with load of 1.71 MVA & loaded at 54% (64.13% considering 5 year load growth), This PTR is also old aged and is greater than 30 years old. 5 MVA PTR- 4, is feeding 3 nos. feeder with combined loading of 4.2 MVA (11kv Dam Site 1.3 MVA, 11kv DNK 2.8 MVA, 11Kv Dedicated Medical 0.1 MVA) & loaded at 84% (99.76% considering 5 years load growth) The present N-1 capacity of Malkangiri pss is 92%. This PSS serves Malkhangiri Town area. The PTR 4 is overloaded with current peak load. **Proposed Scenario**

	To avoid overloading of PTR 4 the following has been proposed : Augmentation of PTR 3 : 3.15 MVA to 5 MVA and swapping of 11kV DNK Feeder & 11kV Micro Feeder among PTR-3 & 4 respectively. After above proposal the loading of PTR 3 & PTR 4 becomes to 62% each. This proposal will also improve N-1 capacity for PSS 80%.

Sr No	10
Circle Division	Raygada-RED
PSS Name	MUNIGUDA
Augmentation From - To	3.15 MVA TO 5 MVA
SCHEMEPLANNED IN FY	25
Total cost of scheme (Lacs)	111.01
Technical Justification	"**Existing Scenario:** Muniguda PSS has 2 nos. of PTR (1 nos. of 5 MVA & 3.15 MV each). 5 MVA PTR- 1, is feeding 2 nos. feeder with combined loading of 3.51 MVA (11kv Muniguda town 2.66 MVA, 11kv Kutragada 0.85 MVA) & loaded at 70.49% (113.52%% considering 5 years load growth) 3.15 MVA PTR - 2, is feeding 2 nos. feeder with combined loading of 1.23 MVA (11 kv Bhairabgada 0.66 MVA, 11KV New hope 0.57 MVA) & loaded at 39.31% (63.30% considering 5 years load growth).The PSS is also feeding Muniguda town The present N-1 capacity of Muniguda pss is 151%. In future PTR 1 is expected to be overloaded as per the Load growth. **Proposed Scenario** To mitigate overloading of PTR the following has been proposed :-

	Augmentation of PTR 2 : 3.15 MVA to 5 MV and shifting of 0.8 MVA from PTR 1 to PTR 2. After above proposal the overloading of PTR 1 will be mitigated considering load growth in near future. This proposal will also improve N-1 capacity for PSS to 95.2%

Sr No	11
Circle Division	Aska-AED II
PSS Name	BUGUDA
Augmentation From - To	3.15 MVA to 5 MVA
SCHEME IN FY	26
Total cost of scheme (Lacs)	117.66
Technical Justification	"**Existing Scenario:** Buguda PSS has 4 nos. of PTR , 2 nos. each of 3.15 MVA and 5MVA. 3.15 MVA PTR- 1, is feeding buguda town feeder with peak load of 2.97 MVA & loaded at 94.35% (114.79 % considering 5 years load growth) this PTR is old aged i.e., greater than 30 years 5 MVA PTR - 2, is feeding pangedi feeder with peak load of 0.91 MVA & loaded at 18.29% (22.25% considering 5 years load growth). 5 MVA PTR - 3, is feeding 2 nos. of feeder with combined loading of peak load of 3.41 MVA (11KvMotabadi- 1.28 MVA &11Kv karchuli-2.13 MVA) loaded at 68.21% (83% considering 5 years load growth) this PTR is old aged i.e., greater than 30 years. 3.15 MVA PTR - 4, is feeding 11 KV Golia feeder with peak load of 1.51 MVA & loaded at 47.78% (58.13% considering 5 years load growth). PTR1 and PTR3 are also very old aged having more than 30 years and breakdown of these PTRs are frequently occuring. The present N-1 capacity of Buguda PSS is 67%

	Proposed Scenario To mitigate overloading of PTR 1 the following has been proposed :-Augmentation of PTR 1 : 3.15 MVA to 5 MVA After above proposal the loading of PTR 1 becomes to 60% This proposal will also becomes N-1 capacity for PSS to 60%

Sr No	12
Circle Division	Bhanjanagr-BOED
PSS Name	BANSUNI
Augmentation From - To	1.6 MVA to 3.15 MVA
SCHEME IN FY	25
Total cost of scheme (Lacs)	61.1
Technical Justification	"**Existing Scenario:** BANSUNI PSS has 2 nos. of PTR (1 nos. of 5 MVA & 1.6 MV each). 5 MVA PTR- 1, is feeding 2 nos. feeder with combined loading of 3.81 MVA (11kv BANSUNI 0.76 MVA, 11kv BAHIRA 1.22 MVA,11 KV DAHIYA- 1 1.2 MVA , 11 KV DAHIYA-2 0.63 MVA) & loaded at 76.21% (111.97% considering 5 years load growth) 1.6 MVA PTR - 2, is feeding 11 Kv Gundulia feede with peak load of 0.91 MVA & loaded at 57.16% (84% considering 5 years load growth) The present N-1 capacity of K.B Pur PSS is 295% **Proposed Scenario** To mitigate overloading of PTR 1 the following has been proposed :- Augmentation of PTR 2 : 1.6 MVA to 3.15 MVA and shifting of 1.23 MVA (11kV Dhaiya-1 feeder) from PTR 1 to PTR 2

	After above proposal the loading of PTR 1 & PTR 2 comes to 58.2% & 57.10% respectively. This proposal will also becomes N-1 capacity for PSS to 150%. Khatkhatia PSS under ODSSP Ph -4 will also cater partial load of Bansuni PSS.

Sr No	13
Circle Division	Jeypore-MED
PSS Name	KORUKUNDA
Augmentation From - To	1.6 MVA to 3.15 MVA
SCHEME IN FY	26
Pay Back Period (Years)	14.29
Technical Justification	"**Existing Scenario:** Korukunda PSS has 2 nos. of PTR 1.6 MVA rating each and both these PTR are very old and having more than 40 years. 1.6 MVA PTR- 1, is feeding Korkunda town feeder with peak load of 0.95 MVA & loaded at 60% (71.26% considering 5 years load growth) 1.6 MVA PTR - 2, is feeding MV-36 with peak load of 0.57 MVA & loaded at 36% (42.75% considering 5 years load growth) The present N-1 capacity of Korukunda PSS is 95% **Proposed Scenario** Replacement and Augmentation of old PTR 1 : 1.6 MVA to 3.15 MVA After above proposal the loading of PTR 1 comes to 48%.

4.4.3 Augmentation / addition of Distribution Transformer

170. To cater the increasing load demand, especially with the introduction of various schemes, DTR augmentation is required to avoid overloading of transformer which can lead to transformer failure and power interruptions. Also, to ensure reliable power supply to our consumers, Distribution Transformers need to be kept at optimum loading to avoid any mechanical stress on the transformers due to overloading.

171. As per standard practice, DTR need to be loaded up to 80% and any DTR above 80% loading needs to be considered for mitigation. To avoid these overloading issues where the load growth is high, it is required to augment the capacity of the Distribution transformers. It will provide benefit to consumers by providing reliable power supply due to reduction in forced Outages.

172. In this proposal, TPSODL intends to carry out Distribution Transformer's augmentation for those DTRs which are identified as overloaded at various locations. A total 165 nos. DTRs are planned for augmentation & 60 nos. are planned for addition of DTRs at different locations.

Benefit

- The proposal will help in Mitigation of overloading DTRs. Thus, it will lead into lower interruption and good quality power hence leading to satisfaction of our consumers.
- Improve Voltage Profile at consumer end.
- Reduction of technical loss
- Improve the operational efficiency
- Existing DTR freed after Augmentation will be reused at other location of PSS for mitigation of old DTR after necessary testing & minor life-enhancement measures as per requirement. This will help in Multiple swapping and Cost optimization.

173. Based on the above, the Capital Expenditure on augmentation/addition of Distribution Transformer proposed in FY 2024-25 is presented in the table below

Table 51 Cost Estimates for Augmentation and Addition of DTRs

Sl. No.	Activity	Unit Cost (Rs Cr)		Quantity (Nos/Km)		Cost (Rs Cr)	
		FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	Augmentation of DTR -Aug to 25 KVA	0.03	0.03	5	6	0.14	0.18
2	Augmentation of DTR -Aug to 25 KVA with Plinth	0.03	0.03	1		0.03	0.00
3	Augmentation of DTR -Aug to 63 KVA	0.04	0.04	20	20	0.74	0.78
4	Augmentation of DTR -Aug to 63 KVA with Plinth	0.04	0.04	2	1	0.08	0.04
5	Augmentation of DTR -Aug to 100 KVA	0.04	0.05	36	36	1.57	1.66
6	Augmentation of DTR -Aug to 100 KVA with Plinth	0.05	0.05	15	15	0.71	0.75
7	Augmentation of DTR-Aug to 250 KVA with Plinth	0.13	0.14	40	40	5.13	5.43
8	Augmentation of DTR-Aug to 500 KVA with Plinth	0.23	0.25	10	10	2.34	2.48
9	Addition of New DTR - 25 KVA (Chain -Link Fencing)	0.05	0.05	9	9	0.44	0.46
10	Addition of New DTR - 63 KVA (Chain -Link Fencing)	0.06	0.06	10	10	0.58	0.61
11	Addition of New DTR - 63 KVA with Plinth (Chain - Link Fencing)	0.06	0.07	2	1	0.12	0.07
12	Addition of New DTR - 100 KVA	0.07	0.07	20	19	1.33	1.34
13	Addition of New DTR - 100 KVA with Plinth	0.07	0.07	12	11	0.84	0.82
14	Addition of New DTR - 250 KVA with Plinth	0.15	0.15	10	10	1.45	1.54
15	Addition of New DTR - 500 KVA with Plinth	0.25	0.26	5	5	1.23	1.31
	Total-1			**197**	**193**	**16.73**	**17.48**
16	11 KV Line Extension for New DTRs	0.17	0.18	29.98	29.72	5.11	5.37
17	11 KV 2 Ph - 3 Ph Conversion	0.01	0.02	7.42	7.42	0.11	0.12
	TOTAL-2					**5.22**	**5.49**
	Total					**21.95**	**22.96**

4.4.4 Augmentation and addition of LT ABC line

174. The LT AB cable has been proposed for augmentation to address addition of LT feeders due to DTR augmentation or new addition. The augmentation of DTR requires augmentation of associated LT AB cable to cater the additional load to be served to consumers seamlessly.

Table 52 Cost Estimates for Augmentation and addition of LT ABC Line

Sl. No.	Activity	Unit Cost (Rs Lakhs)		Quantity (Kms)		Cost (Rs Cr)	
		FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	Augmentation of LT ABC line(16 to 35 sqmm)	6.64	7.04	3	3.35	0.20	0.24
2	Addition of LT ABC(35 sqmm)	12.41	13.15	4	3.4	0.50	0.45
3	Augmentation of LT ABC line(35 to 50 sqmm)	7.21	7.65	25	25	1.80	1.91
4	Addition of LT ABC(50 sqmm)	12.98	13.76	25	25	3.24	3.44
5	Augmentation of LT ABC line(50 to 95 sqmm)	9.85	10.44	21	21	2.07	2.19
6	Addition of LT ABC(95 sqmm)	15.62	16.55	27	28	4.22	4.64
	TOTAL			**105**	**105.75**	**12.03**	**12.86**

4.4.5 Summary of Capital Expenditure requirement for Load Growth:

175. The Capital Expenditure proposed towards network development, augmentation and addition of equipment is as follows

Table 53 Proposed Capital Investment for Load Growth

Sl. No.	Activity	FY 25	FY 26	Total
1	33 / 11 KV New PSS 2X12.5 MVA & associated Lines (Om Bihar)	31.24		31.24
2	33 / 11 KV New PSS 2X10 MVA PSS & associated Lines (Khalikote College)		33.21	33.21
3	PTR Augmentation	13.00	8.70	21.70
4	Augmentation / addition of Distribution Transformer and 11 KV Line Extension for New DTRs	21.95	22.96	44.91
5	Augmentation and addition of LT ABC line	12.03	12.86	24.89
	TOTAL	**78.22**	**77.73**	**155.95**

4.5 Technology Infrastructure

176. The Technology CAPEX for FY 25 and 26 is being estimated against four broad heads as below:

a. Build & Strengthen end user IT infrastructure
b. Strengthen Network Connectivity
c. Augmentation of Data Center – Hardware and Software
d. Augmentation of Disaster Recovery Center – Hardware and Software

The detailed proposals are as follows:

4.5.1 Build & Strengthen end user IT infrastructure

177. Till date, TPSODL has procured and distributed around 1600 laptops and 700 desktops to its officers. TPSODL has also installed around 300 heavy duty Multi-Functional Devices (MFD) across all offices of TPSDOL. With the addition of new manpower and establishments as well as roll out of more and more IT applications, in both FY 25 and FY 26, it is imperative that the end users need to be equipped with necessary IT infrastructure for smoothly performing day to day works.

178. Additionally, in FY 26, a portion of laptops procured in FY22 (Total no of laptops procured in FY 22 is 637) will reach their end of life and hence replacement of laptops shall have to be procured against the same. Accordingly following is being proposed in FY 25 and FY 26 under the stated head.:

Table 54 Building and Strengthening of individual IT Infrastructure

S.No	Description	Unit Cost		Quantity		Amount (Rs Cr)	
		FY 25	FY26	FY 25	FY 26	FY 25	FY 26
1	Laptops with MS License, Antivirus	95000	95000	250	500	2.38	4.75
2	MFD Printer	76700		10		0.08	0.00
	Total					**2.45**	**4.75**

** *The Unit rates are inclusive of taxes and are taken from either competitively discovered rates in FY 22/23/24 and against which orders have been placed or prevailing market rates. We have taken reasonable escalation in the unit rates to accommodate the unknown developments and semi-conductor crisis that is affecting the industry currently.*

The prices of end devices include cost of all licenses, antivirus protection and other obligatory fees associated with the end computing devices.

Benefits

- Enhancing the reach of computerization across the organization.
- Build a culture of following online processes and less of paper movement
- Availability of end user computing devices up to section level for proper use of various IT applications towards more effective and transparent execution of business processes.

4.5.2 Strengthen Network Connectivity

179. In FY 22, we established MPLS connectivity at 100% offices and 83 PSS across TPSODL. The technology used was a combination of IP MPLS and OFC. TPSODL laid 96 Km of Optical Fiber Cable (OFC) in FY 22 in the form of two separate rings connecting 31 offices and 18 PSS. The OFC connectivity has allowed us to enhance the reliability at these locations by giving a redundant connectivity route. In all offices having more than 20 users, we also established WiFi connectivity.

180. In FY 23, the journey continued and we completed 125 Km of OFC for establishing reliable connectivity at 22 PSS and 38 offices. All these PSS now have dual connectivity thereby making communication to SCADA very reliable. Additionally, we connected 45 numbers of PSS via IP MPLS in FY 23 for SCADA implementation. WiFi connectivity was also established for additional locations.

181. In FY 24, we are in the process of connecting 72 numbers of PSS via IP MPLS for SCADA implementation. We are also laying 50 Km of OFC network which will connect 10 PSS and 20 offices thereby establishing redundant secure network.

Table 55 Progress of Communication Network

S.No	Financial Year	OPTCL Node Connected	OFC Laid/ Proposed	Node Connected			Remarks
				PSS	ENT	Total	
1	FY 21-22	2	100	19	36	55	
2	FY 22-23	10	125	22	38	60	
3	FY23-24	5	50	10	20	30	WIP
	Total	**17**	**275**	**51**	**94**	**145**	

Table 56 Nodes on OFC

Sr No	Location	Total Node	FY 24	Node % Connected on OFC
1	IT	171	94	55%
2	OT	260	51	20%

182. In order to further strengthen the network connectivity of PSS which would help build a reliable SCADA system, it is proposed to connect 60 numbers of PSS and 20 numbers of PSS respectively in FY 25 and FY 26 over IP MPLS/VSAT connectivity thus taking the total number of PSS to 280 which could then be brought on to SCADA.

183. Continuing the endeavor of creating our own reliable network, we have proposed to lay 30 Km and 20 Km OFC respectively in FY 25 and FY 26 for connecting 12 PSS (7 numbers in FY 25 and 5 numbers in FY 26) using the OPGW backbone of OPTCL or that of telecom service providers.

184. For all new office buildings/extension of office buildings coming up in FY 25 and FY 26, necessary extension of LAN connectivity and new MPLS connectivity, if required, shall also be planned. Accordingly following is being proposed in FY 25 and FY 26 under this head:

Table 57 Cost of Strengthening of Network Connectivity

		Unit Cost		Quantity		Cost	
S. No.	Description	FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	LAN Cables per node	4600	4600	500	300	0.23	0.14
2	Layer -II & III Switch	152000	152000	5	5	0.08	0.08
3	2/5 kVA UPS (Rack Mounting) with battery	108000	108000	30	10	0.32	0.11
4	SMPS with battery (rack mounted)	108800	108800	40	40	0.44	0.44
5	Aggregator Router	1091000	1091000	4	2	0.44	0.22
6	Over head 24 C unarmoured	220000	220000	30	20	0.66	0.44
7	Layer- 3 Router (VPN)	110000	110000	20	20	0.22	0.22
8	MPLS link installation	7300	7300	60	20	0.04	0.01
9	VSAT/Third Party solution	70977	70977	5		0.04	0.00
	Total					**2.46**	**1.65**

** *The Unit rates are inclusive of taxes and are taken from either competitively discovered rates in FY 22/23/24 and against which orders have been placed or prevailing market rates. We have taken reasonable escalation in the unit rates to accommodate the unknown developments and semi-conductor crisis that is affecting the industry currently.*

The proposal for scheme b) is as follows

Benefits

185. OFC and IP-MPLS/VSAT connectivity in PSS and offices will create a reliable redundant network which can be used for delivering reliable SCADA connectivity of PSS as well as to ensure high availability of critical IT applications across TPSODL.

4.5.3 Augmentation of Data Center – Hardware and Software

186. TPSODL Data Center (DC) was commissioned successfully at Berhampur in FY 22. This DC hosts SCADA, GIS and AMI applications. Augmentation of TPSODL Data Center (DC) infrastructure (both hardware and software) is required in order to cater to incremental growth planned in Advanced Metering Infrastructure (AMI), both in FY 25 and FY 26.

187. For catering to additional AMI implementation, the DC infra shall have to be suitably augmented by procuring additional servers for catering to incremental load

of Head End System (HES), Meter Data Management System (MDMS) and Smart Prepaid Module (SPM). Along with the servers, necessary operating system licenses (both Windows and Linux) shall be needed for functioning of the servers.

188. Also, for security of the additional servers, necessary anti virus shall have to be procured. Additional DB licenses for both Oracle and SQL Server shall be required for handling incremental smart meter count.

189. Additional licenses, for associated systems viz. Meter Data Management (MDM) and Head End System (HES) shall have to be procured accordingly in FY 25 and FY 26.Accordingly following is being proposed in FY 25 and FY 26 under this head:

Table 58 Cost for Augmentation of Data Centre

		Unit Cost		Qty Proposed		Cost (Rs Cr)	
S. No.	Description	FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	MDM license	59	59	240000	224000	1.42	1.32
2	HES license	80	80	240000	224000	1.92	1.79
3	Server	3800000	3800000	2	2	0.76	0.76
4	Windows OS (Data Center Edition)	64000	64000	32	32	0.20	0.20
5	Linux	365000	365000	32	32	1.17	1.17
6	Antivirus (Server Edition)	51000	51000	10	10	0.05	0.05
7	Oracle Enterprise 8 core license	15100000	15100000	1		1.51	0.00
8	MS SQL 2 Core Enterprise license	1445000	1445000	10		1.45	0.00
	Total					**8.47**	**5.30**

*** The Unit rates are inclusive of taxes and are taken from either competitively discovered rates in FY 22/23/24 and against which orders have been placed or prevailing market rates. We have taken reasonable escalation in the unit rates to accommodate the unknown developments and semi-conductor crisis that is affecting the industry currently.*

Benefits

190. Augmentation of TPSODL Data Center infrastructure will enable extension of AMI landscape leading to efficient billing and 100% collection towards reduction of AT&C loss.

4.5.4 Augmentation of Disaster Recovery Center – Hardware and Software

191. TPSODL Data Center (DC) was commissioned successfully at Berhampur in FY 22. This DC hosts SCADA, GIS and AMI applications. In line with the best practices followed up by critical DCs globally, we are in the process of procuring and installing necessary IT infrastructure for the Disaster Recovery (DR) Center for this DC at Sambalpur, Odisha as approved by the Hon'ble OERC under FY 24 CAPEX. The DR will ensure business continuity in the aftermath of any breakdown of the Data Center (DC) owing to a natural calamity or other unforeseeable disaster. The DR will operate at 100% capacity of the DC and the same will be equipped with latest cyber security measures. DR will also ensure 100% data protection for all data stored at DC.

192. Considering the planned augmentation of TPSODL Data Center in FY 25 and FY 26, owing to incremental implementation of Advanced Metering Infrastructure (AMI), it will be imperative to augment the infrastructure capacity of the DR proportionately to ensure business continuity.

Accordingly following is being proposed in FY 25 and FY 26 under this head:

Table 59 Cost of Disaster Recovery Centre (Hardware and Software)

S. No.	Description	Unit Cost		Qty Proposed		Cost (Rs Cr)	
		FY 25	FY 26	FY 25	FY 26	FY 25	FY 26
1	Server	3800000	3800000	2	2	0.76	0.76
2	Windows OS (Data Center Edition)	64000	64000	32	32	0.20	0.20
3	Linux	365000	365000	32	32	1.17	1.17
4	Antivirus (Server Edition)	51000	51000	10	10	0.05	0.05
	Total					**2.18**	**2.18**

** *The Unit rates are inclusive of taxes and are taken from either competitively discovered rates in FY 22/23/24 and against which orders have been placed or prevailing market rates. We have taken reasonable escalation in the unit rates to accommodate the unknown developments and semi-conductor crisis that is affecting the industry currently.*

Benefits

- Disaster Recovery Center shall ensure business continuity in case of breakdown of Data Center
- Disaster Recovery Center shall ensure recovery of data in case of any data loss at Data Center

4.5.5 Summary of expenditure for Technology Infrastructure

193. The total of all proposals under the head of Technology Infrastructure for FY 25 and FY 26 are tabulated below:

Table 60 Summary of expenditure under Technology Infrastructrure

Sr No	Activity	FY 25	FY 26
1	End user IT Infrastructure	2.46	4.75
2	Strengthen Network Connectivity	2.47	1.65
3	Augmentation of Data Center additional Hardware and Software	8.47	5.30
4	Augmentation of Disaster Recovery Centre-Hardware and Software	2.18	2.18
	Sub Total -Technology Infrastructure(5)	**15.59**	**13.88**

4.6 Civil & Administration

4.6.1 Restructuring/Refurbishment of Infratructure of Offices and Stores

194. TPSODL have 245 numbers of established offices (O&M and other supportive functions such as EMR and vigilance) across 48751 Sq. Km area of TPSODL. Some of them are owned and others are on rented property. The condition of almost all existing establishments is either totally dilapidated requiring replacement by new structure or the offices are bad that they need to be reinstated with major refurbishment /restructuring works. This bad condition of the structures is due to aging (approx. 40 to 50 years).

195. These offices requiree immediate attention to bring them to basic prevailing standards of any office to be occupied. This work is taken up since FY22 and is being done judiciously in phased manner spread over more than one year. Total offices attended till FY23 i.e. over 2 years are 64 in numbers. Targeted offices in FY24 are 71 making a total to 135. Now in FY 25 a total 60 offices are planned to be taken up as a continuing endeavor towards providing safe, hygienic & reasonably good working environment with appropriate ventilation to staff.

196. TPSODL is planning to improve the office infrastructure through revamping and other civil interventions. These activities are urgently needed to provide conducive

work environment to TPSODL employees and all consumer visiting TPSODL offices for one or the other work.

197. Further, TPSODL has 4 zonal stores across various circles and 1 main store at Berhampur. All the stores were in bad shape as regard to approachability mainly during monsoon, water drainage facility been almost nonexistent and inadequate safe storage platforms as well as sheds for crucial material.

198. Since FY22 several works such as partial road works, partial boundary wall, refurbishment of existing sheds at Main store, DT workshop at Main store open shed at Main store and partial road works at Jeypore and Bhanjanagar were take up addressing issues to some extent. However considering increasing material storage & its handling with growing Government projects requirement across the overall spread and overall system sufficiency improvement works , following civil activities are required to be taken up may be in phased manner over next 3 years.

- Concrete approach roads to avoid repetitive maintenance & to overcome uneven surfaces leading to safety hazards to heavy vehicles
- Firm & rigid concrete platforms for storing critical material like MU, CT, PT etc.
- Construction of open as well as closed sheds for storing the key material
- Construction of closed sheds for storing material of indoor type
- Washrooms and offices for store at remote location e.g. Phulbani where there is no proper office to manage the store activity. Offices at Bhanjnagar & Jeypore also requires revamping
- It is targeted to cover following activities in the year FY2024-25 & FY 2025-26
- Approach road complete balance qty of 1700 meter
- Drain of about 1600 m out of total estimate of 3600m
- Firm platforms of 400 sqm each 5 nos
- Refurbishment of covered shed at Main store which is crucial
- Open shed at Jeypore 500 sqm

Table 61 Civil Expendituer for Office and Stores

Sr. No.	Description of Projects	Quantity (No)		Cost (Rs Cr)	
		FY 25	FY 26	FY 25	FY 26
1	TPSODL office restructuring/ rebuilding	60		17.0	1.0
2	Store			4.0	4.0
	Total	**60**	**0**	**21.0**	**5.0**

4.6.2 Development of Hostel building for Trainees

199. Trainees are often hired to work alongside managers and executives with the intention that one day they will become a manager within the organization. They work closely with senior personnel, learning techniques and gaining the knowledge required to run a company smoothly. This not only makes sure that our resources have clear understanding of business deliverables but also at the same time they become prepared for challenges ahead, thereby enabling them to advance to higher positions within an organization. Additionally, trainees always add valuable support to current employees and biggest benefit of hiring trainees is that they see and learn the process by getting to work hands-on and getting good exposure to challenging business scenarios.

200. Going forward, TPSODL has planned to fulfil future manpower requirements by recruiting trainees only. It is proposed to hire 100 no. of management trainees each year to fulfil manpower requirements and these trainees would require permanent stay during their training period. Establishment of trainee hostel would cater to the above requirement on a long-term basis. Also, since trainees are hired at a minimum salary band, it is difficult for them to afford self-arranged housing. Moreover, as these resources are hired directly from campus and do not have exposure to the business world, hence with a view to ensure seamless campus to business transition, it is always suggestive to extend them a conducive and a nurturing environment. This would not only aid in grooming of the future ready managers but also help them understand the ethics and culture of the company.

201. Tenders were invited based on approval given by the Hon'ble Commission and total costing as per bid value and finalized contract is Rs. 22.08 Cr and the cost of the project after considering escalation is estimated to be Rr. 23 Cr againt an amount of Rs 20 Crores indicated in the DPR submitted for FY 2023-24 to the Hon'ble Commisison. In FY-24 Rs. 12 Cr. was approved by the Hon'ble Commission towards this scheme and hence the balance amount Rs. 11 Cr is proposed to be spent under Capital Expenditure for FY 2024-25.

4.6.3 Development of New Customer Relationship Centre (CRC)

202. At present TPSODL has 6 CRCs in operation across its Licensed Area and one is under construction. It is now proposed to have 5 more CRCs in different divisions at Malkangiri, Nabarangapur, Phulbani, Boudh and Aska. A budget of **Rs 1.5 Crores** is proposed for construction of such CRCs in FY 2024-25

4.6.4 Admin Infrastructure

- **Provision of Various essential requirement at Circle/Division / sub-division/ section and other offices:**

203. It is essential to make availability of the potable water for the staff to meet the one of the major requirements of basic amenities. Water Coolers, Dispensers and water purifiers /ROs are to be provided at each of the office locations. Some of the locations, at present, do not have the adequate water facility, hence there is immense need of making appropriate arrangements to make availability of potable water facility at all TPSODL offices.

204. Some of the locations, at present, do not have backup power (Inverter) facility. It is proposed to provide emergency power backup supply systems like inverters & batteries. In order to maintain the minimum light backup during absence of main source of power. Mini Load of lights, Fans, PC, Laptop power backup. It helps us to smoothen our official Work for our key offices.

205. Most of the ceiling fans & wall fans within the office's premises are old and not working properly. Locally repaired most of the times but could not run properly. Also , new coming offices requires fans to maintain ventilation within office So, it is proposed to cater this facility by purchasing new fans which helps employees to work in good working environment.

206. Cushion fibre chairs are proposed to facilitate different offices across TPSODL so that employees can sit and work comfortably. Also this chairs can be the substitute of damaged chairs which cannot be repaired.

207. It is proposed to provide office furniture accessories Like, Iron Almirah, steel dustbins and files cabinets for our key offices.It is proposed to provide Air Conditioners for key offices and also replacement of old ACs. (Also where the cost of repair of AC unit almost equal to the cost of new Ac unit then we will prefer to purchase new units).

208. Borewell : It can be a cost effective source of water, especially in areas where other source of water are expensive . Borewell ground water can be use for day today activities or , domestic use, Like drinking, toiletry as well as for earthing.

Table 62: Admin and Office Infrastructure

S.No.	Activity	Cost	
		FY 25	FY 26
1	Commercial Ro (10 to 15 ltr ph)	0.10	0.00
2	Invertors and Batteries	0.0625	0
3	Acs (Air conditioners) for Offices	0.40	0.00
4	Office Furniture, Water Coolers, Voltage Stabilisers, Borewell	0.98	0.80
	Total	**1.54**	**0.80**

4.6.5 Summary of Capital Expenditure under Infrastructure- Civil and Admin

209. The Summary of the Capital Expenditure under Civil and Admin proposed under this petition for FY 2024-25 & FY 2025-26 is given in the table below

Table 63 Capital Expenditure under Civil and Admin

Sr No	Activity	FY 25	FY 26
1	Restructuring/ refurbishment of Infrastructures at offices & Stores	21	5.00
2	Development of Hostel building for Trainees	11	
3	Development of New Customer Relationship Centres	1.5	
4	Admin Infrastructures	1.54	0.81
	Sub Total - Civil Infrastructure & Admin(6)	**35.04**	**5.81**

4.7 Reduction of Carbon Footprint

210. In line with company's commitment on reducing carbon footprints, provision of Roof Top Solar plants for auxiliary consumption of the power of the offices are considered along with provision of Electric Vehicles (EVs) under this head on Pilot basis.

211. There are many ways to reduce the carbon footprints. Minimize the burning of the fuels in vehicles is one of them. As a power distribution company there are lots of travel of our field staff though 2 wheelers and 4 wheelers to serve the consumers. To reduce the carbon foot print without effecting the services to the consumers it is proposed to provide the battery operated 4 wheelers (2 Nos) on pilot basis to our field staff to perform their duties

212. Another way to reduce the carbon footprint is the use of renewable energy. In line we are proposing to install roof top solar power plants for our office requirements at our selected offices. We have in this Capital Investment plan proposed to install 500 KW of Solar Plants in two years for our Corporate and Circle Office.

213. It is proposed to provide the battery operated 4 wheelers to our field staff at a budget of **Rs 50 Lakhs for FY 2024-25**. Further, an amount of **Rs 1.5 Crore each for FY 2024-25 and FY 2025 -26** has been proposed for installation of Solar Modules at offices in 5 Circles with about 100 KW per circle

4.8 Differential Capex to recover the cost of new connection

214. It is also observed that while extending supply to the single-phase consumers i.e less than 5 KW, the expenditure incurred by TPSODL is much higher than the amount paid by the consumer for extension of supply (Service Line charges). The amount under this head would also cover the differential amount i.e amount incurred less amount recovered under this situation

215. An amount of Rs 5.00 Crores is proposed under this head for each year.

5 Directions of the Hon'ble Commission

216. The Hon'ble Commission in the Order dated 19th June 2023 in Case no 05 of 2023 had issued certain directions to TPSODL. In this section, the status of the various Directions given by the Hon'ble is as presented below:

Sr. no.	Direction given by Honorable OERC	Status update
1	Prioritize the completion of important works like strengthening/ expansion of distribution infrastructure, measures for loss reduction, metering, addressing overloading & low voltage issue etc. over the refurbishment of PSS (in nonODSSP) for implementation of SCADA & work related to DR & DC etc.	Strengthening and expansion of distribution infrastructure and electrical refurbishment of PSS (Addition/ refurbishment of circuit breakers, Current Transformers, protection system, earthing system etc) is prioritized under implementation plan for Capex FY24 and is being reviewed on continual basis to ensure completion as per schedule
2	Submit the Capex proposal along with the approval of Board of Director for FY 2024-25 onwards for consideration by the Commission.	The approval of Board of Directors is being submitted alongwith this Capex proposal for FY 25 and 26
3	Submit the Capital Investment Plan strictly adhering to the provisions of Wheeling & Retail Supply Tariff Regulations, Vesting Orders and the License Conditions prioritizing the operation area of TPSODL (indicating the name of Division & activities undertaken) for proposed investment.	Capex proposal for FY25 and 26 is prepared as per the provisions of Wheeling & Retail Supply Tariff Regulations, Vesting Orders and the License Conditions and details of division and cost estimates are given for various activities proposed
4	Submit quarterly progress report for the works along with the details of materials utilised vis-à-vis various activities shown in the DPR.	The progress of the reports are being presented during the review meetings held by Hon'ble Commission and also during other interactions such SAC meeting
5	Formulate implementation plan for the approved Capital Investment and take steps for execution accordingly to avoid cost and time overrun.	Detailed implementation plan is prepared and is reviewed periodically to avoid cost and time overrun.

Sr. no.	Direction given by Honorable OERC	Status update
6	Procure the materials/award the contracts only through transparent competitive bidding process. The requirement of materials shall be prepared based on standardisation of distribution elements. The ratings of equipment / material including DTRs & PTRs need to be standardized across the Discoms and standard specifications need to the adopted across the Discoms.	Procurement of all the materials and award the contracts to selected vendors is undertaken through transparent competitive bidding process. The requirement of materials is prepared based on standardisation of distribution elements. The ratings of equipment / material including DTRs & PTRs are standardized across the four Odisha Discoms and standard specifications are used across all four Odisha Discoms.
7	Adopt latest technology for addition/augmentation of the existing infrastructure.	Technology developments are being reviewed on a continous basis and suitably introduced for augmentation/ of existing infrastructure on the basis of pilot study amd techno commercial benefits. Few of examples of new technologies considered in FY 22 to , FY 26 are introduction of Auto recloser and Sectionalisers, Package Substations, FPI, Mobile DTR, covered conductors, RMU breakers, Roof Top Solar and EV,RLP poles,WPB poles
8	Ensure that there is no duplication of work covered under the CAPEX approved for 2023-24 and the assets created/ to be created through Government Schemes/support.	Capex proposal for FY25 and 26 is prepared ensuring that there is no duplication of work covered under the CAPEX approved for 2023-24 and the assets created/ to be created through Government Schemes/support.
9	Planned new 33/11 kV substations shall have (N-1) contingency provision for incomer & Power Transformers (PTRs), double bus switching scheme/main & transfer bus scheme with Bus coupler and adequate space should be available in PSS for future expansion to avoid additional substations in the nearby areas.	New 33/ 11 kV substations are being planned with N-1 contingency provision for incomer and Power Transformers. Indoor switchgears with Bus couplers are planned for both 33 and 11kV. Double bus/main & transfer bus scheme is not planned due to space constriants and cost optimisation. Space for future expansion will be considered during detailed design of the proposed PSS.
10	TPSODL should have regular interaction with the OPTCL to ensure that the requirement of additional Grid Sub-stations (220/33 kV or 132/33 kV or 220/132/33 kV) are planned as per need of TPSODL	Requirement of Grid Sub-stations and additional bays in existing Grid Sub-stations is regularly communicated to OPTCL during Transmission Planning Meeting. The Plan has been prepared and is under execution for utilisation of all spare bays in existing Grid Sub-stations.

Sr. no.	Direction given by Honorable OERC	Status update
	which will help in resolving low voltage issues and at the same time the available 33 kV outlets from existing Grid Sub-stations of OPTCL should be utilised by TPSODL for their distribution system.	
11	Provide cost benefit analysis and quantification of benefits in terms of percentage of loss reduction, metering & billing, asset mapping, reduction in low voltage areas, reduction in tripping of 33 kV & 11 kV feeders, reduction in failure of equipment/material (PTRs, DTRs, CBs, SAs, etc.), and improvement in safety by reduction in fatal & non-fatal accidents of human being & animals etc. in different divisions of TPSODL's operating area due to addition of distribution infrastructure covered under the capex proposal for the FY 2023-24.	Capex proposal for FY 23-24 is under execution and actual details of benefits in terms of loss reduction, metering & billing, asset mapping, reduction in low voltage areas, reduction in tripping of 33 kV & 11 kV feeders, reduction in failure of equipment/material (PTRs, DTRs, CBs, SAs, etc.), and improvement in safety by reduction in fatal & non-fatal accidents of human being & animals etc. will be shared during periodic/ annual review by Honorable OERC.
12	Provide the financial plan for funding of capex proposal along with rate of interest for the FY 2023-24	The funding of the Capital Investment has been presented in **Table 5 : Proposed funding of Capital Expenditure**. The interest rate would be firmed up only during the time of execution of the Capital Expenditure
13	The details of investment in development/ augmentation of distribution infrastructure in various divisions of the TPSODL.	Details of investment for development/ augmentation of distribution infrastructure alongwith locations are shared with OERC in the submissions made during the scrutiny of the petition filed for FY 2023-24 The locations proposed for FY 2024-25 and FY 2025-26 have been submitted in this petition..
14	Submit details of compliances of the direction given in the Capex Orders of previous years.	The compliances for orders prior to the Order issued for FY 2023-24 (Case No 5 of 2023) was provided in the petition for Case No 5 of 2023. The compliance of directions given in Case No 5 of 2023 is presented in this submission.

Sr. no.	Direction given by Honorable OERC	Status update
15	The system study report relating to installation capacitor banks.	Capacitor Banks as planned under Capex FY24 are under execution. Benefits in improvement of power factor and voltages will be shared post commissioning.
16	TPSODL need to carry out load flow study of the distribution network for a longer time frame (at least 5 year) as directed during the approval of capex for the FY 2022-23.	Capex proposal for FY25 and 26 is prepared considering Load flow study with 5 years load growth and report is submitted alongwith petition.
17	Submit the status (on the date of taking over and as on 31.03.2023) of existing distribution system for each division indicating the achievement (quantification) in respect of following areas by September 2023:	The detailed execution of the projects against the approved schemes is being audited by Wapcos in their assignment. The data required has been submitted to them
a	Reduction in feeder / line / section length at 33kV & 11kV level;	-as above-
b	Reduction in overloading of 33kV & 11kV lines, PTRS, DTRs;	-as above-
c	Reduction in low voltage pockets;	-as above-
d	Repairing of boundary walls for PSSs and fencing of DSSs;	-as above-
e	(N-1) contingency for PTRs and incomer at 33kV level in existing PSS;	-as above-
f	Smart metering of 33kV & 11kV feeders, PTRs, DTRs, Govt & non-Govt. establishments & 3 phase consumers etc;	-as above-
g	Provision of protection for 33kV & 11kV overhead lines & UG cable, PTRs & DTRs (primary & secondary side);	-as above-
h	Improvement in earthing in PSS &DSS;	-as above-
i	Length (in ckt.km.) of overhead line converted and proposed to be converted to ABC in future.	-as above-

6 Annexure 1 : Details of TPSODL

Table 64 : Details of Circles and Divisions of TPSODL

Circle Name		Division Name	Sub-Division Name	SDO CODE
1. CITY CIRCLE	1	BED-I, Berhampur	Medical Sub- Division, Berhampur	3411
			Industrial Sub- Division, Berhampur	3414
			Gopalpur Sub- Division, Berhampur	3412
	2	BED-II, Berhampur	SSD No-I	3421
			SSD No-III	3422
	3	BED-III, Berhampur	SSD No-IV	3432
			Kanisi S/D	3431
2. BERHAMPUR CIRCLE	4	GNED, Chatrapur	Chatrapur S/D	2111
			Rambha S/D	2112
			Khallikote S/D	2113
	5	PSED , Purusottamput	Kodala S/D	2143
			Purushottampur S/D	2141
			Polasara S/D	2142
	6	HED,Hinjilicut	Sheragada S/D	2152
			Hinjilicut S/D	2151
3. ASKA CIRCLE	7	AED-I, Aska	Aska S/D	3511
			Nuagam S/D	3513
	8	AED-II, K.S.NAGAR	K.S.NAGAR	3522
			BUGUDA	3523
	9	GSED, Digapahandi	Digapahandi S/D	3531
			Chikiti S/D	3532
4. BHANJANAGAR CIRCLE	10	BNED, Bhanjanagar	No.1,Bhanjanagar Sub-Division	2911
			No.2,Bhanjanagar S/D	2915
			Bellaguntha S/D	2912
			Sorada S/D	2913
	11	PED , Phulbani	Phulbani S/D	2921
			Balliguda S/D	2922
			G.Udayagiri S/D	2923
	12	BoED ,Boudh	BOUDH S/D	2931
			MANMUNDA S/D	2932
5. RAYAGADA CIRCLE	13	RED, Rayagada	Rayagada S/D	3111
			Therubali S/D	3112
			Bissam Cuttack S/D	3113
	14	PKED, Paralakhemundi	Paralakhemundi S/D	3121
			Kasinagar S/D	3122
			Upalada S/D	3124
			R.Udayagiri S/D	3125
			Mohana S/D	3123
	15	GED,Gunupur	Gunupur S/D	3131
			Gumuda S/D	3132
6. JEYPORE CIRCLE	16	JED, Jeypore	JESD-1 JEYPORE	7111
			JESD-2 JEYPORE	7114
			SDO, BORIGUMMA	7115
	17	KED, Koraput	Koraput S / D	7141
			Sunabeda S / D	7142
			Laxmipur S / D	7143
	18	MED, Malkangiri	Malkangiri S / D	7131
			Balimela S / D	7132
	19	NED,Nabarangpur	Nabarangpur S / D	7121
			Umarkote S / D	7123
			Papadahandi S / D	7124

Table 65 : List of Grid Substations (GSS) of OPTCL in TPSODL

S.NO.	Name of GSS	Capacity
1	220/132/33KV NARENDRAPUR	140
2	132/33KV BERHAMPUR	100
3	132/33KV DIGAPAHANDI	52.5
4	220/132/33KV ASKA NEW	60
5	132/33KV CHIKITI	40
6	132/33KV ASKA (OLD)	100
7	132/33KV PHULBANI	92.5
8	132/33KV CHATRAPUR	60
9	132/33KV BALUGAON	72.5
10	132/33KV GANJAM	25
11	132/33KV PUROSOTTAMPUR	45
12	132/33KV HINJILI	40
13	132/33KV SUNABEDA	45
14	132/33KV TENTULIKHUNTI	45
15	220/33kV LAXMIPUR	40
16	220/132/33KV JAYANAGAR	72.5
17	132/33KV DABUGAON	25
18	132/33KV PODAGADA	25
19	132/33KV UMERKOTE	40
20	132/33KV RAYAGADA	45
21	220/132/33KV THERUBALI	25
22	132/33KV MOHANA	25
23	132/33KV PARALAKHEMUNDI	37.5
24	132/33KV AKHUSINGH	25
25	132/33KV MUNIGUDA	12.5
26	220/33KV KASHIPUR	20
27	220/33KV BALIMELA	60
28	132/33KV POTTANGI	20
29	220/33KV MALKANGIRI	80
30	132/33KV NABARANGPUR	40
31	220/33KV GOVINDAPALLI	40
32	132/33KV SONEPUR	100
33	132/33KV BOUDH	40
34	220/132/33KV BHANJANAGAR	100
35	132/33KV G UDAYAGIRI	80
36	220/33kV KALIMELA	40
37	220/132/33KV GUNUPUR	40
	Total	**1950**

7 Annexure 2 : Glossary of Terms

Table 66 Glossary-1

Glossary		Glossary	
AB SWITCH	Air Breaker Switch	**LTCT**	Low Tension Current Transformer
ABC	Air Bunched Cable	**LTDB**	Low Tension Distribution Box
AC	Alternating Current	**LILO**	Loop In Loop Out
ACDB	A C Distribution Board	**LV**	Low Voltage
ADMS	Advanced Distribution Management System	**MBC**	Metering Billing and Collection
AI	Artificial Intelligence	**MCC**	Master Control Centre
AMC	Annual Maintenance Contract	**MCCB**	Moulded Case Circuit breaker
AMI	Automatic Meter Infrastructure	**MDMS**	Meter Data Management System
APS	Area Power System	**MFD**	Multi Function Devise
ARC	Auto Reclosure	**MMG**	Meter Management Group
AT&C	Aggregate Technical and Commercial	**MPLS**	Multi Protocol Level Switching
BA	Business Associate	**ML**	Machine Learning
BCC	Backup Control Centre	**MRT**	Meter Reading & Testing
BO	Business Output	**MS**	Microsoft
BW	Business Warehouse	**MU**	Million Unit
CAPEX	Capital Expenditure	**MV**	Medium Voltage
CBM	Condition Based Maintenance	**MVA**	Mega Volt Ampere
CC	Control Centre	**MW**	Mega Watt
CIS	Customer Information System	**NHAI**	National Highway Authority of India
Ckt.KM	Circuit Kilo meters	**O&M**	Operation & Maintenance
CRP	Control Relay Panels	**OC and EF**	Over Current and Earth Fault
CRC	Customer Relationship Centre	**ODSSP**	Odisha Distribution System Strengthening Project
CT	Current Transformer	**OERC**	Odisha Electricity Regulatory Commission
CTC	Certified True Copy	**OFC**	Optic Fibre Cable
Cr	Crores	**O/H**	Over head
CWIP	Current Work In Progress	**OPEX**	Operational Expenditure
DC	Direct Current	**OPGW**	Optical Ground Wire
DC	Data Centre	**OPTCL**	Odisha Power Transmission Corporation Limited
DCDB	Direct Current Distribution Board	**OS**	Operating System
DD	Drop Down	**OT**	Operational Technology
DGA	Dissolved Gas Analyser	**PM**	Project Module
DMS	Distribution Management System	**PPE**	Personal Protective Equipment
DOS	Distribution operation system	**PPP**	Public Private Partnership
DPR	Detailed Project Report	**PSC**	Pre Stressed Concrete
DR	Disaster Recovery	**PSCC**	Power System Control Centre
DSS	Distribution Sub-Station	**PT**	Potential Transformer
DTR	Distribution Transformer	**PTR**	Power Transformer
EHT	Extra High Tension	**RLP**	Rebar Lacing Pole
EV	Electric Vehicle	**ROW**	Right of Way
FCC	Fuse Call Centre	**RMU**	Ring Main Unit
FG	Fluent Grid	**RTU**	Remote Terminal Unit
FPI	Fault Passage Indicator	**SAIDI**	System Average Interruption Duration Index
FR	Fire Resistant	**SAIFI**	System Average Interruption Frequency Index
FRP	Fibre Reinforced Plastic	**SAP**	System Application and Products
FRTU	Field Remote Terminal Unit	**SCADA**	Supervisory Control and Data Acquisition
FY	Financial Year	**SD**	Sales and Distribution
GIS	Geographical Information System	**SDO**	Sub Divisional Officer
GoI	Government of India	**SITC**	Supply Installation Testing and Commissioning
GoO	Government of Odisha	**SLDC**	State Load Dispatch Centre
GRIDCO	Grid Corporation of Odisha	**SPM**	Smart Prepaid Module
GSS	Grid Sub Station	**SS**	Substation
HES	Head End System	**STS**	Sub Transmission System
HG	Horn Gap	**TPC**	Tata Power Company

Table 67 Glossary -2

Glossary		Glossary	
HMC	Hub Maintenance Crew	**T&D**	Transmission and Distribution
HT	High Tension	**TPCODL**	TP Central Odisha Distribution Limited
HOTT	Hands On Technical Training	**TPNODL**	TP Northern Odisha Distribution Limited
IDC	Interest During Construction	**TPSODL**	TP Southern Odisha Distribution Limited
IEC	International Electro technical Commission	**TPWODL**	TP Western Odisha Distribution Limited
IED	Intellligent Electronic Device	**TMU**	Transformer Monitoring Unit
IPDS	Integrated Power development scheme	**VCB**	Vaccum Circuit Breaker
IT	Information Technology	**VSAT**	Very Small Aperture Terminal
JE	Junior Engineer	**U/G**	Under Ground
KM	Kilo meter	**UPS**	Uninterrupted Power Supply
KV	Kilo Volt	**PSS**	Primary Sub Station
KVA	Kilo Volt Ampere	**WPB**	Wide Parallel Beam
LA	Lightening Arrestor	**XLPE**	Cross Linked Poly Ethylene
LT	Low Tension		

8 Annexure 3 : Bill of Quantities (Separately Attached)

9 Annexure 4 : Load Flow Study Report (Separately Attached)

ANNEXURE 3

Unit Bill of Quantity with Estimate for Civil works

Table 1 Cost Estimate for Distribution Transformer fencing using brick masonry

SAMPLE DTR FENCING SIZE (4630 x 4630 mm) SIZE						CL Method 4 X 4.630 = 18.52					
Sl No	**Item Description**	**Unit**	**No**	**L**	**B**	**H**	**Q**		**Unit Rate in Rs.**	**Amount in Rs.**	**Round Figuer for EACH DTR in Rs.**
1	Clearing Vegitation	sqm	1	5	5	1	25	25	20.00	500.00	
2	Excavation	Cum	1	18.52	1	0.7	12.964	12.964	238.80	3095.80	3096.00
3	Rubbel Soling	Cum	1	18.52	0.75	0.23	3.1947	3.1947	1990.00	6357.45	6357.00
4	PCC M10 Below foundation	Cum	1	18.52	0.6	0.1	1.1112	1.1112	5989.10	6655.09	6655.00
5	Brick Work 450 mm	Cum	1	18.52	0.45	0.3	2.5002		6138.00	15346.23	15346.00
6	Brick Work 350 mm	Cum	1	18.52	0.35	0.3	1.9446	11.11136	6138.00	11935.95	11936.00
7	Brick Work 350 mm Post	Cum	6	0.35	0.35	1.6	1.176		6138.00	7218.29	7218.00
8	Brick Work 230 mm	Cum	1	14.92	0.23	1.6	5.49056		6138.00	33701.06	33701.00
9	TOP 50 MM Couping M15	Cum	1	14.92	0.23	0.05	0.17158	0.20833	6181.19	1060.57	1061.00
10	TOP 50 MM Couping 350 Column	Cum	6	0.35	0.35	0.05	0.03675		6181.19	227.16	227.00
11	Internal Plaster	sqm	1	17.6	1	1.9	33.44		364.47	12187.88	12188.00
12	Internal Plaster	sqm	0	0.06	1	1.61	0		364.47	0.00	0.00
13	Internal Plaster	sqm	-1	1.5	1	1.65	-2.475		364.47	-902.06	-902.00
14	Internal Plaster	sqm	2	0.35	1	1.75	1.225		364.47	446.48	446.00
15	Top Plaster	sqm	1	14.92	1	0.23	3.4316	75.0608	364.47	1250.72	1251.00
16	Top Post	sqm	6	0.35	0.35	1	0.735		364.47	267.89	268.00
17	External Plaster	sqm	4	4.98	1	2.01	40.0392		364.47	14593.09	14593.00
18	External Plaster	sqm	10	0.06	1	1.9	1.14		364.47	415.50	415.00
19	External Plaster	sqm	-1	1.5	1	1.65	-2.475		350.00	-866.25	-866.00
20	Structural Steel for Gate	sqm	1	0.0523	1	1	0.0523	0.0523	109450.00	5724.24	5724.00
21	Painting of Wall	sqm	1	75.0608	1	1	75.0608	75.0608	216.71	16266.43	16266.00
							0		**TOTAL in Rs.**	134981.48	134981.00
									With GST @ 18%		159277.58
									Per Meter Cost in Rs.		**8600**

Table 2 Cost Estimate for Distribution Transformer fencing using Chain Link

Chain link fencing for 5 mtr x 5 mtr area									
Items	**UOM**	**Nos.**	**L**	**B**	**H**	**Qty**	**Rate in Rs.**	**Amount in Rs.**	**Remarks**
Excavation (0 to 1.5 mt)	m3	9	18.500	0.380	0.750	**47.453**	**238.800**	**11331.657**	
Rubble Soling	m3	9	18.500	0.380	0.225	**14.236**	**1990**	**28329.1425**	
PCC (M10)	m3	1	18.500	0.305	0.075	0.423			Considered as M10
M10 angle grouting		9	0.230	0.23	0.400	0.190			
Coping		1	18.500	0.33	0.100	0.611			
				Total		**1.224**	**5989.100**	**7331.42201**	
B/w Below Foundation	m3	9	0.230	0.230	0.150	0.071			
B/w at balance area		6	2.500	0.23	0.550	1.898			
				Total		**1.969**	**6138**	**12085.20027**	
Plaster	m2	2	18.500		0.300	**11.100**	**431.83**	**4793.313**	
External Painting	m2	2	18.500		1.130	**41.810**	**216.71**	**9060.6451**	
Shuttering for coping	m2	9	0.920		0.600	**4.968**	**250**	**1242**	
Rebar									
Short Bar 8mm dia		93	0.290			10.596			
Log Bar		3	18.500			21.923			
	MT			**Total**		**0.037**	**98505**	**3692.595369**	
Structural Steel									
Vertical Post (65 x 65 x 6)		9	2.900		1.645	42.935			
Horizontal Post		12	2.400		1.645	47.376			
Horizontal Post		4	1.750		1.645	11.515			
Gate						57.500			
	MT			**Total**		**0.159**	**109450**	**17438.17598**	
Structure Painting	m2					**40.000**	**209.13**	**8365.2**	
Chain link fencing	m2	1	18.500		1.85	**34.225**	**384.17**	**13148.21825**	
Barbed wire fencing GI type	mtr	3	18.500			**55.5**	**33.49**	**1858.695**	
						Sub Total in Rs.		**118676.2645**	
						GST 18 % in Rs.		**21361.72761**	
						Total in Rs.		**140037.9921**	
						Per running mt cost in Rs.		**7001.899604**	

Table 3 Cost Estimate for Distribution Transformer fencing using Barbed wire

Barbed wire Fencing for 5 x 5mtr area									
Items	**UOM**	**Nos.**	**L**	**B**	**H**	**Qty**	**Rate in Rs.**	**Amount in Rs.**	Remarks
Excavation (0 to 1.5 mt)	m3	1	18.500	0.230	0.150	**0.638**	**238.800**	**152.41**	
PCC (M10)		1	18.500	0.230	0.150	0.638			PCC considered as M10
PCC (M10) above B/w		1	18.500	0.230	0.075	0.319			
PCC (M10) for Pocket		9	0.230	0.230	0.600	0.286			
	m3			Total		**1.881**	**5989.1**	**11267.20**	
Shuttering									
Bottom Beam		2	18.500		0.230	8.510			
Pedestal		18	0.230		0.600	2.484			
	m2			Total		**10.994**	**250**	**2748.50**	
B/W	m3	1	18.500	0.525	0.230	**2.234**	**6138**	**13711.52**	
Plaster - 18 mm	m2	1	18.500		1.43	**26.455**	**431.83**	**11424.06**	
Paint	m2	1	18.500		1.43	**26.455**	**216.71**	**5733.06**	
Structural Steel	MT								
Vertical Post (50 x 50 x 6)		9	2.300		1.372	0.028			Height above post taken as 1.8mt
Gate						0.040			
				Total		**0.068**	**109450**	**7486.42**	
Enamel paint	m2					**20.000**	**209.13**	**4182.60**	
Barbed wire GI	mtr	13	18.500			**240.500**	**33.49**	**8054.35**	
						Sub Total in Rs.		64760.14	
						GST - 18% in Rs.		11656.82	
						Total in Rs.		76416.96	
						Per running mt cost in Rs.		**3820.85**	

Table 4 Cost Estimate for Switchyard development at PSS

Switch Yard Development with Chain link fencing for 5 mtr x 5 mtr area									
Items	**UOM**	**Nos.**	**L**	**B**	**H**	**Qty**	**rate**	**Amount**	**Remarks**
Excavation (0 to 1.5 mt)	m3	9	18.500	0.380	0.750	**47.453**	**238.800**	**11331.66**	
Rubble Soling	m3	9	18.500	0.380	0.225	**14.236**	**1990**	**28329.14**	
PCC (M10)	m3	1	18.500	0.305	0.075	0.423			Considered as M10
M10 angle grouting		9	0.230	0.23	0.400	0.190			
Coping		1	18.500	0.33	0.100	0.611			
Drain PCC		1	18.500	0.6	0.100	1.110			
				Total		**2.334**	**5989.100**	**13979.32**	
B/w Below Foundation	m3	9	0.230	0.230	0.150	0.071			
B/w at balance area		6	2.500	0.23	0.550	1.898			
B/w for drain		1	18.500	0.23	0.300	1.277			
				Total		**3.245**	**6138**	**19920.36**	
Plaster	m2	2	18.500		0.300	**11.100**			
Plaster for drain	m2	1	18.500		0.830	**15.355**			
				Total		**26.455**	**431.83**	**11424.06**	
External Painting	m2	2	18.500		1.130	**41.810**	**216.71**	**9060.645**	
Shuttering for coping	m2	9	0.920		0.600	**4.968**	**250**	**1242**	
Rebar									
Short Bar 8mm dia		93	0.290			10.596			
Log Bar		3	18.500			21.923			
	MT			**Total**		**0.037**	**98505**	**3692.595**	
Structural Steel									
Vertical Post (65 x 65 x 6)		9	2.900		1.645	42.935			
Horizontal Post		12	2.400		1.645	47.376			
Horizontal Post		4	1.750		1.645	11.515			
Gate						40.000			
	MT			**Total**		**0.142**	**109450**	**15522.8**	
Structure Painting	m2					**40.000**	**209.13**	**8365.2**	
Chain link fencing	m2	1	18.500		1.85	**34.225**	**384.17**	**13148.22**	
Barbed wire fencing GI type	mtr	3	18.500			**55.5**	**33.49**	**1858.695**	
Antiweed treatment	m2	1	5.000	5		**25**	**118.21**	**2955.25**	
Dust Filling	m3	1	5.000	5	0.05	**1.25**	**1094.5**	**1368.125**	
Gravel Filling	m3	1	5.000	5	0.15	**3.75**	**2000**	**7500**	
						Sub Total		**149698.1**	
						GST 18 %		**26945.65**	
						Total		**176643.7**	
						Cost per SQM		**7065.749**	0.149793879

In given budget Total sqm area covered shall be 212 sqm of area in FY25 & FY26

Table 5 Cost Estimate for Boundary wall

Switch Yard Development with Chain link fencing for 5 mtr x 5 mtr area									
Items	**UOM**	**Nos.**	**L**	**B**	**H**	**Qty**	**Rate in Rs.**	**Amount in Rs.**	**Remarks**
Excavation (0 to 1.5 mt)	m3	9	18.500	0.380	0.750	**47.453**	**238.800**	**11331.657**	
Rubble Soling	m3	9	18.500	0.380	0.225	**14.236**	**1990**	**28329.1425**	
PCC (M10)	m3	1	18.500	0.305	0.075	0.423			Considered as M10
M10 angle grouting		9	0.230	0.23	0.400	0.190			
Coping		1	18.500	0.33	0.100	0.611			
Drain PCC		1	18.500	0.6	0.100	1.110			
				Total		**2.334**	**5989.100**	**13979.32301**	
B/w Below Foundation	m3	9	0.230	0.230	0.150	0.071			
B/w at balance area		6	2.500	0.23	0.550	1.898			
B/w for drain		1	18.500	0.23	0.300	1.277			
				Total		**3.245**	**6138**	**19920.35727**	
Plaster	m2	2	18.500		0.300	**11.100**			
Plaster for drain	m2	1	18.500		0.830	**15.355**			
				Total		**26.455**	**431.83**	**11424.06265**	
External Painting	m2	2	18.500		1.130	**41.810**	**216.71**	**9060.6451**	
Shuttering for coping	m2	9	0.920		0.600	**4.968**	**250**	**1242**	
Rebar									
Short Bar 8mm dia		93	0.290			10.596			
Log Bar		3	18.500			21.923			
	MT			**Total**		**0.037**	**98505**	**3692.595369**	
Structural Steel									
Vertical Post (65 x 65 x 6)		9	2.900		1.645	42.935			
Horizontal Post		12	2.400		1.645	47.376			
Horizontal Post		4	1.750		1.645	11.515			
Gate						40.000			
	MT			**Total**		**0.142**	**109450**	**15522.80098**	
Structure Painting	m2					**40.000**	**209.13**	**8365.2**	
Chain link fencing	m2	1	18.500		1.85	**34.225**	**384.17**	**13148.21825**	
Barbed wire fencing GI type	mtr	3	18.500			**55.5**	**33.49**	**1858.695**	
Antiweed treatment	m2	1	5.000	5		**25**	**118.21**	**2955.25**	
Dust Filling	m3	1	5.000	5	0.05	**1.25**	**1094.5**	**1368.125**	
Gravel Filling	m3	1	5.000	5	0.15	**3.75**	**2000**	**7500**	
						Sub Total in Rs.		**149698.0721**	
						GST 18 % in Rs.		**26945.65298**	
						Total in Rs.		**176643.7251**	
						Cost per SQM in Rs.		**7065.749004**	0.149793879

In given budget Total sqm area covered shall be 212 sqm of area in FY25 & FY26

Table 6 Cost Estimate for Civil works in Non-ODSSP PSS for SCADA

ESTIMATION FOR REFURBISHMENT OF PSS CONTROL BUILDING , SEPTIK TANK , SOAK PIT CHAMBER									
Sl.No.	Items	Unit	No	Length	Breadth	Height	Qty	Rate/Unit	Amount in Rs.
1	EXCAVATION(0.0 TO 1.5M)	M3							
	SEPTIC TANK		1	3.500	2.400	1.750	14.700		
	SOAK PIT		1	3.000	2.750	1.500	12.375		
	CHAMBER		2	1.360	0.910	0.525	1.299		
	Cable trench		1	30.000	1.000	1.000	30.000		
						Total	58.374	238.8	13939.82582
2	RUBBLE SOLING	M3							
	PLINTH PROTECTION		1	50.000	0.750	0.230	8.625		
						Total	8.625	1990	17163.75
3	CLEARING JUNGLE	M2	1	20.000	20.000		400.00	20.00	8000
4	PCC M10	M3							
	Inside Cable trench(GROUND)		2	30.000	2.050	0.075	9.225		
						Total	9.225	5989.1	55249.4475
5	PCC M15	M3							
	SEPTIC TANK		2	3.350	2.400	0.075	1.206		
	Plinth protection		1	50.000	0.750	0.150	5.625		
	Inside Cable trench(for edge angle)		2	5.500	0.375	0.150	0.619		
			2	1.750	0.375	0.150	0.197		
						Total	7.647	6181.19	47265.24198
6	RCC M20	M3							
	INSIDE CABLE TRENCH(RAFT)		2	30.000	1.900	0.150	17.10	7,213.75	123355.125
7	RCC M25(FOR FOOTING)	M3							
	SEPTIC TANK RAFT		1	3.200	2.100	0.200	1.344		
						Total	1.344	7741.1	10404.0384
8	RCC M25(FOR SLAB,BEAM)	M3							
	SEPTIC TANK SLAB		1	2.100	1.000	0.100	0.210		
	SOAK PIT COVER		1	1.460	1.460	0.100	0.213		
	BAFFLE WALL		1	1.200	0.600	0.075	0.054		
	CHAMBER COVER		2	1.360	0.910	0.100	0.248		
						Total	1.000	7741.1	7741.1
9	HYSD BAR	MT							
	SAIL						0.50		
						Total	0.500	98505	49252.5
10	230 MM BRICK WORK	M3							
	SEPTIC TANK		1	6.720	0.600	0.525	2.117		
			1	6.720	0.350	0.525	1.235		
			1	6.720	0.230	0.375	0.580		
	SOAK PIT		1	4.000	0.230	1.500	1.380		
	CHAMBER		2	3.620	0.230	0.530	0.883		
	INSIDE CABLE TRENCH		2	5.500	0.375	0.850	3.506		
			2	1.750	0.375	0.850	1.116		
	Refurbishment work						15.000		
						Total	25.816	6138	158456.3431
11	Demolishing B/w	M3	1	3.000	0.230	3.000	2.070		
	door deduction		1	0.860	0.230	2.100	0.415		
						Total	2.485	763.41	1897.363946
12	Demolishing RCC	M3	2				2.00	1,280.57	2561.14
13	Demolishing Plaster	M2							
	internal plaster								
	control panel room		1	50.000		3.000	150.000		
	Bath room		1	12.000		3.000	36.000		
	battery room		1	12.000		3.000	36.000		
	door opening		1	18.500		0.230	4.255		
	window opening		14	1.850		0.230	5.957		
	door deduction		-4	0.800		2.100	-6.720		
	window deduction		-6	1.850		1.350	-14.985		
	external plaster		1	38.020		4.000	152.080		
	door deduction		1	1.200		2.100	2.520		
	shutter deduction		1	2.000		3.000	6.000		
	window deduction		1	12.950		1.350	17.483		
						Total	388.590	142.83	55502.23829

14	Plaster 18mm thk.	M2	1	38.020		4.000	152.080		
	shutter deduction		1	2.000		3.000	-6.000		
	window deduction		-2	1.850		1.350	4.995		
	Cable Trench		2	14.200		1.100	31.240		
						Total	182.315	431.83	78729.08645
15	Plaster 12mm thk	M2							
	control panel room		1	50.000		3.000	150.000		
	battery room		1	12.000		3.000	36.000		
	Bath room		1	11.000		3.000	33.000		
	door opening		1	18.280		0.230	4.204		
	window opening		1	44.800		0.230	10.304		
	door deduction		-4	0.800		2.100	-6.720		
	window deduction		-6	1.850		1.350	-14.985		
						Total	211.803	364.47	77195.9852
16	Exterior paint	M2							
						Total	182.315	216.71	39509.48365
17	Synthetic enamel paint	M2							
						Total	50.000	209.13	10456.5
18	Internal quality paint	M2							
						Total	211.803	211.79	44857.84209
19	Non Skid tiles ceramic	M2							
	toilet		1	1.450	3.950		5.728		
						Total	5.728	1191.91	6826.664525
20	Vitrified tiles	M2							
	Control panel room		1	10.000	10.000		100.000		
			1	2.950	4.200		12.390		
	Battery room		1	2.000	3.950		7.900		
						Total	120.290	1283.27	154364.5483
21	Aluminium Partition	M2	1	4.000		3.000	12.000		
	door deduction	M2	1	1.200		2.100	-2.520		
						Total	9.480	4063.33	38520.3684
22	Window	M2	8	1.200		2.100	20.160		
						Total	20.160	4373.62	88172.1792
23	JET SPRAY	EA	1				1.000	1008.18	1008.18
24	NAHANI TRAP	NO	1				1.000	597	597
25	EUROPEN WATER CLOSET	EA	1				1.000	12892.71	12892.71
26	URINAL	EA	1				1.000	5228.15	5228.15
27	PVC BALL COCK 19 MM	EA	1				1.000	394.02	394.02
28	WASH BASIN	EA	1				1.000	6186.11	6186.11
29	JALI FOR NAHNI TRAP	EA	1				1.000	142.59	142.59
30	BIB COCK	EA	3				3.000	1188.22	3564.66
31	ANGLE COCK	EA	3				3.000	1140.69	3422.07
32	PVC SOAP DISPENSER	EA	1				1.000	472.82	472.82
33	CPVC PIPE 20MM	M	35				20.000	248.75	4975
34	CPVC PIPE 25MM	M	30				25.000	323.38	8084.5
35	WATER STORAGE TANK	L	500				500.000	11.82	5910
36	(110mm dia pipe)	M	10				10.000	547.25	5472.5
37	(VENTILATOR)	M2	2	0.600		0.450	0.540	4278.07	2310.1578
38	PVC DOOR	M2	1	0.800		2.100	1.680	2777.84	4666.7712
39	STRUCTURAL STEEL	MT	1				1.000	109450	109450
40	WIRING POINT	POINT	40				40.000	479.72	19188.8
41	PVC INSULATED COPPER CONDUCTOR(3*2.5)	RM	70				70.000	142.83	9998.1
42	PVC INSULATED COPPER CONDUCTOR(3*4)	RM	50				50.000	182.23	9111.5
43	PVC CONDUIT FOR WIRING	RM	200				200.000	104.56	20912
44	MCB 25-32 AMP	EA	10				10.000	1377.35	13773.5
45	RCCB 63 AMP	EA	2				2.000	2955.15	5910.3
46	LED LIGHT 12 WT	EA	8				8.000	679.66	5437.28
47	5400 LUMEN LIGHT	EA	2				2.000	8104.59	16209.18
48	250 MM DIA EXHAUST FAN	EA	1				1.000	1589.36	1589.36
49	ALUMINIUM (DOOR)	M2	2	1.000		2.100	4.200		
			2	1.200		2.100	5.040		
			2	0.750		2.100	3.150		
			1	0.900		2.100	1.890		
						Total	14.280	4432.73	63299.3844
50	Providing average 25mm thick grading plaster	M2	1	10.000		10.000	100.000	500.00	50000
							Gross Amount in Rs.		1479627.415
							GST in Rs.	**18%**	**266332.9347**
							Amount Including GST in Rs.		**1745960.35**

Table 7 Cost Estimate for Civil works for refurbishment of offices

REFURBISHMNET OF SECTION OFFICE INCLUDING SEPTIK TANK ,SOAK PIT , CHAMBER										
Nos.	**Particulars**	**Unit**	**No.**	**Length**	**Breadth**	**Depth**	**Qty.**	**Remarks**	**RATE**	**Amount**
1	Excavation (0 to 1.5 mtr)	M3								
	EXTENSION OF NEW ROOM		2	7.35	0.840	0.975	12.039			
			2	4.10	0.840	0.975	6.716			
	TOILET		2	1.73	0.950	1.505	4.947			
			1	2.10	0.950	1.505	3.002			
	SEPTIC TANK		1	3.50	2.400	1.850	15.540			
						TOTAL	**42.245**		238.8	10087.99
2	Cartage Services	M3								
			1	2.70	1.600	1.850	**7.992**		359.54	2873.44
3	Rubble soling	M3								
	TOILET FOUNDATION		2	1.73	0.950	0.230	0.756			
			1	2.10	0.950	0.230	0.459			
	TOILET Grade Slab		1	2.10	1.500	0.230	0.725			
	OFFICE FRONT PINDI		1	7.50	0.300	0.225	0.506			
						TOTAL	**2.446**		1990	4866.76
4	Demolishing b/w	M3								
	OFFICE FRONT PINDI		1	7.50	0.600	0.300	1.350		763.41	1030.60
5	Demoilishing PCC	M3								
	OFFICE FLOOR (Both Room)		2	4.10	3.400	0.100	2.788		1044.15	2911.09
6	Demoilishing plaster	M2								
	EXISTING OFFICE ROOM									
	FRONT SIDE		1	7.50		3.200	24.000			
	INNER SIDE		1	15.20		3.200	48.640			
			1	10.90		3.200	34.880			
						TOTAL	107.520		142.83	15357.08
7	Demolishing GI sheet	M2								
	OFFICE		1	9.80	6.400		62.720		142.83	8958.30
8	PCC M10	M3								
	NEW ROOM (Foundation)		2	7.35	0.840	0.075	0.926			
			2	4.10	0.840	0.075	0.517			
	Existing room floor		2	4.10	3.500	0.075	2.153			
	New room floor		1	4.10	2.880	0.100	1.181			
			1	4.10	3.830	0.100	1.570			
	OFICE FRONT PINDI		1	7.50	0.300	0.075	0.169			
	TOILET Foundation PCC		2	4.10	0.950	0.075	0.584			
			1	4.10	0.950	0.075	0.292			
	TOILET Grade Slab		1	2.10	1.500	0.075	0.236			
	SEPTIC TANK		1	3.50	2.400	0.075	0.630			
						TOTAL	**8.258**		5989.1	49456.04
9	M20	M3								
	COLUMN between old & new room		2	0.25	0.250	3.200	0.400		7213.75	2885.50
10	M25	M3								
	TOILET :-									
	FOUNDATION	M3	2	1.73	0.800	0.150	0.415			
			1	2.10	0.800	0.150	0.252			
	GRADE SLAB	M3	1	2.10	1.500	0.100	0.315			
	Roof Beam	M3	2	1.96	0.230	0.350	0.316			
		M3	2	2.10	0.230	0.350	0.338			
	ROOF SLAB	M3	1	3.16	2.260	0.100	0.714			
	SEPTIC TANK :-									
	RAFT/FOOTING	M3	1	1.58	0.650	0.200	0.205			
	Roof Beam	M3	2	2.00	0.230	0.250	0.230			
		M3	2	1.36	0.230	0.250	0.156			
	SLAB	M3	1	2.00	0.900	0.125	0.225			
	BAFELE WALL	M3	1	0.90	0.075	0.650	0.044			
						TOTAL	**3.211**		7741.1	24854.31
11	Rebar	MT								
	COLUMN between old & new room		Nos. Of Bar	Length	Total Length	Unit Wt./Mtr	Total wt. in KG			
	Main Bar (12mm)		8	4.10	32.800	0.888	29.126			
	Stirrups (8mm)		27	0.90	24.709	0.395	9.760			
	TOILET FOUNDATION									
	Long span :- Main Bar (8mm)		6	2.46	13.940	0.395	5.506			
	Distribution Bar bar (8mm)		17	0.70	12.180	0.395	4.811			
	Short span :- Main Bar (8mm)		11	1.68	19.040	0.395	7.521			
	Distribution Bar bar (8mm)		24	0.70	17.080	0.395	6.747			

	TOILET GRADE SLAB									
	Main Bar (10mm)		6	2.00	11.333	0.617	6.993			
	Distribution Bar bar (10mm)		8	1.40	10.733	0.617	6.622			
	TOILET ROOF BEAM									
	Main bar (16mm)									
	Longer span		14	2.51	35.140	1.580	55.521			
	Shorter span		14	1.91	26.740	1.580	42.249			
	Stirrups (8mm)									
	Longer span		19	1.17	21.881	0.395	8.643			
	Shorter span		15	1.17	17.209	0.395	6.797			
	TOILET ROOF SLAB									
	BOTTOM									
	Main Bar (10mm)		11	3.20	22.870	0.617	14.111			
	Distribution Bar(10mm)		17	2.07	34.382	0.617	21.214			
	TOP									
	Long span :- Main Bar (10mm)		16	3.20	51.968	0.617	32.064			
	Distribution Bar bar (10mm)		34	1.44	48.761	0.617	30.086			
	Short span :- Main Bar (10mm)		16	2.25	36.481	0.617	22.509			
	Distribution Bar bar (10mm)		24	1.44	35.086	0.617	21.648			
	SEPTIC TANK :-									
	FOOTING :- Long bar (12mm)		10	3.25	31.200	0.888	27.706			
	FOOTING :- Short bar (12mm)		14	2.15	30.100	0.888	26.729			
	Roof Beam :- Main bar (12mm)									
	Long bar		8	2.36	18.880	0.888	16.765			
	Short bar		8	1.26	10.080	0.888	8.951			
	Roof Beam Stirrups (8mm)									
	Longer span		23	0.88	19.819	0.395	7.829			
	Shorter span		13	0.88	11.402	0.395	4.504			
	SLAB (8mm)									
	Long Bar		4	3.14	12.688	0.395	5.012			
	Short Bar		15	2.04	31.385	0.395	12.397			
						TOTAL	441.820			
						TOTAL IN MT	**0.442**		98505	43521.52
12	B/w upto GF	M3	1							
	OFFICE :-									
	Existing office wall extend upto sheet level									
	north& south side wall		2	7.50	0.230	0.450	1.553			
	East & West side wall		2	4.10	0.230	0.450	0.849			
			2	2.05	0.230	1.200	1.132			
	EXTENTION New Room (Above GL)									
	north& south side wall		2	7.35	0.230	3.465	11.715			
	East & West side wall		2	4.10	0.230	3.600	6.790			
			2	2.05	0.230	0.690	0.651			
	EXTENTION New Room (Below GL)									
	north& south side (690mm)		2	7.35	0.690	0.300	3.043			
	East & West side (690mm)		2	4.10	0.690	0.300	1.697			
	north& south side (460mm)		2	7.35	0.460	0.300	2.029			
	East & West side (460mm)		2	4.10	0.460	0.300	1.132			
	north& south side (230mm)		2	7.35	0.230	0.300	1.014			
	East & West side (230mm)		2	4.10	0.230	0.300	0.566			
	Brick Column at end		2	0.40	0.290	2.880	0.668			
	Existing Front Pindi		1	7.50	0.230	0.600	1.035			
	TOILET :-									
	BRICK WORK (600mm)		2	1.73	0.600	0.300	0.623			
			1	2.10	0.600	0.300	0.378			
	BRICK WORK (450mm)		2	1.73	0.450	0.300	0.467			
			1	2.10	0.450	0.300	0.284			
	BRICK WORK (300mm)		2	1.73	0.300	0.300	0.311			
			1	2.10	0.300	0.300	0.189			
	BRICK WORK (230mm)		2	1.73	0.230	2.200	1.751			
			1	2.10	0.230	2.200	1.063			
	Deduction for door		-1	0.90	0.230	2.000	-0.414			
	SEPTIC TANK :-									
	BRICK WORK (600mm)		2	2.00	0.600	0.525	1.260			
			2	2.10	0.600	0.525	1.323			
	BRICK WORK (350mm)		2	2.00	0.350	0.525	0.735			
			2	1.60	0.350	0.525	0.588			
	BRICK WORK (230mm)		2	2.00	0.230	0.275	0.253			
			2	1.36	0.230	0.275	0.172			
						TOTAL	**42.854**		6138	263039.05
13	Plaster 12 mm thk.	M2								
	Existing office (South & North side wall)									
	Both Inner & Outer wall		4	7.50		3.650	109.500			
	Deduct door		-2	2.00		1.000	-4.000			
	Window		-4	0.90		1.050	-3.780			
	Existing office (East & West side wall)									
	Both Inner & Outer wall		4	4.10		3.580	58.712			
			4	2.05		1.200	9.840			
	NEW Extention Room (South & North side wall)									
	Both Inner & Outer wall		4	7.35		3.430	100.842			
	DEDUCTION DOOR		-2	2.00		1.000	-4.000			
	WINDOW		-2	1.20		0.910	-2.184			
	NEW Extention Room (East & West side wall)									
	Both Inner & Outer wall		4	4.18		3.600	60.192			
			4	2.09		0.690	5.768			
	DEDUCTION DOOR		-2	2.15		0.900	-3.870			
	WINDOW		-2	1.20		0.910	-2.184			

	TOILET :-									
	OUTER SIDE		1	6.48		2.500	16.200			
	DEDUCT DOOR OPENING		-1	0.90		2.000	-1.800			
	INNER SIDE		1	7.20		0.400	2.880			
						TOTAL	**342.116**		364.47	124691.16
14	Exterior paint	M2								
	OFFICE:-									
	OUTER SIDE		2	10.00		3.500	70.000			
			1	4.80		4.000	19.200			
	TOILET :-									
	OUTER SIDE		1	6.48		2.500	16.200			
	DEDUCT DOOR OPENING		-1	0.90		2.000	-1.800			
						TOTAL	**103.600**		216.71	22451.16
15	Internal paint	M2								
	TOILET INNER SIDE		1	7.20		0.400	2.880			
	OFFICE INNER SIDE		1				238.516			
						TOTAL	**241.396**		211.79	51125.34
16	Antiskid tiles	M2								
	TOILET:-									
	WALL DADO		1	7.20		2.100	15.120			
	FLOORING		1	2.10	1.500		3.150			
	DEDUCT DOOR OPENING		-1	0.90		2.000	-1.800			
						TOTAL	**16.470**		1191.91	19630.76
17	Vitrified tile	M2								
	Existing Office Room		2	4.40	3.800		33.440			
	NEW Extention Room		1	4.48	3.170		14.202			
						TOTAL	**47.642**		1392	66317.11
18	Grid False ceiling	M2								
	Existing Office Room		2	4.10	3.500		**28.700**			
	NEW ROOM		1	4.18	2.870		**11.997**			
					TOTAL		**40.697**		1408.92	57338.25
19	Grill	Kg								
	OFFICE:-									
	NEW ROOM WINDOW		3		35.000		**105.000**		119.19	12514.95
20	Aluminium door									
	OFFICE :-									
	NEW ROOM DOOR		2	2.10	1.000		**4.200**		4373.62	18369.20
21	Aluminium Fixed window									
	OFFICE:-									
	NEW ROOM WINDOW		3	1.20	0.900		**3.240**		4,373.62	14170.53
22	P/F factory made PVC door frame									
	TOILET DOOR		1	2	0.9		**1.8**		2,777.84	5000.11
23	Structural steel	MT								
			Nos.	**Length**	**Total Length**	**Unit Wt Kg/m**	**Total in MT**	**Remarks**		
	PURLIN (ISA 65*65*6)		7	7.5	52.5	5.800	0.3045			
	RAFTER (ISA 40*40*5)		10	3.55	35.5	3.000	0.1065			
	WEB (ISMC 100*50*5)		2	1	2	9.560	0.01912			
	TIE BEAM (ISMC 100*50*5)		2	4.7	9.4	9.560	0.089864			
						TOTAL	**1.500**		1,09,450.00	164175.00
24	Fixing of Corrugated GI sheet	M2								
			1	9.80		6.500	**63.700**		763.41	48629.22
25	Wall mounted fan	NO					4.000		2805.42	11221.68
26	Jet spray	NO	1				1.000		1008.08	1008.08
27	Nahani Trap	NO	1				1		597	597.00
28	WC Pedestal type	EA	1				1		12,892.71	12892.71
29	Urinal	EA	1				1		5228.15	5228.15
30	PVC Ball cock	EA	1				1		394.02	394.02
31	Wash Basin	EA	1				1		6186.11	6186.11
32	Jali for nahani treap	EA	1				1		142.59	142.59
33	Bib cock	EA	3				3		1188.22	3564.66
34	Anglo cock	EA	3				3		1140.69	3422.07
35	Soap dispencer	EA	1				1		472.82	472.82
36	CPVC Pipe - 20mm	M	20				20		278.6	5572.00
37	CPVC Pipe - 25mm	M	25				25		323.38	8084.50
38	Water Tank	L	500				500		11.82	5910.00
39	PVC -110 mm dia pipe	M	10				10		547.27	5472.70
40	Wiring Point	POINT	50				50		479.72	23986.00
41	Cable 3 x 2.5 sqmm	RM	110				110		142.83	15711.30
42	Cable 3 x 4 sqmm	RM	70				70		182.23	12756.10
43	Conduit pipe 20 mm	RM	550				550		104.56	57508.00
44	S/F modular switch/socket 6pin 15/16amp	EA	24				24		230.04	5520.96
45	MCB 25/32 amp	EA	15				15		1377.25	20658.75
46	RCCB 63 amp	EA	2				2		2955.15	5910.30
47	12 watt light	EA	8				8		679.66	5437.28
48	5400 lumen light	EA	2				2		8104.59	16209.18
49	Exhaust fan 250 mm dia	EA	1				1		1589.36	1589.36
								Total amount		**1269710.80**
								GST @18%		228547.94
								Total amount with GST		1498258.75

Table 8 Cost Estimate for Civil works for rebuilding of offices

BOQ Estimate for New Section (Office Area 784 sqft)					
Sl No.	**Item Description**	**Qty.**	**UOM**	**Rate in Rs.**	**Amount in Rs.**
1	**Clearing Vegetation**	120.000	M2	20.00	2,400.00
2	**E/W in exc. in all kinds of soil(0-1.5m)**	136.410	M3	238.80	32,574.71
3	**E/W in exc. in all kinds of soil(1.5-1.8m)**	27.282	M3	298.50	8,143.68
4	**Hiring Excavator (JCB or equivalent)**	8.00	H	1413.55	11,308.40
5	**Providing and filling of murrum**	40.000	M3	1,182.06	47,282.40
6	**PRE CONST. ANTI- termite treatment**	80.000	M2	148.25	11,860.00
7	**Providing cartage service & transporting**	50.000	M3	359.54	17,977.00
8	**P & L 225 or 300 mmthk dry rubble soling**	25.148	M3	1,990.00	50,044.92
9	**P & L PCC M10(1:3:6) grade**	9.836	M3	5,989.10	58,907.61
10	**P & L PCC M15(1:2:4) grade**	4.300	M3	6,181.19	26,579.12
11	**P&L RCC M20 grade upto ground floor slab**	13.725	M3	7,213.75	99,008.72
12	**P&L RCC M25 grade upto ground floor slab**	42.447	M3	7,741.10	3,28,585.78
13	**Prov, binding and placing HYSD Bars**	6.000	TON	98,505.00	5,91,030.00
14	**P& L 1st class Brickwork(upto ground flo**	51.002	M3	6,138.00	3,13,052.64
15	**P & L 12 mm thk internal plaster**	220.398	M2	364.47	80,328.46
16	**P & L 18 mm thk external plaster**	319.410	M2	431.83	1,37,930.82
17	**P & L Exterior quality paint**	319.410	M2	216.71	69,219.34
18	**P & L Inerior quality paint**	220.398	M2	211.79	46,678.09
19	**P & L Synthetic enamel paint**	15.750	M2	209.13	3,293.80
20	**P & F anti- skid ceramic tiles 600x600mm**	6.072	M2	1,191.91	7,237.28
21	**P & F ceramic Wall tiles**	31.332	M2	1,293.50	40,527.94
22	**P & F vitrified tiles 600x600mm**	69.955	M2	1,283.27	89,771.15
23	**P &F Alumin. doors partly panelled**	6.720	M2	4,432.73	29,787.95
24	**P&F 25 mm thk PVC flush door with frame**	5.000	M2	2,777.84	13,889.20
25	**P & F Aluminium louvered window**	0.720	M2	4,432.73	3,191.57
26	**P & F glazed AL sliding window (2 Track)**	12.600	M2	4,174.03	52,592.78
27	**P & F hydraulic Door closer (upto 35kg)**	4.000	EA	1,200.00	4,800.00
28	**P/F/E Str steel (rolled / plate sec)**	0.330	TON	1,09,450.00	36,118.50
29	**Chicken mess**	60.000	M2	138.89	8,333.40
30	**Shuttering upto plinth level**	114.280	M2	250.00	28,570.00
31	**Shuttering for Column above plinth to ground slab**	83.123	M2	300.00	24,936.75
32	**Shuttering for slab**	130.200	M2	450.00	58,590.00
33	**Provd. & Laying five layer 3mm thick APP**	84.000	M2	632.00	53,088.00
	Total of Civil Works				**23,87,639.99**
	Electrical				
33	**S&I SP&N MCB distribution board 12 way**	1	EA	5,750.97	5,750.97
34	**S&I 415 volts MCB/RCCB(3 Ph) 63Amps**	1	EA	4,669.14	4,669.14
35	**S&I 6 amps to 16 amps CB**	5	EA	155.40	777.00
36	**S&I 25 amps to 63 amps CB**	5	EA	238.38	1,191.90
37	**S&I 16/25/32 amps 415volts DP MCB**	5	EA	1,377.35	6,886.75
38	**P&F 02 to 04 modular Switch boards**	15	EA	847.14	12,707.10
39	**P&F 06 to 08 modular Switch boards**	15	EA	1,228.36	18,425.40
41	**P&F 12 to 16 modular Switch boards**	4	EA	1,469.69	5,878.76
42	**S&I modular switch/socket 5/6 amps**	30	EA	126.09	3,782.70
43	**S&I modular switch/socket 15/16 amps**	10	EA	123.33	1,233.30
44	**S&I modular switch/socket 3pin 15/16amps**	30	EA	172.38	5,171.40
45	**S&I modular switch/socket 5pin 15/16amps**	10	EA	230.04	2,300.40
46	**S and I of linear Led tubelight (20 w)**	10	EA	1,227.37	12,273.70
48	**S&I of led down ceiling mounted (18W)**	22	EA	1,799.41	39,587.02
49	**S&I of Cu/GI wire clamped to walls**	2	EA	183.22	366.44
50	**SITC Earthing with G.I. earth pipe 4.5m**	1	EA	4,705.58	4,705.58
52	**S&I Ceiling fan 1200mm 240v**	5	EA	1,920.85	9,604.25
53	**S&I of 250 mm dia exhaust fan**	2	EA	1,589.36	3,178.72
54	**S&I of Wiring for light point**	40	EA	479.72	19,188.80
55	**P&F PVC Casing Capping up to 20 to 25 mm**	150	M	82.05	12,307.50
56	**3R X 1.5 Sqm copper flexible wire**	200	M	98.51	19,702.00
57	**3R X 2.5 Sqm copper flexible wire**	120	M	142.83	17,139.60
58	**3R X 4 Sqm copper flexible wire**	100	M	182.23	18,223.00
59	**3C Flat Cable for Motor**	20	M	139.30	2,786.00
60	**6 Sqm x 1 core copper flexible**	40	M	89.64	3,585.60
61	**S&I Water pump 1 HP**	1	EA	12,017.61	12,017.61
					2,43,440.64

	Plumbing				
62	**P&F European WC Floor mounted**	2	EA	12,892.71	25,785.42
63	**P. lip type urinal with accessories**	2	EA	5,228.15	10,456.30
64	**P&F flat back wash basin with Stand**	2	EA	6,186.11	12,372.22
65	**P&F Nahani Trap 100x80mm**	6	EA	597.00	3,582.00
66	**P&F stone ware gully traps**	4	EA	472.82	1,891.28
67	**P&F heavy duty PVC soap dispenser**	2	EA	472.82	945.64
68	**P&F bevelled edge Mirror**	2	EA	1,393.00	2,786.00
69	**P&I heavy duty Health Faucet**	2	EA	1,008.18	2,016.36
70	**P&F CP bib cock 1 way size 12mm dia**	4	EA	1,188.22	4,752.88
71	**P&F CP bib cock 2 way size 12mm dia**	2	EA	1,477.58	2,955.16
72	**P&F cp concealed angle cock size 12mm**	4	EA	1,140.69	4,562.76
73	**P&F cp concealed stop cock size 12mm dia**	2	EA	1,140.69	2,281.38
74	**P&F heavy duty GM gate valve 25mm dia**	2	EA	856.01	1,712.02
75	**P&F PVC pipe Class-B (6 kg/cm2) -75mm D**	20	M	398.00	7,960.00
76	**P&F PVC pipeClass-B (6 kg/cm2)-110 mm D**	50	M	597.00	29,850.00
77	**P&F CPVC pipe for 20 mm Dia**	20	M	278.60	5,572.00
78	**P&F CPVC pipe for 25 mm Dia**	40	M	323.38	12,935.20
79	**Providing & Placing PVC Water tank**	1,000	L	11.82	11,820.00
80	**Serv. of Electrician/Carpenter/ plumber**	2	D	1,142.66	2,285.32
					1,46,521.94
81	**Septik Tank Soak Pit Chamber cost**	1	Nos		310204
				Total in Rs.	**30,87,806.57**
				GST @ 18% in Rs.	**5,55,805.18**
				Incl. GST in Rs.	**36,43,611.75**

Bill of Quantity with Cost for PSS Refurbishment

					1		2		3		4	
					Charichak		Janapank		Bhanjanagar		K. B. Pur	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	3	22518	3	22518	6	45036	6	45036
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	3	393471	2	262314	2	262314	2	262314
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	3	97815		0	3	97815	3	97815
	4	33 KV CT Junction Box	No's	5109	2	10218		0	1	5109	2	10218
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000		0	1	250000	1	250000
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15	3	1435536.45		0	1	478512.149	0	0
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500		0		0	0	0	1	300500
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	6	96000	4	64000	2	32000	2	32000
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	3	68550	3	68550	3	68550	3	68550
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0	0	0	0	0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157		0		0	0	0	0	0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0	0	0	0	0
	13	33 KV CT Junction Box	No's	5109		0		0	0	0	0	0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	2	262314	2	262314	3	393471	1	131157
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	6	195630	6	195630	9	293445	6	195630
	16	33 KV CT Junction Box	No's	5109	2	10218	2	10218	3	15327	2	10218
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	2	500000	2	500000	1	250000	1	250000
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	6	45036	9	67554	6	45036
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6		0		0	0	0	2	928825.2
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83	2	703207.658	2	703207.658	3	1054811.49	0	0
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	2	32000	3	48000	2	32000
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808	1	374808	2	749616	0	0	0	0
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	6	38730	6	38730	9	58095	3	19365
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	6	162000	3	81000	9	243000	6	162000
	25	11 KV CT Junction Box	No's	5109	2	10218	1	5109	3	15327	2	10218
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	2	451524	1	225762	2	451524	2	451524
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0		0	0	0	2	601000
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12	2	603962.24	2	603962.24	3	905943.36	0	0
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	2	103986		0	0	0	0	0
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0	2	79000	3	118500	2	79000
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	2	32000	3	48000	2	32000
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	6	83700	6	83700	9	125550	6	83700
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	0.2	40690	0.2	40690	0	0	0	0
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0	0	0	0	0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0	0	0	0	0
	36	11 KV CT Junction Box	No's	5109		0		0	0	0	0	0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0	0	0	0	0
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500		0		0	0	0	0	0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	12	77460	9	58095	15	96825	9	58095
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0	3	81000	0	0	9	243000
	41	11 KV CT Junction Box	No's	5109		0	2	10218	5	25545	3	15327
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0	2	451524	3	677286	3	677286
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0		0	0	0	3	901500
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12	4	1207924.48	3	905943.36	5	1509905.6	0	0
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	4	207972	3	155979	5	259965	3	155979
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0	0	0	0	0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	8	128000	6	96000	5	80000	3	48000
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500	1	26500		0	0	0	0	0
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202		0		0	0	0	0	0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650	1	353650		0	1	353650	1	353650
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0	0	0	0	0
	56	ACDB (as per specification)	SET	235379	1	235379	1	235379	1	235379	1	235379
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600		0		0	0	0	0	0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744		0		0	1	31744	1	31744
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2		0		0	60	9312	30	4656
	60	33 kV 200 Amp AB Switch	SET	19630		0		0	0	0	0	0
	61	33KV HG fuse 3 Pole, 200A	SET	16861		0		0	1	16861	0	0
	62	33 kV LA for Station Transformer	EA	13455		0		0	3	40365	3	40365

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					Charichak		Janapank		Bhanjanagar		K. B. Pur	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	6	50880	6	50880	0	0	0	0
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9		0		0	0	0	0	0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6		0		0	0	0	0	0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81		0		0	0	0	0	0
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	500	309400	500	309400	500	309400	370	228956
	68	12 Core x 2.5 mm2 armoured	Mtr	449		0		0	0	0	0	0
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4		0		0	0	0	0	0
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6	500	118300	500	118300	0	0	0	0
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6	200	29120	200	29120	600	87360	150	21840
	72	4 Core x 16 mm2 armoured	Mtr	607.86		0		0	0	0	0	0
	73	4 Core x 10 mm2 armoured	Mtr	94.42		0		0	0	0	0	0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6	200	29120	200	29120	850	123760	490	71344
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6	600	87360	600	87360	750	109200	370	53872
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6	600	87360	600	87360	600	87360	500	72800
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37	400	68548	400	68548	110	18850.7	160	27419.2
	78	2Cx 50 Sq mm armoured	Mtr	871.65	50	43582.5	50	43582.5	0	0	0	0
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2		0		0	0	0	0	0
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6	1200	174720	1200	174720	250	36400	195	28392
	82	1 Core x 16 mm2 armoured	Mtr	131.19		0		0	0	0	0	0
	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9		0		0	0	0	0	0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186		0		0	0	0	0	0
	85	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(Straight Through)]	EA	32912		0		0	0	0	0	0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7		0		0	0	0	0	0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9		0		0	0	0	0	0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7		0		0	0	0	0	0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55		0		0	0	0	0	0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55		0		0	0	0	0	0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7		0		0	0	0	0	0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	30	11070	30	11070	52	19188	36	13284
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7	30	3291	30	3291	72	7898.4	48	5265.6
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	30	2468.1	30	2468.1	260	21390.2	180	14808.6
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40		0		0	0	0	0	0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25	30	7417.5	30	7417.5	0	0	0	0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332	5	11.66	5	11.66	0	0	0	0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434	5	5.7717	5	5.7717	0	0	0	0
	99	Lug 16 Sqmm for control cable	Nos	6.201		0		0	0	0	0	0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557	350	544950	350	544950	80	124560	50	77850
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	10	44180	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long. 30.44KG/Mtr.)	NO	40427		0		0	0	0	0	0
	106	WPB 160x152 (11Mtr. Long. 30.44KG/Mtr.)	NO	34321.52		0		0	6	205929.12	0	0
	107	9M WPB	NO	28081.24		0		0	0	0	0	0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5		0		0	200	19500	0	0
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5		0		0	200	19500	0	0
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5		0		0	100	9750	0	0
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5	1150	112125	1150	112125	0	0	0	0
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5		0		0	0	0	0	0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650		0		0		0	0	0
	115			1287						0	0	0
	116	33Kv Post Insulator	No	2054		0		0	0	0	0	0
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872		0		0	0	0	0	0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6		0		0	0	0	0	0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495		0		0	0	0	0	0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248		0		0	0	0	0	0
	121	No. 6 GI wire	KG	97.5		0		0	0	0	0	0
	122	8 SWG GI Wire	KG	97.5		0		0	0	0	0	0
	123	FLAT GI SIZE 50X6 MM	KG	97.5		0		0	0	0	0	0
	124	25x6 GI Stripe	KG	97.5		0		0	0	0	0	0
	125	Nut & Bolt & Washer	KG	101.4		0		0	50	5070	30	3042
	A	**Total landed Cost (A)**				**10247739**		**8086216.4**		**10176830**		**7788952.2**
	B	Stock, Storage & Insurance i.e **3% of A**				188913.244		176193.094		186829.711		151713.81
	C	**Sub Total (A+B)**				**10436652**		**8262409.5**		**10363659**		**7940666**
	D	Contigency @ 3% of C				194580.641		181478.887		192434.602		156265.224
	E	Transportation @ 7.5% of C				486451.603		453697.217		481086.505		390663.061
	F	**Sum of (F=C to E)**				**11117684**		**8897585.6**		**11037180**		**8487594.3**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				0		0		10605.3497		0
	H	Erection Charges @ 10% of other items except RSJ				648602.138		604929.623		620237.974		520884.081
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		110584.5		110584.5		154818.3		154818.3
	J	**Erection Charges Sub Total (G+H+I)**				**759186.64**		**715514.12**		**785661.62**		**675702.38**
	K	Sub-Total (K=F+J)				11876871.1		9613099.71		11822842.1		9163296.68
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e. J=(H+I)				**11876871**		**9613099.7**		**11822842**		**9163296.7**
	N	GST 18%				2137836.79		1730357.95		2128111.57		1649393.4
	O	CESS 1%				118768.711		96130.9971		118228.421		91632.9668
	P	Total of Estimate(K+L+M)				**14133477**		**11439589**		**14069182**		**10904323**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**1.41**		**1.14**		**1.41**		**1.09**

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					Sorada		Tilisingi		Chakapada		Kalinga	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	3	22518	3	22518	6	45036
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	1	131157	1	131157	1	131157	2	262314
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	3	97815	0	0		0	3	97815
	4	33 KV CT Junction Box	No's	5109	1	5109	1	5109		0	2	10218
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000	0	0		0	1	250000
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15	1	478512.149	1	478512.149		0	2	957024.2976
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500	0	0	0	0		0		0
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	1	16000	1	16000	1	16000		0
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	3	68550	0	0	3	68550	3	68550
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	0	0	0	0		0		0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	0	0	0	0		0		0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	0	0	0	0		0		0
	13	33 KV CT Junction Box	No's	5109	0	0	0	0		0		0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	0	0	0	0	0	0		0
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	6	195630	3	97815	3	97815		0
	16	33 KV CT Junction Box	No's	5109	2	10218	1	5109	1	5109	1	5109
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000	0	0	1	250000		0
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	0	0	6	45036	6	45036
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6	0	0	0	0	2	928825.2		0
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83	2	703207.658	2	703207.658	0	0	2	703207.6576
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	1	16000	0	0		0
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808	0	0	0	0	0	0		0
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	6	38730	3	19365	6	38730	6	38730
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	6	162000	3	81000		0		0
	25	11 KV CT Junction Box	No's	5109	2	10218	1	5109		0	2	10218
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762	1	225762		0		0
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	0	0	0	0		0		0
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12	2	603962.24	2	603962.24	1	301981.12		0
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	0	0	0	0	4	207972	2	103986
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	2	79000	2	79000		0		0
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	2	32000		0		0
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	6	83700	3	41850	6	83700	6	83700
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	0	0	0	0	0.1	20345		0
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	0	0	0	0		0		0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	0	0	0	0		0		0
	36	11 KV CT Junction Box	No's	5109	0	0	0	0		0		0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	0	0	0	0		0		0
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500	0	0	0	0		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	9	58095	9	58095	9	58095	9	58095
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	3	81000	3	81000		0		0
	41	11 KV CT Junction Box	No's	5109	4	20436	3	15327		0		0
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762	1	225762		0		0
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	0	0	0	0		0		0
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12	4	1207924.48	3	905943.36		0		0
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	4	207972	3	155979	6	311958	3	155979
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	0	0	0	0		0		0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	4	64000	3	48000		0		0
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500	0	0	1	26500		0	1	26500
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202	0	0	0	0		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650	0	0	0	0		0	1	353650
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650	0	0	0	0		0		0
	56	ACDB (as per specification)	SET	235379	1	235379	1	235379	1	235379	1	235379
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600	0	0	0	0		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744	0	0	0	0		0		0
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2	60	9312	30	4656	80	12416		0
	60	33 kV 200 Amp AB Switch	SET	19630	0	0	0	0		0		0
	61	33KV HG fuse 3 Pole, 200A	SET	16861	0	0	0	0		0		0
	62	33 kV LA for Station Transformer	EA	13455	3	40365	3	40365		0		0

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					Sorada		Tilisingi		Chakapada		Kalinga	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	0	0	0	0	6	50880	6	50880
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9	0	0	0	0		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6	0	0	0	0	350	662760		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81	0	0	0	0		0	60	17868.6
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	400	247520	300	185640	100	61880	360	222768
	68	12 Core x 2.5 mm2 armoured	Mtr	449	0	0	0	0		0		0
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4	0	0	0	0		0		0
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6	0	0	0	0		0		0
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6	200	29120	200	29120		0	200	29120
	72	4 Core x 16 mm2 armoured	Mtr	607.86	0	0	0	0		0		0
	73	4 Core x 10 mm2 armoured	Mtr	94.42	0	0	0	0		0		0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6	800	116480	650	94640	200	29120	300	43680
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6	400	58240	300	43680	200	29120	350	50960
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6	330	48048	350	50960	200	29120	350	50960
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37	80	13709.6	70	11995.9	100	17137	200	34274
	78	2Cx 50 Sq mm armoured	Mtr	871.65	0	0	0	0		0		0
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2	0	0	0	0		0		0
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6	150	21840	150	21840	250	36400	180	26208
	82	1 Core x 16 mm2 armoured	Mtr	131.19	0	0	0	0		0		0
	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9	0	0	0	0	10	117949		0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186	0	0	0	0		0		0
	85	Heat shrinkable jointing kit for3Cx300mm^2 11KV XLPE Cable(Straight Through))	EA	32912	0	0	0	0		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7	0	0	0	0		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9	0	0	0	0		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7	0	0	0	0		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55	0	0	0	0		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55	0	0	0	0		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7	0	0	0	0		0		0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	36	13284	36	13284	10	3690	18	6642
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7	48	5265.6	72	7898.4	30	3291		0
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	220	18099.4	190	15631.3	20	1645.4	100	8227
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40	0	0	0	0		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25	0	0	0	0		0		0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332	0	0	0	0		0		0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434	0	0	0	0	1500	1731.51	1440	1662.2496
	99	Lug 16 Sqmm for control cable	Nos	6.201	0	0	0	0		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557	50	77850	50	77850		0		0
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	10	13650	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	19	83942	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	39	99836.1	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427	0	0	0	0		0		0
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52	4	137286.08	0	0		0		0
	107	9M WPB	NO	28081.24	0	0	0	0	18	505462.32		0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5	150	14625	200	19500	535.36	52197.6		0
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5	150	14625	200	19500	178.5	17403.75		0
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5	100	9750	100	9750		0		0
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5	0	0	0	0	1400	136500	1238.8	120783
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5	0	0	0	0		0		0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650	0	0	0	0	24	15600		0
	115			1287	0	0	0	0		0		0
	116	33Kv Post Insulator	No	2054	0	0	0	0		0		0
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872	0	0	0	0		0		0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6	0	0	0	0		0		0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495	0	0	0	0	21	31395		0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248	0	0	0	0		0		0
	121	No. 6 GI wire	KG	97.5	0	0	0	0		0		0
	122	8 SWG GI Wire	KG	97.5	0	0	0	0		0		0
	123	FLAT GI SIZE 50X6 MM	KG	97.5	0	0	0	0		0		0
	124	25x6 GI Stripe	KG	97.5	0	0	0	0		0		0
	125	Nut & Bolt & Washer	KG	101.4	50	5070	50	5070	50	5070	50	5070
	A	**Total landed Cost (A)**				**6851692.8**		**5260183.6**		**5013731.6**		**4486641.4**
	B	Stock, Storage & Insurance i.e **3% of A**				115742.588		77056.746		113487.758		84792.2835
	C	**Sub Total (A+B)**				**6967435.4**		**5337240.4**		**5127219.4**		**4571433.7**
	D	Contigency @ 3% of C				119214.866		79368.4484		116892.391		87336.052
	E	Transportation @ 7.5% of C				298037.165		198421.121		292230.978		218340.13
	F	**Sum of (F=C to E)**				**7384687.4**		**5615029.9**		**5536342.7**		**4877109.9**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				7070.23312		0		26031.3095		0
	H	Erection Charges @ 10% of other items except RSJ				383242.421		264561.495		337578.685		291120.173
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		88467.6		44233.8		22116.9		22116.9
	J	**Erection Charges Sub Total (G+H+I)**				**478780.25**		**308795.29**		**385726.89**		**313237.07**
	K	Sub-Total (K=F+J)				7863467.68		5923825.22		5922069.62		5190346.94
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e. J=(H+I)				**7863467.7**		**5923825.2**		**5922069.6**		**5190346.9**
	N	GST 18%				1415424.18		1066288.54		1065972.53		934262.45
	O	CESS 1%				78634.6768		59238.2522		59220.6962		51903.4694
	P	Total of Estimate(K+L+M)				**9357526.5**		**7049352**		**7047262.8**		**6176512.9**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**0.94**		**0.70**		**0.70**		**0.62**

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					Kotagada		Sankarakhola		Tikabali		Tumudibandha	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	3	22518	6	45036	6	45036	6	45036
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	1	131157	2	262314	3	393471	2	262314
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0	3	97815		0
	4	33 KV CT Junction Box	No's	5109		0	2	10218	2	10218		0
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0	1	250000		0
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15		0	1	478512.1488	3	1435536.446		0
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500		0		0		0		0
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0		0		0		0
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	3	68550	3	68550	3	68550	3	68550
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0		0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157		0		0		0		0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0		0		0
	13	33 KV CT Junction Box	No's	5109		0		0		0		0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157		0	1	131157	1	131157	2	262314
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0	3	97815		0
	16	33 KV CT Junction Box	No's	5109		0	2	10218	1	5109		0
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0	1	250000		0		0
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	3	22518	3	22518	6	45036
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6		0		0		0		0
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83		0	2	703207.6576	2	703207.6576		0
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0		0		0		0
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808		0		0		0		0
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	6	38730	9	58095	6	38730	6	38730
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0		0		0
	25	11 KV CT Junction Box	No's	5109		0	2	10218		0		0
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0		0		0
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0		0		0		0
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12		0	1	301981.12	1	301981.12		0
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	2	103986	2	103986	2	103986	2	103986
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0		0		0
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0		0		0		0
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	6	83700	6	83700	6	83700	6	83700
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	0.1	20345		0		0		0
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0		0		0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0		0		0
	36	11 KV CT Junction Box	No's	5109		0		0		0		0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0		0
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500		0		0		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	9	58095	9	58095		0	12	77460
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0		0		0
	41	11 KV CT Junction Box	No's	5109		0	3	15327		0		0
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0		0		0
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0		0		0		0
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12		0	3	905943.36	3	905943.36		0
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	3	155979	3	155979	3	155979		0
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0		0		0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0		0		0		0
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500	1	26500	1	26500	1	26500	1	26500
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202		0		0		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650	1	353650	1	353650	1	353650	1	353650
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	56	ACDB (as per specification)	SET	235379	1	235379	1	235379	1	235379	1	235379
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600		0		0		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744		0	1	31744		0		0
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2		0		0		0		0
	60	33 kV 200 Amp AB Switch	SET	19630		0		0		0		0
	61	33KV HG fuse 3 Pole, 200A	SET	16861		0		0		0		0
	62	33 kV LA for Station Transformer	EA	13455		0		0		0		0

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					Kotagada		Sankarakhola		Tikabali		Tumudibandha	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	6	50880	8	67840	6	50880	8	67840
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9		0	50	50895		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6		0		0		0		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81	70	20846.7	40	11912.4	40	11912.4	60	17868.6
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	280	173264	270	167076	300	185640	350	216580
	68	12 Core x 2.5 mm2 armoured	Mtr	449		0		0		0		0
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4		0		0		0		0
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6		0		0		0		0
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6	72	10483.2	90	13104	108	15724.8	108	15724.8
	72	4 Core x 16 mm2 armoured	Mtr	607.86		0		0		0		0
	73	4 Core x 10 mm2 armoured	Mtr	94.42		0		0		0		0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6	500	72800	700	101920	700	101920	700	101920
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6	400	58240	300	43680	500	72800	450	65520
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6	380	55328	340	49504	300	43680	450	65520
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37	200	34274	200	34274	200	34274	200	34274
	78	2Cx 50 Sq mm armoured	Mtr	871.65		0		0		0		0
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2		0		0		0		0
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6	180	26208	180	26208	180	26208	180	26208
	82	1 Core x 16 mm2 armoured	Mtr	131.19		0		0		0		0
	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9		0		0		0		0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186		0		0		0		0
	85	Heat shrinkable jointing kit for3Cx300mm^2 11KV XLPE Cable(Straight Through))	EA	32912		0		0		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7		0		0		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9		0		0		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7		0		0		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	16	5904	16	5904	20	7380	20	7380
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	100	8227	80	6581.6	100	8227	100	8227
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40		0		0		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25		0		0		0		0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332		0		0		0		0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434	1120	1292.8608	1440	1662.2496	1600	1846.944	1600	1846.944
	99	Lug 16 Sqmm for control cable	Nos	6.201		0		0		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557		0		0		0		0
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	16	21840	20	27300	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	14	61852	10	44180	10	44180	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427		0		0		0		0
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52	8	274572.16		0		0		0
	107	9M WPB	NO	28081.24		0		0		0		0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5	1070.72	104395.2		0		0		0
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5	200	19500		0		0		0
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5	100	9750		0		0		0
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5	991.04	96626.4	1300.74	126822.15	1052.98	102665.55	1424.62	138900.45
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5		0		0		0		0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650	27	17550		0		0		0
	115			1287		0		0		0		0
	116	33Kv Post Insulator	No	2054		0		0		0		0
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872		0		0		0		0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6		0		0		0		0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495		0		0		0		0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248		0		0		0		0
	121	No. 6 GI wire	KG	97.5		0		0		0		0
	122	8 SWG GI Wire	KG	97.5		0		0		0		0
	123	FLAT GI SIZE 50X6 MM	KG	97.5		0		0		0		0
	124	25x6 GI Stripe	KG	97.5		0		0		0		0
	125	Nut & Bolt & Washer	KG	101.4	50	5070	50	5070	50	5070	50	5070
	A	**Total landed Cost (A)**				**2708040.1**		**5341773.3**		**6441501.9**		**2682526.4**
	B	Stock, Storage & Insurance i.e **3% of A**				81241.2036		88563.87		92844.9988		80475.7918
	C	**Sub Total (A+B)**				**2789281.3**		**5430337.2**		**6534346.9**		**2763002.2**
	D	Contigency @ 3% of C				83678.4397		91220.7861		95630.3488		82890.0656
	E	Transportation @ 7.5% of C				209196.099		228051.965		239075.872		207225.164
	F	**Sum of (F=C to E)**				**3082155.9**		**5749609.9**		**6869053.1**		**3053117.4**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				14140.4662		0		0		0
	H	Erection Charges @ 10% of other items except RSJ				250647.2		304069.287		318767.829		276300.219
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		0		22116.9		22116.9		0
	J	**Erection Charges Sub Total (G+H+I)**				**264787.67**		**326186.19**		**340884.73**		**276300.22**
	K	Sub-Total (K=F+J)				3346943.53		6075796.09		7209937.83		3329417.63
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e. J=(H+I)				**3346943.5**		**6075796.1**		**7209937.8**		**3329417.6**
	N	GST 18%				602449.835		1093643.3		1297788.81		599295.174
	O	CESS 1%				33469.4353		60757.9609		72099.3783		33294.1763
	P	Total of Estimate(K+L+M)				**3982862.8**		**7230197.4**		**8579826**		**3962007**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**0.40**		**0.72**		**0.86**		**0.40**

					13		14		15		16	
					KANHEIPUR		DANGA SARADA		HATA MUNIGUDA		KUMAR DHAMUNI	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	0	0	6	45036	0	0	0	0
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	1	131157	2	262314	1	131157	1	131157
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	3	97815	6	195630	3	97815	3	97815
	4	33 KV CT Junction Box	No's	5109	1	5109	2	10218	1	5109	1	5109
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000	2	500000	1	250000	1	250000
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15	2	957024.2976	2	957024.2976	1	478512.1488	1	478512.1488
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500		0		0		0		0
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	1	16000	2	32000	1	16000	1	16000
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	0	0	6	137100	3	68550	3	68550
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0	0	0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157		0		0		0	0	0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0		0	0	0
	13	33 KV CT Junction Box	No's	5109		0		0		0	0	0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	2	262314	2	262314	0	0	2	262314
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	9	293445	6	195630	0	0	6	195630
	16	33 KV CT Junction Box	No's	5109	3	15327	2	10218	0	0	2	10218
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	0	0	2	500000	1	250000	2	500000
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506		0	2	15012		0	2	15012
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6		0	2	928825.2		0	2	928825.2
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83	3	1054811.486		0	1	351603.8288		0
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	2	32000		0	2	32000
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808	1	374808	2	749616	0	0	2	749616
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	0	0	6	38730		0	6	38730
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	0	0	6	162000	3	81000	6	162000
	25	11 KV CT Junction Box	No's	5109	0	0	2	10218	1	5109	2	10218
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	2	451524	2	451524	1	225762	2	451524
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0	2	601000	2	601000	2	601000
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12	3	905943.36		0		0		0
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	0	0	2	103986	1	51993	2	103986
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	1	39500	2	79000		0	2	79000
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	1	16000	2	32000	1	16000	2	32000
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	0	0	3	41850	6	83700	3	41850
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	0.1	20345	0.1	20345		0	1	203450
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0	1	225762		0		0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0	1	27000		0		0
	36	11 KV CT Junction Box	No's	5109		0	1	5109		0		0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0	1	51993		0		0
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500		0		0		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	0	0	12	77460		0	9	58095
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	0	0	12	324000	3	81000	9	243000
	41	11 KV CT Junction Box	No's	5109	0	0	4	20436	1	5109	3	15327
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	4	903048	4	903048	1	225762	3	677286
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0	4	1202000		0	3	901500
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12	4	1207924.48		0	2	603962.24		0
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	1	51993	4	207972		0	4	207972
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0	0	0		0	0	0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	1	16000	4	64000		0	4	64000
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500		0		0		0		0
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202		0		0		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	56	ACDB (as per specification)	SET	235379	1	235379	1	235379	1	235379	1	235379
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600		0		0		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744		0		0		0		0
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2		0		0		0		0
	60	33 kV 200 Amp AB Switch	SET	19630		0		0		0		0
	61	33KV HG fuse 3 Pole, 200A	SET	16861		0		0		0		0
	62	33 kV LA for Station Transformer	EA	13455		0		0		0		0

					13		14		15		16	
					KANHEIPUR		DANGA SARADA		HATA MUNIGUDA		KUMAR DHAMUNI	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	6	50880	8	67840	5	42400	5	42400
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9		0		0		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6		0		0		0		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81		0		0		0		0
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	300	185640	700	433160	700	433160	700	433160
	68	12 Core x 2.5 mm2 armoured	Mtr	449		0		0		0		0
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4		0		0		0		0
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6		0	0	0	0	0	0	0
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6		0	300	43680	300	43680	300	43680
	72	4 Core x 16 mm2 armoured	Mtr	607.86		0		0		0		0
	73	4 Core x 10 mm2 armoured	Mtr	94.42		0		0		0		0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6	700	101920	0	0	0	0	0	0
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6	300	43680	500	72800	500	72800	500	72800
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6	300	43680	0	0	0	0	0	0
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37	100	17137	700	119959	700	119959	700	119959
	78	2Cx 50 Sq mm armoured	Mtr	871.65		0		0		0		0
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2		0		0		0		0
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6	360	52416	1000	145600	1000	145600	1000	145600
	82	1 Core x 16 mm2 armoured	Mtr	131.19		0		0		0		0
	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9		0		0		0		0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186		0		0		0		0
	85	Heat shrinkable jointing kit for3Cx300mm^2 11KV XLPE Cable(Straight Through))	EA	32912		0		0		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7		0		0		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9		0		0		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7		0		0		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7		0	25	2742.5	25	2742.5	25	2742.5
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369		0	25	9225	25	9225	25	9225
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27		0	75	6170.25	75	6170.25	75	6170.25
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40		0		0		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25		0		0		0		0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332		0		0		0		0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434	1000	1154.34	1000	1154.34	1000	1154.34	1000	1154.34
	99	Lug 16 Sqmm for control cable	Nos	6.201		0		0		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557		0		0		0		0
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	10	44180	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427		0		0		0		0
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52	2	68643.04		0		0		0
	107	9M WPB	NO	28081.24		0		0		0		0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5	107.072	10439.52		0		0		0
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5	100	9750		0		0		0
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5		0		0		0		0
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5	100	9750		0		0		0
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5		0		0		0		0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650		0		0		0		0
	115			1287		0		0		0		0
	116	33Kv Post Insulator	No	2054		0		0		0		0
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872		0		0		0		0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6		0		0		0		0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495		0		0		0		0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248		0		0		0		0
	121	No. 6 GI wire	KG	97.5		0		0		0		0
	122	8 SWG GI Wire	KG	97.5		0		0		0		0
	123	FLAT GI SIZE 50X6 MM	KG	97.5	140	13650		0		0		0
	124	25x6 GI Stripe	KG	97.5		0		0		0		0
	125	Nut & Bolt & Washer	KG	101.4	50	5070		0		0		0
	A	**Total landed Cost (A)**				**8258269.1**		**10927072**		**5048405.9**		**9050958**
	B	Stock, Storage & Insurance i.e **3% of A**				123976.965		217146.681		90399.8307		184233.621
	C	**Sub Total (A+B)**				**8382246.1**		**11144219**		**5138805.7**		**9235191.7**
	D	Contigency @ 3% of C				127696.274		223661.081		93111.8256		189760.629
	E	Transportation @ 7.5% of C				319240.685		559152.703		232779.564		474401.573
	F	**Sum of (F=C to E)**				**8829183**		**11927033**		**5464697.1**		**9899353.9**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				3535.11656		0		0		0
	H	Erection Charges @ 10% of other items except RSJ				418584.013		745536.937		310372.752		632535.431
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		154818.3		243285.9		88467.6		176935.2
	J	**Erection Charges Sub Total (G+H+I)**				**576937.43**		**988822.84**		**398840.35**		**809470.63**
	K	Sub-Total (K=F+J)				9406120.48		12915855.5		5863537.48		10708824.5
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e. J=(H+I)				**9406120.5**		**12915855**		**5863537.5**		**10708824**
	N	GST 18%				1693101.69		2324853.99		1055436.75		1927588.41
	O	CESS 1%				94061.2048		129158.555		58635.3748		107088.245
	P	Total of Estimate(K+L+M)				**11193283**		**15369868**		**6977609.6**		**12743501**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**1.12**		**1.54**		**0.70**		**1.27**

					17		18		19		20	
					MITS MEGA FOOD		NUAPADA		SORISAPADAR		THERUBALI	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	0	0	0	0	0	0	6	45036
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	1	131157	1	131157	1	131157	2	262314
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	3	97815	3	97815	3	97815	6	195630
	4	33 KV CT Junction Box	No's	5109	1	5109	1	5109	1	5109	2	10218
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000	1	250000	1	250000	2	500000
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15	1	478512.1488	1	478512.1488	1	478512.1488	2	957024.2976
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500		0		0		0		0
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	1	16000	1	16000	1	16000	2	32000
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	3	68550	3	68550	3	68550	6	137100
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0	0	0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157		0		0		0	0	0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0		0	0	0
	13	33 KV CT Junction Box	No's	5109		0		0		0	0	0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	0	0	0	0	0	0	2	262314
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	0	0	0	0	0	0	6	195630
	16	33 KV CT Junction Box	No's	5109	0	0	0	0	0	0	2	10218
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000	1	250000	1	250000	2	500000
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506		0		0		0	2	15012
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6		0		0		0	2	928825.2
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83	1	351603.8288	1	351603.8288	1	351603.8288		0
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0		0		0	2	32000
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808	0	0	0	0	0	0	2	749616
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455		0		0		0	6	38730
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	3	81000	3	81000	3	81000	6	162000
	25	11 KV CT Junction Box	No's	5109	1	5109	1	5109	1	5109	2	10218
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762	1	225762	1	225762	2	451524
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	2	601000	2	601000	2	601000	2	601000
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12		0		0		0		0
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	1	51993	1	51993	1	51993	2	103986
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0		0	2	79000
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	1	16000	1	16000	1	16000	2	32000
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	6	83700	6	83700	6	83700	3	41850
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450		0		0		0	1	203450
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0		0	1	225762
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0		0	1	27000
	36	11 KV CT Junction Box	No's	5109		0		0		0	1	5109
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0	1	51993
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500		0		0		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455		0		0		0	12	77460
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	3	81000	3	81000	3	81000	12	324000
	41	11 KV CT Junction Box	No's	5109	1	5109	1	5109	1	5109	4	20436
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762	1	225762	1	225762	4	903048
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0		0		0	4	1202000
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12	2	603962.24	2	603962.24	2	603962.24		0
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0	4	207972
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0		0	0	0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0		0		0	4	64000
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500		0		0		0		0
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202		0		0		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	56	ACDB (as per specification)	SET	235379	1	235379	1	235379	1	235379	1	235379
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600		0		0		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744		0		0		0		0
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2		0		0		0		0
	60	33 kV 200 Amp AB Switch	SET	19630		0		0		0		0
	61	33KV HG fuse 3 Pole, 200A	SET	16861		0		0		0		0
	62	33 kV LA for Station Transformer	EA	13455		0		0		0	3	40365

					17		18		19		20	
					MITS MEGA FOOD		NUAPADA		SORISAPADAR		THERUBALI	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	5	42400	5	42400	5	42400	8	67840
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9		0		0		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6		0		0		0		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81		0		0		0		0
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	1500	928200	700	433160	700	433160	1500	928200
	68	12 Core x 2.5 mm2 armoured	Mtr	449		0		0		0		0
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4		0		0		0		0
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6	0	0	0	0	0	0	0	0
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6	500	72800	300	43680	300	43680	1000	145600
	72	4 Core x 16 mm2 armoured	Mtr	607.86		0		0		0		0
	73	4 Core x 10 mm2 armoured	Mtr	94.42		0		0		0		0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6	0	0	0	0	0	0	0	0
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6	500	72800	500	72800	500	72800	500	72800
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6	0	0	0	0	0	0	0	0
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37	700	119959	700	119959	700	119959	700	119959
	78	2Cx 50 Sq mm armoured	Mtr	871.65		0		0		0		0
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2		0		0		0		0
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6	1000	145600	1000	145600	1000	145600	1000	145600
	82	1 Core x 16 mm2 armoured	Mtr	131.19		0		0		0		0
	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9		0		0		0		0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186		0		0		0		0
	85	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(Straight Through))	EA	32912		0		0		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7		0		0		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9		0		0		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7		0		0		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7	25	2742.5	25	2742.5	25	2742.5	25	2742.5
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	25	9225	25	9225	25	9225	25	9225
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	75	6170.25	75	6170.25	75	6170.25	75	6170.25
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40		0		0		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25		0		0		0		0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332		0		0		0		0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434	1000	1154.34	1000	1154.34	1000	1154.34	1000	1154.34
	99	Lug 16 Sqmm for control cable	Nos	6.201		0		0		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557		0		0		0		0
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	10	44180	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427		0		0		0		0
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52		0		0		0		0
	107	9M WPB	NO	28081.24		0		0		0		0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5		0		0		0		0
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5		0		0		0		0
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5		0		0		0		0
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5		0		0		0		0
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5		0		0		0		0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650		0		0		0		0
	115			1287		0		0		0		0
	116	33Kv Post Insulator	No	2054		0		0		0		0
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872		0		0		0		0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6		0		0		0		0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495		0		0		0		0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248		0		0		0		0
	121	No. 6 GI wire	KG	97.5		0		0		0		0
	122	8 SWG GI Wire	KG	97.5		0		0		0		0
	123	FLAT GI SIZE 50X6 MM	KG	97.5		0		0		0		0
	124	25x6 GI Stripe	KG	97.5		0		0		0		0
	125	Nut & Bolt & Washer	KG	101.4		0		0		0		0
	A	**Total landed Cost (A)**				**5572565.9**		**5048405.9**		**5048405.9**		**11747502**
	B	Stock, Storage & Insurance i.e **3% of A**				106124.631		90399.8307		90399.8307		241759.581
	C	**Sub Total (A+B)**				**5678690.5**		**5138805.7**		**5138805.7**		**11989262**
	D	Contigency @ 3% of C				109308.37		93111.8256		93111.8256		249012.368
	E	Transportation @ 7.5% of C				273270.924		232779.564		232779.564		622530.92
	F	**Sum of (F=C to E)**				**6061269.8**		**5464697.1**		**5464697.1**		**12860805**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				0		0		0		0
	H	Erection Charges @ 10% of other items except RS				364361.232		310372.752		310372.752		830041.227
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		88467.6		88467.6		88467.6		243285.9
	J	**Erection Charges Sub Total (G+H+I)**				**452828.83**		**398840.35**		**398840.35**		**1073327.1**
	K	Sub-Total (K=F+J)				6514098.66		5863537.48		5863537.48		13934132.2
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e. J=(H+I)				**6514098.7**		**5863537.5**		**5863537.5**		**13934132**
	N	GST 18%				1172537.76		1055436.75		1055436.75		2508143.79
	O	CESS 1%				65140.9866		58635.3748		58635.3748		139341.322
	P	Total of Estimate(K+L+M)				**7751777.4**		**6977609.6**		**6977609.6**		**16581617**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**0.78**		**0.70**		**0.70**		**1.66**

					21		22		23		24	
					BIKRAMPUR		GUMUDA		MINAJHOLA		RAMANAGUDA	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	3	22518	0	0	3	22518	6	45036
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	2	262314	2	262314	2	262314	3	393471
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	0	0	0	0	3	97815	0	0
	4	33 KV CT Junction Box	No's	5109	1	5109	0	0	1	5109	2	10218
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	0	0	0	0	1	250000	2	500000
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15	0	0	0	0	0	0	0	0
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500	1	300500	2	601000	1	300500	2	601000
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	2	32000	2	32000	3	48000
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	3	68550	3	68550	3	68550	3	68550
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	0	0	0	0		0	0	0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	1	131157	1	131157	1	131157	0	0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	0	0	0	0	0	0	0	0
	13	33 KV CT Junction Box	No's	5109	0	0	0	0	0	0	0	0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	2	262314	1	131157	2	262314	4	524628
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	3	97815	3	97815	3	97815	6	195630
	16	33 KV CT Junction Box	No's	5109	2	10218	1	5109	2	10218	2	10218
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000	1	250000	1	250000	2	500000
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	3	22518	6	45036	3	22518	6	45036
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6	2	928825.2	2	928825.2	2	928825.2	2	928825.2
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83	0	0	0	0	0	0	0	0
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	1	16000	2	32000	4	64000
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808	0	0	0	0	0	0	0	0
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	3	19365	3	19365	3	19365	6	38730
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	3	81000	3	81000	3	81000	6	162000
	25	11 KV CT Junction Box	No's	5109	1	5109	1	5109	1	5109	2	10218
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762	2	451524	1	225762	2	451524
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	1	300500	2	601000	1	300500	2	601000
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12	0	0	0	0	0	0	0	0
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	1	51993	2	103986	1	51993	2	103986
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	0	0	0	0	0	0	0	0
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	1	16000	2	32000	1	16000	2	32000
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	3	41850	6	83700	3	41850	6	83700
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	1	203450	1	203450	1	203450	1	203450
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	0	0	0	0	0	0	0	0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	0	0	0	0	0	0	0	0
	36	11 KV CT Junction Box	No's	5109	0	0	0	0	0	0	0	0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	1	51993	1	51993	1	51993	1	51993
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500	0	0	0	0	0	0	0	0
11kV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	9	58095	9	58095	9	58095	18	116190
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	3	81000	9	243000	3	81000	3	81000
	41	11 KV CT Junction Box	No's	5109	3	15327	3	15327	3	15327	4	20436
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	2	451524	2	451524	2	451524	4	903048
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	3	901500	3	901500	3	901500	4	1202000
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12	0	0	0	0	0	0	0	0
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	3	155979	3	155979	3	155979	4	207972
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	0	0	0	0	0	0	0	0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	3	48000	3	48000	3	48000	4	64000
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500	0	0	0	0	0	0	0	0
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202	0	0	0	0	0	0	0	0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650	0	0	0	0	0	0	0	0
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650	0	0	0	0	0	0	0	0
	56	ACDB (as per specification)	SET	235379	0	0	0	0	0	0	0	0
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600	0	0	0	0	0	0	0	0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744	1	31744	1	31744	1	31744	1	31744
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2	300	46560	300	46560	300	46560	300	46560
	60	33 kV 200 Amp AB Switch	SET	19630	1	19630	1	19630	1	19630	1	19630
	61	33KV HG fuse 3 Pole, 200A	SET	16861	1	16861	1	16861	1	16861	1	16861
	62	33 kV LA for Station Transformer	EA	13455	3	40365	3	40365	3	40365	3	40365

					21		22		23		24	
					BIKRAMPUR		GUMUDA		MINAJHOLA		RAMANAGUDA	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	8	67840	8	67840	8	67840	8	67840
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9	0	0	0	0	0	0	0	0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6	0	0	0	0	0	0	0	0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81	500	148905	550	163795.5	500	148905	550	163795.5
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	500	309400	500	309400	500	309400	500	309400
	68	12 Core x 2.5 mm2 armoured	Mtr	449	0	0	0	0	0	0	0	0
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4	0	0	0	0	0	0	0	0
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6	0	0	0	0	0	0	0	0
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6	800	116480	1000	145600	800	116480	1000	145600
	72	4 Core x 16 mm2 armoured	Mtr	607.86	0	0	0	0	0	0	0	0
	73	4 Core x 10 mm2 armoured	Mtr	94.42	0	0	0	0	0	0	0	0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6	500	72800	700	101920	500	72800	700	101920
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6	0	0	0	0	0	0	0	0
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6	700	101920	800	116480	700	101920	800	116480
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37	500	85685	500	85685	500	85685	500	85685
	78	2Cx 50 Sq mm armoured	Mtr	871.65	0	0	0	0	0	0	0	0
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2	0	0	0	0	0	0	0	0
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6	0	0	0	0	0	0	0	0
	82	1 Core x 16 mm2 armoured	Mtr	131.19	0	0	0	0	0	0	0	0
	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9	0	0	0	0	0	0	0	0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186	0	0	0	0	0	0	0	0
	85	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(Straight Through))	EA	32912	0	0	0	0	0	0	0	0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7	0	0	0	0	0	0	0	0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9	0	0	0	0	0	0	0	0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7	0	0	0	0	0	0	0	0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55	0	0	0	0	0	0	0	0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55	0	0	0	0	0	0	0	0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7	0	0	0	0	0	0	0	0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	45	16605	50	18450	45	16605	50	18450
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7	40	4388	45	4936.5	40	4388	45	4936.5
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	40	3290.8	45	3702.15	40	3290.8	45	3702.15
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40	0	0	0	0	0	0	0	0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25	0	0	0	0	0	0	0	0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332	250	583	300	699.6	250	583	300	699.6
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434	1000	1154.34	1500	1731.51	1000	1154.34	1500	1731.51
	99	Lug 16 Sqmm for control cable	Nos	6.201	400	2480.4	500	3100.5	400	2480.4	500	3100.5
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557	1500	2335500	2000	3114000	1500	2335500	2000	3114000
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	10	44180	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427	0	0	0	0	0	0	0	0
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52	0	0	0	0	16	549144.32	0	0
	107	9M WPB	NO	28081.24	0	0	0	0	5	140406.2	0	0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5	0	0	0	0	1600	156000	0	0
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5	0	0	0	0	428.4	41769	0	0
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5	0	0	0	0	270	26325	0	0
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5	0	0	0	0	628	61230	0	0
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5	0	0	0	0		0	0	0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650	0	0	0	0		0	0	0
	115			1287	0	0	0	0	9	11583	0	0
	116	33Kv Post Insulator	No	2054	0	0	0	0	9	18486	0	0
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872	0	0	0	0	12	22464	0	0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6	0	0	0	0	12	8131.2	0	0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495	0	0	0	0		0	0	0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248	0	0	0	0		0	0	0
	121	No. 6 GI wire	KG	97.5	0	0	0	0		0	0	0
	122	8 SWG GI Wire	KG	97.5	0	0	0	0		0	0	0
	123	FLAT GI SIZE 50X6 MM	KG	97.5	0	0	0	0	528	51480	0	0
	124	25x6 GI Stripe	KG	97.5	0	0	0	0		0	0	0
	125	Nut & Bolt & Washer	KG	101.4	0	0	0	0	250	25350	0	0
	A	**Total landed Cost (A)**				**8863468.3**		**10675008**		**10323652**		**12867352**
	B	Stock, Storage & Insurance i.e **3% of A**				192964.294		229280.471		236769.806		286035.791
	C	**Sub Total (A+B)**				**9056432.6**		**10904288**		**10560422**		**13153387**
	D	Contigency @ 3% of C				198753.223		236158.885		243872.9		294616.865
	E	Transportation @ 7.5% of C				496883.058		590397.212		609682.25		736542.161
	F	**Sum of (F=C to E)**				**9752068.9**		**11730844**		**11413977**		**14184546**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				0		0		35511.8518		0
	H	Erection Charges @ 10% of other items except RSJ				662510.743		787196.283		741885.963		982056.215
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		88467.6		110584.5		110584.5		221169
	J	**Erection Charges Sub Total (G+H+I)**				**750978.34**		**897780.78**		**887982.31**		**1203225.2**
	K	Sub-Total (K=F+J)				10503047.3		12628624.9		12301959.3		15387771.6
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e. J=(H+I)				**10503047**		**12628625**		**12301959**		**15387772**
	N	GST 18%				1890548.51		2273152.48		2214352.68		2769798.89
	O	CESS 1%				105030.473		126286.249		123019.593		153877.716
	P	Total of Estimate(K+L+M)				**12498626**		**15028064**		**14639332**		**18311448**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**1.25**		**1.50**		**1.46**		**1.83**

					25		26		27		28	
					UKKUMBA		BRAHMANIGAM		CHHELIGADA		GARABANDHA	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	3	22518	3	22518	9	67554		0
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	2	262314	2	262314	3	393471	1	131157
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	0	0	3	97815	3	97815		0
	4	33 KV CT Junction Box	No's	5109	1	5109	2	10218	3	15327	2	10218
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000	1	250000	1	250000		0
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15	0	0	1	478512.1488	2	957024.2976	1	478512.1488
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500	1	300500		0		0		0
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000		0		0		0
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	3	68550		0	3	68550	3	68550
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	0	0		0		0		0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	1	131157		0		0		0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	0	0		0		0		0
	13	33 KV CT Junction Box	No's	5109	0	0		0		0		0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	2	262314	2	262314	1	131157		0
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	6	195630		0	3	97815		0
	16	33 KV CT Junction Box	No's	5109	2	10218	1	5109		0		0
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	2	500000		0	1	250000		0
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036		0	6	45036		0
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6	2	928825.2		0		0		0
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83	0	0	1	351603.8288	1	351603.8288		0
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000		0		0		0
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808	0	0	2	749616	2	749616	2	749616
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	6	38730		0	6	38730		0
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	6	162000		0		0		0
	25	11 KV CT Junction Box	No's	5109	2	10218		0		0		0
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	2	451524		0		0		0
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	2	601000		0		0		0
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12	0	0	1	301981.12	1	301981.12		0
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	2	103986	1	51993		0	2	103986
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	0	0		0		0		0
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000		0		0		0
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	6	83700	3	41850	3	41850	3	41850
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	1	203450		0	0.3	61035	0.25	50862.5
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	0	0		0		0		0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	0	0		0		0		0
	36	11 KV CT Junction Box	No's	5109	0	0		0		0		0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	1	51993	1	51993	1	51993	1	51993
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500	0	0		0		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	6	38730	6	38730	6	38730	12	77460
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	6	162000	3	81000	6	162000	6	162000
	41	11 KV CT Junction Box	No's	5109	2	10218	3	15327	4	20436	4	20436
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762	1	225762	2	451524	2	451524
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	2	601000		0		0		0
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12	0	0	1	301981.12	2	603962.24	2	603962.24
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	2	103986	3	155979	4	207972	4	207972
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	0	0		0		0		0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000		0		0		0
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500	0	0		0		0		0
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202	0	0		0		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650	0	0		0		0		0
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650	0	0		0		0		0
	56	ACDB (as per specification)	SET	235379	0	0		0		0	1	235379
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600	0	0		0		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744	1	31744		0		0		0
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2	300	46560		0		0		0
	60	33 kV 200 Amp AB Switch	SET	19630	1	19630		0		0		0
	61	33KV HG fuse 3 Pole, 200A	SET	16861	1	16861		0		0		0
	62	33 kV LA for Station Transformer	EA	13455	3	40365		0		0		0

					25		26		27		28	
					UKKUMBA		BRAHMANIGAM		CHHELIGADA		GARABANDHA	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	8	67840	8	67840	8	67840	8	67840
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9	0	0		0		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6	0	0		0		0		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81	500	148905		0		0		0
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	500	309400	80	49504	100	61880	100	61880
	68	12 Core x 2.5 mm2 armoured	Mtr	449	0	0		0		0		0
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4	0	0		0		0		0
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6	0	0		0		0		0
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6	800	116480		0		0		0
	72	4 Core x 16 mm2 armoured	Mtr	607.86	0	0		0		0		0
	73	4 Core x 10 mm2 armoured	Mtr	94.42	0	0		0		0		0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6	500	72800	800	116480	800	116480	1000	145600
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6	0	0		0		0		0
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6	700	101920		0		0		0
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37	500	85685	1000	171370	1200	205644	1000	171370
	78	2Cx 50 Sq mm armoured	Mtr	871.65	0	0		0		0		0
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2	0	0		0		0		0
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6	0	0		0		0		0
	82	1 Core x 16 mm2 armoured	Mtr	131.19	0	0		0		0		0
	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9	0	0		0		0		0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186	0	0		0		0		0
	85	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(Straight Through))	EA	32912	0	0		0		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7	0	0		0		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9	0	0		0		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7	0	0		0		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55	0	0		0		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55	0	0		0		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7	0	0		0		0		0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	45	16605		0		0		0
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7	40	4388		0		0		0
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	40	3290.8		0		0		0
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40	0	0		0		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25	0	0		0		0		0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332	250	583		0		0		0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434	1000	1154.34		0		0		0
	99	Lug 16 Sqmm for control cable	Nos	6.201	400	2480.4		0		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557	1500	2335500		0		0		0
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	10	44180	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427	0	0		0	6	242562	8	323416
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52	6	205929.12		0		0		0
	107	9M WPB	NO	28081.24	2	56162.48		0		0		0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5	497.12	48469.2		0	600	58500	600	58500
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5	128.52	12530.7		0	400	39000	400	39000
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5	94.5	9213.75		0	250	24375	250	24375
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5	78.72	7675.2		0	100	9750	100	9750
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5	0	0		0		0		0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650	0	0		0		0		0
	115			1287	0	0		0		0		0
	116	33Kv Post Insulator	No	2054	0	0		0		0		0
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872	0	0		0		0		0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6	0	0		0		0		0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495	0	0		0		0		0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248	0	0		0		0		0
	121	No. 6 GI wire	KG	97.5	0	0		0		0		0
	122	8 SWG GI Wire	KG	97.5	0	0		0		0		0
	123	FLAT GI SIZE 50X6 MM	KG	97.5	168	16380		0	50	4875	50	4875
	124	25x6 GI Stripe	KG	97.5	0	0		0		0		0
	125	Nut & Bolt & Washer	KG	101.4	100	10140		0	100	10140	100	10140
	A	**Total landed Cost (A)**				**10054152**		**4468801.8**		**6603220.1**		**4669215.5**
	B	Stock, Storage & Insurance i.e **3% of A**				228684.798		91041.708		131659.458		107602.233
	C	**Sub Total (A+B)**				**10282837**		**4559843.5**		**6734879.5**		**4776817.7**
	D	Contigency @ 3% of C				235545.342		93772.9592		135609.242		110830.3
	E	Transportation @ 7.5% of C				588863.354		234432.398		339023.104		277075.75
	F	**Sum of (F=C to E)**				**11107245**		**4888048.9**		**7209511.9**		**5164723.8**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				13497.7174		0		12491.943		16655.924
	H	Erection Charges @ 10% of other items except RSJ				758155.704		312576.531		427046.92		336122.485
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		132701.4		44233.8		88467.6		44233.8
	J	**Erection Charges Sub Total (G+H+I)**				**904354.82**		**356810.33**		**528006.46**		**397012.21**
	K	Sub-Total (K=F+J)				12011600.1		5244859.21		7737518.35		5561735.98
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e. J=(H+I)				**12011600**		**5244859.2**		**7737518.4**		**5561736**
	N	GST 18%				2162088.02		944074.658		1392753.3		1001112.48
	O	CESS 1%				120116.001		52448.5921		77375.1835		55617.3598
	P	Total of Estimate(K+L+M)				**14293804**		**6241382.5**		**9207646.8**		**6618465.8**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**1.43**		**0.62**		**0.92**		**0.66**

					29		30		31		32	
					GUMMA		MOHANA		RAIGADA		UPALADA	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	3	22518	3	22518	6	45036	6	45036
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	1	131157	2	262314	3	393471	5	655785
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0	3	97815	3	97815
	4	33 KV CT Junction Box	No's	5109	2	10218	2	10218	1	5109	3	15327
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0	1	250000
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15		0	1	478512.1488		0	1	478512.1488
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500		0		0		0		0
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0		0		0		0
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	3	68550		0	3	68550		0
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0		0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157		0		0		0		0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0		0		0
	13	33 KV CT Junction Box	No's	5109		0		0		0		0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157		0	2	262314	2	262314		0
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	6	195630		0		0		0
	16	33 KV CT Junction Box	No's	5109	2	10218	2	10218		0		0
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	2	500000		0		0		0
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	6	45036	6	45036		0
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6		0		0		0		0
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83	1	351603.8288	1	351603.8288	1	351603.8288	1	351603.8288
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0		0	2	32000		0
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808	2	749616	2	749616	2	749616	2	749616
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	6	38730	6	38730	6	38730	3	19365
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	6	162000	3	81000	3	81000	3	81000
	25	11 KV CT Junction Box	No's	5109	2	10218	2	10218		0	2	10218
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0	1	225762		0	1	225762
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0		0		0		0
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12		0	1	301981.12	1	301981.12	1	301981.12
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0	1	51993		0	3	155979
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0	1	39500		0
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0		0	1	16000		0
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	3	41850	3	41850	3	41850	3	41850
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	0.3	61035	0.25	50862.5	0.3	61035	0.3	61035
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0		0		0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0		0		0
	36	11 KV CT Junction Box	No's	5109		0		0		0		0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0	1	51993		0
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500		0		0		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455		0	12	77460	9	58095	9	58095
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0	3	81000	3	81000
	41	11 KV CT Junction Box	No's	5109		0	4	20436	1	5109	3	15327
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0		0	1	225762
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0		0		0		0
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12		0	2	603962.24		0	2	603962.24
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	5	259965	4	207972	3	155979	3	155979
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0		0		0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0		0	3	48000		0
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000	2	1800000						
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000	5	4250000						
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000	1	900000						
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000	2	800000						
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500		0		0		0		0
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202		0		0		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	56	ACDB (as per specification)	SET	235379		0	1	235379		0		0
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600		0		0		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744		0		0		0		0
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2		0		0		0		0
	60	33 kV 200 Amp AB Switch	SET	19630		0		0		0		0
	61	33KV HG fuse 3 Pole, 200A	SET	16861		0		0		0		0
	62	33 kV LA for Station Transformer	EA	13455		0	3	40365		0		0

					29		30		31		32	
					GUMMA		MOHANA		RAIGADA		UPALADA	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	8	67840	8	67840	8	67840	8	67840
	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9		0		0		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6		0		0		0		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81		0		0		0		0
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8		0	100	61880	80	49504	100	61880
	68	12 Core x 2.5 mm2 armoured	Mtr	449		0		0		0		0
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4		0		0		0		0
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6		0		0		0		0
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6		0		0		0		0
	72	4 Core x 16 mm2 armoured	Mtr	607.86		0		0		0		0
	73	4 Core x 10 mm2 armoured	Mtr	94.42		0		0		0		0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6		0	1200	174720	700	101920	800	116480
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6		0		0		0		0
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6		0		0		0		0
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37		0	1200	205644	1000	171370	1000	171370
	78	2Cx 50 Sq mm armoured	Mtr	871.65		0		0		0		0
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2		0		0		0		0
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6		0		0		0		0
	82	1 Core x 16 mm2 armoured	Mtr	131.19		0		0		0		0
Cables & Accessories	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9		0		0		0		0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186		0		0		0		0
	85	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(Straight Through))	EA	32912		0		0		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7		0		0		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9		0		0		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7		0		0		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369		0		0		0		0
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27		0		0		0		0
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40		0		0		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25		0		0		0		0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332		0		0		0		0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434		0		0		0		0
	99	Lug 16 Sqmm for control cable	Nos	6.201		0		0		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557		0		0		0		0
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	10	44180	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427	4	161708	6	242562	6	242562		0
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52		0		0		0		0
	107	9M WPB	NO	28081.24		0		0		0		0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5	600	58500	600	58500	600	58500	600	58500
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5	400	39000	400	39000	400	39000	400	39000
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5	250	24375	250	24375	250	24375	250	24375
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5	100	9750	100	9750	100	9750	100	9750
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5		0		0		0		0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650		0		0		0		0
	115			1287		0		0		0		0
	116	33Kv Post Insulator	No	2054		0		0		0		0
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872		0		0		0		0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6		0		0		0		0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495		0		0		0		0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248		0		0		0		0
	121	No. 6 GI wire	KG	97.5		0		0		0		0
	122	8 SWG GI Wire	KG	97.5		0		0		0		0
	123	FLAT GI SIZE 50X6 MM	KG	97.5	50	4875	50	4875	50	4875	50	4875
	124	25x6 GI Stripe	KG	97.5		0		0		0		0
	125	Nut & Bolt & Washer	KG	101.4	100	10140	100	10140	100	10140	100	10140
	A	**Total landed Cost (A)**				**11091524**		**5386598.4**		**4117650.5**		**5552211.9**
	B	Stock, Storage & Insurance i.e **3% of A**				322197.618		109516.173		103921.968		114484.578
	C	**Sub Total (A+B)**				**11413722**		**5496114.6**		**4221572.5**		**5666696.5**
	D	Contigency @ 3% of C				331863.547		112801.658		107039.627		117919.115
	E	Transportation @ 7.5% of C				829658.866		282004.145		267599.068		294797.788
	F	**Sum of (F=C to E)**				**12575244**		**5890920.4**		**4596211.2**		**6079413.4**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				8327.962		12491.943		12491.943		0
	H	Erection Charges @ 10% of other items except RS				1089555.9		351021.641		331814.871		393063.718
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		44233.8		22116.9		0		66350.7
	J	**Erection Charges Sub Total (G+H+I)**				**1142117.7**		**385630.48**		**344306.81**		**459414.42**
	K	Sub-Total (K=F+J)				13717362.1		6276550.9		4940518.03		6538827.84
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e. J=(H+I)				**13717362**		**6276550.9**		**4940518**		**6538827.8**
	N	GST 18%				2469125.18		1129779.16		889293.245		1176989.01
	O	CESS 1%				137173.621		62765.509		49405.1803		65388.2784
	P	Total of Estimate(K+L+M)				**16323661**		**7469095.6**		**5879216.5**		**7781205.1**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**1.63**		**0.75**		**0.59**		**0.78**

					33		34		35		36	
					B.SINGPUR		BAIPARIGUDA		DANGAGUDA		KUNDRA	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	6	45036	3	22518	12	90072
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	2	262314	3	393471	2	262314	4	524628
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0	3	97815	3	97815
	4	33 KV CT Junction Box	No's	5109	2	10218	3	15327	1	5109	4	20436
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0	1	250000	1	250000
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15	1	478512.1488	3	1435536.446	1	478512.1488	4	1914048.595
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500	1	300500		0		0		0
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	6	96000	4	64000	8	128000
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	3	68550	3	68550	3	68550	3	68550
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0		0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157		0		0		0		0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0		0		0
	13	33 KV CT Junction Box	No's	5109		0		0		0		0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	4	524628	4	524628	2	262314	2	262314
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	6	195630	6	195630	6	195630	6	195630
	16	33 KV CT Junction Box	No's	5109	2	10218	2	10218	2	10218	2	10218
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0	2	500000		0	1	250000
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	6	45036	6	45036	6	45036
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6	0	0	0	0		0	0	0
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83	2	703207.6576	2	703207.6576	2	703207.6576	2	703207.6576
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	4	64000	8	128000	4	64000	2	32000
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808		0		0	2	749616	1	374808
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class.class-2)	No's	6455	6	38730	6	38730	6	38730	6	38730
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	6	162000	6	162000	6	162000	6	162000
	25	11 KV CT Junction Box	No's	5109	2	10218	2	10218	2	10218	2	10218
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	2	451524	2	451524	2	451524	1	225762
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	0	0	0	0		0	0	0
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12	2	603962.24	2	603962.24	2	603962.24	2	603962.24
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0		0
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	4	158000	4	158000	2	79000	4	158000
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	8	128000	8	128000	6	96000	4	64000
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	3	41850	6	83700	3	41850	3	41850
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	0.5	101725	0.5	101725		0	0.4	81380
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0		0		0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0		0		0
	36	11 KV CT Junction Box	No's	5109		0		0		0		0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0		0
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500		0		0		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class.class-2)	No's	6455	4	25820	12	77460	12	77460	15	96825
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0		0		0
	41	11 KV CT Junction Box	No's	5109	4	20436	4	20436	4	20436	5	25545
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0	4	903048	4	903048	5	1128810
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0	0	0		0	0	0
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12	4	1207924.48	4	1207924.48	4	1207924.48	5	1509905.6
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	6	311958	4	207972	4	207972	5	259965
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0		0		0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	8	128000	8	128000	8	128000	10	160000
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-finction Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-finction Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500		0	1	26500	1	26500	1	26500
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202		0		0		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0	1	353650	1	353650	1	353650
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	56	ACDB (as per specification)	SET	235379		0	1	235379	1	235379	1	235379
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600		0		0		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744		0		0		0		0
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2		0		0		0		0
	60	33 kV 200 Amp AB Switch	SET	19630		0		0		0		0
	61	33KV HG fuse 3 Pole, 200A	SET	16861		0		0		0		0
	62	33 kV LA for Station Transformer	EA	13455		0		0		0		0

					33		34		35		36	
					B.SINGPUR		BAIPARIGUDA		DANGAGUDA		KUNDRA	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	4	33920	4	33920	4	33920	4	33920
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9		0		0		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6		0		0		0		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81		0		0		0		0
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	500	309400	500	309400	500	309400	500	309400
	68	12 Core x 2.5 mm2 armoured	Mtr	449		0		0		0		0
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4		0		0		0		0
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6	500	118300	500	118300	500	118300	500	118300
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6	200	29120	200	29120	200	29120	200	29120
	72	4 Core x 16 mm2 armoured	Mtr	607.86	200	121572	200	121572	200	121572	200	121572
	73	4 Core x 10 mm2 armoured	Mtr	94.42	600	56652	600	56652	600	56652	600	56652
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6	600	87360	600	87360	600	87360	600	87360
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6	200	29120	200	29120	200	29120	200	29120
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6	600	87360	600	87360	600	87360	600	87360
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37	600	102822	600	102822	600	102822	600	102822
	78	2Cx 50 Sq mm armoured	Mtr	871.65	50	43582.5	50	43582.5	50	43582.5	50	43582.5
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2		0		0		0		0
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6	1.2	174.72	1.2	174.72	1.2	174.72	1.2	174.72
	82	1 Core x 16 mm2 armoured	Mtr	131.19		0		0		0		0
	83	Heat shrinkable jointing kit for 3Cx300mm² 11KV XLPE Cable(indoor type)	EA	11794.9		0		0		0		0
	84	Heat shrinkable jointing kit for 3Cx300mm² 11KV XLPE Cable(outdoor type)	EA	17186		0		0		0		0
	85	Heat shrinkable jointing kit for3Cx300mm² 11KV XLPE Cable(Straight Through))	EA	32912		0		0		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7		0		0		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9		0		0		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7		0		0		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	30	11070	30	11070	30	11070	30	11070
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7	30	3291	30	3291	30	3291	30	3291
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	30	2468.1	30	2468.1	30	2468.1	30	2468.1
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40		0		0		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25	30	7417.5	30	7417.5	30	7417.5	30	7417.5
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332	10	23.32	10	23.32	10	23.32	10	23.32
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434	5	5.7717	5	5.7717	5	5.7717	5	5.7717
	99	Lug 16 Sqmm for control cable	Nos	6.201		0		0		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557	216	336312	336	523152	396	616572	986	1535202
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	10	44180	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427		0		0		0		0
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52		0		0		0	26	892359.52
	107	9M WPB	NO	28081.24		0		0		0		0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5		0		0		0	1200	117000
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5		0		0		0	540	52650
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5		0		0		0	280	27300
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5		0		0		0	1500	146250
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5		0		0		0	6	585
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650		0		0		0	6	3900
	115			1287		0		0		0	72	92664
	116	33Kv Post Insulator	No	2054		0		0		0	72	147888
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872		0		0		0	60	112320
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6		0		0		0	60	40656
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495		0		0		0	40	59800
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248		0		0		0	40	49920
	121	No. 6 GI wire	KG	97.5		0		0		0	100	9750
	122	8 SWG GI Wire	KG	97.5		0		0		0	100	9750
	123	FLAT GI SIZE 50X6 MM	KG	97.5		0		0		0	200	19500
	124	25x6 GI Stripe	KG	97.5		0		0		0	200	19500
	125	Nut & Bolt & Washer	KG	101.4		0		0		0	170	17238
	A	**Total landed Cost (A)**				**7816960.038**		**10932671.34**		**9889716.038**		**14854128.12**
	B	Stock, Storage & Insurance i.e **3% of A**				135685.6054		209461.2154		206883.2854		303690.121
	C	**Sub Total (A+B)**				**7952645.643**		**11142132.55**		**10096599.32**		**15157818.25**
	D	Contigency @ 3% of C				139756.1735		215745.0518		213089.7839		312800.8246
	E	Transportation @ 7.5% of C				349390.4338		539362.6295		532724.4598		782002.0614
	F	**Sum of (F=C to E)**				**8441792.251**		**11897240.23**		**10842413.57**		**16252621.13**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				0		0		0		45956.51528
	H	Erection Charges @ 10% of other items except RS]				465853.9117		719150.1727		710299.2797		950756.3847
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		44233.8		176935.2		154818.3		176935.2
	J	**Erection Charges Sub Total (G+H+I)**				**510087.7117**		**896085.3727**		**865117.5797**		**1173648.1**
	K	Sub-Total (K=F+J)				8951879.962		12793325.61		11707531.15		17426269.23
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e.]=(H+I)				**8951879.962**		**12793325.61**		**11707531.15**		**17426269.23**
	N	GST 18%				1611338.393		2302798.609		2107355.606		3136728.462
	O	CESS 1%				89518.79962		127933.2561		117075.3115		174262.6923
	P	Total of Estimate(K+L+M)				**10652737.16**		**15224057.47**		**13931962.06**		**20737260.39**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**1.07**		**1.52**		**1.39**		**2.07**

					37		38		39		40	
					KUSUMI		ANALA BADI		BANDHUGAON		BILEIGUDA	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	3	22518	3	22518	6	45036
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	2	262314	1	131157	1	131157	2	262314
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0		0		0
	4	33 KV CT Junction Box	No's	5109	2	10218		0		0		0
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0		0
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15	2	957024.2976	1	478512.1488	2	957024.2976	2	957024.2976
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500		0		0		0		0
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	4	64000		0		0		0
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	3	68550	3	68550		0		0
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0		0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157		0		0		0		0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0		0		0
	13	33 KV CT Junction Box	No's	5109		0		0		0		0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	4	524628	2	262314	2	262314	2	262314
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	6	195630		0	3	97815		0
	16	33 KV CT Junction Box	No's	5109	2	10218		0		0		0
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000		0	1	250000	1	250000
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	3	22518	6	45036	3	22518
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6	0	0		0		0		0
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83	2	703207.6576	2	703207.6576	2	703207.6576	2	703207.6576
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	4	64000		0		0		0
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808		0	1	374808	1	374808	1	374808
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	6	38730	6	38730	3	19365		0
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	6	162000	6	162000		0	6	162000
	25	11 KV CT Junction Box	No's	5109	2	10218	2	10218		0		0
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762		0		0		0
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	0	0		0		0		0
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12	2	603962.24	2	603962.24	2	603962.24	2	603962.24
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0	2	103986	2	103986
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	4	158000		0		0		0
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	4	64000		0		0		0
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	3	41850	6	83700	6	83700	6	83700
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	0.4	81380	0.5	101725	0.4	81380	0.4	81380
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0		0		0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0		0		0
	36	11 KV CT Junction Box	No's	5109		0		0		0		0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0		0
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500		0		0		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	9	58095	6	38730	6	38730	6	38730
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0	3	81000	3	81000
	41	11 KV CT Junction Box	No's	5109	3	15327		0	1	5109	1	5109
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	3	677286		0	2	451524	1	225762
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	0	0		0		0		0
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12	3	905943.36	2	603962.24	3	905943.36	4	1207924.48
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	3	155979	2	103986	3	155979	2	103986
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0		0		0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	6	96000		0		0		0
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500		0	1	26500		0	1	26500
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202		0		0		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0	1	353650		0	1	353650
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	56	ACDB (as per specification)	SET	235379	1	235379	1	235379	1	235379	1	235379
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600		0		0		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744		0		0		0		0
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2		0		0		0		0
	60	33 kV 200 Amp AB Switch	SET	19630		0		0		0		0
	61	33KV HG fuse 3 Pole, 200A	SET	16861		0		0		0		0
	62	33 kV LA for Station Transformer	EA	13455		0		0		0		0

					37		38		39		40	
					KUSUMI		ANALA BADI		BANDHUGAON		BILEIGUDA	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	1	8480	6	50880	6	50880	6	50880
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9		0		0		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6		0		0		0		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81		0	100	29781	100	29781	50	14890.5
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	500	309400	250	154700	250	154700	250	154700
	68	12 Core x 2.5 mm2 armoured	Mtr	449		0		0		0		0
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4		0		0		0		0
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6	500	118300	100	23660	100	23660	100	23660
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6	200	29120	250	36400	150	21840	250	36400
	72	4 Core x 16 mm2 armoured	Mtr	607.86	200	121572	50	30393	50	30393	50	30393
	73	4 Core x 10 mm2 armoured	Mtr	94.42	600	56652		0		0		0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6	600	87360	200	29120	500	72800	500	72800
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6	200	29120	250	36400	250	36400	250	36400
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6	600	87360	100	14560	100	14560	100	14560
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37	600	102822	100	17137	100	17137	100	17137
	78	2Cx 50 Sq mm armoured	Mtr	871.65	50	43582.5	50	43582.5	50	43582.5	50	43582.5
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2		0	50	17410	50	17410	50	17410
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6	1.2	174.72	100	14560	100	14560	100	14560
	82	1 Core x 16 mm2 armoured	Mtr	131.19		0		0		0		0
	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9		0		0		0		0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186		0		0		0		0
	85	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(Straight Through))	EA	32912		0		0		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7		0		0		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9		0		0		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7		0		0		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	30	11070	30	11070	30	11070	30	11070
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7	30	3291		0		0		0
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	30	2468.1	100	8227	100	8227	100	8227
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40		0		0		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25	30	7417.5		0		0		0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332	10	23.32		0		0		0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434	5	5.7717		0		0		0
	99	Lug 16 Sqmm for control cable	Nos	6.201		0		0		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557	300	467100		0		0		0
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300	20	27300	30	40950
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	10	44180	15	66270
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	45	115195.5
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427		0	8	323416	8	323416	8	323416
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52		0		0		0		0
	107	9M WPB	NO	28081.24		0		0		0		0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5		0	950	92625	600	58500	800	78000
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5		0	650	63375	450	43875	600	58500
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5		0	500	48750	250	24375	450	43875
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5		0		0		0		0
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5		0		0		0		0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650		0		0		0		0
	115			1287		0		0		0		0
	116	33Kv Post Insulator	No	2054		0		0		0		0
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872		0		0		0		0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6		0		0		0		0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495		0		0		0		0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248		0		0		0		0
	121	No. 6 GI wire	KG	97.5		0		0		0		0
	122	8 SWG GI Wire	KG	97.5		0		0		0		0
	123	FLAT GI SIZE 50X6 MM	KG	97.5		0	375	36562.5	250	24375	375	36562.5
	124	25x6 GI Stripe	KG	97.5		0		0		0		0
	125	Nut & Bolt & Washer	KG	101.4		0	100	10140	100	10140	100	10140
	A	**Total landed Cost (A)**				**8522084.067**		**5825867.886**		**6948610.655**		**7668584.275**
	B	Stock, Storage & Insurance i.e **3% of A**				160558.3954		103086.708		113354.193		125893.968
	C	**Sub Total (A+B)**				**8682642.462**		**5928954.594**		**7061964.848**		**7794478.243**
	D	Contigency @ 3% of C				165375.1472		106179.3092		116754.8188		129670.787
	E	Transportation @ 7.5% of C				413437.868		265448.2731		291887.047		324176.9676
	F	**Sum of (F=C to E)**				**9261455.477**		**6300582.177**		**7470606.714**		**8248325.998**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				0		16655.924		16655.924		16655.924
	H	Erection Charges @ 10% of other items except RSJ				551250.4907		320619.1828		355870.8813		398924.1088
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		110584.5	100	0	100	66350.7	100	44233.8
	J	**Erection Charges Sub Total (G+H+I)**				**661834.9907**		**337275.1068**		**438877.5053**		**459813.8328**
	K	Sub-Total (K=F+J)				9923290.468		6637857.284		7909484.219		8708139.831
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e. J=(H+I)				**9923290.468**		**6637857.284**		**7909484.219**		**8708139.831**
	N	GST 18%				1786192.284		1194814.311		1423707.159		1567465.17
	O	CESS 1%				99232.90468		66378.57284		79094.84219		87081.39831
	P	Total of Estimate(K+L+M)				**11808715.66**		**7899050.167**		**9412286.221**		**10362686.4**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**1.18**		**0.79**		**0.94**		**1.04**

					41		42		43		44	
					DASMANTPUR		KAKRIGUMA		KOLAB NAGAR		NARAYANAPATNA	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	9	67554	3	22518	6	45036
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	2	262314	2	262314	1	131157	2	262314
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0	3	97815		0	3	97815
	4	33 KV CT Junction Box	No's	5109		0	2	10218		0	1	5109
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000	2	500000		0	1	250000
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15		0	3	1435536.446	1	478512.1488	3	1435536.446
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500	2	601000		0		0		0
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	1	16000	1	16000	2	32000
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	6	137100		0	3	68550	6	137100
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0		0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157		0		0		0		0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0		0		0
	13	33 KV CT Junction Box	No's	5109		0		0		0		0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	2	262314	1	131157	2	262314	2	262314
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	3	97815		0	6	195630	6	195630
	16	33 KV CT Junction Box	No's	5109	1	5109		0	2	10218	2	10218
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000	1	250000		0	1	250000
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	3	22518	6	45036	6	45036
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6	2	928825.2		0	2	928825.2		0
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83		0	2	703207.6576		0	2	703207.6576
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000		0	2	32000	2	32000
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808	1	374808	1	374808		0		0
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455		0	3	19365	6	38730	6	38730
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	6	162000		0	6	162000	6	162000
	25	11 KV CT Junction Box	No's	5109	2	10218		0	2	10218	2	10218
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762	1	225762		0	1	225762
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	2	601000		0		0		0
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12		0	2	603962.24	2	603962.24	2	603962.24
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0	2	103986		0		0
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	2	79000		0	2	79000	2	79000
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000		0	2	32000	2	32000
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	6	83700	6	83700	6	83700	6	83700
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	0.15	30517.5	0.1	20345	0.2	40690	0.2	40690
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0		0		0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0		0		0
	36	11 KV CT Junction Box	No's	5109		0		0		0		0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0		0
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500		0		0		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	12	77460	12	77460	12	77460	9	58095
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	6	162000	3	81000	6	162000	3	81000
	41	11 KV CT Junction Box	No's	5109	2	10218		0	2	10218	1	5109
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	3	677286	1	225762	1	225762	3	677286
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	4	1202000		0		0		0
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12	0	0	4	1207924.48	4	1207924.48	3	905943.36
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	4	207972	4	207972	4	207972	3	155979
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0		0		0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	4	64000		0	4	64000	3	48000
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set, 2 Nos of 12V Battery)	EA	26500		0		0	1	26500		0
	53	48 V, 100 AH, maintenance free VRLA Battery (Set, 4 Nos of 12V Battery)	EA	32202		0		0		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0	1	353650		0
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	56	ACDB (as per specification)	SET	235379		0	1	235379	1	235379		0
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600		0		0		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744		0		0	1	31744	1	31744
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2		0		0	20	3104	20	3104
	60	33 kV 200 Amp AB Switch	SET	19630		0		0		0		0
	61	33KV HG fuse 3 Pole, 200A	SET	16861		0		0		0		0
	62	33 kV LA for Station Transformer	EA	13455		0		0		0		0

					41		42		43		44	
					DASMANTPUR		KAKRIGUMA		KOLAB NAGAR		NARAYANAPATNA	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	6	50880	8	67840	5	42400	5	42400
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9		0		0		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6		0		0		0		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81	90	26802.9	30	8934.3	100	29781	90	26802.9
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	210	129948	250	154700	35	21658	210	129948
	68	12 Core x 2.5 mm2 armoured	Mtr	449	350	157150		0	420	188580	420	188580
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4		0		0		0		0
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6		0	100	23660		0		0
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6	1836	267321.6	250	36400	1606	233833.6	2136	311001.6
	72	4 Core x 16 mm2 armoured	Mtr	607.86		0	50	30393		0		0
	73	4 Core x 10 mm2 armoured	Mtr	94.42		0		0		0		0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6		0	500	72800		0		0
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6		0	250	36400		0		0
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6		0	100	14560		0		0
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37		0	100	17137		0		0
	78	2Cx 50 Sq mm armoured	Mtr	871.65		0	50	43582.5		0		0
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2	200	69640	50	17410	150	52230	100	34820
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6		0	100	14560		0		0
	82	1 Core x 16 mm2 armoured	Mtr	131.19		0		0	30	3935.7		0
	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9		0		0		0		0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186		0		0		0		0
	85	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(Straight Through))	EA	32912		0		0		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7		0		0		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9		0		0		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7		0		0		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	6	2214	30	11070	1	369	6	2214
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	24	1974.48	100	8227	82	6746.14	56	4607.12
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40		0		0		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25		0		0		0		0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332		0		0		0		0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434		0		0		0		0
	99	Lug 16 Sqmm for control cable	Nos	6.201		0		0		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557		0		0		0		0
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	10	44180	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long. 30.44KG/Mtr.)	NO	40427		0	8	323416		0		0
	106	WPB 160x152 (11Mtr. Long. 30.44KG/Mtr.)	NO	34321.52	2	68643.04		0		0		0
	107	9M WPB	NO	28081.24		0		0		0		0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5	133.84	13049.4	800	78000		0		0
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5	99.96	9746.1	600	58500		0		0
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5	121.5	11846.25	450	43875		0		0
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5		0		0		0		0
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5		0		0		0		0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650		0		0		0		0
	115			1287		0		0		0		0
	116	33Kv Post Insulator	No	2054	24	49296		0	24	49296	24	49296
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872	24	44928		0	24	44928	24	44928
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6		0		0		0		0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495		0		0		0		0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248		0		0		0		0
	121	No. 6 GI wire	KG	97.5		0		0		0		0
	122	8 SWG GI Wire	KG	97.5		0		0		0		0
	123	FLAT GI SIZE 50X6 MM	KG	97.5	800	78000	375	36562.5	350	34125	625	60937.5
	124	25x6 GI Stripe	KG	97.5	60	5850		0	75	7312.5	75	7312.5
	125	Nut & Bolt & Washer	KG	101.4	50	5070	100	10140	50	5070	50	5070
	A	**Total landed Cost (A)**				**8247842.1**		**8378904.72**		**6874030.609**		**8220547.924**
	B	Stock, Storage & Insurance i.e **3% of A**				147450.506		132848.217		109644.1962		137156.9466
	C	**Sub Total (A+B)**				**8395292.6**		**8511752.94**		**6983674.805**		**8357704.871**
	D	Contigency @ 3% of C				151874.021		136833.6635		112933.5221		141271.655
	E	Transportation @ 7.5% of C				379685.053		342084.1588		282333.8052		353179.1375
	F	**Sum of (F=C to E)**				**8926851.7**		**8990670.76**		**7378942.132**		**8852155.663**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				3535.11656		16655.924		0		0
	H	Erection Charges @ 10% of other items except RSJ				499176.504		422800.3637		376445.0736		470905.5167
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		132701.4	100	110584.5		22116.9		132701.4
	J	**Erection Charges Sub Total (G+H+I)**				**635413.02**		**550040.788**		**398561.9736**		**603606.9167**
	K	Sub-Total (K=F+J)				9562264.67		9540711.551		7777504.106		9455762.58
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e.)=(H+I)				**9562264.7**		**9540711.55**		**7777504.106**		**9455762.58**
	N	GST 18%				1721207.64		1717328.079		1399950.739		1702037.264
	O	CESS 1%				95622.6467		95407.11551		77775.04106		94557.6258
	P	Total of Estimate(K+L+M)				**11379095**		**11353446.7**		**9255229.886**		**11252357.47**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**1.14**		**1.14**		**0.93**		**1.13**

					45		46		47		48	
					POTTANGI		Chitrakonda		K.M.GUMMA		KHAIRAPUT	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	3	22518	3	22518	3	22518
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	2	262314	1	131157	1	131157	1	131157
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	3	97815		0	3	97815		0
	4	33 KV CT Junction Box	No's	5109	1	5109	1	5109	1	5109	1	5109
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000		0	1	250000		0
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15		0		0		0		0
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500	3	901500	1	300500	1	300500	1	300500
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000		0	1	16000		0
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	6	137100	3	68550	3	68550	3	68550
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0		0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157		0		0		0		0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0		0		0
	13	33 KV CT Junction Box	No's	5109		0		0		0		0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	2	262314	2	262314		0	1	131157
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0	3	97815		0		0
	16	33 KV CT Junction Box	No's	5109		0	1	5109		0		0
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0	1	250000		0		0
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	3	22518	6	45036	3	22518	6	45036
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6	2	928825.2	3	1393237.8	1	464412.6	2	928825.2
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83		0		0		0		0
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	1	16000	1	16000		0
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808		0	2	749616		0	2	749616
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	3	19365	6	38730		0	6	38730
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	3	81000	3	81000		0	3	81000
	25	11 KV CT Junction Box	No's	5109	1	5109	1	5109		0	1	5109
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762	1	225762		0	1	225762
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	2	601000	3	901500	1	300500	1	300500
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12		0		0		0		0
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0		0
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	2	79000	2	79000	1	39500	2	79000
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	1	16000		0		0
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	6	83700	9	125550	3	41850	6	83700
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	0.15	30517.5	0.15	30517.5		0		0
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0		0		0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0		0		0
	36	11 KV CT Junction Box	No's	5109		0		0		0		0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0		0
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500		0		0		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	12	77460	9	58095	6	38730	12	77460
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0	6	162000	3	81000
	41	11 KV CT Junction Box	No's	5109		0		0	2	10218	1	5109
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762		0		0	1	225762
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	4	1202000	3	901500	2	601000	1	300500
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12		0		0		0		0
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	4	207972	3	155979	2	103986	4	207972
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0		0		0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	4	64000		0		0		0
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel. Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500		0		0		0	2	53000
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202		0		0		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650	1	353650		0		0	1	353650
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	56	ACDB (as per specification)	SET	235379	1	235379	1	235379		0	1	235379
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600		0		0		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744		0		0		0		0
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2		0		0		0		0
	60	33 kV 200 Amp AB Switch	SET	19630		0		0		0		0
	61	33KV HG fuse 3 Pole, 200A	SET	16861		0		0		0		0
	62	33 kV LA for Station Transformer	EA	13455		0		0		0		0

					45		46		47		48	
					POTTANGI		Chitrakonda		K.M.GUMMA		KHAIRAPUT	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	5	42400	6	50880	6	50880	6	50880
	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9		0		0		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6		0		0		0		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81	90	26802.9	50	14890.5	100	29781	50	14890.5
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	105	64974	1000	618800	1000	618800	1000	618800
	68	12 Core x 2.5 mm2 armoured	Mtr	449	140	62860		0		0		0
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4		0		0		0		0
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6		0	150	35490	150	35490	150	35490
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6	618	89980.8	250	36400	150	21840	250	36400
	72	4 Core x 16 mm2 armoured	Mtr	607.86		0	50	30393	50	30393	50	30393
	73	4 Core x 10 mm2 armoured	Mtr	94.42		0		0		0		0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6		0	150	21840	150	21840	150	21840
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6		0	500	72800	700	101920	500	72800
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6		0	1000	145600	1000	145600	600	87360
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37		0	100	17137	100	17137	100	17137
	78	2Cx 50 Sq mm armoured	Mtr	871.65		0	50	43582.5	50	43582.5	50	43582.5
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2	150	52230	50	17410	50	17410	50	17410
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6		0	300	43680	300	43680	200	29120
	82	1 Core x 16 mm2 armoured	Mtr	131.19		0		0		0		0
Cables & Accessories	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9		0		0		0		0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186		0		0		0		0
	85	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(Straight Through))	EA	32912		0		0		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7		0		0		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9		0		0		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7		0		0		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	3	1107	30	11070	30	11070	30	11070
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	54	4442.58	100	8227	100	8227	100	8227
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40		0		0		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25		0		0		0		0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332		0		0		0		0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434		0		0		0		0
	99	Lug 16 Sqmm for control cable	Nos	6.201		0		0		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557		0	200	311400	300	467100	150	233550
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300	20	27300	30	40950
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	10	44180	15	66270
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	45	115195.5
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427		0	9	363843	3	121281	8	323416
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52	2	68643.04		0		0		0
	107	9M WPB	NO	28081.24		0		0		0		0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5	133.84	13049.4	900	87750	200	19500	800	78000
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5	99.96	9746.1	650	63375	250	24375	600	58500
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5	121.5	11846.25	500	48750	165	16087.5	450	43875
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5		0		0	50	4875		0
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5		0		0		0		0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650		0		0		0		0
	115			1287		0		0		0		0
	116	33Kv Post Insulator	No	2054	24	49296		0		0		0
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872	24	44928		0		0		0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6		0		0		0		0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495		0		0		0		0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248		0		0		0		0
	121	No. 6 GI wire	KG	97.5		0		0		0		0
	122	8 SWG GI Wire	KG	97.5		0		0		0		0
	123	FLAT GI SIZE 50X6 MM	KG	97.5	650	63375	40	3900		0	30	2925
	124	25x6 GI Stripe	KG	97.5	15	1462.5	60	5850	35	3412.5	60	5850
	125	Nut & Bolt & Washer	KG	101.4	50	5070	100	10140	100	10140	50	5070
	A	**Total landed Cost (A)**				**7419412.87**		**8571282.9**		**4863776.7**		**6963817.3**
	B	Stock, Storage & Insurance i.e **3% of A**				113582.6301		152236.353		95920.923		154004.763
	C	**Sub Total (A+B)**				**7532995.5**		**8723519.25**		**4959697.623**		**7117822.063**
	D	Contigency @ 3% of C				116990.109		156803.4436		98798.55069		158624.9059
	E	Transportation @ 7.5% of C				292475.2725		392008.609		246996.3767		396562.2647
	F	**Sum of (F=C to E)**				**7942460.882**		**9272331.31**		**5305492.55**		**7673009.234**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				3535.11656		18737.9145		6245.9715		16655.924
	H	Erection Charges @ 10% of other items except RS				382896.7969		485202.3163		316836.5593		495437.8383
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		66350.7		44233.8		22116.9		44233.8
	J	**Erection Charges Sub Total (G+H+I)**				**452782.6135**		**548174.031**		**345199.4308**		**556327.5623**
	K	Sub-Total (K=F+J)				8395243.495		9820505.336		5650691.981		8229336.796
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e. J=(H+I)				**8395243.495**		**9820505.34**		**5650691.981**		**8229336.796**
	N	GST 18%				1511143.829		1767690.961		1017124.557		1481280.623
	O	CESS 1%				83952.43495		98205.05336		56506.91981		82293.36796
	P	Total of Estimate(K+L+M)				**9990339.759**		**11686401.4**		**6724323.458**		**9792910.787**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**1.00**		**1.17**		**0.67**		**0.98**

					49		50		51		52	
					KORUKONDA		MV.79		PANDRIPANI		DABUGAON	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	3	22518	3	22518	3	22518	6	45036
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	2	262314	2	262314	1	131157	2	262314
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	6	195630		0		0	3	97815
	4	33 KV CT Junction Box	No's	5109	2	10218		0		0	1	5109
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	2	500000		0		0	1	250000
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15	2	957024.2976	1	478512.1488		0	2	957024.2976
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500		0		0	1	300500		0
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0	2	32000	1	16000	4	64000
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	3	68550	3	68550	3	68550	3	68550
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0		0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157		0		0		0		0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0		0		0
	13	33 KV CT Junction Box	No's	5109		0		0		0		0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	2	262314		0	2	262314	4	524628
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0		0	9	293445
	16	33 KV CT Junction Box	No's	5109	2	10218		0		0	3	15327
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0		0
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	6	45036	3	22518		0	9	67554
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6	1	464412.6	1	464412.6	1	464412.6		0
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83		0		0		0	3	1054811.486
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0	2	32000		0	4	64000
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808	2	749616		0		0		0
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	6	38730	3	19365	3	19365	9	58095
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0	3	81000		0	9	243000
	25	11 KV CT Junction Box	No's	5109	2	10218	1	5109		0	3	15327
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762	1	225762		0		0
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	1	300500	1	300500	1	300500		0
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12		0		0		0	3	905943.36
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0		0
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	2	79000	2	79000	2	79000	3	118500
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0	1	16000		0	3	48000
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	6	83700	6	83700	6	83700	3	41850
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450		0	0.07	14241.5		0	0.25	50862.5
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0		0		0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0		0		0
	36	11 KV CT Junction Box	No's	5109		0		0		0		0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0		0
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500		0		0		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	6	38730	12	77460	6	38730	9	58095
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0	6	162000	6	162000	0	0
	41	11 KV CT Junction Box	No's	5109		0	2	10218	2	10218	3	15327
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0	2	451524	2	451524	3	677286
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500	1	300500	2	601000	4	1202000		0
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12		0		0		0	3	905943.36
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	2	103986	4	207972	4	207972	6	311958
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0		0		0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000		0	4	64000		0	12	192000
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500		0		0		0		0
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202		0		0		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	56	ACDB (as per specification)	SET	235379	1	235379	1	235379	1	235379	1	235379
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600		0		0		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744		0		0		0		0
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2		0		0		0		0
	60	33 kV 200 Amp AB Switch	SET	19630		0		0		0		0
	61	33KV HG fuse 3 Pole, 200A	SET	16861		0		0		0		0
	62	33 kV LA for Station Transformer	EA	13455		0		0		0		0

					49		50		51		52	
					KORUKONDA		MV.79		PANDRIPANI		DABUGAON	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	6	50880	8	67840	6	50880	6	50880
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9		0		0		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6		0		0		0		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81	50	14890.5	30	8934.3	50	14890.5		0
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	800	495040	1000	618800	1000	618800	140	86632
	68	12 Core x 2.5 mm2 armoured	Mtr	449		0		0		0	700	314300
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4		0		0		0	2824	947169.6
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6	150	35490	150	35490	150	35490		0
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6	250	36400	250	36400	250	36400		0
	72	4 Core x 16 mm2 armoured	Mtr	607.86	50	30393	50	30393	50	30393		0
	73	4 Core x 10 mm2 armoured	Mtr	94.42		0		0		0		0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6	150	21840	150	21840	150	21840		0
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6	500	72800	600	87360	500	72800		0
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6	800	116480	1000	145600	500	72800		0
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37	100	17137	100	17137	100	17137		0
	78	2Cx 50 Sq mm armoured	Mtr	871.65	50	43582.5	50	43582.5	50	43582.5		0
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2	50	17410	50	17410	50	17410	150	52230
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6	100	14560	300	43680	200	29120		0
	82	1 Core x 16 mm2 armoured	Mtr	131.19		0		0		0	0	19678.5
	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9		0		0		0		0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186		0		0		0		0
	85	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(Straight Through))	EA	32912		0		0		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7		0		0		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9		0		0		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7		0		0		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	30	11070	30	11070	30	11070	4	
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	100	8227	100	8227	100	8227	72	
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40		0		0		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25		0		0		0		17802
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332		0		0		0		0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434		0		0		0		0
	99	Lug 16 Sqmm for control cable	Nos	6.201		0		0		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557	200	311400	300	467100	200	311400		0
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	10	44180	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427	8	323416	8	323416	9	363843		0
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52		0		0		0	4	137286.08
	107	9M WPB	NO	28081.24		0		0		0		0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5	800	78000	800	78000	950	92625	107.072	10439.52
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5	600	58500	600	58500	650	63375	214.144	20879.04
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5	450	43875	450	43875	500	48750	31.5	3071.25
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5		0		0		0	30	2925
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5		0		0		0		0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650		0		0		0		0
	115			1287		0		0		0	36	46332
	116	33Kv Post Insulator	No	2054		0		0		0	36	73944
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872		0		0		0		0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6		0		0		0		0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495		0		0		0		0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248		0		0		0		0
	121	No. 6 GI wire	KG	97.5		0		0		0		0
	122	8 SWG GI Wire	KG	97.5		0		0		0		0
	123	FLAT GI SIZE 50X6 MM	KG	97.5	75	7312.5	60	5850	40	3900	625	60937.5
	124	25x6 GI Stripe	KG	97.5	80	7800	85	8287.5	50	4875	240	23400
	125	Nut & Bolt & Washer	KG	101.4	50	5070	100	10140	100	10140		0
	A	**Total landed Cost (A)**				**7092920.998**		**6512979.149**		**6342579.2**		**9822078.1**
	B	Stock, Storage & Insurance i.e **3% of A**				152114.523		140056.632		122254.998		179950.668
	C	**Sub Total (A+B)**				**7245035.521**		**6653035.781**		**6464834.198**		**10002029**
	D	Contigency @ 3% of C				156677.9587		144258.331		125922.6479		185349.188
	E	Transportation @ 7.5% of C				391694.8967		360645.8274		314806.6199		463372.969
	F	**Sum of (F=C to E)**				**7793408.376**		**7157939.939**		**6905563.466**		**10650751**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				16655.924		16655.924		18737.9145		7070.23312
	H	Erection Charges @ 10% of other items except RSJ				488948.0143		447549.2552		382266.3308		603690.16
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		66350.7		66350.7		44233.8		88467.6
	J	**Erection Charges Sub Total (G+H+I)**				**571954.6383**		**530555.8792**		**445238.0453**		**699227.99**
	K	Sub-Total (K=F+J)				8365363.014		7688495.818		7350801.511		11349978.9
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e.]=(H+I)				**8365363.014**		**7688495.818**		**7350801.511**		**11349979**
	N	GST 18%				1505765.343		1383929.247		1323144.272		2042996.2
	O	CESS 1%				83653.63014		76884.95818		73508.01511		113499.789
	P	Total of Estimate(K+L+M)				**9954781.987**		**9149310.024**		**8747453.798**		**13506475**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**1.00**		**0.91**		**0.87**		**1.35**

					53		54		55		56	
					JHARIGAM		KOSAGUMUDA		NANDAHANDI		PAPADAHANDI	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	9	67554	9	67554	3	22518	6	45036
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	1	131157	2	262314	1	131157	2	262314
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0	3	97815	3	97815	3	97815
	4	33 KV CT Junction Box	No's	5109		0	1	5109	1	5109	1	5109
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0	1	250000	1	250000	1	250000
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15	3	1435536.446	2	957024.2976	1	478512.1488	2	957024.2976
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500		0		0		0		0
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	4	64000	2	32000	4	64000
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	6	137100	6	137100	3	68550	3	68550
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0		0		0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157		0		0		0		0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0		0		0
	13	33 KV CT Junction Box	No's	5109		0		0		0		0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	2	262314	3	393471	2	262314	1	131157
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605	3	97815		0	3	97815	3	97815
	16	33 KV CT Junction Box	No's	5109	1	5109		0	1	5109	1	5109
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000	1	250000	0	0	1	250000	1	250000
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506		0	12	90072	6	45036	3	22518
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6		0		0		0		0
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83	2	703207.6576		0	1	351603.8288	1	351603.8288
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	3	48000	2	32000	1	16000
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808	2	749616	1	374808		0	1	374808
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	6	38730	12	77460	6	38730	3	19365
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	3	81000		0	3	81000	3	81000
	25	11 KV CT Junction Box	No's	5109	1	5109		0	1	5109	1	5109
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762		0		0	1	225762
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0	0	0	0	0	0	0
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12	2	603962.24		0	1	301981.12	1	301981.12
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0		0
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	2	79000	4	158000		0	1	39500
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	4	64000		0	1	16000
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	6	83700	12	167400	6	83700	3	41850
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	0.2	40690	0.3	61035	0.2	40690	0.1	20345
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0		0		0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0		0		0
	36	11 KV CT Junction Box	No's	5109		0		0		0		0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0		0		0
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus ouple	No's	300500		0		0		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	15	96825	21	135555	12	77460	6	38730
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	3	81000	12	324000	3	81000	6	162000
	41	11 KV CT Junction Box	No's	5109	2	10218	4	20436	1	5109	2	10218
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	2	451524	4	903048		0	2	451524
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0		0		0		0
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12	5	1509905.6	4	1207924.48	2	603962.24	2	603962.24
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	5	259965	7	363951	4	207972	2	103986
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0		0		0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	10	160000	14	224000	8	128000	4	64000
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000								
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000								
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000								
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500	1	26500		0	1	26500	1	26500
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202		0		0		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650	1	353650	1	353650	1	353650	1	353650
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0		0		0
	56	ACDB (as per specification)	SET	235379	1	235379	1	235379	1	235379	1	235379
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600		0		0		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744		0		0	1	31744		0
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2		0		0	20	3104		0
	60	33 kV 200 Amp AB Switch	SET	19630		0		0		0		0
	61	33KV HG fuse 3 Pole, 200A	SET	16861		0		0		0		0
	62	33 kV LA for Station Transformer	EA	13455		0		0		0		0

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					JHARIGAM		KOSAGUMUDA		NANDAHANDI		PAPADAHANDI	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	5	42400	6	50880	3	25440	2	16960
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9		0		0		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6		0		0		0		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81		0		0	70	20846.7		0
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	140	86632	175	108290	70	43316	175	108290
	68	12 Core x 2.5 mm2 armoured	Mtr	449	280	125720	350	157150	280	125720	350	157150
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4	3424	1148409.6	2330	781482	1412	473584.8	2030	680862
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6		0		0		0		0
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6		0		0		0		0
	72	4 Core x 16 mm2 armoured	Mtr	607.86		0		0		0		0
	73	4 Core x 10 mm2 armoured	Mtr	94.42		0		0		0		0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6		0		0		0		0
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6		0		0		0		0
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6		0		0		0		0
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37		0		0		0		0
	78	2Cx 50 Sq mm armoured	Mtr	871.65		0		0		0		0
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2	150	52230	200	69640	100	34820	70	24374
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6		0		0		0		0
	82	1 Core x 16 mm2 armoured	Mtr	131.19	30	3935.7	0	0	30	3935.7	30	3935.7
	83	Heat shrinkable jointing kit for 3Cx300mm² 11KV XLPE Cable(indoor type)	EA	11794.9		0		0		0		0
	84	Heat shrinkable jointing kit for 3Cx300mm² 11KV XLPE Cable(outdoor type)	EA	17186		0		0		0		0
	85	Heat shrinkable jointing kit for 3Cx300mm² 11KV XLPE Cable(Straight Through))	EA	32912		0		0		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7		0		0		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9		0		0		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7		0		0		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55		0		0		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	4	1476	5	1845	2	738	5	1845
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7		0		0		0		0
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	98	8062.46	68	5594.36	54	4442.58	60	4936.2
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40		0		0		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25		0		0		0		0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332		0		0		0		0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434		0		0		0		0
	99	Lug 16 Sqmm for control cable	Nos	6.201		0		0		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557		0		0		0		0
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180	10	44180	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797	30	76797	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427		0		0		0		0
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52		0		0		0		0
	107	9M WPB	NO	28081.24		0		0		0		0
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5		0		0		0		0
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5		0		0		0		0
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5		0		0		0		0
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5		0		0		0		0
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5		0		0		0		0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650		0		0		0		0
	115			1287	24	30888	36	46332	24	30888	24	30888
	116	33Kv Post Insulator	No	2054	24	49296	36	73944	24	49296	24	49296
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872		0		0		0		0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6		0		0		0		0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495		0		0		0		0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248		0		0		0		0
	121	No. 6 GI wire	KG	97.5		0		0		0		0
	122	8 SWG GI Wire	KG	97.5		0		0		0		0
	123	FLAT GI SIZE 50X6 MM	KG	97.5	450	43875	1000	97500	200	19500	250	24375
	124	25x6 GI Stripe	KG	97.5	30	2925	135	13162.5	30	2925	15	1462.5
	125	Nut & Bolt & Washer	KG	101.4		0		0		0		0
	A	**Total landed Cost (A)**				**10181170.3**		**8755917.2**		**5577073.72**		**7211086.486**
	B	Stock, Storage & Insurance i.e **3% of A**				177856.7508		197729.054		115230.4314		149895.45
	C	**Sub Total (A+B)**				**10359027.05**		**8953646.3**		**5692304.15**		**7360981.936**
	D	Contigency @ 3% of C				183192.4533		203660.925		118687.3443		154392.3135
	E	Transportation @ 7.5% of C				457981.1333		509152.314		296718.3609		385980.7838
	F	**Sum of (F=C to E)**				**11000200.64**		**9666459.5**		**6107709.85**		**7901355.034**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				0		0		0		0
	H	Erection Charges @ 10% of other items except RS				610641.5111		678869.751		395624.4811		514641.045
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		88467.6		110584.5		44233.8		110584.5
	J	**Erection Charges Sub Total (G+H+I)**				**699109.1111**		**789454.25**		**439858.281**		**625225.545**
	K	Sub-Total (K=F+J)				11699309.75		10455913.8		6547568.135		8526580.579
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0		0		0
	M	Total Estimated Cost i.e. J=(H+I)				**11699309.75**		**10455914**		**6547568.14**		**8526580.579**
	N	GST 18%				2105875.755		1882064.48		1178562.264		1534784.504
	O	CESS 1%				116993.0975		104559.138		65475.68135		85265.80579
	P	Total of Estimate(K+L+M)				**13922178.61**		**12442537**		**7791606.08**		**10146630.89**
	Q	**Grand Total**										
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**1.39**		**1.24**		**0.78**		**1.01**

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					TANDAGUDA		TENTULIKHUNTI	
	Sl. No.	Item Description	Unit	Unit in Cost Rs	Qty	Cost in Rs.	Qty	Cost in Rs.
33KV Bay	1	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	3	22518	6	45036
	2	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157	1	131157	1	131157
	3	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0	6	195630
	4	33 KV CT Junction Box	No's	5109		0	2	10218
	5	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0	3	750000
	6	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	4,78,512.15	1	478512.1488		0
	7	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)- Indoor Type	No's	300500		0		0
	8	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	1	16000	2	32000
33 kV BUS	9	33kV IVT (33/√3kV / 110/√3-110/√3V) (1-Ph)	No's	22850	3	68550	3	68550
33KV BUS Coupler Bay	10	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0		0
	11	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator with manual earth switch with Pad clamp.	No's	131157		0		0
	12	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0		0
	13	33 KV CT Junction Box	No's	5109		0		0
33KV Transformer Bay	14	33kV 1250 Amp Double Break (Turn & twist centre rotating) Non-Motorised Isolator without earth switch with Pad clamp.	No's	131157	2	262314	2	262314
	15	33 KV multicore 1PH CT (600-300-150/1-1-1 A) 3 Core	No's	32605		0	6	195630
	16	33 KV CT Junction Box	No's	5109		0	2	10218
	17	33kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	250000		0	2	500000
	18	Lightning Arrester(30 KV,10 KA) (Station Class,class-3) with Surge Counter	EA	7506	3	22518	6	45036
	19	CRP with O/C relay for 33kV I/C(one bay in a panel of 600mm)	No's	464412.6		0		0
	20	CRP with O/C relay for 33kV I/C(one bay in a panel)- Outdoor Type	No's	3,51,603.83	2	703207.6576	2	703207.6576
	21	Junction /Control Cabinet Box for 33kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	2	32000	2	32000
33/11KV PTR Accessories	22	33/11 KV PTR TMU	No's	374808		0	1	374808
11KV I/C Bay	23	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	3	19365	6	38730
	24	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	3	81000	3	81000
	25	11 KV CT Junction Box	No's	5109	1	5109	1	5109
	26	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	1	225762	1	225762
	27	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0		0
	28	CRP with O/C relay for 11kV I/IC Panel)- Outdoor Type	Nos'	3,01,981.12	2	603962.24	2	603962.24
	29	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0
	30	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500	1	39500	2	79000
	31	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	1	16000	2	32000
11kV BUS	32	11 KV Oil Cooled 1 Ph PT(11√3kV/110√3V)	No's	13950	6	83700	6	83700
	33	Bus Conductor 232 ACSR Sq. mm.	Km	203450	0.15	30517.5	0.15	30517.5
11kV BUS Coupler	34	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762		0		0
	35	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000		0		0
	36	11 KV CT Junction Box	No's	5109		0		0
	37	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993		0		0
	38	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm) for Bus oupler	No's	300500		0		0
11KV Feeder Bay	39	Lightning Arrester(11KV,10KA) (Station Class,class-2)	No's	6455	15	96825	15	96825
	40	11 KV multicore 1PH CT(800-400-200/1-1-1 A) for 3 Core	No's	27000	6	162000	6	162000
	41	11 KV CT Junction Box	No's	5109	2	10218	2	10218
	42	11kV 1250 Amp Outdoor Vacuum Circuit Breaker	No's	225762	2	451524	2	451524
	43	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel of 600mm)	No's	300500		0		0
	44	CRP with O/C + E/F relays for 11kV O/G (one bay in a panel) Outdoor Type	No's	3,01,981.12	5	1509905.6	5	1509905.6
	45	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator with earth switch with Pad clamp.	No's	51993	5	259965	5	259965
	46	11kV 630 Amp Double Break (Turn & twist centre rotating) Isolator without earth switch with Pad clamp.	No's	39500		0		0
	47	Junction /Control Cabinet Box for 11kV isolator & ES (Including Cabling) for Existing isolators	No's	16000	10	160000	10	160000
11KV Indore type Feeder Bay complete set	48	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for Transformer Protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	900000				
	49	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for Feeder protection Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No's	850000				
	50	11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No's	900000				
	51	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	400000				
DCDB/ACDB	52	24 V, 100 AH, maintenance free VRLA Battery (Set. 2 Nos of 12V Battery)	EA	26500		0		0
	53	48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery)	EA	32202		0		0
	54	24V/80A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0
	55	48V/50A, SMPS Battery Charger with n+1 module & Integral DCDB	EA	353650		0		0
	56	ACDB (as per specification)	SET	235379	1	235379	1	235379
33/0.4 kV Station Transformer	57	33/0.4 kV Auxillary Transformer 100KVA	EA	353600		0		0
	58	LT Distribution Box for Station Tramnsformer (Rating of existing transformer to be mentioned)	EA	31744	1	31744	1	31744
	59	CABLE 1.1KV AL 1CX150 SQMM Un-ARM	Mtr	155.2	20	3104	20	3104
	60	33 kV 200 Amp AB Switch	SET	19630		0	1	19630
	61	33KV HG fuse 3 Pole, 200A	SET	16861		0	1	16861
	62	33 kV LA for Station Transformer	EA	13455		0	3	40365

					57		58	
					TANDAGUDA		TENTULIKHUNTI	
	Sl. No.	Item Description	Unit	Unit Cost in	Qty	Cost in Rs.	Qty	Cost in Rs.
Services at PSS	63	YARD Light for PSS (LED light with pole, fittings & cable included)	Nos	8480	5	42400	6	50880
Cables & Accessories	64	33 kV 1C 400 Sqmm XLPE UG	Mtr	1017.9		0		0
	65	11 kV 3C 300 Sqmm. XLPE UG	Mtr	1893.6		0		0
	66	STATION TF TO ACDB 4X50MM	Mtr	297.81		0		0
	67	19 C 2.5 mm sq Cu Control Cable, armoured (VCB to CRP)	Mtr	618.8	105	64974	280	173264
	68	12 Core x 2.5 mm2 armoured	Mtr	449	210	94290	490	220010
	69	10 C 2.5 mm sq Cu Control Cable, armoured	Mtr	335.4	2718	911617.2	2948	988759.2
	70	7 C 2.5 mm sq Cu Control Cable, armoured	Mtr	236.6		0		0
	71	4 Core x 2.5 mm2 armoured (CT to CT JB) 3 run	Mtr	145.6		0		0
	72	4 Core x 16 mm2 armoured	Mtr	607.86		0		0
	73	4 Core x 10 mm2 armoured	Mtr	94.42		0		0
	74	4 Core x 2.5 mm2 armoured For DC supply to CRP	Mtr	145.6		0		0
	75	4 Core x 2.5 mm2 armoured (CRP to VCB DC supply)	Mtr	145.6		0		0
	76	4 Core x 2.5 mm2 armoured Isolator to CRP	Mtr	145.6		0		0
	77	6 C 2.5 mm sq Cu Control Cable, armoured for PTR to TMU 2 run	Mtr	171.37		0		0
	78	2Cx 50 Sq mm armoured	Mtr	871.65		0		0
	79	2 Core x 2.5 mm2 cable for Ac supply to CRP & Breaker	Mtr	88.4	500	44200	500	44200
	80	2Cx 16 Sq mm armoured	Mtr	348.2	150	52230	200	69640
	81	4 C 2.5 mm sq Cu Control Cable, armoured for PT to CRP 2 run	Mtr	145.6		0		0
	82	1 Core x 16 mm2 armoured	Mtr	131.19	0	0	0	0
	83	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(indoor type)	EA	11794.9		0		0
	84	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(outdoor type)	EA	17186		0		0
	85	Heat shrinkable jointing kit for 3Cx300mm^2 11KV XLPE Cable(Straight Through))	EA	32912		0		0
	86	Heat shrinkable jointing kit forXLPE 1Core x 400mm2, 33kV XLPE Cable (Outdoor)	EA	8929.7		0		0
	87	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Indoor)	EA	6802.9		0		0
	88	Heat shrinkable jointing kit for XLPE 1Core x 400mm2, 33kV XLPE Cable (Straight Through)	EA	8929.7		0		0
	89	CABLE GLAND FOR 10C X 2.5 SQ.MM CC,DC	EA	116.55		0		0
	90	CABLE GLAND FOR 12C X 2.5 SQ.MM CC,DC	EA	116.55		0		0
	91	CABLE GLAND FOR 7C X 2.5 SQ.MM CC,DC	EA	109.7		0		0
	92	CABLE GLAND FOR 19C X 2.5 SQ.MM CC,DC	EA	369	3	1107	8	2952
	93	CABLE GLAND FOR 6C X 2.5 SQ.MM CC,DC	EA	109.7		0		0
	94	CABLE GLAND FOR 4C X 2.5 SQ.MM CC,DC	EA	82.27	74	6087.98	68	5594.36
	95	CABLE GLAND FOR 1C X 16 SQ.MM CC,DC	EA	40		0		0
	96	CABLE GLAND FOR 2C X 50 SQ.MM CC,DC	EA	247.25		0		0
	97	Ferrule 2.5 Sqmm for Control Cable	Nos	2.332		0		0
	98	Lug 2.5 Sqmm for control cable	Nos	1.15434		0		0
	99	Lug 16 Sqmm for control cable	Nos	6.201		0		0
	100	CABLE TRAY(LADDER) 450MM*100MM*20MM GI	Mtr	1557		0		0
PSS Earthing	101	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	1365	20	27300	20	27300
	102	100 mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .	No's	4418	10	44180	10	44180
	103	Borewell earthing	Nos'	4725	1	4725	1	4725
	104	Materials for Massionary work for Earth Pit,Charcoal, Salt etc including construction of earthing chamber (Size: 2"x2") and RCC slab cover	No's	2559.9	30	76797	30	76797
GI & MS Items for Structure	105	WPB 160x152 (13Mtr. Long, 30.44KG/Mtr.)	NO	40427		0	6	242562
	106	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	NO	34321.52		0		0
	107	9M WPB	NO	28081.24		0	2	56162.48
	108	(100X50X5) channel mm 2.8 Mtr (9.56 Kg. / Mtr.) with Galvanization	KG	97.5		0	669.2	65247
	109	75x40x4.8 mm M.S Channel (7.14Kg. / Mtr) with Galvanization	KG	97.5		0	199.92	19492.2
	110	(50X50X6) mm 2.8mtr long (4.5 Kg./Mtr.) with Galvanization	KG	97.5		0	121.5	11846.25
	111	75X10 Cu. Flat 8mtr(5.89KG/Mtr.)	KG	1165	94.24	109789.6	94.24	109789.6
	112	50X8 GI Flat	KG	97.5		0		0
	113	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr	Nos	97.5		0		0
	114	11 KV Polymeric Disc insulator 90 KN along with suitable hardware fittings	Nos	650		0		0
	115			1287	24	30888	24	30888
	116	33Kv Post Insulator	No	2054	24	49296	24	49296
	117	Disc insulator 33kV (B&S)120 KN polymer	No	1872		0		0
	118	33KV H/W fitting (B & S) 120KN 4 Bolt	No	677.6		0		0
	119	PG Clamp 232 sqmm All Alloy Aluminum Conductor AAAC	No	1495		0		0
	120	12 bolted (M-12)"T" clamp, 232 sq.mm AAAC run & 230 mm drop	No	1248		0		0
	121	No. 6 GI wire	KG	97.5		0		0
	122	8 SWG GI Wire	KG	97.5		0		0
	123	FLAT GI SIZE 50X6 MM	KG	97.5	275	26812.5	725	70687.5
	124	25x6 GI Stripe	KG	97.5	0	0	75	7312.5
	125	Nut & Bolt & Washer	KG	101.4		0		0
	A	**Total landed Cost (A)**				**7349051.426**		**9904691.088**
	B	Stock, Storage & Insurance i.e **3% of A**				121603.9134		212628.4677
	C	**Sub Total (A+B)**				**7470655.34**		**10117319.56**
	D	Contigency @ 3% of C				125252.0308		219007.3217
	E	Transportation @ 7.5% of C				313130.077		547518.3043
	F	**Sum of (F=C to E)**				**7909037.448**		**10883845.18**
	G	Erection Charges @ 5% of RS Joist,Transformer & WPB pole				0		15384.31072
	H	Erection Charges @ 10% of other items except RSJ				417506.7693		699255.7843
	I	Erection 33-11 KV Outdoor VCB with 3 Core CT	No's	22116.90		66350.7		176935.2
	J	**Erection Charges Sub Total (G+H+I)**				**483857.4693**		**891575.2951**
	K	Sub-Total (K=F+J)				8392894.917		11775420.48
	L	Over Head charges/Departmental including Supervision Charges @ 0% of H				0		0
	M	Total Estimated Cost i.e.]=(H+I)				**8392894.917**		**11775420.48**
	N	GST 18%				1510721.085		2119575.686
	O	CESS 1%				83928.94917		117754.2048
	P	Total of Estimate(K+L+M)				**9987544.951**		**14012750.37**
	Q	**Grand Total**						
	R	**Total Budget for Electrical Work(In Rs. Crores)**				**1.00**		**1.40**

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 # The Unit BoQ for various Project Heads is prepared considering FY 2024-25 & an escalation of 6% is considered for cost estimation for FY 2025-26.

PART A: Unit Bill of Quantity with Cost for Statutory & Safety

Table 1 Cost Estimate for 33 KV Cradle guard at major road crossings

Cost Estimate for 33kV Cradle Guard in Existing Line					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 13 MTR	EA	1	40,427.00	40,427.00
2	Cross arm of 75X40X4.8mm GI Channel 3.7 mtr long 4Nos	Kg	105.67	97.50	10,303.02
3	No. 10 GI wire cross lacing (0.08Kg/mtr)	Kg	1.78	97.50	173.16
4	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	33.26	97.50	3,243.05
5	33kV V cross Arm (GI) for WPB Pole	No	1.00	2,340.00	2,340.00
6	GI Back Clamp for 33kV 'V' Cros Arm for WPB Pole	No	1.00	195.00	195.00
7	Top bracket 100X50X5mm GI channel for 33kV	No	1.00	195.00	195.00
8	Danger Plate, 1 no	No	1	104.00	104.00
9	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
10	GI barbed wire anticlimbing device	Kg	3	104.00	312.00
11	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	1.20	97.50	117.35
12	33kV,10kN pin insulator polymer	No	3	624.00	1,872.00
13	Eye hook	No	4	78.00	312.00
14	Earthing of Support (Coil Type)	No	1	215.80	215.80
15	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.262	97.50	25.55
16	GI Nut , Bolt & Washer of different sizes	Kg	15	101.40	1,483.68
17	H.T. Stay clamp	Pair	2	162.50	325.00
18	H.T 33kV Stay set (Complete)	Set	2	1,365.00	2,730.00
19	H.T Stay Insulator	No	4	65.00	260.00
20	7/8 SWG Stay Wire	Kg	30	97.50	2,925.00
21	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
22	50x6 mm GI flat	Kg	24	97.50	2,340.00
23	Black Paint	Ltr	0.5	286.00	143.00
24	Yellow Colour Paint for Background	L	1	212.77	212.77
A				**Total Cost of materials**	**73,013.71**
B				**Stock, Storage & Insurance i.e 3%**	**2,190.41**
C				**Sub Total C=A+B**	**75,204.12**
D				**Contigency @ 3% of C**	**2,256.12**
E				**Tools & Plants @ 2% of C**	**1,504.08**
F				**Transportation @ 7.5% of C**	**5,640.31**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**2,395.88**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**87,000.52**
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	1	8,458.80	8,458.80
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	2	2,504.25	5,008.50
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
L				**Total Civil Part**	**18,587.10**
M				**Sub-Total M =K+L**	**1,05,587.62**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**1,05,587.62**
P				**GST @ 18% of Sub-Total O**	**19,005.77**
Q				**CESS @ 1% of Sub-Total O**	**1,055.88**
R				**Grand Total R=P+Q**	**1,25,649.27**

Table 2 Cost Estimate for 11 KV Cradle guard at major road crossings

Cost Estimate for 11kV Cradle Guard in Existing Line					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	1	34,321.52	34,321.52
2	Cross arm of 75X40X4.8mm GI Channel 2.2 mtr long 4Nos	Kg	62.83	97.50	6,126.12
3	No. 10 GI wire cross lacing (0.08Kg/mtr)	Kg	1.78	97.50	173.16
4	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	33.26	97.50	3,243.05
5	11kV V cross Arm (GI) for WPB Pole	No	1.00	1,053.00	1,053.00
6	GI Back Clamp for 11kV 'V' Cros Arm for WPB Pole	No	1.00	104.00	104.00
7	Top bracket 100X50X5mm GI channel for 11kV	No	1.00	195.00	195.00
8	Danger Plate, 1 no	No	1	104.00	104.00
9	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
10	GI barbed wire anticlimbing device	Kg	3	104.00	312.00
11	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	1.20	97.50	117.35
12	11kV,5kN pin insulator polymer	No	3	260.00	780.00
13	Eye hook	No	4	78.00	312.00
14	Earthing of Support (Coil Type)	No	1	215.80	215.80
15	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.262	97.50	25.55
16	GI Nut , Bolt & Washer of different sizes	Kg	12	101.40	1,216.80
17	H.T Stay clamp	Pair	2	162.50	325.00
18	H.T 11kV Stay set (Complete)	Set	2	1,365.00	2,730.00
19	H.T Stay Insulator	No	4	65.00	260.00
20	7/10 SWG Stay Wire	Kg	30	97.50	2,925.00
21	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1	1,365.00	1,365.00
22	50x6 mm GI flat	Kg	12	97.50	1,170.00
23	Black Paint	Ltr	0.5	286.00	143.00
24	Yellow Colour Paint for Background	L	1	212.77	212.77
A				**Total Cost of materials**	**57,459.45**
B				**Stock, Storage & Insurance i.e 3%**	**1,723.78**
C				**Sub Total C=A+B**	**59,183.23**
D				**Contigency @ 3% of C**	**1,775.50**
E				**Tools & Plants @ 2% of C**	**1,183.66**
F				**Transportation @ 7.5% of C**	**4,438.74**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**1,563.25**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**68,144.38**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	1	6,678.00	6,678.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	2	2,504.25	5,008.50
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1	2,559.90	2,559.90
L				**Total Civil Part**	**14,246.40**
M				**Sub-Total M =K+L**	**82,390.78**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**82,390.78**
P				**GST @ 18% of Sub-Total O**	**14,830.34**
Q				**CESS @ 1% of Sub-Total O**	**823.91**
R				**Grand Total R=P+Q**	**98,045.03**

Table 3 Cost Estimate for Intermediate poles for vulnerable location (33kv Line) 13 Mtr WPB Pole

Cost Estimate for 33kV,13Mtr WPB Intermediate Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 13 MTR	EA	1	40,427.00	40,427.00
2	33kV V cross Arm (GI) for WPB Pole	No	1.00	2,340.00	2,340.00
3	GI Back Clamp for 33kV 'V' Cros Arm for WPB Pole	No	1.00	195.00	195.00
4	Top bracket 100X50X5mm GI channel for 33kV	No	1.00	195.00	195.00
5	Danger Plate, 1 no	No	1.00	104.00	104.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
7	GI barbed wire anticlimbing device	Kg	3.00	104.00	312.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	1.2036	97.50	117.35
9	33kV,10kN pin insulator polymer	No	3.00	624.00	1,872.00
10	Earthing of Support (Coil Type)	No	1	215.80	215.80
11	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.26	97.50	25.55
12	GI Nut , Bolt & Washer of different sizes	Kg	1.45	101.40	147.03
13	Black Paint	Ltr	0.5	286.00	143.00
14	Yellow Colour Paint for Background	L	1	212.77	212.77
A				**Total Cost of materials**	46,335.83
B				**Stock, Storage & Insurance i.e 3%**	1,390.08
C				**Sub Total C=A+B**	47,725.91
D				**Contigency @ 3% of C**	1,431.78
E				**Tools & Plants @ 2% of C**	954.52
F				**Transportation @ 7.5% of C**	3,579.44
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	571.97
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	54,263.61
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	1	8,458.80	8,458.80
L				**Total Civil Part**	**8,458.80**
M				**Sub-Total M =K+L**	**62,722.41**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**62,722.41**
P				**GST @ 18% of Sub-Total O**	**11,290.03**
Q				**CESS @ 1% of Sub-Total O**	**627.22**
R				**Grand Total R=P+Q**	**74,639.67**

Table 4 Cost Estimate for Intermediate poles for vulnerable location (33kv Line) 11 Mtr WPB Pole

Cost Estimate for 33kV,11Mtr WPB Intermediate Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	1	34,321.52	34,321.52
2	33kV V cross Arm (GI) for WPB Pole	No	1.00	2,340.00	2,340.00
3	GI Back Clamp for 33kV 'V' Cros Arm for WPB Pole	No	1.00	195.00	195.00
4	Top bracket 100X50X5mm GI channel for 33kV	No	1.00	195.00	195.00
5	Danger Plate, 1 no	No	1	104.00	104.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
7	GI barbed wire anticlimbing device	Kg	3	104.00	312.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	1.20	97.50	117.35
9	33kV,10kN pin insulator polymer	No	3	624.00	1,872.00
10	Earthing of Support (Coil Type)	No	1	215.80	215.80
11	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.262	97.50	25.55
12	GI Nut , Bolt & Washer of different sizes	Kg	1.45	101.40	147.03
13	Black Paint	Ltr	0.5	286.00	143.00
14	Yellow Colour Paint for Background	L	1	212.77	212.77
A				**Total Cost of materials**	**40,230.35**
B				**Stock, Storage & Insurance i.e 3%**	**1,206.91**
C				**Sub Total C=A+B**	**41,437.26**
D				**Contigency @ 3% of C**	**1,243.12**
E				**Tools & Plants @ 2% of C**	**828.75**
F				**Transportation @ 7.5% of C**	**3,107.79**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**571.97**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**47,188.89**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	1	6,678.00	6,678.00
L				**Total Civil Part**	**6,678.00**
M				**Sub-Total M =K+L**	**53,866.89**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**53,866.89**
P				**GST @ 18% of Sub-Total O**	**9,696.04**
Q				**CESS @ 1% of Sub-Total O**	**538.67**
R				**Grand Total R=P+Q**	**64,101.60**

Table 5 Cost Estimate for Intermediate poles for vulnerable location (33kv Line) 10 Mtr PSC Pole

Cost Estimate for 33kV,10Mtr PSC Intermediate Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 10 METER 330 KG	No	1	8,450.00	8,450.00
2	RCC base Plate	EA	1	408.00	408.00
3	33kV V cross Arm (GI)	No	1	2,340.00	2,340.00
4	GI Back Clamp for 33kV 'V' Cros Arm	No	1	195.00	195.00
5	Top bracket 100X50X5mm GI channel for 33kV	No	1	195.00	195.00
6	Danger Plate, 1 no	No	1	104.00	104.00
7	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
8	GI barbed wire anticlimbing device	Kg	3	104.00	312.00
9	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	1.20	97.50	117.35
10	33kV,10kN pin insulator polymer	No	3	624.00	1,872.00
11	Earthing of Support (Coil Type)	No	1	215.80	215.80
12	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.262	97.50	25.55
13	GI Nut , Bolt & Washer of different sizes	Kg	1.45	101.40	147.03
14	Black Paint	Ltr	0.5	286.00	143.00
15	Yellow Colour Paint for Background	L	1	212.77	212.77
A				**Total Cost of materials**	**14,766.83**
B				**Stock, Storage & Insurance i.e 3%**	**443.01**
C				**Sub Total C=A+B**	**15,209.84**
D				**Contigency @ 3% of C**	**456.30**
E				**Tools & Plants @ 2% of C**	**304.20**
F				**Transportation @ 7.5% of C**	**1,140.74**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**613.99**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**17,725.06**
	Civil & Services				
	Installation/Erection of 10 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1600 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	1	7,420.00	7,420.00
L				**Total Civil Part**	**7,420.00**
M				**Sub-Total M=K+L**	**25,145.06**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**25,145.06**
P				**GST @ 18% of Sub-Total O**	**4,526.11**
Q				**CESS @ 1% of Sub-Total O**	**251.45**
R				**Grand Total R=P+Q**	**29,922.62**

Table 6 Cost Estimate for Intermediate poles for vulnerable location (11kv Line) 13 Mtr WPB Pole

Cost Estimate for 11kV,13Mtr WPB Intermediate Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 13 MTR	EA	1	40,427.00	40,427.00
2	11kV V cross Arm (GI) for WPB Pole	No	1.00	1,053.00	1,053.00
3	GI Back Clamp for 11kV 'V' Cros Arm for WPB Pole	No	1.00	104.00	104.00
4	Top bracket 100X50X5mm GI channel for 11kV	No	1.00	195.00	195.00
5	Danger Plate, 1 no	No	1	104.00	104.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
7	GI barbed wire anticlimbing device	Kg	3	104.00	312.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	1.20	97.50	117.35
9	11kV,5kN pin insulator polymer	No	3	260.00	780.00
10	Earthing of Support (Coil Type)	No	1	215.80	215.80
11	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.262	97.50	25.55
12	GI Nut , Bolt & Washer of different sizes	Kg	1.45	101.40	147.03
13	Black Paint	Ltr	0.5	286.00	143.00
14	Yellow Colour Paint for Background	L	1	212.77	212.77
A				**Total Cost of materials**	**43,865.83**
B				**Stock, Storage & Insurance i.e 3%**	**1,315.98**
C				**Sub Total C=A+B**	**45,181.81**
D				**Contigency @ 3% of C**	**1,355.45**
E				**Tools & Plants @ 2% of C**	**903.64**
F				**Transportation @ 7.5% of C**	**3,388.64**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**317.56**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**51,147.09**
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	1	8,458.80	8,458.80
L				**Total Civil Part**	**8,458.80**
M				**Sub-Total M =K+L**	**59,605.89**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**59,605.89**
P				**GST @ 18% of Sub-Total O**	**10,729.06**
Q				**CESS @ 1% of Sub-Total O**	**596.06**
R				**Grand Total R=P+Q**	**70,931.01**

Table 7 Cost Estimate for Intermediate poles for vulnerable location (11kv Line) 11 Mtr WPB Pole

Cost Estimate for 11kV,11Mtr WPB Intermediate Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	1	34,321.52	34,321.52
2	11kV V cross Arm (GI) for WPB Pole	No	1.00	1,053.00	1,053.00
3	GI Back Clamp for 11kV 'V' Cros Arm for WPB Pole	No	1.00	104.00	104.00
4	Top bracket 100X50X5mm GI channel for 11kV	No	1.00	195.00	195.00
5	Danger Plate, 1 no	No	1	104.00	104.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
7	GI barbed wire anticlimbing device	Kg	3	104.00	312.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	1.20	97.50	117.35
9	11kV,5kN pin insulator polymer	No	3	260.00	780.00
10	Earthing of Support (Coil Type)	No	1	215.80	215.80
11	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.262	97.50	25.55
12	GI Nut , Bolt & Washer of different sizes	Kg	1.45	101.40	147.03
13	Black Paint	Ltr	0.5	286.00	143.00
14	Yellow Colour Paint for Background	L	1	212.77	212.77
A				**Total Cost of materials**	**37,760.35**
B				**Stock, Storage & Insurance i.e 3%**	**1,132.81**
C				**Sub Total C=A+B**	**38,893.16**
D				**Contigency @ 3% of C**	**1,166.79**
E				**Tools & Plants @ 2% of C**	**777.86**
F				**Transportation @ 7.5% of C**	**2,916.99**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**317.56**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**44,072.37**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	1	6,678.00	6,678.00
L				**Total Civil Part**	**6,678.00**
M				**Sub-Total M =K+L**	**50,750.37**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**50,750.37**
P				**GST @ 18% of Sub-Total O**	**9,135.07**
Q				**CESS @ 1% of Sub-Total O**	**507.50**
R				**Grand Total R=P+Q**	**60,392.93**

Table 8 Cost Estimate for Intermediate poles for vulnerable location (11kv Line) 9 Mtr WPB Pole

Cost Estimate for 11kV,9Mtr WPB Intermediate Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 9 MTR	EA	1	28,081.24	28,081.24
2	11kV V cross Arm (GI) for WPB Pole	No	1.00	1,053.00	1,053.00
3	GI Back Clamp for 11kV 'V' Cros Arm for WPB Pole	No	1.00	104.00	104.00
4	Top bracket 100X50X5mm GI channel for 11kV	No	1.00	195.00	195.00
5	Danger Plate, 1 no	No	1	104.00	104.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
7	GI barbed wire anticlimbing device	Kg	3	104.00	312.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	1.20	97.50	117.35
9	11kV,5kN pin insulator polymer	No	3	260.00	780.00
10	Earthing of Support (Coil Type)	No	1	215.80	215.80
11	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.262	97.50	25.55
12	GI Nut , Bolt & Washer of different sizes	Kg	1.45	101.40	147.03
13	Black Paint	Ltr	0.5	286.00	143.00
14	Yellow Colour Paint for Background	L	1	212.77	212.77
A				**Total Cost of materials**	**31,520.08**
B				**Stock, Storage & Insurance i.e 3%**	**945.60**
C				**Sub Total C=A+B**	**32,465.68**
D				**Contigency @ 3% of C**	**973.97**
E				**Tools & Plants @ 2% of C**	**649.31**
F				**Transportation @ 7.5% of C**	**2,434.93**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**317.56**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**36,841.45**
	Civil & Services				
	Installation/Erection of (GI coated 116X 100mm WPB (9 Mtr long) (23 kg Per meter) (Each 207 kg)) Pole including loading and unloading, transportation from site/tent upto 6 Kms., excavation, fixing of base plate, fixing of clamps, iron fittings, steel fabricated work (Angle installation), refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of 1:1:5:3 cement concrete, and Painting of Pole (In Black & Yellow Strips/Zebra) .As per drawing.	EA	1	7,234.50	7,234.50
L				**Total Civil Part**	**7,234.50**
M				**Sub-Total M=K+L**	**44,075.95**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**44,075.95**
P				**GST @ 18% of Sub-Total O**	**7,933.67**
Q				**CESS @ 1% of Sub-Total O**	**440.76**
R				**Grand Total R=P+Q**	**52,450.37**

Table 9 Cost Estimate for Intermediate poles for vulnerable location (11kv Line) 9 Mtr PSC Pole

Cost Estimate for 11kV,9Mtr PSC Intermediate Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 9 METER 300 KG	No	1	3,900.00	3,900.00
2	RCC base Plate	EA	1	408.00	408.00
3	11kV V cross Arm (GI) for WPB Pole	No	1.00	1,053.00	1,053.00
4	GI Back Clamp for 11kV 'V' Cros Arm for WPB Pole	No	1.00	104.00	104.00
5	Top bracket 100X50X5mm GI channel for 11kV	No	1.00	195.00	195.00
6	Danger Plate, 1 no	No	1	104.00	104.00
7	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
8	GI barbed wire anticlimbing device	Kg	3	104.00	312.00
9	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	1.20	97.50	117.35
10	11kV,5kN pin insulator polymer	No	3	260.00	780.00
11	Earthing of Support (Coil Type)	No	1	215.80	215.80
12	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.262	97.50	25.55
13	GI Nut , Bolt & Washer of different sizes	Kg	1.45	101.40	147.03
14	Black Paint	Ltr	0.5	286.00	143.00
15	Yellow Colour Paint for Background	L	1	212.77	212.77
A				**Total Cost of materials**	**7,746.83**
B				**Stock, Storage & Insurance i.e 3%**	**232.41**
C				**Sub Total C=A+B**	**7,979.24**
D				**Contigency @ 3% of C**	**239.38**
E				**Tools & Plants @ 2% of C**	**159.58**
F				**Transportation @ 7.5% of C**	**598.44**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**359.58**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**9,336.22**
	Civil & Services				
	Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	1	6,678.00	6,678.00
L				**Total Civil Part**	**6,678.00**
M				**Sub-Total M=K+L**	**16,014.22**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**16,014.22**
P				**GST @ 18% of Sub-Total O**	**2,882.56**
Q				**CESS @ 1% of Sub-Total O**	**160.14**
R				**Grand Total R=P+Q**	**19,056.93**

Table 10 Cost Estimate for Intermediate poles for vulnerable location (LT Line) 11 Mtr WPB Pole

Cost Estimate for LT,11Mtr WPB Intermediate Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	1	34,321.52	34,321.52
2	BOARD DANGER 400/440 VOLT	No	1	104.00	104.00
3	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
4	GI barbed wire anticlimbing device	Kg	3.00	104.00	312.00
5	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	0.30	97.50	29.34
6	Pole clamp for EYE hook for XLPE Aerial bunched Cable	Pair	1.00	260.00	260.00
7	Suspension Clamp	Pair	1.00	442.00	442.00
8	Eye hook	No	1.00	78.00	78.00
9	Earthing of Support (Coil Type)	No	1	215.80	215.80
10	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.26	97.50	25.55
11	GI Nut , Bolt & Washer of different sizes	Kg	1	101.40	101.40
12	Black Paint	Ltr	0.5	286.00	143.00
13	Yellow Colour Paint for Background	L	1	212.77	212.77
A				**Total Cost of materials**	**36,274.71**
B				**Stock, Storage & Insurance i.e 3%**	**1,088.24**
C				**Sub Total C=A+B**	**37,362.95**
D				**Contigency @ 3% of C**	**1,120.89**
E				**Tools & Plants @ 2% of C**	**747.26**
F				**Transportation @ 7.5% of C**	**2,802.22**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**164.53**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**42,197.86**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	1	6,678.00	6,678.00
L				**Total Civil Part**	**6,678.00**
M				**Sub-Total M =K+L**	**48,875.86**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**48,875.86**
P				**GST @ 18% of Sub-Total O**	**8,797.65**
Q				**CESS @ 1% of Sub-Total O**	**488.76**
R				**Grand Total R=P+Q**	**58,162.27**

Table 11 Cost Estimate for Intermediate poles for vulnerable location (LT Line) 9 Mtr PSC Pole

Cost Estimate for LT, 9Mtr PSC Intermediate Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 9 METER 300 KG	No	1	3,900.00	3,900.00
2	RCC base Plate	EA	1	408.00	408.00
3	BOARD DANGER 400/440 VOLT	No	1.00	104.00	104.00
4	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
5	GI barbed wire anticlimbing device	Kg	3.00	104.00	312.00
6	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	0.30	97.50	29.34
7	Pole clamp for EYE hook for XLPE Aerial bunched Cable	Pair	1.00	260.00	260.00
8	Suspension Clamp	Pair	1.00	442.00	442.00
9	Eye hook	No	1.00	78.00	78.00
10	Earthing of Support (Coil Type)	No	1	215.80	215.80
11	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.26	97.50	25.55
12	GI Nut , Bolt & Washer of different sizes	Kg	1	101.40	101.40
13	Black Paint	Ltr	0.5	286.00	143.00
14	Yellow Colour Paint for Background	L	1	212.77	212.77
A				**Total Cost of materials**	**6,261.19**
B				**Stock, Storage & Insurance i.e 3%**	**187.84**
C				**Sub Total C=A+B**	**6,449.03**
D				**Contigency @ 3% of C**	**193.47**
E				**Tools & Plants @ 2% of C**	**128.98**
F				**Transportation @ 7.5% of C**	**483.68**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**206.56**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**7,461.71**
	Civil & Services				
	Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	1	6,678.00	6,678.00
L				**Total Civil Part**	**6,678.00**
M				**Sub-Total M =K+L**	**14,139.71**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**14,139.71**
P				**GST @ 18% of Sub-Total O**	**2,545.15**
Q				**CESS @ 1% of Sub-Total O**	**141.40**
R				**Grand Total R=P+Q**	**16,826.26**

Table 12 Cost Estimate for Intermediate poles for vulnerable location (LT Line) 8 Mtr PSC Pole

Cost Estimate for LT,8Mtr PSC Intermediate Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 8 METER 200 KG	No	1	2,600.00	2,600.00
2	RCC base Plate	EA	1	408.00	408.00
3	BOARD DANGER 400/440 VOLT	No	1.00	104.00	104.00
4	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
5	GI barbed wire anticlimbing device	Kg	3.00	104.00	312.00
6	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	0.30	97.50	29.34
7	Pole clamp for EYE hook for XLPE Aerial bunched Cable	Pair	1.00	260.00	260.00
8	Suspension Clamp	Pair	1.00	442.00	442.00
9	Eye hook	No	1.00	78.00	78.00
10	Earthing of Support (Coil Type)	No	1	215.80	215.80
11	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.26	97.50	25.55
12	GI Nut , Bolt & Washer of different sizes	Kg	1	101.40	101.40
13	Black Paint	Ltr	0.5	286.00	143.00
14	Yellow Colour Paint for Background	L	1	212.77	212.77
A				**Total Cost of materials**	**4,961.19**
B				**Stock, Storage & Insurance i.e 3%**	**148.84**
C				**Sub Total C=A+B**	**5,110.03**
D				**Contigency @ 3% of C**	**153.30**
E				**Tools & Plants @ 2% of C**	**102.20**
F				**Transportation @ 7.5% of C**	**383.25**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**206.56**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**5,955.34**
	Civil & Services				
	Installation/Erection of 8 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size 500x500x1400 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	1	4,856.24	4,856.24
L				**Total Civil Part**	**4,856.24**
M				**Sub-Total M=K+L**	**10,811.58**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**10,811.58**
P				**GST @ 18% of Sub-Total O**	**1,946.08**
Q				**CESS @ 1% of Sub-Total O**	**108.12**
R				**Grand Total R=P+Q**	**12,865.78**

Table 13 Cost Estimate for 4-Pole Arrangement for unsafe N-1 connection

Cost Estimate of 11kV Four Pole Arrangement for N-1 Connection					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	4	34,321.52	1,37,286.08
2	Top Channel 100X50X5mm,each channel length 3.25 mtr	Kg	279.63	97.50	27,263.93
3	AB Switch mounting Channel 100X50X5mm GI channel 3.0mtr long	Kg	114.72	97.50	11,185.20
4	Double Pole Belting Channel 75X40X 4.8mm.,each channel length 3.0 Mtr.	Kg	171.36	97.50	16,707.60
5	50X50X6mm.GI Bracing Angle, each angle length 3.512 mtr	Kg	126.43	97.50	12,327.12
6	AB Switch Side Support Channel 100X50X5mm,each channel length 0.35 mtr.	Kg	13.38	97.50	1,304.94
7	Channel Support for down Pipe 75X40X4.8mm., each channel length 0.8 Mtr.	Kg	11.42	97.50	1,113.84
8	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	5.28	97.50	514.33
9	Danger Plate, 1 no	No	4	104.00	416.00
10	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	1.20	97.50	117.35
11	GI barbed wire anticlimbing device	Kg	12	104.00	1,248.00
12	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	4.81	97.50	469.40
13	11kV,5kN pin insulator polymer	No	3	260.00	780.00
14	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	6	455.00	2,730.00
15	11kV Disc insulator (B&S) 70KN polymer	No	6	1,495.00	8,970.00
16	11kV AB Switch 400A 3pole 50Hz Horizontal Type	Set	2	15,405.00	30,810.00
17	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
18	Earthing of Support (Coil Type)	No	4	215.80	863.20
19	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	1.05	97.50	102.18
20	CLAMP PG FOR 100 SQMM CONDUCTOR	No	6	754.00	4,524.00
21	GI Nut , Bolt & Washer of different sizes	Kg	96.5	101.40	9,785.10
22	H.T Stay clamp	Pair	4	162.50	650.00
23	H.T 11kV Stay set (Complete)	Set	4	1,365.00	5,460.00
24	H.T Stay Insulator	No	4	65.00	260.00
25	7/10 SWG Stay Wire	Kg	40	97.50	3,900.00
26	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1	1,365.00	1,365.00
27	CONDUCTOR 100 SQMM AAA	Mtr	20.00	71.50	1,430.00
28	50x6 mm GI flat	Kg	40	97.50	3,900.00
29	Black Paint	Ltr	2	286.00	572.00
30	Yellow Colour Paint for Background	L	4	212.77	851.08
A				**Total Cost of materials**	**2,90,806.35**
B				**Stock, Storage & Insurance i.e 3%**	**8,724.19**
C				**Sub Total C=A+B**	**2,99,530.54**
D				**Contigency @ 3% of C**	**8,985.92**
E				**Tools & Plants @ 2% of C**	**5,990.61**
F				**Transportation @ 7.5% of C**	**22,464.79**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**14,467.61**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**3,51,439.47**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	4	6,678.00	26,712.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	4	2,504.25	10,017.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1	2,559.90	2,559.90
L				**Total Civil Part**	**39,288.90**
M				**Sub-Total M =K+L**	**3,90,728.37**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**3,90,728.37**
P				**GST @ 18% of Sub-Total O**	**70,331.11**
Q				**CESS @ 1% of Sub-Total O**	**3,907.28**
R				**Grand Total R=P+Q**	**4,64,966.76**

PART B: Unit Bill of Quantity with Cost for Loss Reduction

Table 14 Cost Estimate for LT Bare to ABC Conversion (95 sqmm) AB Cable

Cost Estimate for LT Bare to ABC of 4X95+1X95+1X16 mm2					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 9 METER 300 KG	No	8	3,900.00	31,200.00
2	1.1KV LT AB Cable 4x95+1x95+1x16mm2	KM	1.03	3,68,637.85	3,79,696.99
3	RCC base Plate	EA	8	408.00	3,264.00
4	BOARD DANGER 400/440 VOLT	No	8	104.00	832.00
5	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	2.41	97.50	234.70
6	GI barbed wire anticlimbing device	Kg	24.00	104.00	2,496.00
7	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
8	Pole clamp for EYE hook for XLPE Aerial bunched Cable	Pair	8.00	260.00	2,080.00
9	Suspension Clamp	Pair	8.00	442.00	3,536.00
10	Eye hook	No	8.00	78.00	624.00
11	Earthing of Support (Coil Type)	No	8	215.80	1,726.40
12	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	2	97.50	204.36
13	LT Distribution Box Polycarbonate	EA	13	925.00	12,025.00
14	Cap cable end	EA	48	192.79	9,253.94
15	IPC 50-150, 50-150 SQ.MM ST.LT Type A	EA	12	50.00	600.00
16	IPC EP 95 LT ABC 16-95 & 1.5-16 SQMM ST.LT Type C	No	3	104.00	312.00
17	IPC KZ 2X150 LTABC 25-150 & 6-35(50) sqmm Type B	No	3	52.00	156.00
18	STEEL STRAP SIZE 20 MMX50 M LONG	ROL	4	1,564.71	6,258.83
19	BUCKLES FOR STEEL STRAP (1 EA = 100 NOS)	EA	4	705.00	2,820.00
20	Cable 1.1kV Al 4CX25 Sq.mm Armoured	M	52	175.42	9,121.84
21	Gland for 1.1kV Al 4CX25 Sq.mm	EA	13	369.00	4,797.00
22	GI Nut , Bolt & Washer of different sizes	Kg	4	101.40	405.60
23	Lug AL Crimping 25 Sqmm XLPE Single hole	EA	52	4.77	248.04
24	FRP CROSS ARM 1070MM 415V	EA	26	981.49	25,518.74
25	2C X 4sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	200	49.76	9,952.00
26	2C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	100	75.16	7,516.00
27	4C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	100	95.42	9,542.00
28	Tie Plastic Black size 7.6mmX380mm	Lot	40	420.00	16,800.00
29	Tie Plastic size 9mmX265mm	Lot	60	735.00	44,100.00
30	Black Paint	Ltr	4	286.00	1,144.00
31	Yellow Colour Paint for Background	L	8	212.77	1,702.16
A				**Total Cost of materials**	**5,88,402.31**
B				**Stock, Storage & Insurance i.e 3%**	**17,652.07**
C				**Sub Total C=A+B**	**6,06,054.38**
D				**Contigency @ 3% of C**	**18,181.63**
E				**Tools & Plants @ 2% of C**	**12,121.09**
F				**Transportation @ 7.5% of C**	**45,454.08**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**57,098.68**
I				**Erection PSC Pole @ 20%**	**6,427.20**
K				**Sub Total K=C+D+E+F+G+H+I**	**7,45,337.06**
	Civil & Services				
	Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	8	6,678.00	53,424.00
	Dismantling of 9/8 Mtr. PCC/Joist Pole (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km/site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	3	945.00	2,835.00
	Dismantling of varous size of LT AB Cable from over head line, recoiling, loading,transportation, unloading and staking at a proper place in safe position/BA site store.	M	1030	23.63	24,333.75
L				**Total Civil Part**	**80,592.75**
M				**Sub-Total M =K+L**	**8,25,929.81**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**8,25,929.81**
P				**GST @ 18% of Sub-Total O**	**1,48,667.37**
Q				**CESS @ 1% of Sub-Total O**	**8,259.30**
R				**Grand Total R=P+Q**	**9,82,856.47**

Table 15 Cost Estimate for LT Bare to ABC Conversion (50 sqmm) AB Cable

Cost Estimate for LT Bare to ABC of 4X50+1X50+1X16 mm2					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 9 METER 300 KG	No	8	3,900.00	31,200.00
2	1.1KV LT AB Cable 4x50+1x50+1x16mm2	KM	1.03	1,98,018.01	2,03,958.55
3	RCC base Plate	EA	8	408.00	3,264.00
4	BOARD DANGER 400/440 VOLT	No	8	104.00	832.00
5	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	2.41	97.50	234.70
6	GI barbed wire anticlimbing device	Kg	24.00	104.00	2,496.00
7	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
8	Pole clamp for EYE hook for XLPE Aerial bunched Cable	Pair	8.00	260.00	2,080.00
9	Suspension Clamp	Pair	8.00	442.00	3,536.00
10	Eye hook	No	8.00	78.00	624.00
11	Earthing of Support (Coil Type)	No	8	215.80	1,726.40
12	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	2	97.50	204.36
13	LT Distribution Box Polycarbonate	EA	13	925.00	12,025.00
14	Cap cable end	EA	48	192.79	9,253.94
15	IPC 50-150, 50-150 SQ.MM ST.LT Type A	EA	12	50.00	600.00
16	IPC EP 95 LT ABC 16-95 & 1.5-16 SQMM ST.LT Type C	No	3	104.00	312.00
17	IPC KZ 2X150 LTABC 25-150 & 6-35(50) sqmm Type B	No	3	52.00	156.00
18	STEEL STRAP SIZE 20 MMX50 M LONG	ROL	4	1,564.71	6,258.83
19	BUCKLES FOR STEEL STRAP (1 EA = 100 NOS)	EA	4	705.00	2,820.00
20	Cable 1.1kV Al 4CX25 Sq.mm Armoured	M	52	175.42	9,121.84
21	Gland for 1.1kV Al 4CX25 Sq.mm	EA	13	369.00	4,797.00
22	GI Nut , Bolt & Washer of different sizes	Kg	4	101.40	405.60
23	Lug AL Crimping 25 Sqmm XLPE Single hole	EA	52	4.77	248.04
24	FRP CROSS ARM 1070MM 415V	EA	26	1,040.38	27,049.86
25	2C X 4sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	200	49.76	9,952.00
26	2C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	100	75.16	7,516.00
27	4C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	100	95.42	9,542.00
28	Tie Plastic Black size 7.6mmX380mm	Lot	40	420.00	16,800.00
29	Tie Plastic size 9mmX265mm	Lot	60	735.00	44,100.00
30	Black Paint	Ltr	4	286.00	1,144.00
31	Yellow Colour Paint for Background	L	8	212.77	1,702.16
A				**Total Cost of materials**	**4,14,195.00**
B				**Stock, Storage & Insurance i.e 3%**	**12,425.85**
C				**Sub Total C=A+B**	**4,26,620.85**
D				**Contigency @ 3% of C**	**12,798.63**
E				**Tools & Plants @ 2% of C**	**8,532.42**
F				**Transportation @ 7.5% of C**	**31,996.56**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**39,155.33**
I				**Erection PSC Pole @ 20%**	**6,427.20**
K				**Sub Total K=C+D+E+F+G+H+I**	**5,25,530.98**
	Civil & Services				
	Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	8	6,678.00	53,424.00
	Dismantling of 9/8 Mtr. PCC/Joist Pole (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	3	945.00	2,835.00
	Dismantling of varous size of LT AB Cable from over head line, recoiling, loading,transportation, unloading and staking at a proper place in safe position/BA site store.	M	1030	23.63	24,333.75
L				**Total Civil Part**	**80,592.75**
M				**Sub-Total M =K+L**	**6,06,123.73**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**6,06,123.73**
P				**GST @ 18% of Sub-Total O**	**1,09,102.27**
Q				**CESS @ 1% of Sub-Total O**	**6,061.24**
R				**Grand Total R=P+Q**	**7,21,287.24**

Table 16 Cost Estimate for LT Bare to ABC Conversion (35 sqmm) AB Cable

Cost Estimate for LT Bare to ABC of 4X35+1X35+1X16 mm2					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 9 METER 300 KG	No	8	3,900.00	31,200.00
2	1.1KV LT AB Cable 4x35+1x35+1x16mm2	KM	1.03	1,61,083.00	1,65,915.49
3	RCC base Plate	EA	8	408.00	3,264.00
4	BOARD DANGER 400/440 VOLT	No	8	104.00	832.00
5	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	2.41	97.50	234.70
6	GI barbed wire anticlimbing device	Kg	24.00	104.00	2,496.00
7	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
8	Pole clamp for EYE hook for XLPE Aerial bunched Cable	Pair	8.00	260.00	2,080.00
9	Suspension Clamp	Pair	8.00	442.00	3,536.00
10	Eye hook	No	8.00	78.00	624.00
11	Earthing of Support (Coil Type)	No	8	215.80	1,726.40
12	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	2	97.50	204.36
13	LT Distribution Box Polycarbonate	EA	13	925.00	12,025.00
14	Cap cable end	EA	48	192.79	9,253.94
15	IPC 50-150, 50-150 SQ.MM ST.LT Type A	EA	12	50.00	600.00
16	IPC EP 95 LT ABC 16-95 & 1.5-16 SQMM ST.LT Type C	No	3	104.00	312.00
17	IPC KZ 2X150 LTABC 25-150 & 6-35(50) sqmm Type B	No	3	52.00	156.00
18	STEEL STRAP SIZE 20 MMX50 M LONG	ROL	4	1,564.71	6,258.83
19	BUCKLES FOR STEEL STRAP (1 EA = 100 NOS)	EA	4	705.00	2,820.00
20	Cable 1.1kV Al 4CX25 Sq.mm Armoured	M	52	175.42	9,121.84
21	Gland for 1.1kV Al 4CX25 Sq.mm	EA	13	369.00	4,797.00
22	GI Nut , Bolt & Washer of different sizes	Kg	4	101.40	405.60
23	Lug AL Crimping 25 Sqmm XLPE Single hole	EA	52	4.77	248.04
24	FRP CROSS ARM 1070MM 415V	EA	26	1,040.38	27,049.86
25	2C X 4sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	200	49.76	9,952.00
26	2C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	100	75.16	7,516.00
27	4C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	100	95.42	9,542.00
28	Tie Plastic Black size 7.6mmX380mm	Lot	40	420.00	16,800.00
29	Tie Plastic size 9mmX265mm	Lot	60	735.00	44,100.00
30	Black Paint	Ltr	4	286.00	1,144.00
31	Yellow Colour Paint for Background	L	8	212.77	1,702.16
A				**Total Cost of materials**	**3,76,151.94**
B				**Stock, Storage & Insurance i.e 3%**	**11,284.56**
C				**Sub Total C=A+B**	**3,87,436.49**
D				**Contigency @ 3% of C**	**11,623.09**
E				**Tools & Plants @ 2% of C**	**7,748.73**
F				**Transportation @ 7.5% of C**	**29,057.74**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**35,236.89**
I				**Erection PSC Pole @ 20%**	**6,427.20**
K				**Sub Total K=C+D+E+F+G+H+I**	**4,77,530.15**
	Civil & Services				
	Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	8	6,678.00	53,424.00
	Dismantling of 9/8 Mtr. PCC/Joist Pole (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km/site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	3	945.00	2,835.00
	Dismantling of varous size of LT AB Cable from over head line, recoiling, loading,transportation, unloading and staking at a proper place in safe position/BA site store.	M	1030	23.63	24,333.75
L				**Total Civil Part**	**80,592.75**
M				**Sub-Total M=K+L**	**5,58,122.90**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**5,58,122.90**
P				**GST @ 18% of Sub-Total O**	**1,00,462.12**
Q				**CESS @ 1% of Sub-Total O**	**5,581.23**
R				**Grand Total R=P+Q**	**6,64,166.25**

Table 17 Cost Estimate for 33 KV Feeder Meter for Energy Audit without Double Pole Structure

Sl.No.	Items Description	UOM	QTY	Units Cost (with GST) in Rs	Total Cost in Rs.
1	Supply 33KV Smart Meter (1-2A)	Nos	1	11254.70	11254.70
2	IC of 33KV Smart Meter	Nos	1	8090.17	8090.17
3	Supply of 33KV MU (400/5A)	Nos	1	104145.00	104145.00
4	ITC of 33KV MU	Nos	1	16439.00	16439.00
5	SITC of DP without DP Structure	Nos	1	29939.01	29939.01
Total Unit Price without DP in Rs.					**169867.88**

Table 18 Cost Estimate for 33 KV Feeder Meter for Energy Audit without Double Pole Structure

Sl.No.	Items Description	UOM	QTY	Units Cost (with GST) in Rs	Total Cost in Rs.
1	Supply 33KV Smart Meter (1-2A)	Nos	1	11254.70	11254.70
2	IC of 33KV Smart Meter	Nos	1	8090.17	8090.17
3	Supply of 33KV MU (400/5A)	Nos	1	104145.00	104145.00
4	ITC of 33KV MU	Nos	1	16439.00	16439.00
5	SITC of DP with DP Structure	Nos	1	67272.9848	67272.98
Total Unit Price with DP in Rs.					**207201.86**

PART C: Unit Bill of Quantity with Cost for Network Reliability

Table 19 Cost Estimate for 33/0.433KV 100 KVA Station Transformer

Cost Estimate for Installation of 33/0.433KV 100kVA Station Transformer					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	100 KVA 33/0.43KV(Al) Transformer	No	1	3,53,600.00	3,53,600.00
2	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
3	Top Channel 100X50X5mm, each channel length 4.3 mtr.	Kg	82.22	97.50	8,016.06
4	AB Switch mounting Bracket 75X40X4.8mm GI Channel length 4.3 mtr	Kg	61.40	97.50	5,986.89
5	HG Fuse mounting channel 75X40X4.8mm of length 4.3 mtr	Kg	61.40	97.50	5,986.89
6	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	42.84	97.50	4,176.90
7	33kV Disc insulator (B&S) 120KN polymer	No	3.00	1,872.00	5,616.00
8	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	3.00	677.60	2,032.80
9	33kV AB Switch 200A 3Pole 50Hz Horizontal Type	Set	1.00	19,630.00	19,630.00
10	HG Fuse(33KV 200A 3 Pole 50Hz) with PI	Set	1.00	16,861.00	16,861.00
11	Lightning Arrester (30kV,10kA) (Station Class,Class 2)	No	3.00	13,455.00	40,365.00
12	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
13	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
14	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
15	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
16	LT Distribution Box with MCCB for 100KVA S/S	EA	1	45,400.00	45,400.00
17	Earthing of Support (Coil Type)	No	2	215.80	431.60
18	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	1	97.50	51.09
19	H.T. Stay clamp	Pair	2	162.50	325.00
20	H.T 33kV Stay set (Complete)	Set	2	1,365.00	2,730.00
21	H.T Stay Insulator	No	2	65.00	130.00
22	7/8 SWG Stay Wire	Kg	20	97.50	1,950.00
23	1.1kV Al 1CX150 Sq.mm Un-armoured Cable	M	32	155.20	4,966.40
24	Gland for 1.1kV Al 1CX150 Sq.mm	EA	4	128.30	513.20
25	Lug AL Crimping 150 Sqmm XLPE Single hole	EA	4	16.30	65.20
26	CLAMP PG FOR 148 SQMM AAA COND	No	3	806.00	2,418.00
27	CONDUCTOR 148 SQ.MM. AAA	Mtr	15	106.60	1,599.00
28	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
29	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	5	1,365.00	6,825.00
30	25x6 mm GI flat	Kg	6	97.50	585.00
31	Black Paint	Ltr	1	286.00	286.00
32	Yellow Colour Paint for Background	L	2	212.77	425.54
A				**Total Cost of materials**	**6,03,231.45**
B				**Stock, Storage & Insurance i.e 3%**	**18,096.94**
C				**Sub Total C=A+B**	**6,21,328.39**
D				**Contigency @ 3% of C**	**18,639.85**
E				**Tools & Plants @ 2% of C**	**12,426.57**
F				**Transportation @ 7.5% of C**	**46,599.63**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**18,210.40**
H				**Erection Other @ 10%**	**17,336.64**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**7,34,541.48**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	2	2,504.25	5,008.50
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	5	2,559.90	12,799.50
L				**Total Civil Part**	**31,164.00**
M				**Sub-Total M=K+L**	**7,65,705.48**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**7,65,705.48**
P				**GST @ 18% of Sub-Total O**	**1,37,826.99**
Q				**CESS @ 1% of Sub-Total O**	**7,657.05**
R				**Grand Total R=P+Q**	**9,11,189.52**

Table 20 Cost Estimate for Bus-Coupler arrangement at PSS

Cost Estimate for Bus-Coupler arrangement at PSS					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	Lightning Arrester (11kV,10kA) (Station Class,Class 2)	EA	3.00	6,455.69	19,367.07
2	11KV 630 Amp Isolator without earth switch with PI(Porcelain)	Set	2.00	56,212.00	1,12,424.00
3	11kV 1250 Amp Outdoor VCB	EA	1	2,25,762.71	2,25,762.71
4	POLE WPB GI 160X152 9 MTR	EA	4	28,081.24	1,12,324.97
5	Top Channel 100X50X5mm,each channel length 3.25 mtr	Kg	124.28	97.50	12,117.30
6	Insulator Support Channel 75X40X4.8mm., each channel length 4.3 Mtr.	Kg	122.81	97.50	11,973.78
7	Isolator Support Channel 75X40X4.8mm., each channel length 4.3 Mtr.	Kg	61.40	97.50	5,986.89
8	Isolator Operating Down Pipe Support Channel 75X40X4.8mm.,of length 0.8 mtr.	Kg	5.712	97.50	556.92
9	Down Pipe Diagonal Support Angle 50X50X6mm, each angle length 0.388mtr.	Kg	3.6	97.50	351.00
10	Down Pipe Base Support Angle 50X50X6mm, each angle length 0.34mtr.	Kg	1.75	97.50	170.24
11	Isolator Support Side Channel 100X50X5mm, each channel length 0.5 mtr.	Kg	9.56	97.50	932.10
12	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
13	Earthing of Support (Coil Type)	No	4	215.80	863.20
14	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.26	97.50	25.55
15	33kV Disc insulator (B&S) 90 KN polymer	No	6	1,495.00	8,970.00
16	33kV H/W fitting(B&S) 90KN,4 Bolt	Set	6	650.00	3,900.00
17	CLAMP PG FOR 100 SQMM CONDUCTOR	No	6	754.00	4,524.00
18	12 bolted (M-12) "T" clamp for 232 mm² conductor	No	9	1,248.00	11,232.00
19	CONDUCTOR AAA 232 SQMM	Mtr	300	203.45	61,035.00
20	50x6 mm GI flat	Kg	100	97.50	9,750.00
21	11kV AL 3CX300 Sqmm XLPE Cable armoured	M	40	1,893.63	75,745.20
22	Heat shrinkable jointing kit for 3Cx300mm² 11KV XLPE Cable(outdoor type)	No	6	17,186.00	1,03,116.00
23	Heat shrinkable jointing kit for 3Cx300mm² 11KV XLPE Cable(indoor type)	No	6	11,794.90	70,769.40
24	4 Core x 2.5 mm2	Mtr	100	145.60	14,560.00
25	7 Core x 2.5 mm2	Mtr	100	236.60	23,660.00
26	19 Core x 2.5 mm2	Mtr	100	618.80	61,880.00
27	Black Paint	Ltr	2	286.00	572.00
28	Yellow Colour Paint for Background	L	2	212.77	425.54
29	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	4	1,365.00	5,460.00
A				**Total Cost of materials**	**9,60,482.86**
B				**Stock, Storage & Insurance i.e 3%**	**28,814.49**
C				**Sub Total C=A+B**	**9,89,297.35**
D				**Contigency @ 3% of C**	**29,678.92**
E				**Tools & Plants @ 2% of C**	**19,785.95**
F				**Transportation @ 7.5% of C**	**74,197.30**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**11,626.78**
H				**Erection Other @ 10%**	**63,544.32**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**11,88,130.62**
	Civil & Services				
	Installation/Erection of (GI coated 116X 100mm WPB (9 Mtr long) (23 kg Per meter) (Each 207 kg)) Pole including loading and unloading, transportation from site/tent upto 6 Kms., excavation, fixing of base plate, fixing of clamps, iron fittings, steel fabricated work (Angle installation), refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of 1:1:5:3 cement concrete, and Painting of Pole (In Black & Yellow Strips/Zebra) .As per drawing.	EA	4	7,234.50	28,938.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	4	2,559.90	10,239.60
L				**Total Civil Part**	**39,177.60**
M				**Sub-Total M=K+L**	**12,27,308.22**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**12,27,308.22**
P				**GST @ 18% of Sub-Total O**	**2,20,915.48**
Q				**CESS @ 1% of Sub-Total O**	**12,273.08**
R				**Grand Total R=P+Q**	**14,60,496.78**

Table 21 Cost Estimate for 33KV New line with RLP Pole & 148 Sqmm AAAC

Cost Estimate for 33kV new line with RLP pole and 148 mm2 AAAC					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	RLP Suspension Type 10.478Mtr. Long 514.31KG	EA	20	55,644.54	11,12,890.80
2	POLE WPB GI 160X152 13 MTR	EA	4	40,427.00	1,61,708.00
3	Top Channel 100X50X5mm,each channel length 3.25 mtr	Kg	62.14	97.50	6,058.65
4	Double Pole Belting Channel 75X40X4.8mm.,each channel length 2.8 Mtr	Kg	99.96	97.50	9,746.10
5	50X50X6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr.	Kg	61.78	97.50	6,023.16
6	Straight Cross Arm Channel 100X50X5mm, each channel length 1.7 Mtr.	Kg	65.01	97.50	6,338.28
7	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	11.70	97.50	1,140.89
8	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	12.31	97.50	1,200.11
9	Danger Plate, 1 no	No	4	104.00	416.00
10	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	1.20	97.50	117.35
11	Back Clamp for danger Plate, 1 no for RLP	Kg	6.02	97.50	586.76
12	GI barbed wire anticlimbing device	Kg	12	104.00	1,248.00
13	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	4.81	97.50	469.40
14	Back Clamp for Barbed wire anticlimbing device for RLP	Kg	24.07	97.50	2,347.02
15	33kV,10kN pin insulator polymer	No	66	624.00	41,184.00
16	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	18	677.60	12,196.80
17	Hardware fitting (suspension clamp,D shackle)	EA	60	2,083.20	1,24,992.00
18	33kV Disc insulator (B&S) 120KN polymer	No	156	1,872.00	2,92,032.00
19	Earthing of Support (Coil Type)	No	24	215.80	5,179.20
20	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	6.29	97.50	613.08
21	CLAMP PG FOR 148 SQMM AAA COND	No	18	806.00	14,508.00
22	GI Nut , Bolt & Washer of different sizes	Kg	22.02	101.40	2,232.73
23	H.T. Stay clamp	Pair	8	162.50	1,300.00
24	H.T 33kV Stay set (Complete)	Set	8	1,365.00	10,920.00
25	H.T Stay Insulator	No	16	65.00	1,040.00
26	7/8 SWG Stay Wire	Kg	120	97.50	11,700.00
27	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1	1,365.00	1,365.00
28	CONDUCTOR 148 SQ.MM. AAA	Mtr	3090.00	106.60	3,29,394.00
29	50x6 mm GI flat	Kg	48	97.50	4,680.00
30	Black Paint	Ltr	22	286.00	6,292.00
31	Yellow Colour Paint for Background	L	44	212.77	9,361.88
A				**Total Cost of materials**	**21,79,281.21**
B				**Stock, Storage & Insurance i.e 3%**	**65,378.44**
C				**Sub Total C=A+B**	**22,44,659.64**
D				**Contigency @ 3% of C**	**67,339.79**
E				**Tools & Plants @ 2% of C**	**44,893.19**
F				**Transportation @ 7.5% of C**	**1,68,349.47**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**88,858.46**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**26,14,100.56**
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	4	8,458.80	33,835.20
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	8	2,504.25	20,034.00
	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead up to 50 m and lift up to 1.5 m, as directed by Engineer-in-charge. Note- All kind of excavation work with different size for plinth, Structure & other works will be considered under this line items. All kinds of soil (exlcuding hard rock)	M3	22	315.00	6,930.00
	Providing & placing Reinforcement Steel for piles Reinforcement for the piles, HYSD generally conforming to the requirements of IS: 1786, including procurement, storage, transportation, cleaning, cutting, bending, tack welding, of laps in the longitudinal bars and lateral steel to prevent disturbance during lowering of steel cage into the bore, tying the rods using binding wire of soft annealed black wire of 16 G, and placing the reinforcement cage into the bore hole to correct position etc. complete. No separate payment will be made for binding wires. All Material shall be procured from Prime Manufacturer.	Kg	900	73.17	65,853.00
	Providing all materials, tools, equipment, manpower, fabrication, cleaning, cutting, bending, welding of 1.5mm thk metal sheet liner lowering by manual or mechanical means, placing and maintaining it in position for pile. Material to be supplied by contractor. All Material shall be procured from Prime Manufacturer.	Kg	1000	97.00	97,000.00
	Providing & placing Reinforcement Steel for piles Reinforcement for the piles, HYSD generally conforming to the requirements of IS: 1786, including procurement, storage, transportation, cleaning, cutting, bending, tack welding, of laps in the longitudinal bars and lateral steel to prevent disturbance during lowering of steel cage into the bore, tying the rods using binding wire of soft annealed black wire of 16 G, and placing the reinforcement cage into the bore hole to correct position etc. complete. No separate payment will be made for binding wires. All Material shall be procured from Prime Manufacturer.	M3	14	10500.00	1,47,000.00
	Nut bolting of foundation, cross arms and whrerever required in the pole. Installation of insulators, hardware fittings and conductor stringing.	No	20	47.25	945.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1	2,559.90	2,559.90
L				**Total Civil Part**	**3,74,157.10**
M				**Sub-Total M =K+L**	**29,88,257.66**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**29,88,257.66**
P				**GST @ 18% of Sub-Total O**	**5,37,886.38**
Q				**CESS @ 1% of Sub-Total O**	**29,882.58**
R				**Grand Total R=P+Q**	**35,56,026.61**

Table 22 Cost Estimate for 33KV New line with WPB Pole & 148 Sqmm AAAC

Cost Estimate for 33kV line with WPB pole and 148mm2 AAAC					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 13 MTR	EA	25	40,427.00	10,10,675.00
2	Top Channel 100X50X5mm,each channel length 3.25 mtr	Kg	124.28	97.50	12,117.30
3	Double Pole Belting Channel 75X40X4.8mm.,each channel length 2.8 Mtr	Kg	199.92	97.50	19,492.20
4	50X50X6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr.	Kg	123.55	97.50	12,046.32
5	Straight Cross Arm Channel 100X50X5mm, each channel length 1.7 Mtr.	Kg	97.51	97.50	9,507.42
6	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	17.55	97.50	1,711.34
7	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	21.10	97.50	2,057.33
8	Danger Plate, 1 no	No	25	104.00	2,600.00
9	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	7.52	97.50	733.44
10	GI barbed wire anticlimbing device	Kg	75	104.00	7,800.00
11	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	30.09	97.50	2,933.78
12	33kV,10kN pin insulator polymer	No	71	624.00	44,304.00
13	33kV V cross Arm (GI) for WPB Pole	No	19	2,340.00	44,460.00
14	GI Back Clamp for 33kV 'V' Cros Arm for WPB Pole	No	19	195.00	3,705.00
15	Top bracket 100X50X5mm GI channel for 33kV	No	21	195.00	4,095.00
16	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	24	677.60	16,262.40
17	33kV Disc insulator (B&S) 120KN polymer	No	24	1,872.00	44,928.00
18	Earthing of Support (Coil Type)	No	25	215.80	5,395.00
19	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	6.55	97.50	638.63
20	CLAMP PG FOR 148 SQMM AAA COND	No	24	806.00	19,344.00
21	GI Nut , Bolt & Washer of different sizes	Kg	68.2	101.40	6,912.03
22	H.T. Stay clamp	Pair	12	162.50	1,950.00
23	H.T 33kV Stay set (Complete)	Set	12	1,365.00	16,380.00
24	H.T Stay Insulator	No	24	65.00	1,560.00
25	7/8 SWG Stay Wire	Kg	180	97.50	17,550.00
26	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
27	CONDUCTOR 148 SQ.MM. AAA	Mtr	3090.00	106.60	3,29,394.00
28	50x6 mm GI flat	Kg	12	97.50	1,170.00
29	Black Paint	Ltr	12.5	286.00	3,575.00
30	Yellow Colour Paint for Background	L	25	212.77	5,319.25
A				**Total Cost of materials**	**16,51,346.43**
B				**Stock, Storage & Insurance i.e 3%**	**49,540.39**
C				**Sub Total C=A+B**	**17,00,886.82**
D				**Contigency @ 3% of C**	**51,026.60**
E				**Tools & Plants @ 2% of C**	**34,017.74**
F				**Transportation @ 7.5% of C**	**1,27,566.51**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**60,935.54**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**19,74,433.21**
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	25	8,458.80	2,11,470.00
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	12	2,504.25	30,051.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
L				**Total Civil Part**	**2,46,640.80**
M				**Sub-Total M =K+L**	**22,21,074.01**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**22,21,074.01**
P				**GST @ 18% of Sub-Total O**	**3,99,793.32**
Q				**CESS @ 1% of Sub-Total O**	**22,210.74**
R				**Grand Total R=P+Q**	**26,43,078.08**

Table 23 Cost Estimate for 33KV Bay at Existing PSS with H-Pole

Cost Estimate for Bay 33kV at Existing PSS with H Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	Lightning Arrester (30kV,10kA) (Station Class,Class 3) with Surge Counter	EA	3	7,506.94	22,520.82
2	33kV 1250 Amp Outdoor VCB	EA	1	2,50,000.00	2,50,000.00
3	CT 33KV 1P O/D OIL 600-300-150/1-1-1A	EA	3	32,605.93	97,817.79
4	CRP WITH TRF DIFF+INBUILT O/C & EF RELAY	EA	1	3,93,570.00	3,93,570.00
5	PT 33KV O/D OIL FILLED	EA	3	22,850.00	68,550.00
6	33kV,1250A Double break (Turn & Twist centre rotating) isolator with earth switch with PI(Polymer)	Set	1	1,31,157.00	1,31,157.00
7	50x6 mm GI flat	Kg	300	97.50	29,250.00
8	Junction Box for CT or PT Structure	EA	2	5,909.09	11,818.18
9	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
10	13 MTR GI H POLE	EA	2	92,740.36	1,85,480.72
11	Top Channel 100X50X5mm, each channel length 4.3 mtr.	Kg	82.216	97.50	8,016.06
12	Double Pole Belting Channel 75X40X4.8mm., each channel length 4.3 Mtr	Kg	122.808	97.50	11,973.78
13	50X50X6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr.	Kg	88.686	97.50	8,646.89
14	Insulator Support Channel 75X40X4.8mm., each channel length 4.3 Mtr.	Kg	30.702	97.50	2,993.45
15	Isolator Support Channel 75X40X4.8mm., each channel length 4.3 Mtr.	Kg	61.404	97.50	5,986.89
16	Isolator Operating Down Pipe Support Channel 75X40X4.8mm.,of length 0.8 mtr.	Kg	5.712	97.50	556.92
17	Down Pipe Diagonal Support Angle 50X50X6mm, each angle length 0.388mtr.	Kg	1.75	97.50	170.24
18	Down Pipe Base Support Angle 50X50X6mm, each angle length 0.34mtr.	Kg	1.53	97.50	149.18
19	Isolator Support Side Channel 100X50X5mm, each channel length 0.5 mtr.	Kg	9.56	97.50	932.10
20	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	5.28	97.50	514.33
21	Danger Plate, 1 no	No	2	104.00	208.00
22	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	1.20	97.50	117.35
23	GI barbed wire anticlimbing device	Kg	6	104.00	624.00
24	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
25	GI Nut , Bolt & Washer of different sizes	Kg	107.00	101.40	10,849.80
26	CONDUCTOR AAA 232 SQMM	Mtr	300	203.45	61,035.00
27	33kV Disc insulator (B&S) 120KN polymer	No	12	1,872.00	22,464.00
28	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	12	677.60	8,131.20
29	33kV,10kN pin insulator polymer	No	3	624.00	1,872.00
30	CLAMP PG FOR 232 SQMM AAA COND	No	6	1,495.00	8,970.00
31	12 bolted (M-12) "T" clamp for 232 mm² conductor	No	6	1,248.00	7,488.00
32	Chequered plate for Cable Trench	Sqm	40	5,250.00	2,10,000.00
33	4 Core x 2.5 mm2	Mtr	350.00	145.60	50,960.00
34	7 Core x 2.5 mm2	Mtr	300.00	236.60	70,980.00
35	10 Core x 2.5 mm2	Mtr	250.00	335.40	83,850.00
36	Black Paint	Ltr	1	286.00	286.00
37	Yellow Colour Paint for Background	L	2	212.77	425.54
A				**Total Cost of materials**	**17,78,154.93**
B				**Stock, Storage & Insurance i.e 3%**	**53,344.65**
C				**Sub Total C=A+B**	**18,31,499.57**
D				**Contigency @ 3% of C**	**54,944.99**
E				**Tools & Plants @ 2% of C**	**36,629.99**
F				**Transportation @ 7.5% of C**	**1,37,362.47**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**12,875.00**
H				**Erection Other @ 10%**	**1,37,237.99**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**22,10,550.01**
	Civil & Services				
	Installation/Erection of 14 Mtr.H Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,work ad civil work. The scope also includes providing of all civil material for concreting and couping. Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting and couping and earthing as per TPSODL standards and drawings. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 600(B)x600(W)X2300(H) , and cooping of 600(B)x600(W)x450(H).Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	8,784.75	17,569.50
	33 KV- Supply of material for construction of foundation will scope of BA . ITC and wiring/laying cable to control panel/supply unit of equipment will be on BA scope . Civil Works of foundation/ Structure works include only of Civil foundation & structure as per TPSODL approved drawing ,GTP and specification. (New Foundation/ Supply of structure shall be paid as extra as per approved rates of BOQ)	EA	1.00	14,691.60	14,691.60
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7.00	2,559.90	17,919.30
	BA will excavate the cable trench length by providing all necessary tool, Manpower, pump etc suitable for HT & LT Cable laying.BA will supply neccessry barricades at the excavation site.	M3	66.69	735.00	49,017.15
	Providing and laying Reinforced Cement Concrete (RCC) of proportion M25 (as per design mix) from RMC Batching Plant, using approved quality of cement, 20mm & 10mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machineries required for the work etc., as directed by Engineer-in-Charge.	M3	7.296	8,400.00	61,283.25
	Providing and laying Plain Cement Concrete (PCC) of proportion (1:3:6) in foundations, Trench and plinths using approved quality of cement, 20mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machinaries required for the work etc., as directed by Engineer-in-Charge.	M3	5.850	5,386.50	31,511.03
	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in Cement mortar 1:4 (1 Cement : 4 Coarse sand) as per TPSODL specifcation. Scope includes supply of all material	M3	6.975	7,084.35	49,413.34
	12 mm Cement Plaster of mix - 1:6 (1 Cement : 6 Fine sand (50 % fine :50% coarse)) as per as per TPSODL specification. Scope includes supply of all material.	M2	123.99	291.90	36,192.68
	BA will Supply & Install prefabricated RCC Slabs (950x450x75)M30 Grade with supply of all civil material,Rods,bending & cutting	EA	67	5,150.25	3,45,066.75
L				**Total Civil Part**	**6,22,664.60**
M				**Sub-Total M =K+L**	**28,33,214.61**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**28,33,214.61**
P				**GST @ 18% of Sub-Total O**	**5,09,978.63**
Q				**CESS @ 1% of Sub-Total O**	**28,332.15**
R				**Grand Total R=P+Q**	**33,71,525.38**

Table 24 Cost Estimate for 33KV Bay at Existing PSS with WPB-Pole

Cost Estimate for Bay 33kV at Existing PSS with WPB Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	Lightning Arrester (30kV,10kA) (Station Class,Class 3) with Surge Counter	EA	3	7,506.94	22,520.82
2	33kV 1250 Amp Outdoor VCB	EA	1	2,50,000.00	2,50,000.00
3	CT 33KV 1P O/D OIL 600-300-150/1-1-1A	EA	3	32,605.93	97,817.79
4	CRP WITH TRF DIFF+INBUILT O/C & EF RELAY	EA	1	3,93,570.00	3,93,570.00
5	PT 33KV O/D OIL FILLED	EA	3	22,850.00	68,550.00
6	33kV,1250A Double break (Turn & Twist centre rotating) isolator with earth switch with PI(Polymer)	Set	1	1,31,157.00	1,31,157.00
7	50x6 mm GI flat	Kg	300	97.50	29,250.00
8	Junction Box for CT or PT Structure	EA	2	5,909.09	11,818.18
9	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
10	POLE WPB GI 160X152 13 MTR	EA	2	40,427.00	80,854.00
11	Top Channel 100X50X5mm, each channel length 4.3 mtr.	Kg	82.216	97.50	8,016.06
12	Double Pole Belting Channel 75X40X4.8mm., each channel length 4.3 Mtr	Kg	122.808	97.50	11,973.78
13	50X50X6mm,GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr.	Kg	88.686	97.50	8,646.89
14	Insulator Support Channel 75X40X4.8mm., each channel length 4.3 Mtr.	Kg	30.702	97.50	2,993.45
15	Isolator Support Channel 75X40X4.8mm., each channel length 4.3 Mtr.	Kg	61.404	97.50	5,986.89
16	Isolator Operating Down Pipe Support Channel 75X40X4.8mm.,of length 0.8 mtr.	Kg	5.712	97.50	556.92
17	Down Pipe Diagonal Support Angle 50X50X6mm, each angle length 0.388mtr.	Kg	1.75	97.50	170.24
18	Down Pipe Base Support Angle 50X50X6mm, each angle length 0.34mtr.	Kg	1.53	97.50	149.18
19	Isolator Support Side Channel 100X50X5mm, each channel length 0.5 mtr.	Kg	9.56	97.50	932.10
20	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	5.28	97.50	514.33
21	Danger Plate, 1 no	No	2	104.00	208.00
22	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	1.20	97.50	117.35
23	GI barbed wire anticlimbing device	Kg	6	104.00	624.00
24	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
25	GI Nut , Bolt & Washer of different sizes	Kg	107.00	101.40	10,849.80
26	CONDUCTOR AAA 232 SQMM	Mtr	300	203.45	61,035.00
27	33kV Disc insulator (B&S) 120KN polymer	No	12	1,872.00	22,464.00
28	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	12	677.60	8,131.20
29	33kV,10kN pin insulator polymer	No	3	624.00	1,872.00
30	CLAMP PG FOR 232 SQMM AAA COND	No	6	1,495.00	8,970.00
31	12 bolted (M-12) "T" clamp for 232 mm² conductor	No	6	1,248.00	7,488.00
32	Chequered plate for Cable Trench	Sqm	40	5,250.00	2,10,000.00
33	4 Core x 2.5 mm2	Mtr	350.00	145.60	50,960.00
34	7 Core x 2.5 mm2	Mtr	300.00	236.60	70,980.00
35	10 Core x 2.5 mm2	Mtr	250.00	335.40	83,850.00
36	Black Paint	Ltr	1	286.00	286.00
37	Yellow Colour Paint for Background	L	2	212.77	425.54
A				**Total Cost of materials**	**16,73,528.21**
B				**Stock, Storage & Insurance i.e 3%**	**50,205.85**
C				**Sub Total C=A+B**	**17,23,734.05**
D				**Contigency @ 3% of C**	**51,712.02**
E				**Tools & Plants @ 2% of C**	**34,474.68**
F				**Transportation @ 7.5% of C**	**1,29,280.05**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**12,875.00**
H				**Erection Other @ 10%**	**1,37,237.99**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**20,89,313.80**
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	8,458.80	16,917.60
	33 KV- Supply of material for construction of foundation will scope of BA . ITC and wiring/laying cable to control panel/supply unit of equipment will be on BA scope . Civil Works of foundation/ Structure works include only of Civil foundation & structure as per TPSODL approved drawing ,GTP and specification. (New Foundation/ Supply of structure shall be paid as extra as per approved rates of BOQ)	EA	1.00	14,691.60	14,691.60
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7.00	2,559.90	17,919.30
	BA will excavate the cable trench length by providing all necessary tool, Manpower, pump etc suitable for HT & LT Cable laying.BA will supply neccessry barricades at the excavation site.	M3	66.69	735.00	49,017.15
	Providing and laying Reinforced Cement Concrete (RCC) of proportion M25 (as per design mix) from RMC Batching Plant, using approved quality of cement, 20mm & 10mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machineries required for the work etc., as directed by Engineer-in-Charge.	M3	7.296	8,400.00	61,283.25
	Providing and laying Plain Cement Concrete (PCC) of proportion (1:3:6) in foundations, Trench and plinths using approved quality of cement, 20mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machinaries required for the work etc., as directed by Engineer-in-Charge.	M3	5.850	5,386.50	31,511.03
	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in Cement mortar 1:4 (1 Cement : 4 Coarse sand) as per TPSODL specifcation. Scope includes supply of all material	M3	6.975	7,084.35	49,413.34
	12 mm Cement Plaster of mix - 1:6 (1 Cement : 6 Fine sand (50 % fine :50% coarse)) as per as per TPSODL specification. Scope includes supply of all material.	M2	123.99	291.90	36,192.68
	BA will Supply & Install prefabricated RCC Slabs (950x450x75)M30 Grade with supply of all civil material,Rods,bending & cutting	EA	67	5,150.25	3,45,066.75
L				**Total Civil Part**	**6,22,012.70**
M				**Sub-Total M=K+L**	**27,11,326.49**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**27,11,326.49**
P				**GST @ 18% of Sub-Total O**	**4,88,038.77**
Q				**CESS @ 1% of Sub-Total O**	**27,113.26**
R				**Grand Total R=P+Q**	**32,26,478.53**

Table 25 Cost Estimate for 11KV New line with RLP Pole & 100 Sqmm AAAC

Cost Estimate for 11kV new line with RLP pole and 100 mm2 AAAC					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	RLP Suspension Type 9.978Mtr. Long 449.14KG	EA	17	48,543.15	8,25,233.55
2	POLE WPB GI 160X152 11 MTR	EA	4	34,321.52	1,37,286.08
3	Top Channel 100X50X5mm, each channel length 2.3 mtr.	Kg	43.98	97.50	4,287.66
4	Double Pole Bracing Channel 75X40X4.8mm,each channel length 2.0 Mtr.	Kg	71.40	97.50	6,961.50
5	50X50X6mm.GI Bracing Angle, each angle length 2.671 mtr	Kg	48.08	97.50	4,687.61
6	Straight Cross Arm Channel 100X50X5mm, each channel length 1.2 mtr.	Kg	65.01	97.50	6,338.28
7	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	11.70	97.50	1,140.89
8	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	12.31	97.50	1,200.11
9	Danger Plate, 1 no	No	4	104.00	416.00
10	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	1.20	97.50	117.35
11	Back Clamp for danger Plate, 1 no for RLP	Kg	5.12	97.50	498.74
12	GI barbed wire anticlimbing device	Kg	12	104.00	1,248.00
13	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	4.81	97.50	469.40
14	Back Clamp for Barbed wire anticlimbing device for RLP	Kg	20.46	97.50	1,994.97
15	11kV,5kN pin insulator polymer	No	57	260.00	14,820.00
16	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	18	455.00	8,190.00
17	Hardware fitting (suspension clamp,D shackle)	EA	51	2,083.20	1,06,243.20
18	11kV Disc insulator (B&S) 70KN polymer	No	138	1,495.00	2,06,310.00
19	Earthing of Support (Coil Type)	No	21	215.80	4,531.80
20	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	5.50	97.50	536.45
21	CLAMP PG FOR 100 SQMM CONDUCTOR	No	18	754.00	13,572.00
22	GI Nut , Bolt & Washer of different sizes	Kg	19.52	101.40	1,979.73
23	H.T Stay clamp	Pair	8	162.50	1,300.00
24	H.T 11kV Stay set (Complete)	Set	8	1,365.00	10,920.00
25	H.T Stay Insulator	No	16	65.00	1,040.00
26	7/10 SWG Stay Wire	Kg	120	97.50	11,700.00
27	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1	1,365.00	1,365.00
28	CONDUCTOR 100 SQMM AAA	Mtr	3090.00	71.50	2,20,935.00
29	50x6 mm GI flat	Kg	48	97.50	4,680.00
30	Black Paint	Ltr	19	286.00	5,434.00
31	Yellow Colour Paint for Background	L	38	212.77	8,085.26
A				**Total Cost of materials**	**16,13,522.58**
B				**Stock, Storage & Insurance i.e 3%**	**48,405.68**
C				**Sub Total C=A+B**	**16,61,928.25**
D				**Contigency @ 3% of C**	**49,857.85**
E				**Tools & Plants @ 2% of C**	**33,238.57**
F				**Transportation @ 7.5% of C**	**1,24,644.62**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**62,949.34**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**19,32,618.63**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	4	6,678.00	26,712.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	8	2,504.25	20,034.00
	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead up to 50 m and lift up to 1.5 m, as directed by Engineer-in-charge. Note- All kind of excavation work with different size for plinth, Structure & other works will be considered under this line items. All kinds of soil (exlcuding hard rock)	M3	18.7	315.00	5,890.50
	Providing & placing Reinforcement Steel for piles Reinforcement for the piles, HYSD generally conforming to the requirements of IS: 1786, including procurement, storage, transportation, cleaning, cutting, bending, tack welding, of laps in the longitudinal bars and lateral steel to prevent disturbance during lowering of steel cage into the bore, tying the rods using binding wire of soft annealed black wire of 16 G, and placing the reinforcement cage into the bore hole to correct position etc. complete. No separate payment will be made for binding wires. All Material shall be procured from Prime Manufacturer.	Kg	765	73.17	55,975.05
	Providing all materials, tools, equipment, manpower, fabrication, cleaning, cutting, bending, welding of 1.5mm thk metal sheet liner lowering by manual or mechanical means, placing and maintaining it in position for pile. Material to be supplied by contractor. All Material shall be procured from Prime Manufacturer.	Kg	850	97.00	82,450.00
	Providing & placing Reinforcement Steel for piles Reinforcement for the piles, HYSD generally conforming to the requirements of IS: 1786, including procurement, storage, transportation, cleaning, cutting, bending, tack welding, of laps in the longitudinal bars and lateral steel to prevent disturbance during lowering of steel cage into the bore, tying the rods using binding wire of soft annealed black wire of 16 G, and placing the reinforcement cage into the bore hole to correct position etc. complete. No separate payment will be made for binding wires. All Material shall be procured from Prime Manufacturer.	M3	11.9	10500.00	1,24,950.00
	Nut bolting of foundation, cross arms and whrerever required in the pole. Installation of insulators, hardware fittings and conductor stringing.	No	17	47.25	803.25
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1	2,559.90	2,559.90
L				**Total Civil Part**	**3,19,374.70**
M				**Sub-Total M =K+L**	**22,51,993.33**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**22,51,993.33**
P				**GST @ 18% of Sub-Total O**	**4,05,358.80**
Q				**CESS @ 1% of Sub-Total O**	**22,519.93**
R				**Grand Total R=P+Q**	**26,79,872.06**

Table 26 Cost Estimate for 11KV New line with WPB Pole & 100 Sqmm AAAC

Cost Estimate for 11kV new line with WPB pole and 100 mm2 AAAC					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	20	34,321.52	6,86,430.40
2	Top Channel 100X50X5mm, each channel length 2.3 mtr.	Kg	43.98	97.50	4,287.66
3	Double Pole Bracing Channel 75X40X4.8mm,each channel length 2.0 Mtr.	Kg	71.40	97.50	6,961.50
4	50X50X6mm.GI Bracing Angle, each angle length 2.671 mtr	Kg	48.08	97.50	4,687.61
5	Straight Cross Arm Channel 100X50X5mm, each channel length 1.2 mtr.	Kg	68.83	97.50	6,711.12
6	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	17.55	97.50	1,711.34
7	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	15.83	97.50	1,543.00
8	Danger Plate, 1 no	No	20	104.00	2,080.00
9	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	6.02	97.50	586.76
10	GI barbed wire anticlimbing device	Kg	60	104.00	6,240.00
11	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	24.07	97.50	2,347.02
12	11kV,5kN pin insulator polymer	No	59	260.00	15,340.00
13	11kV V cross Arm (GI) for WPB Pole	No	16	1,053.00	16,848.00
14	GI Back Clamp for 11kV 'V' Cros Arm for WPB Pole	No	16	104.00	1,664.00
15	Top bracket 100X50X5mm GI channel for 11kV	No	18	195.00	3,510.00
16	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	18	455.00	8,190.00
17	11kV Disc insulator (B&S) 70KN polymer	No	18	1,495.00	26,910.00
18	Earthing of Support (Coil Type)	No	20	215.80	4,316.00
19	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	5.24	97.50	510.90
20	CLAMP PG FOR 100 SQMM CONDUCTOR	No	18	754.00	13,572.00
21	GI Nut , Bolt & Washer of different sizes	Kg	46.5	101.40	4,714.19
22	H.T Stay clamp	Pair	8	162.50	1,300.00
23	H.T 11kV Stay set (Complete)	Set	8	1,365.00	10,920.00
24	H.T Stay Insulator	No	8	65.00	520.00
25	7/10 SWG Stay Wire	Kg	80	97.50	7,800.00
26	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1	1,365.00	1,365.00
27	CONDUCTOR 100 SQMM AAA	Mtr	3090.00	71.50	2,20,935.00
28	50x6 mm GI flat	Kg	6	97.50	585.00
29	Black Paint	Ltr	10	286.00	2,860.00
30	Yellow Colour Paint for Background	L	20	212.77	4,255.40
A				**Total Cost of materials**	**10,69,701.88**
B				**Stock, Storage & Insurance i.e 3%**	**32,091.06**
C				**Sub Total C=A+B**	**11,01,792.94**
D				**Contigency @ 3% of C**	**33,053.79**
E				**Tools & Plants @ 2% of C**	**22,035.86**
F				**Transportation @ 7.5% of C**	**82,634.47**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**36,487.86**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**12,76,004.91**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	20	6,678.00	1,33,560.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	8	2,504.25	20,034.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1	2,559.90	2,559.90
L				**Total Civil Part**	**1,56,153.90**
M				**Sub-Total M =K+L**	**14,32,158.81**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**14,32,158.81**
P				**GST @ 18% of Sub-Total O**	**2,57,788.59**
Q				**CESS @ 1% of Sub-Total O**	**14,321.59**
R				**Grand Total R=P+Q**	**17,04,268.99**

Table 27 Cost Estimate for 11KV New line with WPB Pole & 99 Sqmm Covered Conductor

Cost Estimate for 11kV new line with Covered Conductor					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	20	34,321.52	6,86,430.40
2	Top Channel 100X50X5mm, each channel length 2.3 mtr.	Kg	62.14	97.50	6,058.65
3	Double Pole Bracing Channel 75X40X4.8mm,each channel length 2.0 Mtr.	Kg	99.96	97.50	9,746.10
4	50X50X6mm.GI Bracing Angle, each angle length 2.671 mtr	Kg	61.78	97.50	6,023.16
5	Straight Cross Arm Channel 100X50X5mm, each channel length 1.2 mtr.	Kg	97.51	97.50	9,507.42
6	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	17.55	97.50	1,711.34
7	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	15.83	97.50	1,543.00
8	Danger Plate, 1 no	No	20	104.00	2,080.00
9	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	6.02	97.50	586.76
10	GI barbed wire anticlimbing device	Kg	60	104.00	6,240.00
11	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	24.07	97.50	2,347.02
12	11kV,5kN pin insulator polymer	No	59	260.00	15,340.00
13	11kV V cross Arm (GI) for WPB Pole	No	16	1,053.00	16,848.00
14	GI Back Clamp for 11kV 'V' Cros Arm for WPB Pole	No	16	104.00	1,664.00
15	Top bracket 100X50X5mm GI channel for 11kV	No	18	195.00	3,510.00
16	Dead End Clamp 11kV	EA	18	890.00	16,020.00
17	11kV Disc insulator (B&S) 70KN polymer	No	18	1,495.00	26,910.00
18	JT KIT 11KV END TERM F/ 1X100 SQMM	EA	3	970.00	2,910.00
19	Earthing of Support (Coil Type)	No	20	215.80	4,316.00
20	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	5.24	97.50	510.90
21	IPC for 100sqmm	EA	18	500.00	9,000.00
22	Midspan Joint Kit 100sqmm	EA	3	1,600.00	4,800.00
23	CONNECTOR MECHANICAL FOR 100SQMM COND.	EA	18	500.00	9,000.00
24	Cap cable end	EA	30	192.79	5,783.72
25	Tie for alignment 11kV	EA	57	249.00	14,193.00
26	GI Nut , Bolt & Washer of different sizes	Kg	96.5	101.40	9,785.10
27	H.T Stay clamp	Pair	8	162.50	1,300.00
28	H.T 11kV Stay set (Complete)	Set	8	1,365.00	10,920.00
29	H.T Stay Insulator	No	8	65.00	520.00
30	7/10 SWG Stay Wire	Kg	80	97.50	7,800.00
31	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1	1,365.00	1,365.00
32	11KV COVERED CONDUCTOR 99 SQMM	M	3090.00	238.50	7,36,965.00
33	50x6 mm GI flat	Kg	6	97.50	585.00
34	Black Paint	Ltr	10	286.00	2,860.00
35	Yellow Colour Paint for Background	L	20	212.77	4,255.40
A				**Total Cost of materials**	**16,39,434.95**
B				**Stock, Storage & Insurance i.e 3%**	**49,183.05**
C				**Sub Total C=A+B**	**16,88,618.00**
D				**Contigency @ 3% of C**	**50,658.54**
E				**Tools & Plants @ 2% of C**	**33,772.36**
F				**Transportation @ 7.5% of C**	**1,26,212.57**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**94,574.64**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**19,93,836.12**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	20	6,678.00	1,33,560.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	8	2,504.25	20,034.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1	2,559.90	2,559.90
L				**Total Civil Part**	**1,56,153.90**
M				**Sub-Total M=K+L**	**21,49,990.02**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**21,49,990.02**
P				**GST @ 18% of Sub-Total O**	**3,86,998.20**
Q				**CESS @ 1% of Sub-Total O**	**21,499.90**
R				**Grand Total R=P+Q**	**25,58,488.12**

Table 28 Cost Estimate for 11KV New Bay at Existing PSS

Cost Estimate for Bay 11kV at Existing PSS					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	Lightning Arrester (11kV,10kA) (Station Class,Class 2)	EA	3	6,455.69	19,367.07
2	11kV 1250 Amp Outdoor VCB	EA	1.00	2,25,762.71	2,25,762.71
3	11 KV multi core 1 PH CT with CTR (800-400-200/1-1-1)A 3 Core	EA	3.00	27,000.00	81,000.00
4	CRP with O/C & E/F relay for 11kV	EA	1.00	3,57,571.00	3,57,571.00
5	11 KV IVT(11 KV/√ 3/110 V/√ 3)	EA	3	13,950.00	41,850.00
6	11KV 630 Amp Isolator without earth switch with PI(Porcelain)	Set	1.00	56,212.00	56,212.00
7	50x6 mm GI flat	Kg	300	97.50	29,250.00
8	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7.00	1,365.00	9,555.00
9	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
11	Top Channel 100X50X5mm, each channel length 3.0 mtr.	Kg	57.36	97.50	5,592.60
12	Double Pole Belting Channel 75X40X4.8mm.,each channel length 2.8 Mtr	Kg	79.968	97.50	7,796.88
13	50X50X6mm.GI Bracing Angle, each angle length 2.671 mtr	Kg	48.078	97.50	4,687.61
16	AB Switch mounting Channel 100X50X5mm GI channel 3.0mtr long	Kg	21.42	97.50	2,088.45
17	AB Switch Side Support Channel 100X50X5mm,each channel length 0.35 mtr.	Kg	4.998	97.50	487.31
18	Isolator Operating Down Pipe Support Channel 75X40X4.8mm.,of length 0.8 mtr.	Kg	5.712	97.50	556.92
19	Down Pipe Diagonal Support Angle 50X50X6mm, each angle length 0.388mtr.	Kg	1.75	97.50	170.24
20	Down Pipe Base Support Angle 50X50X6mm, each angle length 0.34mtr.	Kg	1.53	97.50	149.18
21	Isolator Support Side Channel 100X50X5mm, each channel length 0.5 mtr.	Kg	9.56	97.50	932.10
22	Danger Plate, 1 no	No	2	104.00	208.00
23	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	1.20	97.50	117.35
24	GI barbed wire anticlimbing device	Kg	6	104.00	624.00
25	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
26	GI Nut , Bolt & Washer of different sizes	Kg	100.00	101.40	10,140.00
27	CONDUCTOR 100 SQMM AAA	Mtr	310.00	71.50	22,165.00
28	11kV Disc insulator (B&S) 70KN polymer	No	12.00	1,495.00	17,940.00
29	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	12.00	455.00	5,460.00
30	11kV,5kN pin insulator polymer	No	3.00	260.00	780.00
31	CLAMP PG FOR 100 SQMM CONDUCTOR	No	6.00	754.00	4,524.00
32	12 bolted (M-12) "T" clamp for 232 mm² conductor	No	6.00	1,248.00	7,488.00
33	Chequered plate for Cable Trench	Sqm	25.00	5,250.00	1,31,250.00
34	4 Core x 2.5 mm2	Mtr	350.00	145.60	50,960.00
35	7 Core x 2.5 mm2	Mtr	350.00	236.60	82,810.00
36	10 Core x 2.5 mm2	Mtr	250.00	335.40	83,850.00
37	Black Paint	Ltr	1	286.00	286.00
38	Yellow Colour Paint for Background	L	2	212.77	425.54
A				**Total Cost of materials**	**13,30,934.68**
B				**Stock, Storage & Insurance i.e 3%**	**39,928.04**
C				**Sub Total C=A+B**	**13,70,862.72**
D				**Contigency @ 3% of C**	**41,125.88**
E				**Tools & Plants @ 2% of C**	**27,417.25**
F				**Transportation @ 7.5% of C**	**1,02,814.70**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**11,626.78**
H				**Erection Other @ 10%**	**1,05,705.03**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**16,59,552.37**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	11 KV- Supply of material for construction of foundation will scope of BA . ITC and wiring/laying cable to control panel/supply unit of equipment will be on BA scope . Civil Works of foundation/ Structure works include only of Civil foundation & structure as per TPSODL approved drawing ,GTP and specification. (New Foundation/ Supply of structure shall be paid as extra as per approved rates of BOQ)	EA	1.00	14,691.60	14,691.60
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7.00	2,559.90	17,919.30
	BA will excavate the cable trench length by providing all necessary tool, Manpower, pump etc suitable for HT & LT Cable laying.BA will supply neccessry barricades at the excavation site.	M3	44.46	735.00	32,678.10
	Providing and laying Reinforced Cement Concrete (RCC) of proportion M25 (as per design mix) from RMC Batching Plant, using approved quality of cement, 20mm & 10mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machineries required for the work etc., as directed by Engineer-in-Charge.	M3	4.896	8,400.00	41,123.25
	Providing and laying Plain Cement Concrete (PCC) of proportion (1:3:6) in foundations, Trench and plinths using approved quality of cement, 20mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machinaries required for the work etc., as directed by Engineer-in-Charge.	M3	3.900	5,386.50	21,007.35
	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in Cement mortar 1:4 (1 Cement : 4 Coarse sand) as per TPSODL specifcation. Scope includes supply of all material	M3	4.650	7,084.35	32,942.23
	12 mm Cement Plaster of mix - 1:6 (1 Cement : 6 Fine sand (50 % fine :50% coarse)) as per as per TPSODL specification. Scope includes supply of all material.	M2	123.99	291.90	36,192.68
	BA will Supply & Install prefabricated RCC Slabs (950x450x75)M30 Grade with supply of all civil material,Rods,bending & cutting	EA	44	5,150.25	2,26,611.00
L				**Total Civil Part**	**4,36,521.51**
M				**Sub-Total M =K+L**	**20,96,073.88**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**20,96,073.88**
P				**GST @ 18% of Sub-Total O**	**3,77,293.30**
Q				**CESS @ 1% of Sub-Total O**	**20,960.74**
R				**Grand Total R=P+Q**	**24,94,327.92**

Table 29 Cost Estimate for 33KV line uprating with WPB Pole & 148 Sqmm AAAC

Cost Estimate for 33kV line Upgradation with WPB Pole and 148 mm2 AAAC					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 13 MTR	EA	13	40,427.00	5,25,551.00
2	Straight Cross Arm Channel 100X50X5mm, each channel length 1.7 Mtr.	Kg	97.51	97.50	9,507.42
3	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	17.55	97.50	1,711.34
4	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	3.26	97.50	317.77
5	Danger Plate, 1 no	No	13	104.00	1,352.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	3.91	97.50	381.39
7	GI barbed wire anticlimbing device	Kg	39	104.00	4,056.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	15.65	97.50	1,525.56
9	33kV,10kN pin insulator polymer	No	38	624.00	23,712.00
10	33kV V cross Arm (GI) for WPB Pole	No	10	2,340.00	23,400.00
11	GI Back Clamp for 33kV 'V' Cros Arm for WPB Pole	No	10	195.00	1,950.00
12	Top bracket 100X50X5mm GI channel for 33kV	No	12	195.00	2,340.00
13	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	12	677.60	8,131.20
14	33kV Disc insulator (B&S) 120KN polymer	No	12	1,872.00	22,464.00
15	Earthing of Support (Coil Type)	No	13	215.80	2,805.40
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	3.41	97.50	332.09
17	CLAMP PG FOR 148 SQMM AAA COND	No	12	806.00	9,672.00
18	GI Nut , Bolt & Washer of different sizes	Kg	96.5	101.40	9,785.10
19	H.T. Stay clamp	Pair	4	162.50	650.00
20	H.T 33kV Stay set (Complete)	Set	4	1,365.00	5,460.00
21	H.T Stay Insulator	No	8	65.00	520.00
22	7/8 SWG Stay Wire	Kg	60	97.50	5,850.00
23	CONDUCTOR 148 SQ.MM. AAA	Mtr	3090	106.60	3,29,394.00
24	Black Paint	Ltr	6.5	286.00	1,859.00
25	Yellow Colour Paint for Background	L	13	212.77	2,766.01
A				**Total Cost of materials**	**9,95,493.28**
B				**Stock, Storage & Insurance i.e 3%**	**29,864.80**
C				**Sub Total C=A+B**	**10,25,358.07**
D				**Contigency @ 3% of C**	**30,760.74**
E				**Tools & Plants @ 2% of C**	**20,507.16**
F				**Transportation @ 7.5% of C**	**76,901.86**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**46,642.24**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**12,00,170.07**
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	13	8,458.80	1,09,964.40
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	4	2,504.25	10,017.00
	Dismantling of 11/13 Mtr. Joist/WPB Pole- 150X150 mm/ 160X160 mm (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km/site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	2	1,417.50	2,835.00
	Dismantling/Removal of all hardware fittings & Insulator etc. from HT Single Pole including loading, transportation, unloading and staking of dismantled material at a proper place in TPSODL store (at Berhampur Central store for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)(price per Pole)/as per instruction of EIC.	EA	20	105.00	2,100.00
	Dismantling / Removal of V Cross arm from pole including loading, transportation, unloading and staking of dismantled material at a proper place in safe position at Site Store.	EA	2	43.47	86.94
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	50	78.75	3,937.50
	Dismantling of ACSR/AAAC 80/100 mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/site store	Kg	461.028	15.75	7,261.19
L				**Total Civil Part**	**1,36,202.03**
M				**Sub-Total M =K+L**	**13,36,372.10**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**13,36,372.10**
P				**GST @ 18% of Sub-Total O**	**2,40,546.98**
Q				**CESS @ 1% of Sub-Total O**	**13,363.72**
R				**Grand Total R=P+Q**	**15,90,282.80**

Table 30 Cost Estimate for 33KV line uprating with WPB Pole & 100 Sqmm AAAC

Cost Estimate for 33kV line Upgradation with 100mm2 AAAC					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 13 MTR	EA	13	40,427.00	5,25,551.00
2	Straight Cross Arm Channel 100X50X5mm, each channel length 1.7 Mtr.	Kg	97.51	97.50	9,507.42
3	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	17.55	97.50	1,711.34
4	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	3.26	97.50	317.77
5	Danger Plate, 1 no	No	13	104.00	1,352.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	3.91	97.50	381.39
7	GI barbed wire anticlimbing device	Kg	39	104.00	4,056.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	15.65	97.50	1,525.56
9	33kV,10kN pin insulator polymer	No	38	624.00	23,712.00
10	33kV V cross Arm (GI) for WPB Pole	No	10	2,340.00	23,400.00
11	GI Back Clamp for 33kV 'V' Cros Arm for WPB Pole	No	10	195.00	1,950.00
12	Top bracket 100X50X5mm GI channel for 33kV	No	12	195.00	2,340.00
13	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	12	677.60	8,131.20
14	33kV Disc insulator (B&S) 120KN polymer	No	12	1,872.00	22,464.00
15	Earthing of Support (Coil Type)	No	13	215.80	2,805.40
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	3.41	97.50	332.09
17	CLAMP PG FOR 100 SQMM CONDUCTOR	No	12	754.00	9,048.00
18	GI Nut , Bolt & Washer of different sizes	Kg	96.5	101.40	9,785.10
19	H.T. Stay clamp	Pair	4	162.50	650.00
20	H.T 33kV Stay set (Complete)	Set	4	1,365.00	5,460.00
21	H.T Stay Insulator	No	8	65.00	520.00
22	7/8 SWG Stay Wire	Kg	60	97.50	5,850.00
23	CONDUCTOR 100 SQMM AAA	Mtr	3090	71.50	2,20,935.00
24	Black Paint	Ltr	6.5	286.00	1,859.00
25	Yellow Colour Paint for Background	L	13	212.77	2,766.01
A				**Total Cost of materials**	**8,86,410.28**
B				**Stock, Storage & Insurance i.e 3%**	**26,592.31**
C				**Sub Total C=A+B**	**9,13,002.58**
D				**Contigency @ 3% of C**	**27,390.08**
E				**Tools & Plants @ 2% of C**	**18,260.05**
F				**Transportation @ 7.5% of C**	**68,475.19**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**35,406.69**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**10,62,534.60**
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	13	8,458.80	1,09,964.40
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	4	2,504.25	10,017.00
	Dismantling of 11/13 Mtr. Joist/WPB Pole- 150X150 mm/ 160X160 mm (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	2	1,417.50	2,835.00
	Dismantling/Removal of all hardware fittings & Insulator etc. from HT Single Pole including loading, transportation, unloading and staking of dismantled material at a proper place in TPSODL store (at Berhampur Central store for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)(price per Pole)/as per instruction of EIC.	EA	20	105.00	2,100.00
	Dismantling / Removal of V Cross arm from pole including loading, transportation, unloading and staking of dismantled material at a proper place in safe position at Site Store.	EA	2	43.47	86.94
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	50	78.75	3,937.50
	Dismantling of ACSR/AAAC 80/100 mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/site store	Kg	461.028	15.75	7,261.19
L				**Total Civil Part**	**1,36,202.03**
M				**Sub-Total M=K+L**	**11,98,736.63**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**11,98,736.63**
P				**GST @ 18% of Sub-Total O**	**2,15,772.59**
Q				**CESS @ 1% of Sub-Total O**	**11,987.37**
R				**Grand Total R=P+Q**	**14,26,496.59**

Table 31 Cost Estimate for 11KV line uprating with WPB Pole & 100 Sqmm AAAC

Cost Estimate for 11kV line Upgradation with WPB Pole and 100mm2 AAAC					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	7	34,321.52	2,40,250.64
2	Straight Cross Arm Channel 100X50X5mm, each channel length 1.2 mtr.	Kg	97.51	97.50	9,507.42
3	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	17.55	97.50	1,711.34
4	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	3.26	97.50	317.77
5	Danger Plate, 1 no	No	7	104.00	728.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	2.11	97.50	205.36
7	GI barbed wire anticlimbing device	Kg	21	104.00	2,184.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	8.43	97.50	821.46
9	11kV,5kN pin insulator polymer	No	26	260.00	6,760.00
10	11kV V cross Arm (GI) for WPB Pole	No	6	1,053.00	6,318.00
11	GI Back Clamp for 11kV 'V' Cros Arm for WPB Pole	No	6	104.00	624.00
12	Top bracket 100X50X5mm GI channel for 11kV	No	8	195.00	1,560.00
13	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	12	455.00	5,460.00
14	11kV Disc insulator (B&S) 70KN polymer	No	12	1,495.00	17,940.00
15	Earthing of Support (Coil Type)	No	7	215.80	1,510.60
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	1.83	97.50	178.82
17	CLAMP PG FOR 100 SQMM CONDUCTOR	No	12	754.00	9,048.00
18	GI Nut , Bolt & Washer of different sizes	Kg	96.5	101.40	9,785.10
19	H.T Stay clamp	Pair	7	162.50	1,137.50
20	H.T 11kV Stay set (Complete)	Set	7	1,365.00	9,555.00
21	H.T Stay Insulator	No	7	65.00	455.00
22	7/10 SWG Stay Wire	Kg	70	97.50	6,825.00
23	CONDUCTOR 100 SQMM AAA	Mtr	3090	71.50	2,20,935.00
24	Black Paint	Ltr	3.5	286.00	1,001.00
25	Yellow Colour Paint for Background	L	7	212.77	1,489.39
A				**Total Cost of materials**	**5,56,308.39**
B				**Stock, Storage & Insurance i.e 3%**	**16,689.25**
C				**Sub Total C=A+B**	**5,72,997.65**
D				**Contigency @ 3% of C**	**17,189.93**
E				**Tools & Plants @ 2% of C**	**11,459.95**
F				**Transportation @ 7.5% of C**	**42,974.82**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**30,446.27**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**6,75,068.62**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	7	6,678.00	46,746.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	7	2,504.25	17,529.75
	Dismantling of 11/13 Mtr. Joist/WPB Pole- 150X150 mm/ 160X160 mm (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	12	1,417.50	17,010.00
	Dismantling/Removal of all hardware fittings & Insulator etc. from HT Single Pole including loading, transportation, unloading and staking of dismantled material at a proper place in TPSODL store (at Berhampur Central store for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)(price per Pole)/as per instruction of EIC.	EA	45	105.00	4,725.00
	Dismantling / Removal of V Cross arm from pole including loading, transportation, unloading and staking of dismantled material at a proper place in safe position at Site Store.	EA	10	43.47	434.70
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	52	78.75	4,095.00
	Dismantling of ACSR/AAAC 80/100 mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/site store	Kg	460.84	15.75	7,258.27
L				**Total Civil Part**	**97,798.72**
M				**Sub-Total M =K+L**	**7,72,867.34**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**7,72,867.34**
P				**GST @ 18% of Sub-Total O**	**1,39,116.12**
Q				**CESS @ 1% of Sub-Total O**	**7,728.67**
R				**Grand Total R=P+Q**	**9,19,712.14**

Table 32 Cost Estimate for 11KV line uprating with WPB Pole & 80 Sqmm AAAC

Cost Estimate for 11kV line Upgradation with WPB Pole and 80mm2 AAAC					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	7	34,321.52	2,40,250.64
2	Straight Cross Arm Channel 100X50X5mm, each channel length 1.2 mtr.	Kg	97.51	97.50	9,507.42
3	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	17.55	97.50	1,711.34
4	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	3.26	97.50	317.77
5	Danger Plate, 1 no	No	7	104.00	728.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	2.11	97.50	205.36
7	GI barbed wire anticlimbing device	Kg	21	104.00	2,184.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	8.43	97.50	821.46
9	11kV,5kN pin insulator polymer	No	26	260.00	6,760.00
10	11kV V cross Arm (GI) for WPB Pole	No	6	1,053.00	6,318.00
11	GI Back Clamp for 11kV 'V' Cros Arm for WPB Pole	No	6	104.00	624.00
12	Top bracket 100X50X5mm GI channel for 11kV	No	8	195.00	1,560.00
13	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	12	455.00	5,460.00
14	11kV Disc insulator (B&S) 70KN polymer	No	12	1,495.00	17,940.00
15	Earthing of Support (Coil Type)	No	7	215.80	1,510.60
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	1.83	97.50	178.82
17	CLAMP PG FOR 80 SQMM AAAC	No	12	689.00	8,268.00
18	GI Nut , Bolt & Washer of different sizes	Kg	96.5	101.40	9,785.10
19	H.T Stay clamp	Pair	7	162.50	1,137.50
20	H.T 11kV Stay set (Complete)	Set	7	1,365.00	9,555.00
21	H.T Stay Insulator	No	7	65.00	455.00
22	7/10 SWG Stay Wire	Kg	70	97.50	6,825.00
23	CONDUCTOR 80 SQMM AAA	Mtr	3090	55.90	1,72,731.00
24	Black Paint	Ltr	3.5	286.00	1,001.00
25	Yellow Colour Paint for Background	L	7	212.77	1,489.39
A				**Total Cost of materials**	**5,07,324.39**
B				**Stock, Storage & Insurance i.e 3%**	**15,219.73**
C				**Sub Total C=A+B**	**5,22,544.13**
D				**Contigency @ 3% of C**	**15,676.32**
E				**Tools & Plants @ 2% of C**	**10,450.88**
F				**Transportation @ 7.5% of C**	**39,190.81**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**25,400.92**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**6,13,263.06**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	7	6,678.00	46,746.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	7	2,504.25	17,529.75
	Dismantling of 11/13 Mtr. Joist/WPB Pole- 150X150 mm/ 160X160 mm (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	10	1,417.50	14,175.00
	Dismantling/Removal of all hardware fittings & Insulator etc. from HT Single Pole including loading, transportation, unloading and staking of dismantled material at a proper place in TPSODL store (at Berhampur Central store for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)(price per Pole)/as per instruction of EIC.	EA	58	105.00	6,090.00
	Dismantling / Removal of V Cross arm from pole including loading, transportation, unloading and staking of dismantled material at a proper place in safe position at Site Store.	EA	12	43.47	521.64
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	69.56	78.75	5,477.85
	Dismantling of ACSR/AAAC 80/100 mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/site store	Kg	460.84	15.75	7,258.27
L				**Total Civil Part**	**97,798.51**
M				**Sub-Total M =K+L**	**7,11,061.57**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**7,11,061.57**
P				**GST @ 18% of Sub-Total O**	**1,27,991.08**
Q				**CESS @ 1% of Sub-Total O**	**7,110.62**
R				**Grand Total R=P+Q**	**8,46,163.27**

Table 33 Cost Estimate for 11KV line uprating with PSC Pole & 100 Sqmm AAAC

Cost Estimate for 11kV line Upgradation with PSC Pole and 100mm2 AAAC					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 11 METER 330 KG	No	6	9,100.00	54,600.00
2	RCC base Plate	EA	6	408.00	2,448.00
3	Straight Cross Arm Channel 100X50X5mm, each channel length 1.2 mtr.	Kg	97.51	97.50	9,507.42
4	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	17.55	97.50	1,711.34
5	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	3.26	97.50	317.77
6	Danger Plate, 1 no	No	6	104.00	624.00
7	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	1.81	97.50	176.03
8	GI barbed wire anticlimbing device	Kg	18	104.00	1,872.00
9	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	7.22	97.50	704.11
10	11kV,5kN pin insulator polymer	No	20	260.00	5,200.00
11	11kV V cross Arm (GI) for WPB Pole	No	4	1,053.00	4,212.00
12	GI Back Clamp for 11kV 'V' Cros Arm for WPB Pole	No	4	104.00	416.00
13	Top bracket 100X50X5mm GI channel for 11kV	No	6	195.00	1,170.00
14	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	12	455.00	5,460.00
15	11kV Disc insulator (B&S) 70KN polymer	No	12	1,495.00	17,940.00
16	Earthing of Support (Coil Type)	No	6	215.80	1,294.80
17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	1.57	97.50	153.27
18	CLAMP PG FOR 100 SQMM CONDUCTOR	No	12	754.00	9,048.00
19	GI Nut , Bolt & Washer of different sizes	Kg	96.5	101.40	9,785.10
20	H.T Stay clamp	Pair	7	162.50	1,137.50
21	H.T 11kV Stay set (Complete)	Set	7	1,365.00	9,555.00
22	H.T Stay Insulator	No	7	65.00	455.00
23	7/10 SWG Stay Wire	Kg	70	97.50	6,825.00
24	CONDUCTOR 100 SQMM AAA	Mtr	3090	71.50	2,20,935.00
25	Black Paint	Ltr	3	286.00	858.00
26	Yellow Colour Paint for Background	L	6	212.77	1,276.62
A				**Total Cost of materials**	**3,67,681.95**
B				**Stock, Storage & Insurance i.e 3%**	**11,030.46**
C				**Sub Total C=A+B**	**3,78,712.41**
D				**Contigency @ 3% of C**	**11,361.37**
E				**Tools & Plants @ 2% of C**	**7,574.25**
F				**Transportation @ 7.5% of C**	**28,403.43**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**30,176.41**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**4,56,227.87**
	Civil & Services				
	Installation/Erection of 11 Mtr.PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,work ad civil work. The scope also includes providing of all civil material for concreting and couping. Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting and couping and earthing as per TPSODL standards and drawings. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 600(B)x600(W)X1800(H) , and cooping of 600(B)x600(W)x450(H).Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	6	8,162.00	48,972.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	7	2,504.25	17,529.75
	Dismantling of 11/13 Mtr. Joist/WPB Pole- 150X150 mm/ 160X160 mm (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km/site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	7	1,417.50	9,922.50
	Dismantling/Removal of all hardware fittings & Insulator etc. from HT Single Pole including loading, transportation, unloading and staking of dismantled material at a proper place in TPSODL store (at Berhampur Central store for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)(price per Pole)/as per instruction of EIC.	EA	20	105.00	2,100.00
	Dismantling / Removal of V Cross arm from pole including loading, transportation, unloading and staking of dismantled material at a proper place in safe position at Site Store.	EA	5	43.47	217.35
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	36	78.75	2,809.01
	Dismantling of ACSR/AAAC 80/100 mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/site store	Kg	458.55	15.75	7,222.16
L				**Total Civil Part**	**88,772.78**
M				**Sub-Total M =K+L**	**5,45,000.64**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**5,45,000.64**
P				**GST @ 18% of Sub-Total O**	**98,100.12**
Q				**CESS @ 1% of Sub-Total O**	**5,450.01**
R				**Grand Total R=P+Q**	**6,48,550.76**

Table 34 Cost Estimate for 11KV line uprating with PSC Pole & 80 Sqmm AAAC

Cost Estimate for 11kV line Upgradation with PSC Pole and 80mm2 AAAC					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 11 METER 330 KG	No	6	9,100.00	54,600.00
2	RCC base Plate	EA	6	408.00	2,448.00
3	Straight Cross Arm Channel 100X50X5mm, each channel length 1.2 mtr.	Kg	97.51	97.50	9,507.42
4	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	17.55	97.50	1,711.34
5	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	3.26	97.50	317.77
6	Danger Plate, 1 no	No	6	104.00	624.00
7	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	1.81	97.50	176.03
8	GI barbed wire anticlimbing device	Kg	18	104.00	1,872.00
9	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	7.22	97.50	704.11
10	11kV,5kN pin insulator polymer	No	20	260.00	5,200.00
11	11kV V cross Arm (GI) for WPB Pole	No	4	1,053.00	4,212.00
12	GI Back Clamp for 11kV 'V' Cros Arm for WPB Pole	No	4	104.00	416.00
13	Top bracket 100X50X5mm GI channel for 11kV	No	6	195.00	1,170.00
14	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	12	455.00	5,460.00
15	11kV Disc insulator (B&S) 70KN polymer	No	12	1,495.00	17,940.00
16	Earthing of Support (Coil Type)	No	6	215.80	1,294.80
17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	1.57	97.50	153.27
18	CLAMP PG FOR 80 SQMM AAAC	No	12	689.00	8,268.00
19	GI Nut , Bolt & Washer of different sizes	Kg	96.5	101.40	9,785.10
20	H.T Stay clamp	Pair	7	162.50	1,137.50
21	H.T 11kV Stay set (Complete)	Set	7	1,365.00	9,555.00
22	H.T Stay Insulator	No	7	65.00	455.00
23	7/10 SWG Stay Wire	Kg	70	97.50	6,825.00
24	CONDUCTOR 80 SQMM AAA	Mtr	3090	55.90	1,72,731.00
25	Black Paint	Ltr	3	286.00	858.00
26	Yellow Colour Paint for Background	L	6	212.77	1,276.62
A				**Total Cost of materials**	**3,18,697.95**
B				**Stock, Storage & Insurance i.e 3%**	**9,560.94**
C				**Sub Total C=A+B**	**3,28,258.89**
D				**Contigency @ 3% of C**	**9,847.77**
E				**Tools & Plants @ 2% of C**	**6,565.18**
F				**Transportation @ 7.5% of C**	**24,619.42**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**25,131.06**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**3,94,422.31**
	Civil & Services				
	Installation/Erection of 11 Mtr.PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,work ad civil work. The scope also includes providing of all civil material for concreting and couping. Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting and couping and earthing as per TPSODL standards and drawings. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 600(B)x600(W)X1800(H) , and cooping of 600(B)x600(W)x450(H).Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	6	8,162.00	48,972.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	7	2,504.25	17,529.75
	Dismantling of 11/13 Mtr. Joist/WPB Pole- 150X150 mm/ 160X160 mm (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	7	1,417.50	9,922.50
	Dismantling/Removal of all hardware fittings & Insulator etc. from HT Single Pole including loading, transportation, unloading and staking of dismantled material at a proper place in TPSODL store (at Berhampur Central store for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)(price per Pole)/as per instruction of EIC.	EA	20	105.00	2,100.00
	Dismantling / Removal of V Cross arm from pole including loading, transportation, unloading and staking of dismantled material at a proper place in safe position at Site Store.	EA	5	43.47	217.35
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	36	78.75	2,808.23
	Dismantling of ACSR/AAAC 80/100 mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/site store	Kg	458.55	15.75	7,222.16
L				**Total Civil Part**	**88,771.99**
M				**Sub-Total M =K+L**	**4,83,194.29**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**4,83,194.29**
P				**GST @ 18% of Sub-Total O**	**86,974.97**
Q				**CESS @ 1% of Sub-Total O**	**4,831.94**
R				**Grand Total R=P+Q**	**5,75,001.21**

Table 35 Cost Estimate for Conversion of 33 KV Bare O/H to Covered Conductor 159 Sqmm

Cost Estimate for 33kV Upgradation Covered Conductor 159 mm2					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 13 MTR	EA	13	40,427.00	5,25,551.00
2	Straight Cross Arm Channel 100X50X5mm, each channel length 1.7 Mtr.	Kg	97.51	97.50	9,507.42
3	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	17.55	97.50	1,711.34
4	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	10.55	97.50	1,028.66
5	Danger Plate, 1 no	No	13	104.00	1,352.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	3.91	97.50	381.39
7	GI barbed wire anticlimbing device	Kg	39	104.00	4,056.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	15.65	97.50	1,525.56
9	33kV,10kN pin insulator polymer	No	38	624.00	23,712.00
10	33kV V cross Arm (GI) for WPB Pole	No	10	2,340.00	23,400.00
11	GI Back Clamp for 33kV 'V' Cros Arm for WPB Pole	No	10	195.00	1,950.00
12	Top bracket 100X50X5mm GI channel for 33kV	No	12	195.00	2,340.00
13	Dead End Clamp 33kV	EA	12	1,800.00	21,600.00
14	33kV Disc insulator (B&S) 120KN polymer	No	12	1,872.00	22,464.00
15	JT KIT 33KV END TERM. 1X232 SQMM	EA	3	1,510.00	4,530.00
16	Earthing of Support (Coil Type)	No	13	215.80	2,805.40
17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	3.41	97.50	332.09
18	IPC for 232sqmm	EA	12	900.00	10,800.00
19	Cap cable end	EA	30	192.79	5,783.72
20	Tie for alignment 33kV	EA	36	400.00	14,400.00
21	GI Nut , Bolt & Washer of different sizes	Kg	96.5	101.40	9,785.10
22	H.T. Stay clamp	Pair	4	162.50	650.00
23	H.T 33kV Stay set (Complete)	Set	4	1,365.00	5,460.00
24	H.T Stay Insulator	No	8	65.00	520.00
25	7/8 SWG Stay Wire	Kg	60	97.50	5,850.00
26	33KV CONDUCTOR 159MM2 AAAC INSULATED	M	3090.00	388.22	11,99,599.80
27	Black Paint	Ltr	6.5	286.00	1,859.00
28	Yellow Colour Paint for Background	L	13	212.77	2,766.01
A				**Total Cost of materials**	**19,05,720.48**
B				**Stock, Storage & Insurance i.e 3%**	**57,171.61**
C				**Sub Total C=A+B**	**19,62,892.10**
D				**Contigency @ 3% of C**	**58,886.76**
E				**Tools & Plants @ 2% of C**	**39,257.84**
F				**Transportation @ 7.5% of C**	**1,46,783.13**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**1,39,799.92**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**23,47,619.75**
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	13	8,458.80	1,09,964.40
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	4	2,504.25	10,017.00
	Dismantling of 11/13 Mtr. Joist/WPB Pole- 150X150 mm/ 160X160 mm (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	2	1,417.50	2,835.00
	Dismantling/Removal of all hardware fittings & Insulator etc. from HT Single Pole including loading, transportation, unloading and staking of dismantled material at a proper place in TPSODL store (at Berhampur Central store for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)(price per Pole)/as per instruction of EIC.	EA	20	105.00	2,100.00
	Dismantling / Removal of V Cross arm from pole including loading, transportation, unloading and staking of dismantled material at a proper place in safe position at Site Store.	EA	2	43.47	86.94
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	50	78.75	3,937.50
	Dismantling of ACSR/AAAC 80/100 mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/site store	Kg	4610.28	15.75	72,611.91
L				**Total Civil Part**	**2,01,552.75**
M				**Sub-Total M=K+L**	**25,49,172.50**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**25,49,172.50**
P				**GST @ 18% of Sub-Total O**	**4,58,851.05**
Q				**CESS @ 1% of Sub-Total O**	**25,491.72**
R				**Grand Total R=P+Q**	**30,33,515.27**

Table 36 Cost Estimate for Conversion of 11 KV Bare O/H to Covered Conductor 99 Sqmm

Cost Estimate for 11kV Upgradation Covered Conductor 99mm2					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	8	34,321.52	2,74,572.16
3	Straight Cross Arm Channel 100X50X5mm, each channel length 1.2 mtr.	Kg	68.83	97.50	6,711.12
4	Straight Cross Arm Top Channel 100X50X5mm,each channel length 0.306 Mtr.	Kg	17.55	97.50	1,711.34
5	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	10.55	97.50	1,028.66
6	Danger Plate, 1 no	No	8	104.00	832.00
7	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	2.41	97.50	234.70
8	GI barbed wire anticlimbing device	Kg	24	104.00	2,496.00
9	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	9.63	97.50	938.81
10	11kV,5kN pin insulator polymer	No	26	260.00	6,760.00
11	11kV V cross Arm (GI) for WPB Pole	No	6	1,053.00	6,318.00
12	GI Back Clamp for 11kV 'V' Cros Arm for WPB Pole	No	6	104.00	624.00
13	Top bracket 100X50X5mm GI channel for 11kV	No	8	195.00	1,560.00
14	Dead End Clamp 11kV	EA	12	890.00	10,680.00
15	11kV Disc insulator (B&S) 70KN polymer	No	12	1,495.00	17,940.00
16	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	12	455.00	5,460.00
17	JT KIT 11KV END TERM F/ 1X100 SQMM	EA	3	970.00	2,910.00
18	Earthing of Support (Coil Type)	No	8	215.80	1,726.40
19	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	2.10	97.50	204.36
20	IPC for 100sqmm	EA	12	500.00	6,000.00
21	Cap cable end	EA	30	192.79	5,783.72
22	Tie for alignment 11kV	EA	24	249.00	5,976.00
23	GI Nut , Bolt & Washer of different sizes	Kg	96.5	101.40	9,785.10
24	H.T Stay clamp	Pair	4	162.50	650.00
25	H.T 11kV Stay set (Complete)	Set	4	1,365.00	5,460.00
26	H.T Stay Insulator	No	8	65.00	520.00
27	7/10 SWG Stay Wire	Kg	60	97.50	5,850.00
28	11KV COVERED CONDUCTOR 99 SQMM	M	3090.00	238.50	7,36,965.00
29	Black Paint	Ltr	4	286.00	1,144.00
30	Yellow Colour Paint for Background	L	8	212.77	1,702.16
A				**Total Cost of materials**	**11,22,543.52**
B				**Stock, Storage & Insurance i.e 3%**	**33,676.31**
C				**Sub Total C=A+B**	**11,56,219.83**
D				**Contigency @ 3% of C**	**34,686.59**
E				**Tools & Plants @ 2% of C**	**23,124.40**
F				**Transportation @ 7.5% of C**	**86,282.71**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**85,166.73**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**13,85,480.26**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	4	6,678.00	26,712.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	8	2,504.25	20,034.00
	Dismantling of 11/13 Mtr. Joist/WPB Pole- 150X150 mm/ 160X160 mm (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	2	1,417.50	2,835.00
	Dismantling/Removal of all hardware fittings & Insulator etc. from HT Single Pole including loading, transportation, unloading and staking of dismantled material at a proper place in TPSODL store (at Berhampur Central store for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)(price per Pole)/as per instruction of EIC.	EA	20	105.00	2,100.00
	Dismantling / Removal of V Cross arm from pole including loading, transportation, unloading and staking of dismantled material at a proper place in safe position at Site Store.	EA	2	43.47	86.94
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	50	78.75	3,937.50
	Dismantling of ACSR/AAAC 80/100 mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/site store	Kg	2766.168	15.75	43,567.15
L				**Total Civil Part**	**99,272.59**
M				**Sub-Total M=K+L**	**14,84,752.85**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**14,84,752.85**
P				**GST @ 18% of Sub-Total O**	**2,67,255.51**
Q				**CESS @ 1% of Sub-Total O**	**14,847.53**
R				**Grand Total R=P+Q**	**17,66,855.89**

Table 37 Cost Estimate for laying 33kV Under Ground Cable 1X630 Sqmm

Cost Estimate for 33kV Under Ground Cable by Open Trench & HDD Method					
	HDD Method(In KM)		0.5		
	Open Trench(In KM)		0.5		
Sl No	Description of Item	Unit	Quantity	Unit Rate(In Rs.)	Amount(In Rs.)
1	33kV AL 1CX630 Sqmm XLPE Cable,armoured	M	3000	1,495.47	44,86,410.00
2	HDPE Pipe 10 Mtr(Spec PE80-PN8,110mm dia)	M	3060	357.60	10,94,256.00
3	Heat shrinkable jointing kit for 1Cx630 mm² 33KV XLPE Cable(Outdoor type)	EA	6	6,350.00	38,100.00
4	Heat shrinkable jointing kit for 1Cx630 mm² 33KV XLPE Cable(Straight type)	EA	9	11,900.00	1,07,100.00
A				Total Cost of materials	57,25,866.00
B				Stock, Storage & Insurance i.e 3%	1,71,775.98
C				Sub Total C=A+B	58,97,641.98
D				Contigency @ 3% of C	1,76,929.26
E				Tools & Plants @ 2% of C	1,17,952.84
F				Transportation @ 7.5% of C	4,42,323.15
G				Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%	
H				Erection Other @ 10%	5,89,764.20
I				Erection PSC Pole @ 20%	
K				Sub Total K=C+D+E+F+G+H+I	72,24,611.43
	Civil & Services				
	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in charge. Note- All kind of excavation work with different size for plinth, Structure & other works will be considered under this line items Hard rock.	M3	480.00	1,370.25	6,57,720.00
	Supply, laying & fixing of 1st Class Fly Ash Brick for any types of work(Cable Laying etc) Note:- Rate will per Brick	EA	2174	11.55	25,109.70
	Shifting of excavated soil	M3	288.00	171.55	49,406.40
	BA will Back fill the cable excvation site with same earth.BA will provide necessary Tools,Machinery & Manpower for the activity.	M3	480.00	210.00	1,00,800.00
	BA will break Asphalt road & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works.BA will provide necessary Tools,Machinery & Manpower for the activity.	M3	240	1,012.20	2,42,928.00
	Supply and Installation of cable Route marker including transportation from site/tent, excavation, refilling, disposing of malba, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing.	EA	33	1,062.60	35,065.80
	Laying of 33 Kv XLPE Cable Underground by HDD Method with Heat sink type cable end termination with HDPE Pipe.	M	500	1,868.27	9,34,132.50
L				Total Civil Part	20,45,162.40
M				Sub-Total M =K+L	92,69,773.83
N				Other Over Head (Including Supervision charges)@ 6% of M	-
O				Sub-Total O=M+N	92,69,773.83
P				GST @ 18% of Sub-Total O	16,68,559.29
Q				CESS @ 1% of Sub-Total O	92,697.74
R				Grand Total R=P+Q	1,10,31,030.85

Table 38 Cost Estimate for laying 11kV Under Ground Cable 3X400 Sqmm

Cost Estimate for 11kV Under Ground Cable by Open Trench & HDD Method					
	HDD Method(In KM)		0.5		
	Open Trench(In KM)		0.5		
Sl No	Description of Item	Unit	Quantity	Unit Rate(In Rs.)	Amount(In Rs.)
1	11kV AL 3CX400 Sqmm XLPE Cable armoured	M	1000	2,452.54	24,52,540.00
2	High Density Polyethelene (HDPE) pipe 160mm diameter, PE 80-PN4	M	1000	775.40	7,75,400.00
3	Heat shrinkable jointing kit for 3Cx400 mm² 11KV XLPE Cable(outdoor type)	No	6	18,075.20	1,08,451.20
4	Heat shrinkable jointing kit for 3Cx400 mm² 11KV XLPE Cable(Straight type)	No	9	32,912.10	2,96,208.90
A				**Total Cost of materials**	**36,32,600.10**
B				**Stock, Storage & Insurance i.e 3%**	**1,08,978.00**
C				**Sub Total C=A+B**	**37,41,578.10**
D				**Contigency @ 3% of C**	**1,12,247.34**
E				**Tools & Plants @ 2% of C**	**74,831.56**
F				**Transportation @ 7.5% of C**	**2,80,618.36**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**3,74,157.81**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**45,83,433.18**
	Civil & Services				
	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in charge. Note- All kind of excavation work with different size for plinth, Structure & other works will be considered under this line items Hard rock.	M3	400.00	1,370.25	5,48,100.00
	Supply, laying & fixing of 1st Class Fly Ash Brick for any types of work(Cable Laying etc) Note:- Rate will per Brick	EA	2174	11.55	25,109.70
	Shifting of excavated soil	M3	240.00	171.55	41,172.00
	BA will Back fill the cable excvation site with same earth.BA will provide necessary Tools,Machinery & Manpower for the activity.	M3	400.00	210.00	84,000.00
	BA will break Asphalt road & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works.BA will provide necessary Tools,Machinery & Manpower for the activity.	M3	200	1,012.20	2,02,440.00
	Supply and Installation of cable Route marker including transportation from site/tent, excavation, refilling, disposing of malba, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing.	EA	33	1,062.60	35,065.80
	Laying of 11 Kv XLPE Cable Underground by HDD Method with Heat sink type cable end termination with HDPE Pipe.	M	500	1,868.27	9,34,132.50
L				**Total Civil Part**	**18,70,020.00**
M				**Sub-Total M =K+L**	**64,53,453.18**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**64,53,453.18**
P				**GST @ 18% of Sub-Total O**	**11,61,621.57**
Q				**CESS @ 1% of Sub-Total O**	**64,534.53**
R				**Grand Total R=P+Q**	**76,79,609.28**

Table 39 Cost Estimate for 33KV 400 Amp Line AB Switch

Cost Estimate for 33kV Line AB Switch, 400 Amp					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 13 MTR	EA	2	40,427.00	80,854.00
2	Top Channel 100X50X5mm, each channel length 4.3 mtr.	Kg	82.22	97.50	8,016.06
3	AB Switch mounting Channel 100X50X5mm GI channel 3.5mtr long	Kg	66.92	97.50	6,524.70
4	Double Pole Belting Channel 75X40X4.8mm., each channel length 4.3 Mtr	Kg	122.81	97.50	11,973.78
5	50X50X6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr.	Kg	88.69	97.50	8,646.89
6	AB Switch Side Support Channel 100X50X5mm,each channel length 0.35 mtr.	Kg	6.69	97.50	652.47
7	Channel Support for down Pipe 75X40X4.8mm., each channel length 0.8 Mtr.	Kg	5.71	97.50	556.92
8	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	5.28	97.50	514.33
9	Danger Plate, 1 no	No	2	104.00	208.00
10	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.60	97.50	58.68
11	GI barbed wire anticlimbing device	Kg	6	104.00	624.00
12	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
13	33kV,10kN pin insulator polymer	No	3	624.00	1,872.00
14	33kV H/W fitting(B&S) 90KN,4 Bolt	Set	6	650.00	3,900.00
15	33kV Disc insulator (B&S) 90 KN polymer	No	6	1,495.00	8,970.00
16	33kV AB Switch 400A 3Pole 50Hz Horizontal Type	Set	1	24,791.00	24,791.00
17	Lightning Arrester (30kV,10kA) (Station Class,Class 2)	No	3	13,455.00	40,365.00
18	Earthing of Support (Coil Type)	No	2	215.80	431.60
19	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.52	97.50	51.09
20	CLAMP PG FOR 148 SQMM AAA COND	No	6	806.00	4,836.00
21	GI Nut , Bolt & Washer of different sizes	Kg	96.5	101.40	9,785.10
22	H.T. Stay clamp	Pair	4	162.50	650.00
23	H.T 33kV Stay set (Complete)	Set	4	1,365.00	5,460.00
24	H.T Stay Insulator	No	8	65.00	520.00
25	7/8 SWG Stay Wire	Kg	60	97.50	5,850.00
26	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1	1,365.00	1,365.00
27	CONDUCTOR 148 SQ.MM. AAA	Mtr	20.00	106.60	2,132.00
28	50x6 mm GI flat	Kg	6	97.50	585.00
29	Black Paint	Ltr	1	286.00	286.00
30	Yellow Colour Paint for Background	L	2	212.77	425.54
A				**Total Cost of materials**	**2,31,139.85**
B				**Stock, Storage & Insurance i.e 3%**	**6,934.20**
C				**Sub Total C=A+B**	**2,38,074.05**
D				**Contigency @ 3% of C**	**7,142.22**
E				**Tools & Plants @ 2% of C**	**4,761.48**
F				**Transportation @ 7.5% of C**	**17,855.55**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**13,980.12**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**2,81,813.43**
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	8,458.80	16,917.60
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	4	2,504.25	10,017.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1	2,559.90	2,559.90
L				**Total Civil Part**	**29,494.50**
M				**Sub-Total M =K+L**	**3,11,307.93**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**3,11,307.93**
P				**GST @ 18% of Sub-Total O**	**56,035.43**
Q				**CESS @ 1% of Sub-Total O**	**3,113.08**
R				**Grand Total R=P+Q**	**3,70,456.43**

Table 40 Cost Estimate for 11KV400 Amp Line AB Switch

Sl No	Description of Item	Unit	Quantity	Unit Rate(In Rs.)	Amount(In Rs.)
1	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
2	Top Channel 100X50X5mm,each channel length 3.25 mtr	Kg	62.14	97.50	6,058.65
3	AB Switch mounting Channel 100X50X5mm GI channel 3.0mtr long	Kg	57.36	97.50	5,592.60
4	Double Pole Belting Channel 75X40X 4.8mm.,each channel length 3.0 Mtr.	Kg	85.68	97.50	8,353.80
5	50X50X6mm.GI Bracing Angle, each angle length 3.512 mtr	Kg	63.22	97.50	6,163.56
6	AB Switch Side Support Channel 100X50X5mm,each channel length 0.35 mtr.	Kg	6.69	97.50	652.47
7	Channel Support for down Pipe 75X40X4.8mm., each channel length 0.8 Mtr.	Kg	5.71	97.50	556.92
8	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	5.28	97.50	514.33
9	Danger Plate, 1 no	No	2	104.00	208.00
10	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.60	97.50	58.68
11	GI barbed wire anticlimbing device	Kg	6	104.00	624.00
12	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
13	11kV,5kN pin insulator polymer	No	3	260.00	780.00
14	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	6	455.00	2,730.00
15	11kV Disc insulator (B&S) 70KN polymer	No	6	1,495.00	8,970.00
16	11kV AB Switch 400A 3pole 50Hz Horizontal Type	Set	1	15,405.00	15,405.00
17	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
18	Earthing of Support (Coil Type)	No	2	215.80	431.60
19	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.52	97.50	51.09
20	CLAMP PG FOR 100 SQMM CONDUCTOR	No	6	754.00	4,524.00
21	GI Nut , Bolt & Washer of different sizes	Kg	96.5	101.40	9,785.10
22	H.T Stay clamp	Pair	4	162.50	650.00
23	H.T 11kV Stay set (Complete)	Set	4	1,365.00	5,460.00
24	H.T Stay Insulator	No	4	65.00	260.00
25	7/10 SWG Stay Wire	Kg	40	97.50	3,900.00
26	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
27	CONDUCTOR 100 SQMM AAA	Mtr	44	71.50	3,158.87
28	50x6 mm GI flat	Kg	22	97.50	2,189.36
29	Black Paint	Ltr	1	286.00	286.00
30	Yellow Colour Paint for Background	L	2	212.77	425.54
A				**Total Cost of materials**	**1,63,297.31**
B				**Stock, Storage & Insurance i.e 3%**	**4,898.92**
C				**Sub Total C=A+B**	**1,68,196.23**
D				**Contigency @ 3% of C**	**5,045.89**
E				**Tools & Plants @ 2% of C**	**3,363.92**
F				**Transportation @ 7.5% of C**	**12,614.72**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**8,337.10**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**1,97,557.86**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	4	2,504.25	10,017.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
L				**Total Civil Part**	**28,492.80**
M				**Sub-Total M=K+L**	**2,26,050.66**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**2,26,050.66**
P				**GST @ 18% of Sub-Total O**	**40,689.12**
Q				**CESS @ 1% of Sub-Total O**	**2,260.51**
R				**Grand Total R=P+Q**	**2,69,000.29**

Table 41 Cost Estimate for 33 KV Auto-Recloser

Cost Estimate for Auto Reclosure-33kV					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 13 MTR	EA	2	40,427.00	80,854.00
2	33kV Auto Reclosure	No	1.00	12,49,079.00	12,49,079.00
3	Lightning Arrester (30kV,10kA) (Station Class,Class 2)	No	3.00	13,455.00	40,365.00
4	25x6 mm GI flat	Kg	15.00	97.50	1,462.50
5	Danger Plate, 1 no	No	2.00	104.00	208.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.60	97.50	58.68
7	GI barbed wire anticlimbing device	Kg	6.00	104.00	624.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
9	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	10.55	97.50	1,028.66
10	33kV,10kN pin insulator polymer	No	3.00	624.00	1,872.00
11	Top Channel 100X50X5mm,each channel length 3.25 mtr	Kg	62.14	97.50	6,058.65
12	Double Pole Belting Channel 75X40X4.8mm.,each channel length 2.8 Mtr	Kg	80.0	97.50	7,796.88
13	50X50X6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr.	Kg	61.776	97.50	6,023.16
14	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	6	677.60	4,065.60
15	33kV Disc insulator (B&S) 120KN polymer	No	6	1,872.00	11,232.00
16	Earthing of Support (Coil Type)	No	2.00	215.80	431.60
17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.524	97.50	51.09
18	CLAMP PG FOR 148 SQMM AAA COND	No	6	806.00	4,836.00
19	GI Nut , Bolt & Washer of different sizes	Kg	97.7	101.40	9,907.29
20	H.T. Stay clamp	Pair	4	162.50	650.00
21	H.T 33kV Stay set (Complete)	Set	4	1,365.00	5,460.00
22	H.T Stay Insulator	No	8	65.00	520.00
23	7/8 SWG Stay Wire	Kg	60	97.50	5,850.00
24	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
25	CONDUCTOR 148 SQ.MM. AAA	Mtr	35.00	106.60	3,731.00
27	Black Paint	Ltr	1	286.00	286.00
28	Yellow Colour Paint for Background	L	2	212.77	425.54
A				**Total Cost of materials**	**14,45,841.35**
B				**Stock, Storage & Insurance i.e 3%**	**43,375.24**
C				**Sub Total C=A+B**	**14,89,216.59**
D				**Contigency @ 3% of C**	**44,676.50**
E				**Tools & Plants @ 2% of C**	**29,784.33**
F				**Transportation @ 7.5% of C**	**1,11,691.24**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**1,38,953.78**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**18,14,322.44**
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	8,458.80	16,917.60
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	4	2,504.25	10,017.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
L				**Total Civil Part**	**32,054.40**
M				**Sub-Total M =K+L**	**18,46,376.84**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**18,46,376.84**
P				**GST @ 18% of Sub-Total O**	**3,32,347.83**
Q				**CESS @ 1% of Sub-Total O**	**18,463.77**
R				**Grand Total R=P+Q**	**21,97,188.44**

Table 42 Cost Estimate for 33 KV Sectionalizer

Cost Estimate for Sectionalizer-33kV					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 13 MTR	EA	2	40,427.00	80,854.00
2	33kV Sectionalizer	No	1.00	12,49,079.00	12,49,079.00
3	Lightning Arrester (30kV,10kA) (Station Class,Class 2)	No	3.00	13,455.00	40,365.00
4	25x6 mm GI flat	Kg	15.00	97.50	1,462.50
5	Danger Plate, 1 no	No	2.00	104.00	208.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.60	97.50	58.68
7	GI barbed wire anticlimbing device	Kg	6.00	104.00	624.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
9	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	10.55	97.50	1,028.66
10	33kV,10kN pin insulator polymer	No	3.00	624.00	1,872.00
11	Top Channel 100X50X5mm,each channel length 3.25 mtr	Kg	62.14	97.50	6,058.65
12	Double Pole Belting Channel 75X40X4.8mm.,each channel length 2.8 Mtr	Kg	80.0	97.50	7,796.88
13	50X50X6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr.	Kg	61.776	97.50	6,023.16
14	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	6	677.60	4,065.60
15	33kV Disc insulator (B&S) 120KN polymer	No	6	1,872.00	11,232.00
16	Earthing of Support (Coil Type)	No	2.00	215.80	431.60
17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.524	97.50	51.09
18	CLAMP PG FOR 148 SQMM AAA COND	No	6	806.00	4,836.00
19	GI Nut , Bolt & Washer of different sizes	Kg	97.7	101.40	9,907.29
20	H.T. Stay clamp	Pair	4	162.50	650.00
21	H.T 33kV Stay set (Complete)	Set	4	1,365.00	5,460.00
22	H.T Stay Insulator	No	8	65.00	520.00
23	7/8 SWG Stay Wire	Kg	60	97.50	5,850.00
24	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
25	CONDUCTOR 148 SQ.MM. AAA	Mtr	35.00	106.60	3,731.00
27	Black Paint	Ltr	1	286.00	286.00
28	Yellow Colour Paint for Background	L	2	212.77	425.54
A				**Total Cost of materials**	**14,45,841.35**
B				**Stock, Storage & Insurance i.e 3%**	**43,375.24**
C				**Sub Total C=A+B**	**14,89,216.59**
D				**Contigency @ 3% of C**	**44,676.50**
E				**Tools & Plants @ 2% of C**	**29,784.33**
F				**Transportation @ 7.5% of C**	**1,11,691.24**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**1,38,953.78**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**18,14,322.44**
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	8,458.80	16,917.60
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	4	2,504.25	10,017.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
L				**Total Civil Part**	**32,054.40**
M				**Sub-Total M=K+L**	**18,46,376.84**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**18,46,376.84**
P				**GST @ 18% of Sub-Total O**	**3,32,347.83**
Q				**CESS @ 1% of Sub-Total O**	**18,463.77**
R				**Grand Total R=P+Q**	**21,97,188.44**

Table 43 Cost Estimate for 11 KV Auto-Recloser

Cost Estimate for Auto Reclosure-11kV					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
2	11kV Auto Reclosure	No	1.00	6,24,533.00	6,24,533.00
3	Lightning Arrester (11kV,10kA) (Station Class,Class 2)	EA	3.00	6,455.69	19,367.07
4	25x6 mm GI flat	Kg	15.00	97.50	1,462.50
5	Danger Plate, 1 no	No	2.00	104.00	208.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.60	97.50	58.68
7	GI barbed wire anticlimbing device	Kg	6.00	104.00	624.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
9	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	10.55	97.50	1,028.66
10	11kV,5kN pin insulator polymer	No	3.00	260.00	780.00
11	Top Channel 100X50X5mm, each channel length 2.3 mtr.	Kg	43.976	97.50	4,287.66
12	Double Pole Bracing Channel 75X40X4.8mm,each channel length 2.0 Mtr.	Kg	57.12	97.50	5,569.20
13	50X50X6mm.GI Bracing Angle, each angle length 2.671 mtr	Kg	48.078	97.50	4,687.61
14	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	6	455.00	2,730.00
15	11kV Disc insulator (B&S) 70KN polymer	No	6	1,495.00	8,970.00
16	Earthing of Support (Coil Type)	No	2.00	215.80	431.60
17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.524	97.50	51.09
18	CLAMP PG FOR 100 SQMM CONDUCTOR	No	6	754.00	4,524.00
19	GI Nut , Bolt & Washer of different sizes	Kg	85.24	101.40	8,643.34
20	H.T Stay clamp	Pair	4	162.50	650.00
21	H.T 11kV Stay set (Complete)	Set	4	1,365.00	5,460.00
22	H.T Stay Insulator	No	4	65.00	260.00
23	7/10 SWG Stay Wire	Kg	40	97.50	3,900.00
24	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
25	CONDUCTOR 100 SQMM AAA	Mtr	20.00	71.50	1,430.00
26	Black Paint	Ltr	1	286.00	286.00
27	Yellow Colour Paint for Background	L	2	212.77	425.54
A	**Total Cost of materials**				**7,71,975.68**
B	**Stock, Storage & Insurance i.e 3%**				**23,159.27**
C	**Sub Total C=A+B**				**7,95,134.95**
D	**Contigency @ 3% of C**				**23,854.05**
E	**Tools & Plants @ 2% of C**				**15,902.70**
F	**Transportation @ 7.5% of C**				**59,635.12**
G	**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**				
H	**Erection Other @ 10%**				**71,030.97**
I	**Erection PSC Pole @ 20%**				
K	**Sub Total K=C+D+E+F+G+H+I**				**9,65,557.80**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	4	2,504.25	10,017.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
L	**Total Civil Part**				**28,492.80**
M	**Sub-Total M =K+L**				**9,94,050.60**
N	**Other Over Head (Including Supervision charges)@ 6% of M**				-
O	**Sub-Total O=M+N**				**9,94,050.60**
P	**GST @ 18% of Sub-Total O**				**1,78,929.11**
Q	**CESS @ 1% of Sub-Total O**				**9,940.51**
R	**Grand Total R=P+Q**				**11,82,920.21**

Table 44 Cost Estimate for 11 KV Sectionalizer

Cost Estimate for Sectionaliser-11kV					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
2	SECTIONALIZER 11KV 3PH POLE MOUNTED	EA	1.00	5,30,986.10	5,30,986.10
3	Lightning Arrester (11kV,10kA) (Station Class,Class 2)	EA	3.00	6,455.69	19,367.07
4	25x6 mm GI flat	Kg	15.00	97.50	1,462.50
5	Danger Plate, 1 no	No	2.00	104.00	208.00
6	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.60	97.50	58.68
7	GI barbed wire anticlimbing device	Kg	6.00	104.00	624.00
8	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
9	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	10.55	97.50	1,028.66
10	11kV,5kN pin insulator polymer	No	3.00	260.00	780.00
11	Top Channel 100X50X5mm, each channel length 2.3 mtr.	Kg	43.976	97.50	4,287.66
12	Double Pole Bracing Channel 75X40X4.8mm,each channel length 2.0 Mtr.	Kg	57.1	97.50	5,569.20
13	50X50X6mm.GI Bracing Angle, each angle length 2.671 mtr	Kg	48.078	97.50	4,687.61
14	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	6	455.00	2,730.00
15	11kV Disc insulator (B&S) 70KN polymer	No	6	1,495.00	8,970.00
16	Earthing of Support (Coil Type)	No	2.00	215.80	431.60
17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.524	97.50	51.09
18	CLAMP PG FOR 100 SQMM CONDUCTOR	No	6	754.00	4,524.00
19	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,067.75
20	H.T Stay clamp	Pair	4	162.50	650.00
21	H.T 11kV Stay set (Complete)	Set	4	1,365.00	5,460.00
22	H.T Stay Insulator	No	4	65.00	260.00
23	7/10 SWG Stay Wire	Kg	40	97.50	3,900.00
24	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
25	CONDUCTOR 100 SQMM AAA	Mtr	20.00	71.50	1,430.00
26	Black Paint	Ltr	1	286.00	286.00
27	Yellow Colour Paint for Background	L	2	212.77	425.54
A				**Total Cost of materials**	**6,71,853.20**
B				**Stock, Storage & Insurance i.e 3%**	**20,155.60**
C				**Sub Total C=A+B**	**6,92,008.79**
D				**Contigency @ 3% of C**	**20,760.26**
E				**Tools & Plants @ 2% of C**	**13,840.18**
F				**Transportation @ 7.5% of C**	**51,900.66**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**60,718.36**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**8,39,228.25**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	4	2,504.25	10,017.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
L				**Total Civil Part**	**28,492.80**
M				**Sub-Total M=K+L**	**8,67,721.05**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**8,67,721.05**
P				**GST @ 18% of Sub-Total O**	**1,56,189.79**
Q				**CESS @ 1% of Sub-Total O**	**8,677.21**
R				**Grand Total R=P+Q**	**10,32,588.05**

Table 45 Cost Estimate for 33 KV RMU

Cost Estimate for 33kV,4 Way RMU					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	RMU 33kV 4 Way	EA	1	24,50,000.00	24,50,000.00
2	Cross arm of 75X40X4.8mm GI Channel 3.7 mtr long 4Nos	Kg	105.67	97.50	10,303.02
3	50x6 mm GI flat	Kg	100.00	97.50	9,750.00
4	25x6 mm GI flat	Kg	50.00	97.50	4,875.00
5	Pre-Wired FRTU Panel with FRTU	No	1.00	1,21,744.00	1,21,744.00
6	Managed Layer2 Ethernet Switch (FRTU Panel)	No	1.00	1,00,000.00	1,00,000.00
7	Networking Accessories	No	1.00	72.00	72.00
8	CMR with Mounting Base for Digital Inputs	No	32.00	650.00	20,800.00
9	Interposing Relay for Digital Output	No	16.00	467.94	7,487.04
10	Battery Charger	No	1.00	15,385.00	15,385.00
11	Battery	No	1.00	8,333.00	8,333.00
12	4G Modem cum Router	No	1.00	18,500.00	18,500.00
13	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr	40.00	204.87	8,194.80
14	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr	40.00	305.58	12,223.20
15	Twisted Pair Shielded & Over all shielded Instrumentation Cable 5 P X 1.0 mm2, Armored for Analog Input	Mtr	40.00	275.23	11,009.20
16	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr	20.00	165.25	3,305.00
17	2 C X 4 mm2 Cable for DC Power Supply	Mtr	10.00	150.00	1,500.00
18	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr	20.00	148.43	2,968.60
19	Armored CAT6 SFTP Cable	Mtr	20.00	45.87	917.40
20	Un-Armored CAT6 SFTP Cable	Mtr	20.00	89.45	1,789.00
21	Multi Function Meter	No	2.00	18,651.00	37,302.00
22	Danger Plate, 1 no	No	8	104.00	832.00
23	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
24	GI Nut , Bolt & Washer of different sizes	Kg	50	101.40	5,070.00
25	33kV AL 3CX300 Sqmm XLPE Cable armoured	M	35	2,780.25	97,308.75
26	Heat shrinkable jointing kit for 3Cx300 mm² 33KV XLPE Cable(outdoor type)	No	6	43,231.50	2,59,389.00
27	Heat shrinkable jointing kit for 3Cx300 mm² 33KV XLPE Cable(indoor type)	EA	6	10,390.00	62,340.00
28	High Density Polyethelene (HDPE) pipe 160mm diameter, PE 80-PN4	M	90	775.40	69,786.00
29	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
30	Lug AL Crimping 95 Sqmm XLPE Single hole	EA	8	19.07	152.56
31	CONDUCTOR 148 SQ.MM. AAA	Mtr	60	106.60	6,396.00
A				**Total Cost of materials**	**33,50,491.91**
B				**Stock, Storage & Insurance i.e 3%**	**1,00,514.76**
C				**Sub Total C=A+B**	**34,51,006.66**
D				**Contigency @ 3% of C**	**1,03,530.20**
E				**Tools & Plants @ 2% of C**	**69,020.13**
F				**Transportation @ 7.5% of C**	**2,58,825.50**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**41,446.13**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**39,23,828.63**
	Civil & Services				
	BA will provide necessary Manpower,FRP Fencing & Ms Material for construction boundary wall fencing as per TPSODL Drawing, specification & GTP.	Sqm	26	4,095.00	1,06,470.00
	Installation, Testing and Commissioning of 33kV 3-way / 4-way/5Way Ring Main Unit (RMU) on existing structure/foundation as per TPSODL.Specification including grouting & HT Cable Connections,earthing Connections & minor site modifications. Scope of work excludes earthing chamber and construction of foundation.	EA	1	10,728.21	10,728.21
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
L				**Total Civil Part**	**1,22,318.01**
M				**Sub-Total M=K+L**	**40,46,146.63**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**40,46,146.63**
P				**GST @ 18% of Sub-Total O**	**7,28,306.39**
Q				**CESS @ 1% of Sub-Total O**	**40,461.47**
R				**Grand Total R=P+Q**	**48,14,914.49**

Table 46 Cost Estimate for 11 KV RMU

Cost Estimate for 11kV,4 Way RMU					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	11 kV RMU 4 Way	EA	1	5,70,598.00	5,70,598.00
2	Cross arm of 75X40X4.8mm GI Channel 2.2 mtr long 4Nos	Kg	62.83	97.50	6,126.12
3	50x6 mm GI flat	Kg	100.00	97.50	9,750.00
4	25x6 mm GI flat	Kg	50.00	97.50	4,875.00
5	Pre-Wired FRTU Panel with FRTU	No	1.00	1,21,744.00	1,21,744.00
6	Managed Layer2 Ethernet Switch (FRTU Panel)	No	1.00	1,00,000.00	1,00,000.00
7	Networking Accessories	No	1.00	72.00	72.00
8	CMR with Mounting Base for Digital Inputs	No	32.00	650.00	20,800.00
9	Interposing Relay for Digital Output	No	16.00	467.94	7,487.04
10	Battery Charger	No	1.00	15,385.00	15,385.00
11	Battery	No	1.00	8,333.00	8,333.00
12	4G Modem cum Router	No	1.00	18,500.00	18,500.00
13	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr	40.00	204.87	8,194.80
14	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr	40.00	305.58	12,223.20
15	Twisted Pair Shielded & Over all shielded Instrumentation Cable 5 P X 1.0 mm2, Armored for Analog Input	Mtr	40.00	275.23	11,009.20
16	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr	20.00	165.25	3,305.00
17	2 C X 4 mm2 Cable for DC Power Supply	Mtr	10.00	150.00	1,500.00
18	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr	20.00	148.43	2,968.60
19	Armored CAT6 SFTP Cable	Mtr	20.00	45.87	917.40
20	Un-Armored CAT6 SFTP Cable	Mtr	20.00	89.45	1,789.00
21	Multi Function Meter	No	2.00	18,651.00	37,302.00
22	Danger Plate, 1 no	No	8	104.00	832.00
23	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
24	GI Nut , Bolt & Washer of different sizes	Kg	50	101.40	5,070.00
25	11kV AL 3CX300 Sqmm XLPE Cable armoured	M	35	1,893.63	66,277.05
26	Heat shrinkable jointing kit for 3Cx300mm² 11KV XLPE Cable(outdoor type)	No	6	17,186.00	1,03,116.00
27	Heat shrinkable jointing kit for 3Cx300mm² 11KV XLPE Cable(indoor type)	No	6	11,794.90	70,769.40
28	High Density Polyethelene (HDPE) pipe 160mm diameter, PE 80-PN4	M	90	775.40	69,786.00
29	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
30	Lug AL Crimping 95 Sqmm XLPE Single hole	EA	8	19.07	152.56
31	CONDUCTOR 100 SQMM AAA	Mtr	60	71.50	4,290.00
A				**Total Cost of materials**	**12,85,931.71**
B				**Stock, Storage & Insurance i.e 3%**	**38,577.95**
C				**Sub Total C=A+B**	**13,24,509.66**
D				**Contigency @ 3% of C**	**39,735.29**
E				**Tools & Plants @ 2% of C**	**26,490.19**
F				**Transportation @ 7.5% of C**	**99,338.22**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**41,015.91**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**15,31,089.27**
	Civil & Services				
	BA will provide necessary Manpower,FRP Fencing & Ms Material for construction boundary wall fencing as per TPSODL Drawing, specification & GTP.	Sqm	26	4,095.00	1,06,470.00
	Installation, Testing and Commissioning of 11/33kV 3-way /4-way/5way Ring Main Unit (RMU) on existing structure/foundation as per TPSODL.Specification including grouting & HT Cable Connections,earthing Connections & minor site modifications. Scope of work excludes earthing chamber and construction of foundation.	EA	1	10,728.21	10,728.21
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
L				**Total Civil Part**	**1,22,318.01**
M				**Sub-Total M=K+L**	**16,53,407.28**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**16,53,407.28**
P				**GST @ 18% of Sub-Total O**	**2,97,613.31**
Q				**CESS @ 1% of Sub-Total O**	**16,534.07**
R				**Grand Total R=P+Q**	**19,67,554.66**

Table 47 Cost Estimate for 33 KV Communicable FPI

Cost Estimate for Installation of Communicable FPI-33kV					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	COMMUNICABLE FPI 33KV O/H	EA	3.00	12,378.65	37,135.94
2	DATA CONTROL UNIT FOR 33KV O/H COMM. FPI	EA	1.00	1,08,848.22	1,08,848.22
A	**Total Cost of materials**				**1,45,984.16**
B	**Stock, Storage & Insurance i.e 3%**				**4,379.52**
C	**Sub Total C=A+B**				**1,50,363.69**
D	**Contigency @ 3% of C**				**4,510.91**
E	**Tools & Plants @ 2% of C**				**3,007.27**
F	**Transportation @ 7.5% of C**				**11,277.28**
G	**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**				
H	**Erection Other @ 10%**				**15,036.37**
I	**Erection PSC Pole @ 20%**				
K	**Sub Total K=C+D+E+F+G+H+I**				**1,84,195.52**
L	**Other Over Head (Including Supervision charges)@ 6% of K**				-
M	**Sub-Total M=K+L**				**1,84,195.52**
N	**GST @ 18% of Sub-Total L**				**33,155.19**
O	**CESS @ 1% of Sub-Total L**				**1,841.96**
P	**Grand Total P=N+O**				**2,19,192.67**

Table 48 Cost Estimate for 33 KV Non- Communicable FPI

Cost Estimate for Installation of Non-Communicable FPI-33kV					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	COMMUNICABLE FPI 33KV O/H	EA	3.00	12,378.65	37,135.94
A	**Total Cost of materials**				**37,135.94**
B	**Stock, Storage & Insurance i.e 3%**				**1,114.08**
C	**Sub Total C=A+B**				**38,250.02**
D	**Contigency @ 3% of C**				**1,147.50**
E	**Tools & Plants @ 2% of C**				**765.00**
F	**Transportation @ 7.5% of C**				**2,868.75**
G	**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**				
H	**Erection Other @ 10%**				**3,825.00**
I	**Erection PSC Pole @ 20%**				
K	**Sub Total K=C+D+E+F+G+H+I**				**46,856.28**
L	**Other Over Head (Including Supervision charges)@ 6% of K**				-
M	**Sub-Total M=K+L**				**46,856.28**
N	**GST @ 18% of Sub-Total L**				**8,434.13**
O	**CESS @ 1% of Sub-Total L**				**468.56**
P	**Grand Total P=N+O**				**55,758.97**

Table 49 Cost Estimate for 11 KV Communicable FPI

Cost Estimate for Installation of Communicable FPI-11kV					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	COMMUNICABLE FPI 11KV O/H	EA	3.00	12,378.65	37,135.94
2	DATA CONTROL UNIT FOR 11KV O/H COMM. FPI	EA	1.00	95,400.00	95,400.00
A	**Total Cost of materials**				**1,32,535.94**
B	**Stock, Storage & Insurance i.e 3%**				**3,976.08**
C	**Sub Total C=A+B**				**1,36,512.02**
D	**Contigency @ 3% of C**				**4,095.36**
E	**Tools & Plants @ 2% of C**				**2,730.24**
F	**Transportation @ 7.5% of C**				**10,238.40**
G	**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**				
H	**Erection Other @ 10%**				**13,651.20**
I	**Erection PSC Pole @ 20%**				
K	**Sub Total K=C+D+E+F+G+H+I**				**1,67,227.23**
L	**Other Over Head (Including Supervision charges)@ 6% of K**				-
M	**Sub-Total M=K+L**				**1,67,227.23**
N	**GST @ 18% of Sub-Total L**				**30,100.90**
O	**CESS @ 1% of Sub-Total L**				**1,672.27**
P	**Grand Total P=N+O**				**1,99,000.40**

Table 50 Cost Estimate for 11 KV Non- Communicable FPI

Cost Estimate for Installation of Non-Communicable FPI-11kV					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	COMMUNICABLE FPI 11KV O/H	EA	3.00	12,378.65	37,135.94
A	**Total Cost of materials**				**37,135.94**
B	**Stock, Storage & Insurance i.e 3%**				**1,114.08**
C	**Sub Total C=A+B**				**38,250.02**
D	**Contigency @ 3% of C**				**1,147.50**
E	**Tools & Plants @ 2% of C**				**765.00**
F	**Transportation @ 7.5% of C**				**2,868.75**
G	**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**				
H	**Erection Other @ 10%**				**3,825.00**
I	**Erection PSC Pole @ 20%**				
K	**Sub Total K=C+D+E+F+G+H+I**				**46,856.28**
L	**Other Over Head (Including Supervision charges)@ 6% of K**				**-**
M	**Sub-Total M=K+L**				**46,856.28**
N	**GST @ 18% of Sub-Total L**				**8,434.13**
O	**CESS @ 1% of Sub-Total L**				**468.56**
P	**Grand Total P=N+O**				**55,758.97**

Table 51 Cost Estimate for DSS AB Switch 200 Amp

Cost Estimate for Installation of DSS Refurbishment with AB Switch 200 Amp					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	AB Switch mounting Channel 100X50X5mm GI channel 3.0mtr long	Kg	57.36	97.50	5,592.60
2	AB Switch Side Support Channel 100X50X5mm,each channel length 0.35 mtr.	Kg	6.69	97.50	652.47
3	Channel Support for down Pipe 75X40X4.8mm., each channel length 0.8 Mtr.	Kg	5.71	97.50	556.92
4	11kV AB Switch 200A 3pole 50Hz Horizontal type	Set	1	9,555.00	9,555.00
5	GI Nut , Bolt & Washer of different sizes	Kg	5	101.40	507.00
A	**Total Cost of materials**				**16,863.99**
B	**Stock, Storage & Insurance i.e 3%**				**505.92**
C	**Sub Total C=A+B**				**17,369.91**
D	**Contigency @ 3% of C**				**521.10**
E	**Tools & Plants @ 2% of C**				**347.40**
F	**Transportation @ 7.5% of C**				**1,302.74**
G	**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**				
H	**Erection Other @ 10%**				**1,736.99**
I	**Erection PSC Pole @ 20%**				
K	**Sub Total K=C+D+E+F+G+H+I**				**21,278.14**
	Civil & Services				
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	69.76	78.75	5,493.92
	Dismantling of 11 kV GO/AB Switch including removal of all Electric/Earth connections etc., loading, transportation, unloading and staking at a proper place in TPSODL store(at Berhampur Central store for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada) /as per instruction of EIC.	EA	1	1,575.00	1,575.00
L	**Total Civil Part**				**7,068.92**
M	**Sub-Total M =K+L**				**28,347.05**
N	**Other Over Head (Including Supervision charges)@ 6% of M**				**-**
O	**Sub-Total O=M+N**				**28,347.05**
P	**GST @ 18% of Sub-Total O**				**5,102.47**
Q	**CESS @ 1% of Sub-Total O**				**283.47**
R	**Grand Total R=P+Q**				**33,732.99**

Table 52 Cost Estimate for DSS AB Switch 400 Amp

Cost Estimate for Installation of DSS Refurbishment with AB Switch 400 Amp					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	AB Switch mounting Channel 100X50X5mm GI channel 3.0mtr long	Kg	57.36	97.50	5,592.60
2	AB Switch Side Support Channel 100X50X5mm,each channel length 0.35 mtr.	Kg	6.69	97.50	652.47
3	Channel Support for down Pipe 75X40X4.8mm., each channel length 0.8 Mtr.	Kg	5.71	97.50	556.92
4	11kV AB Switch 400A 3pole 50Hz Horizontal type	Set	1	15,405.00	15,405.00
5	GI Nut , Bolt & Washer of different sizes	Kg	5	101.40	507.00
A	**Total Cost of materials**				**22,713.99**
B	**Stock, Storage & Insurance i.e 3%**				**681.42**
C	**Sub Total C=A+B**				**23,395.41**
D	**Contigency @ 3% of C**				**701.86**
E	**Tools & Plants @ 2% of C**				**467.91**
F	**Transportation @ 7.5% of C**				**1,754.66**
G	**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**				
H	**Erection Other @ 10%**				**2,339.54**
I	**Erection PSC Pole @ 20%**				
K	**Sub Total K=C+D+E+F+G+H+I**				**28,659.38**
	Civil & Services				
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	69.76	78.75	5,493.92
	Dismantling of 11 kV GO/AB Switch including removal of all Electric/Earth connections etc., loading, transportation, unloading and staking at a proper place in TPSODL store(at Berhampur Central store for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada) /as per instruction of EIC.	EA	1	1,575.00	1,575.00
L	**Total Civil Part**				**7,068.92**
M	**Sub-Total M =K+L**				**35,728.29**
N	**Other Over Head (Including Supervision charges)@ 6% of M**				**-**
O	**Sub-Total O=M+N**				**35,728.29**
P	**GST @ 18% of Sub-Total O**				**6,431.09**
Q	**CESS @ 1% of Sub-Total O**				**357.28**
R	**Grand Total R=P+Q**				**42,516.67**

Table 53 Cost Estimate for DSS HG Fuse 200 Amp

Cost Estimate for Installation of DSS HG Fuse 200 Amp					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	53.54	97.50	5,219.76
2	HG Fuse(11KV 200A 3 Pole 50Hz) with PI	Set	1	7,956.00	7,956.00
3	GI Nut , Bolt & Washer of different sizes	Kg	5	101.40	507.00
A				**Total Cost of materials**	**13,682.76**
B				**Stock, Storage & Insurance i.e 3%**	**410.48**
C				**Sub Total C=A+B**	**14,093.24**
D				**Contigency @ 3% of C**	**422.80**
E				**Tools & Plants @ 2% of C**	**281.86**
F				**Transportation @ 7.5% of C**	**1,056.99**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**1,409.32**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**17,264.22**
	Civil & Services				
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	53.54	78.75	4,215.96
	Dismantling of SINGLE phase DD Fuse/ DO Fuse set arrangement fitted on structure including removal of all Electric/Earth connections etc., loading, transportation, unloading and staking at a proper place in TPSODL Central store at Berhampur / as per instruction of EIC.	EA	1	840.00	840.00
L				**Total Civil Part**	**5,055.96**
M				**Sub-Total M=K+L**	**22,320.18**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**22,320.18**
P				**GST @ 18% of Sub-Total O**	**4,017.63**
Q				**CESS @ 1% of Sub-Total O**	**223.20**
R				**Grand Total R=P+Q**	**26,561.02**

Table 54 Cost Estimate for DSS HG Fuse 400 Amp

Cost Estimate for Installation of DSS HG Fuse 400 Amp					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	53.54	97.50	5,219.76
2	HG Fuse(11KV 400A 3 Pole 50Hz) with PI	Set	1	14,989.00	14,989.00
3	GI Nut , Bolt & Washer of different sizes	Kg	5	101.40	507.00
A				**Total Cost of materials**	**20,715.76**
B				**Stock, Storage & Insurance i.e 3%**	**621.47**
C				**Sub Total C=A+B**	**21,337.23**
D				**Contigency @ 3% of C**	**640.12**
E				**Tools & Plants @ 2% of C**	**426.74**
F				**Transportation @ 7.5% of C**	**1,600.29**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**2,133.72**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**26,138.11**
	Civil & Services				
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	53.54	78.75	4,215.96
	Dismantling of SINGLE phase DD Fuse/ DO Fuse set arrangement fitted on structure including removal of all Electric/Earth connections etc., loading, transportation, unloading and staking at a proper place in TPSODL Central store at Berhampur / as per instruction of EIC.	EA	1	840.00	840.00
L				**Total Civil Part**	**5,055.96**
M				**Sub-Total M=K+L**	**31,194.07**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**31,194.07**
P				**GST @ 18% of Sub-Total O**	**5,614.93**
Q				**CESS @ 1% of Sub-Total O**	**311.94**
R				**Grand Total R=P+Q**	**37,120.94**

Table 55 Cost Estimate for DSS Lightning Arrestor

Cost Estimate for Installation of Lightning Arrestor in Distribution Transformer					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
2	25x6 mm GI flat	Kg	12	97.50	1,170.00
A				**Total Cost of materials**	**5,070.00**
B				**Stock, Storage & Insurance i.e 3%**	**152.10**
C				**Sub Total C=A+B**	**5,222.10**
D				**Contigency @ 3% of C**	**156.66**
E				**Tools & Plants @ 2% of C**	**104.44**
F				**Transportation @ 7.5% of C**	**391.66**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**120.51**
I				**Erection PSC Pole @ 20%**	
J				**Sub Total J=C+D+E+F+G+H+I**	**5,995.37**
K				**Other Over Head (Including Supervision charges)@ 6% of J**	**-**
L				**Sub-Total L=J+K**	**5,995.37**
M				**GST @ 18% of Sub-Total L**	**1,079.17**
N				**CESS @ 1% of Sub-Total L**	**59.95**
O				**Grand Total O=M+N**	**7,134.49**

Table 56 Cost Estimate for DSS Earthing

Cost Estimate for Installation of Earthing in Distribution Transformer					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1	1,365.00	1,365.00
2	25x6 mm GI flat	Kg	12	97.50	1,170.00
A				**Total Cost of materials**	**2,535.00**
B				**Stock, Storage & Insurance i.e 3%**	**76.05**
C				**Sub Total C=A+B**	**2,611.05**
D				**Contigency @ 3% of C**	**78.33**
E				**Tools & Plants @ 2% of C**	**52.22**
F				**Transportation @ 7.5% of C**	**195.83**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**120.51**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**3,057.94**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1	2,559.90	2,559.90
L				**Total Civil Part**	**2,559.90**
M				**Sub-Total M =K+L**	**5,617.84**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**5,617.84**
P				**GST @ 18% of Sub-Total O**	**1,011.21**
Q				**CESS @ 1% of Sub-Total O**	**56.18**
R				**Grand Total R=P+Q**	**6,685.23**

Table 57 Cost Estimate for DSS Plinth

Cost Estimate for Installation of DTR Plinth for 250-1000kVA					
Sl No	**Civil & Services**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	Construction of Plinth with Brick, Mortar, 12 mm cement plaster and for 250-1000KVA transformer as per TPSODL drawing.Scope of work includes excavation of earth,supply of Civil material for construction, desposal of extra malba as per EIC instruction.	EA	1.00	31,878.00	31,878.00
A				**Total Civil Part**	**31,878.00**
B				**Other Over Head (Including Supervision charges)@ 6% of A**	**-**
C				**Sub-Total C=A+B**	**31,878.00**
D				**GST @ 18% of Sub-Total C**	**5,738.04**
E				**CESS @ 1% of Sub-Total C**	**318.78**
F				**Grand Total F=D+E**	**37,934.82**

Table 58 Cost Estimate for DSS Refurbishment with WPB Pole & structure

DSS Refurbishment with WPB Pole & Structure					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
2	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
3	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
4	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
5	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
6	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
7	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
8	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
9	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
10	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
11	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
12	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
13	Back Clamp for Transformer belting angle of length 0.576 mtr	Kg	3.62	97.50	352.68
14	Earthing of Support (Coil Type)	No	2	215.80	431.60
15	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.524	97.50	51.09
16	H.T Stay clamp	Pair	2	162.50	325.00
17	H.T 11kV Stay set (Complete)	Set	2	1,365.00	2,730.00
18	H.T Stay Insulator	No	2	65.00	130.00
19	7/10 SWG Stay Wire	Kg	20	97.50	1,950.00
20	Black Paint	Ltr	1	286.00	286.00
21	Yellow Colour Paint for Background	L	2	212.77	425.54
A				**Total Cost of materials**	**98,574.37**
B				**Stock, Storage & Insurance i.e 3%**	**2,957.23**
C				**Sub Total C=A+B**	**1,01,531.60**
D				**Contigency @ 3% of C**	**3,045.95**
E				**Tools & Plants @ 2% of C**	**2,030.63**
F				**Transportation @ 7.5% of C**	**7,614.87**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**2,480.73**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**1,16,703.78**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	2	2,504.25	5,008.50
L				**Total Civil Part**	**18,364.50**
M				**Sub-Total M =K+L**	**1,35,068.28**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**1,35,068.28**
P				**GST @ 18% of Sub-Total O**	**24,312.29**
Q				**CESS @ 1% of Sub-Total O**	**1,350.68**
R				**Grand Total R=P+Q**	**1,60,731.26**

Table 59 Cost Estimate for DSS Refurbishment with PSC Pole & structure

DSS Refurbishment with PSC Pole & Structure					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 11 METER 330 KG	EA	2	9,100.00	18,200.00
2	RCC base Plate	EA	2	408.00	816.00
3	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
4	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
5	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
6	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
7	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
8	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
9	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
10	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
11	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
12	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	2.36	97.50	230.10
15	Earthing of Support (Coil Type)	No	2	215.80	431.60
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.524	97.50	51.09
17	H.T Stay clamp	Pair	2	162.50	325.00
18	H.T 11kV Stay set (Complete)	Set	2	1,365.00	2,730.00
19	H.T Stay Insulator	No	2	65.00	130.00
20	7/10 SWG Stay Wire	Kg	20	97.50	1,950.00
21	Black Paint	Ltr	1	286.00	286.00
22	Yellow Colour Paint for Background	L	2	212.77	425.54
A				**Total Cost of materials**	**48,131.46**
B				**Stock, Storage & Insurance i.e 3%**	**1,443.94**
C				**Sub Total C=A+B**	**49,575.40**
D				**Contigency @ 3% of C**	**1,487.26**
E				**Tools & Plants @ 2% of C**	**991.51**
F				**Transportation @ 7.5% of C**	**3,718.16**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**2,480.75**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**58,253.07**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	8,162.00	16,324.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	2	2,504.25	5,008.50
L				**Total Civil Part**	**21,332.50**
M				**Sub-Total M =K+L**	**79,585.57**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**79,585.57**
P				**GST @ 18% of Sub-Total O**	**14,325.40**
Q				**CESS @ 1% of Sub-Total O**	**795.86**
R				**Grand Total R=P+Q**	**94,706.83**

Table 60 Cost Estimate for DSS MCCB 10 KVA Distribution Transformer

Cost Estimate for Installation of MCCB-10kVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	LT Distribution Box with MCCB for 10KVA S/S	No	1	8,287.50	8,287.50
2	1.1kV Al 1CX95 Sq.mm Un-armoured Cable	M	8.00	100.68	805.44
3	Gland for 1.1kV Al 1CX95 Sq.mm	EA	2.00	116.55	233.10
4	Lug AL Crimping 95 Sqmm XLPE Single hole	EA	2.00	19.07	38.14
5	25x6 mm GI flat	Kg	6.00	97.50	585.00
6	GI Nut , Bolt & Washer of different sizes	Kg	2.00	101.40	202.80
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1.00	1,365.00	1,365.00
A				**Total Cost of materials**	**11,516.98**
B				**Stock, Storage & Insurance i.e 3%**	**345.51**
C				**Sub Total C=A+B**	**11,862.49**
D				**Contigency @ 3% of C**	**355.87**
E				**Tools & Plants @ 2% of C**	**237.25**
F				**Transportation @ 7.5% of C**	**889.69**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**1,045.65**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**14,390.95**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1.00	2,559.90	2,559.90
L				**Total Civil Part**	**2,559.90**
M				**Sub-Total M =K+L**	**16,950.85**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**16,950.85**
P				**GST @ 18% of Sub-Total O**	**3,051.15**
Q				**CESS @ 1% of Sub-Total O**	**169.51**
R				**Grand Total R=P+Q**	**20,171.52**

Table 61 Cost Estimate for DSS MCCB 16 KVA-1 Ph Distribution Transformer

Cost Estimate for Installation of MCCB-16kVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	LT Distribution Box with MCCB for 16KVA S/S	No	1	8,450.00	8,450.00
2	1.1kV Al 1CX95 Sq.mm Un-armoured Cable	M	8.00	100.68	805.44
3	Gland for 1.1kV Al 1CX95 Sq.mm	EA	2.00	116.55	233.10
4	Lug AL Crimping 95 Sqmm XLPE Single hole	EA	2.00	19.07	38.14
5	25x6 mm GI flat	Kg	6.00	97.50	585.00
6	GI Nut , Bolt & Washer of different sizes	Kg	2.00	101.40	202.80
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1.00	1,365.00	1,365.00
A				**Total Cost of materials**	**11,679.48**
B				**Stock, Storage & Insurance i.e 3%**	**350.38**
C				**Sub Total C=A+B**	**12,029.86**
D				**Contigency @ 3% of C**	**360.90**
E				**Tools & Plants @ 2% of C**	**240.60**
F				**Transportation @ 7.5% of C**	**902.24**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**1,062.39**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**14,595.99**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1.00	2,559.90	2,559.90
L				**Total Civil Part**	**2,559.90**
M				**Sub-Total M =K+L**	**17,155.89**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**17,155.89**
P				**GST @ 18% of Sub-Total O**	**3,088.06**
Q				**CESS @ 1% of Sub-Total O**	**171.56**
R				**Grand Total R=P+Q**	**20,415.51**

Table 62 Cost Estimate for DSS MCCB 16 KVA-3 Ph Distribution Transformer

Cost Estimate for Installation of MCCB-16kVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	LT Distribution Box with MCCB for 16KVA S/S	No	1	8,450.00	8,450.00
2	1.1kV Al 1CX95 Sq.mm Un-armoured Cable	M	8.00	100.68	805.44
3	Gland for 1.1kV Al 1CX95 Sq.mm	EA	2.00	116.55	233.10
4	Lug AL Crimping 95 Sqmm XLPE Single hole	EA	2.00	19.07	38.14
5	25x6 mm GI flat	Kg	6.00	97.50	585.00
6	GI Nut , Bolt & Washer of different sizes	Kg	2.00	101.40	202.80
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1.00	1,365.00	1,365.00
A				**Total Cost of materials**	**11,679.48**
B				**Stock, Storage & Insurance i.e 3%**	**350.38**
C				**Sub Total C=A+B**	**12,029.86**
D				**Contigency @ 3% of C**	**360.90**
E				**Tools & Plants @ 2% of C**	**240.60**
F				**Transportation @ 7.5% of C**	**902.24**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**1,062.39**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**14,595.99**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1.00	2,559.90	2,559.90
L				**Total Civil Part**	**2,559.90**
M				**Sub-Total M=K+L**	**17,155.89**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**17,155.89**
P				**GST @ 18% of Sub-Total O**	**3,088.06**
Q				**CESS @ 1% of Sub-Total O**	**171.56**
R				**Grand Total R=P+Q**	**20,415.51**

Table 63 Cost Estimate for DSS MCCB 25 KVA Distribution Transformer

Cost Estimate for Installation of MCCB-25kVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	LT Distribution Box with MCCB for 25KVA S/S	No	1	19,409.00	19,409.00
2	1.1kV Al 1CX95 Sq.mm Un-armoured Cable	M	8.00	100.68	805.44
3	Gland for 1.1kV Al 1CX95 Sq.mm	EA	2.00	116.55	233.10
4	Lug AL Crimping 95 Sqmm XLPE Single hole	EA	2.00	19.07	38.14
5	25x6 mm GI flat	Kg	6.00	97.50	585.00
6	GI Nut , Bolt & Washer of different sizes	Kg	2.00	101.40	202.80
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1.00	1,365.00	1,365.00
A				**Total Cost of materials**	**22,638.48**
B				**Stock, Storage & Insurance i.e 3%**	**679.15**
C				**Sub Total C=A+B**	**23,317.63**
D				**Contigency @ 3% of C**	**699.53**
E				**Tools & Plants @ 2% of C**	**466.35**
F				**Transportation @ 7.5% of C**	**1,748.82**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**2,191.17**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**28,423.51**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1.00	2,559.90	2,559.90
L				**Total Civil Part**	**2,559.90**
M				**Sub-Total M=K+L**	**30,983.41**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**30,983.41**
P				**GST @ 18% of Sub-Total O**	**5,577.01**
Q				**CESS @ 1% of Sub-Total O**	**309.83**
R				**Grand Total R=P+Q**	**36,870.25**

Table 64 Cost Estimate for DSS MCCB 63 KVA Distribution Transformer

Cost Estimate for Installation of MCCB-63kVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	LT Distribution Box with MCCB for 63KVA S/S	EA	1	41,195.76	41,195.76
2	1.1kV Al 1CX95 Sq.mm Un-armoured Cable	M	8.00	100.68	805.44
3	Gland for 1.1kV Al 1CX95 Sq.mm	EA	2.00	116.55	233.10
4	Lug AL Crimping 95 Sqmm XLPE Single hole	EA	2.00	19.07	38.14
5	25x6 mm GI flat	Kg	6.00	97.50	585.00
6	GI Nut , Bolt & Washer of different sizes	Kg	2.00	101.40	202.80
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1.00	1,365.00	1,365.00
A				**Total Cost of materials**	**44,425.24**
B				**Stock, Storage & Insurance i.e 3%**	**1,332.76**
C				**Sub Total C=A+B**	**45,758.00**
D				**Contigency @ 3% of C**	**1,372.74**
E				**Tools & Plants @ 2% of C**	**915.16**
F				**Transportation @ 7.5% of C**	**3,431.85**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**4,435.20**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**55,912.95**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1.00	2,559.90	2,559.90
L				**Total Civil Part**	**2,559.90**
M				**Sub-Total M =K+L**	**58,472.85**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**58,472.85**
P				**GST @ 18% of Sub-Total O**	**10,525.11**
Q				**CESS @ 1% of Sub-Total O**	**584.73**
R				**Grand Total R=P+Q**	**69,582.69**

Table 65 Cost Estimate for DSS MCCB 100 KVA Distribution Transformer

Cost Estimate for Installation of MCCB-100kVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	LT Distribution Box with MCCB for 100KVA S/S	EA	1	45,400.00	45,400.00
2	1.1kV Al 1CX150 Sq.mm Un-armoured Cable	M	32.00	155.20	4,966.40
3	Gland for 1.1kV Al 1CX150 Sq.mm	EA	4.00	128.30	513.20
4	Lug AL Crimping 150 Sqmm XLPE Single hole	EA	4.00	16.30	65.20
5	25x6 mm GI flat	Kg	6.00	97.50	585.00
6	GI Nut , Bolt & Washer of different sizes	Kg	2.00	101.40	202.80
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1.00	1,365.00	1,365.00
A				**Total Cost of materials**	**53,097.60**
B				**Stock, Storage & Insurance i.e 3%**	**1,592.93**
C				**Sub Total C=A+B**	**54,690.53**
D				**Contigency @ 3% of C**	**1,640.72**
E				**Tools & Plants @ 2% of C**	**1,093.81**
F				**Transportation @ 7.5% of C**	**4,101.79**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**5,328.46**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**66,855.30**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1.00	2,559.90	2,559.90
L				**Total Civil Part**	**2,559.90**
M				**Sub-Total M =K+L**	**69,415.20**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**69,415.20**
P				**GST @ 18% of Sub-Total O**	**12,494.74**
Q				**CESS @ 1% of Sub-Total O**	**694.15**
R				**Grand Total R=P+Q**	**82,604.09**

Table 66 Cost Estimate for DSS MCCB 250 KVA Distribution Transformer

Cost Estimate for Installation of MCCB-250kVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	LT Distribution Box with MCCB for 250KVA S/S	EA	1	75,017.80	75,017.80
2	1.1kV Al 1CX300 Sq.mm Un-armoured Cable	Mtr	64.00	496.60	31,782.40
3	Gland for 1.1kV Al 1CX300 Sq.mm	No	8.00	67.60	540.80
4	Lug AL Crimping 300 Sqmm XLPE Single hole	EA	8.00	54.43	435.44
5	25x6 mm GI flat	Kg	6.00	97.50	585.00
6	GI Nut , Bolt & Washer of different sizes	Kg	2.00	101.40	202.80
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1.00	1,365.00	1,365.00
A				**Total Cost of materials**	**1,09,929.24**
B				**Stock, Storage & Insurance i.e 3%**	**3,297.88**
C				**Sub Total C=A+B**	**1,13,227.12**
D				**Contigency @ 3% of C**	**3,396.81**
E				**Tools & Plants @ 2% of C**	**2,264.54**
F				**Transportation @ 7.5% of C**	**8,492.03**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**11,182.12**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**1,38,562.62**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1.00	2,559.90	2,559.90
L				**Total Civil Part**	**2,559.90**
M				**Sub-Total M =K+L**	**1,41,122.52**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**1,41,122.52**
P				**GST @ 18% of Sub-Total O**	**25,402.05**
Q				**CESS @ 1% of Sub-Total O**	**1,411.23**
R				**Grand Total R=P+Q**	**1,67,935.80**

Table 67 Cost Estimate for DSS MCCB 315 KVA Distribution Transformer

Cost Estimate for Installation of MCCB-315kVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	LT Distribution Box with MCCB for 315KVA S/S	No	1	92,445.60	92,445.60
2	1.1kV Al 1CX300 Sq.mm Un-armoured Cable	Mtr	64.00	496.60	31,782.40
3	Gland for 1.1kV Al 1CX300 Sq.mm	No	8.00	67.60	540.80
4	Lug AL Crimping 300 Sqmm XLPE Single hole	EA	8.00	54.43	435.44
5	25x6 mm GI flat	Kg	6.00	97.50	585.00
6	GI Nut , Bolt & Washer of different sizes	Kg	2.00	101.40	202.80
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1.00	1,365.00	1,365.00
A				**Total Cost of materials**	**1,27,357.04**
B				**Stock, Storage & Insurance i.e 3%**	**3,820.71**
C				**Sub Total C=A+B**	**1,31,177.75**
D				**Contigency @ 3% of C**	**3,935.33**
E				**Tools & Plants @ 2% of C**	**2,623.56**
F				**Transportation @ 7.5% of C**	**9,838.33**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**12,977.18**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**1,60,552.15**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1.00	2,559.90	2,559.90
L				**Total Civil Part**	**2,559.90**
M				**Sub-Total M =K+L**	**1,63,112.05**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**1,63,112.05**
P				**GST @ 18% of Sub-Total O**	**29,360.17**
Q				**CESS @ 1% of Sub-Total O**	**1,631.12**
R				**Grand Total R=P+Q**	**1,94,103.34**

Table 68 Cost Estimate for DSS MCCB 500 KVA Distribution Transformer

Cost Estimate for Installation of MCCB-500kVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	LT Distribution Box with MCCB for 500KVA S/S	No	1	1,26,568.00	1,26,568.00
2	1.1kV Al 1CX630 Sq.mm Un-armoured Cable	M	64.00	585.93	37,499.52
3	Gland for 1.1kV Al 1CX630 Sq.mm	EA	8.00	1,084.50	8,676.00
4	Lug AL Crimping 630 Sqmm XLPE Single hole	EA	8.00	133.39	1,067.12
5	25x6 mm GI flat	Kg	6.00	97.50	585.00
6	GI Nut , Bolt & Washer of different sizes	Kg	3.00	101.40	304.20
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	1.00	1,365.00	1,365.00
A				**Total Cost of materials**	**1,76,064.84**
B				**Stock, Storage & Insurance i.e 3%**	**5,281.95**
C				**Sub Total C=A+B**	**1,81,346.79**
D				**Contigency @ 3% of C**	**5,440.40**
E				**Tools & Plants @ 2% of C**	**3,626.94**
F				**Transportation @ 7.5% of C**	**13,601.01**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**17,994.08**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**2,22,009.22**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	1.00	2,559.90	2,559.90
L				**Total Civil Part**	**2,559.90**
M				**Sub-Total M =K+L**	**2,24,569.12**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**2,24,569.12**
P				**GST @ 18% of Sub-Total O**	**40,422.44**
Q				**CESS @ 1% of Sub-Total O**	**2,245.69**
R				**Grand Total R=P+Q**	**2,67,237.25**

Table 69 Cost Estimate for DSS ACB 630 KVA Distribution Transformer

Cost Estimate for Installation of ACB for 400A					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	LT ACB 400A	EA	3	42,002.50	1,26,007.50
2	1.1kV Al 1CX630 Sq.mm Un-armoured Cable	M	180.00	585.93	1,05,467.40
3	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	128.52	97.50	12,530.70
4	Gland for 1.1kV Al 1CX630 Sq.mm	EA	36.00	1,084.50	39,042.00
5	Lug AL Crimping 630 Sqmm XLPE Single hole	EA	36.00	133.39	4,802.04
6	25x6 mm GI flat	Kg	36.00	97.50	3,510.00
7	GI Nut , Bolt & Washer of different sizes	Kg	15.00	101.40	1,521.00
8	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	3.00	1,365.00	4,095.00
A				**Total Cost of materials**	**2,96,975.64**
B				**Stock, Storage & Insurance i.e 3%**	**8,909.27**
C				**Sub Total C=A+B**	**3,05,884.91**
D				**Contigency @ 3% of C**	**9,176.55**
E				**Tools & Plants @ 2% of C**	**6,117.70**
F				**Transportation @ 7.5% of C**	**22,941.37**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**30,166.71**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**3,74,287.23**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	3.00	2,559.90	7,679.70
L				**Total Civil Part**	**7,679.70**
M				**Sub-Total M =K+L**	**3,81,966.93**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**3,81,966.93**
P				**GST @ 18% of Sub-Total O**	**68,754.05**
Q				**CESS @ 1% of Sub-Total O**	**3,819.67**
R				**Grand Total R=P+Q**	**4,54,540.65**

Table 70 Cost Estimate for River Crossing using Double Pole Structure

Cost Estimate for River Crossing with 02 No's of Double Pole at both side of River with Strut Pole arrangement					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 13 MTR	EA	8	40,427.00	3,23,416.00
2	Top Channel 100X50X5mm,each channel length 3.25 mtr	Kg	124.28	97.50	12,117.30
3	Double Pole Belting Channel 75X40X4.8mm.,each channel length 2.8 Mtr	Kg	199.92	97.50	19,492.20
4	50X50X6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr.	Kg	123.55	97.50	12,046.32
5	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	11	97.50	1,028.66
6	Danger Plate, 1 no	No	4	104.00	416.00
7	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	1.20	97.50	117.35
8	GI barbed wire anticlimbing device	Kg	12	104.00	1,248.00
9	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	4.81	97.50	469.40
10	33kV,10kN pin insulator polymer	No	6	624.00	3,744.00
11	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	24	677.60	16,262.40
12	33kV Disc insulator (B&S) 120KN polymer	No	24	1,872.00	44,928.00
13	CONDUCTOR 148 SQ.MM. AAA	Mtr	309	106.60	32,939.40
14	CLAMP PG FOR 148 SQMM AAA COND	No	12	806.00	9,672.00
15	Earthing of Support (Coil Type)	No	8	215.80	1,726.40
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	2.10	97.50	204.36
17	GI Nut , Bolt & Washer of different sizes	Kg	24.5	101.40	2,486.53
18	H.T. Stay clamp	Pair	8	162.50	1,300.00
19	H.T 33kV Stay set (Complete)	Set	4	1,365.00	5,460.00
20	H.T Stay Insulator	No	8	65.00	520.00
21	7/8 SWG Stay Wire	Kg	60	97.50	5,850.00
22	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
23	50x6 mm GI flat	Kg	12.00	97.50	1,170.00
24	Black Paint	Ltr	4	286.00	1,144.00
25	Yellow Colour Paint for Background	L	8	212.77	1,702.16
A				**Total Cost of materials**	**5,02,190.49**
B				**Stock, Storage & Insurance i.e 3%**	**15,065.71**
C				**Sub Total C=A+B**	**5,17,256.20**
D				**Contigency @ 3% of C**	**15,517.69**
E				**Tools & Plants @ 2% of C**	**10,345.12**
F				**Transportation @ 7.5% of C**	**38,794.22**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**16,487.04**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**5,98,400.27**
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	8	8,458.80	67,670.40
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	4	2,504.25	10,017.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
L				**Total Civil Part**	**82,807.20**
M				**Sub-Total M =K+L**	**6,81,207.47**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**6,81,207.47**
P				**GST @ 18% of Sub-Total O**	**1,22,617.34**
Q				**CESS @ 1% of Sub-Total O**	**6,812.07**
R				**Grand Total R=P+Q**	**8,10,636.89**

Table 71 Cost Estimate for River Crossing using Four Pole Structure

Cost Estimate for River Crossing with 02 No's of Four Pole at both side of River with Strut Pole arrangement					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE WPB GI 160X152 13 MTR	EA	12	40,427.00	4,85,124.00
2	Top Channel 100X50X5mm, each channel length 4.3 mtr.	Kg	739.94	97.50	72,144.54
3	Double Pole Belting Channel 75X40X4.8mm., each channel length 4.3 Mtr	Kg	491.23	97.50	47,895.12
4	50X50X6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr.	Kg	354.74	97.50	34,587.54
5	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	21	97.50	2,057.33
6	Danger Plate, 1 no	No	8	104.00	832.00
7	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	2.41	97.50	234.70
8	GI barbed wire anticlimbing device	Kg	24	104.00	2,496.00
9	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	9.63	97.50	938.81
10	33kV,10kN pin insulator polymer	No	6	624.00	3,744.00
11	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	24	677.60	16,262.40
12	33kV Disc insulator (B&S) 120KN polymer	No	24	1,872.00	44,928.00
13	CONDUCTOR 148 SQ.MM. AAA	Mtr	309	106.60	32,939.40
14	CLAMP PG FOR 148 SQMM AAA COND	No	12	806.00	9,672.00
15	Earthing of Support (Coil Type)	No	12	215.80	2,589.60
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	3.14	97.50	306.54
17	GI Nut , Bolt & Washer of different sizes	Kg	49.0	101.40	4,973.06
18	H.T. Stay clamp	Pair	8	162.50	1,300.00
19	H.T 33kV Stay set (Complete)	Set	4	1,365.00	5,460.00
20	H.T Stay Insulator	No	8	65.00	520.00
21	7/8 SWG Stay Wire	Kg	60	97.50	5,850.00
22	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
23	50x6 mm GI flat	Kg	12	97.50	1,170.00
24	Black Paint	Ltr	6	286.00	1,716.00
25	Yellow Colour Paint for Background	L	12	212.77	2,553.24
A				**Total Cost of materials**	**7,83,024.28**
B				**Stock, Storage & Insurance i.e 3%**	**23,490.73**
C				**Sub Total C=A+B**	**8,06,515.01**
D				**Contigency @ 3% of C**	**24,195.45**
E				**Tools & Plants @ 2% of C**	**16,130.30**
F				**Transportation @ 7.5% of C**	**60,488.63**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**28,610.42**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**9,35,939.80**
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	12	8,458.80	1,01,505.60
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	4	2,504.25	10,017.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
L				**Total Civil Part**	**1,16,642.40**
M				**Sub-Total M=K+L**	**10,52,582.20**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**10,52,582.20**
P				**GST @ 18% of Sub-Total O**	**1,89,464.80**
Q				**CESS @ 1% of Sub-Total O**	**10,525.82**
R				**Grand Total R=P+Q**	**12,52,572.82**

Table 72 Cost Estimate for River Crossing using PC Type Tower

Cost Estimate for River Crossing with 02 No's of PC+6 EHT Tower at both side of River					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	PC Tower (5.923 MT per Tower)	MT	11.846	1,43,192.32	16,96,256.22
2	+6 Mtr Extention (2.14 MT per Tower)	MT	4.28	1,43,192.32	6,12,863.13
3	Template (0.876MT per Tower)	MT	1.75	1,43,193.32	2,50,874.70
4	PC Tower (0.296 MT per Tower)	MT	0.59	1,43,193.32	84,770.45
5	+6 Mtr Extention (0.096 MT per Tower)	MT	0.192	1,43,194.32	27,493.31
6	CONDUCTOR AAA 232 SQMM	Mtr	3150.0	203.45	6,40,867.50
7	Earth wire 7/3.25	KM	0.662	16,765.00	11,098.43
8	Double Tension HW fitting	Set	24	4,498.00	1,07,952.00
9	33kV Disc insulator (B&S) 120KN polymer	No	48	1,872.00	89,856.00
10	Earth wire tension fittings	SET	4	1,944.03	7,776.12
11	Vibration damper for earth wire	No	4	2,651.72	10,606.88
12	Vibration damper	No	24	2,651.72	63,641.28
13	Copper flexible bond	No	2	265.97	531.94
14	Phase Plate (R,Y,B)	SET	12	87.92	1,055.04
15	Tower Number Plate	No	4	87.92	351.68
16	Circuit Plate	No	4	87.92	351.68
17	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	4	1,365.00	5,460.00
18	50x6 mm GI flat	Kg	200	97.50	19,500.00
19	Danger Plate, 1 no	No	4	104.00	416.00
20	GI barbed wire anticlimbing device	Kg	211.2	104.00	21,964.80
21	Bird Guard	No	24	139.22	3,341.28
22	Loop Connector	No	12	265.17	3,182.04
A				**Total Cost of materials**	**36,60,210.47**
B				**Stock, Storage & Insurance i.e 3%**	**1,09,806.31**
C				**Sub Total C=A+B**	**37,70,016.79**
D				**Contigency @ 3% of C**	**1,13,100.50**
E				**Tools & Plants @ 2% of C**	**75,400.34**
F				**Transportation @ 7.5% of C**	**2,82,751.26**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**3,64,876.13**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**46,06,145.02**
	Civil & Services				
	Detail survey including preparation of site plan and line profile preparation of drawing & approval for 33KV Line River crossing	No	2	25,000.00	50,000.00
	Soil investigation per location for river crossing foundation	Per Location	2	45,000.00	90,000.00
	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .	No	4	3,700.00	14,800.00
	Excavation for following type of soil and rocks and back filling (back filling shall be done in layers of 500mm sprinkling of water and compaction thereafter and disposed of excess quantity of excavated soilat suitable place after back filling), & if required for filling the foundation, borrowed earth/morrum/sand shall be brought for filling and compaction, including supply of sand, all T&P, labour as requiredfor foundation	CUM	93	450.00	41,911.20
	De-watering for open cast location	Hr	230	232.05	53,371.50
	Providing and laying Plain Cement Concrete (PCC) of proportion (1:3:6) in foundations, Trench and plinths using approved quality of cement, 20mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machinaries required for the work etc., as directed by Engineer-in-Charge.	M3	7.006	5,386.50	37,737.82
	SHORING & SHUTTERING-Required in wet/submerged or special locations of open cast/shallow type foundations with supply of all materials,T &P and Labour	Sqm	0	150.00	-
	Head-Loading of all types of foundation-materials, towers, structures, conductors, Insulators, Hardwares for inaccessible Locations beyond 400 mtrs from the nearest approach road as per the recommendation of siteEngineer-In Charge (Per MT/Per Mtr)	M	40000	5.00	2,00,000.00

	Providing and installation of bored cast-in-situ reinforced cement concrete piles of grade M-25 (with minimum cement content400kg/cum) of diameter and length 500mm & 12 mtr respectively. The pile cap, to carry a safeworking load not less than specified, excluding the cost of steel reinforcement but including cement concrete ,the cost of boring with Steel Liner Casing as maybe required depending on the design based on soil investigation report & other load calculation as per prevailing IS Code. Boring shall be with Bailer and chisel technique by tripod and mechanical winch machine all complete, including removal of excavated earth with all its lifts and leads (length of pile for payment shall be measured up to bottom of pile cap) Cost should include breaking of 1m oftop pile after 2-3 days of casting of piles –Pile of suitable diameter based on design referring to soil investigation report. *Quantity is indicative in nature & subject to final study of soil test report.	R mtr.	320	6,100.00	19,52,000.00
	FOR OPENCAST FOUNDATION: (FOR DOUBLE CIRCUIT TOWER) Providing & laying of RCC work of ratio 1:1.5:3 (GradeM-20)with approved quality stone chips of nominal size 12mm to 20mm in tower foundation and copinginclusive of cost of mixing, supply of form boxes Chimney &fixing, including cost of providing form work for all shapes (including steel plate/plywood shuttering, strutting, steel scaffoldingetc.), butexcluding the cost of providing reinforcement, inserts, curing, testing of sample cement concrete cubes & cost of all materials like cement,etc as per IS.456.& excluding steel.(ii) The coping height shall be 350mmabove the ground level. The surrounding area shall be clear from materials and damage of land if any shall be repaired before measurement and as per requirement, including labours and T<(>&<)>P as perspecification in the concrete ratio 1:1.5:3 (Grade M-20.)	M3	64	9,500.00	6,10,907.00
	Continuous welding-WELDING OF BOLTS & NUTS,, Supply of all materials for continuous welding of bolts & nuts (around the bolts) up to top of tower without cross arm, including welding rods,welding generator machine (diesel engine operator.), application of required zinc rich paints around the welding portion after welding (two coats),fuel,lubricants,T<(>&<)>P and labours and other arrangements etc.,,	NO	4326	11.92	51,565.92
	Reinforcement	MT	7.040	1,08,000.00	7,60,320.00
L				**Total Civil Part**	**38,62,613.44**
M				**Sub-Total M =K+L**	**84,68,758.46**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**84,68,758.46**
P				**GST @ 18% of Sub-Total O**	**15,24,376.52**
Q				**CESS @ 1% of Sub-Total O**	**84,687.58**
R				**Grand Total R=P+Q**	**1,00,77,822.56**

Cost Estimate for 4-Pole Anchor for PC Type Tower

Sl No	Description of Item	Unit	Quantity	Unit Rate(In Rs.)	Amount(In Rs.)
1	POLE WPB GI 160X152 13 MTR	EA	12	40,427.00	4,85,124.00
2	Top Channel 100X50X5mm, each channel length 4.3 mtr.	Kg	739.94	97.50	72,144.54
3	Double Pole Belting Channel 75X40X4.8mm., each channel length 4.3 Mtr	Kg	491.23	97.50	47,895.12
4	50X50X6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr.	Kg	354.74	97.50	34,587.54
5	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	21	97.50	2,057.33
6	Danger Plate, 1 no	No	8	104.00	832.00
7	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	2.41	97.50	234.70
8	GI barbed wire anticlimbing device	Kg	24	104.00	2,496.00
9	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	9.63	97.50	938.81
10	33kV,10kN pin insulator polymer	No	6	624.00	3,744.00
11	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	24	677.60	16,262.40
12	33kV Disc insulator (B&S) 120KN polymer	No	24	1,872.00	44,928.00
13	CONDUCTOR 148 SQ.MM. AAA	Mtr	309	106.60	32,939.40
14	CLAMP PG FOR 148 SQMM AAA COND	No	12	806.00	9,672.00
15	Earthing of Support (Coil Type)	No	12	215.80	2,589.60
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	3.14	97.50	306.54
17	GI Nut , Bolt & Washer of different sizes	Kg	49.0	101.40	4,973.06
18	H.T. Stay clamp	Pair	8	162.50	1,300.00
19	H.T 33kV Stay set (Complete)	Set	4	1,365.00	5,460.00
20	H.T Stay Insulator	No	8	65.00	520.00
21	7/8 SWG Stay Wire	Kg	60	97.50	5,850.00
22	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
23	50x6 mm GI flat	Kg	12	97.50	1,170.00
24	Black Paint	Ltr	6	286.00	1,716.00
25	Yellow Colour Paint for Background	L	12	212.77	2,553.24
S				**Total Cost of materials**	**7,83,024.28**
T				**Stock, Storage & Insurance i.e 3%**	**23,490.73**
U				**Sub Total C=A+B**	**8,06,515.01**
V				**Contigency @ 3% of C**	**24,195.45**
W				**Tools & Plants @ 2% of C**	**16,130.30**
X				**Transportation @ 7.5% of C**	**60,488.63**
Y				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
Z				**Erection Other @ 10%**	**28,610.42**
AA				**Erection PSC Pole @ 20%**	
AB				**Sub Total K=C+D+E+F+G+H+I**	**9,35,939.80**
	Civil & Services				
	Installation/Erection of 13 Mtr long RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of malba as per instruction of EIC. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H). Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	12	8,458.80	1,01,505.60
	Fixing of complete 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	EA	4	2,504.25	10,017.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
AC				**Total Civil Part**	**1,16,642.40**
AD				**Sub-Total M =K+L**	**10,52,582.20**
AE				**Other Over Head (Including Supervision charges)@ 6% of M**	-
AF				**Sub-Total O=M+N**	**10,52,582.20**
AG				**GST @ 18% of Sub-Total O**	**1,89,464.80**
AH				**CESS @ 1% of Sub-Total O**	**10,525.82**
AI				**Grand Total R=P+Q**	**12,52,572.82**
AJ				**Grand Total (PC Type + 4-Pole Anchor) AJ=R+AI**	**1,13,30,395.38**

PART D: Unit Bill of Quantity with Cost for Load Growth

Table 73 Cost Estimate for 33/11 KV,2X12.5 MVA PSS

2X12.5 MVA PSS					
PART B: Construction of 33/11 KV Primary Substation with 2X12.5 MVA Trf., including complete Control Room Building and All Equipment Supply, Erection, Commissioning, Testing, Civil Works with					
Sl. No.	DESCRIPTION OF ITEMS	Unit	Quantity	Unit Rate(In Rs.)	Amount(In Rs.)
	SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)				
	33kV Equipment (Indoor Type)				
1	36kV Indoor Panel for 33/11kV Substation as detailed below				
1.1	33kV Incoming Line Feeder Indoor AIS Panel consisting of 36kV VCB Breaker (2 no.s), 33kV Outgoing Line Feeder Indoor AIS Panel consisting of 36kV VCB Breaker (1 no.s)Transformer Indoor AIS Panel (2no.s), 33kV Bus coupler Indoor AIS Panel (1 no.s) and 2 no PT panel - Total 7No's Switch panel board . CTR 800-400/5-5 for Incoming & Bus-coupler, 600-300/5-5-5 for Transformer . Bus Bar size 1250Amp. Each Breaker Rating is 1250Amp & Draw out type.The module shall be provided with complete Feeder & Transformer Feeder protection system to suit for SCADA (BCPU, Numerical Differential Relay having inbuilt of REF protection, Multi-function Meter & other provisions as per tech spec).Energy meter shall be provided on each Incoming & outgoing breaker.	Set	1	1,06,42,372.88	1,06,42,372.88
	11kV Equipment (Indoor Type)				
2	30kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester (for 33kV Incoming/Outgoing Line, HT side of 3nos. Power Transformers and 33/0.433kV Station Transformer) - Outdoor Type with Surge Counter	Nos.	18	13,455.00	2,42,190.00
3	12kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester with out surge counter(For Transformers & Out Going Feeders) - Outdoor type	Nos.	24	4,615.00	1,10,760.00
4	11kV **Indoor Air Insulated switchgear Panel** consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for **Transformer Protection** Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No	2	9,00,000.00	18,00,000.00
5	11kV **Indoor Air Insulated switchgear Panel** consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for **Feeder protection** Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No	6	8,50,000.00	51,00,000.00
6	**11kV Bus-Coupler Indoor AIS Panel** consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No	1	9,00,000.00	9,00,000.00
7	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	2	4,00,000.00	8,00,000.00
	SCADA				
8	SCADA FOR Primary Substation	Set	1	27,00,000.00	27,00,000.00
	Transformer and RMU			-	
9	12.5 MVA, 33/11kV Power Transformer DYn11 (Outdoor Installation) with Accessories	No.	2	1,45,80,900.00	2,91,61,800.00
10	100 KVA 33/0.433kV Energy efficient Station Transformer with HV & LV BOX	No	1	4,24,320.00	4,24,320.00
	Supply , Installation, Testing and Commissioning OF Transformer Monitoring Unit	No	2	3,50,000.00	7,00,000.00
	Substation Earthing System GI				
12	Earthing Conductor 75X10 mm (5.89 Kg/Mtr.) GI Flat for laying (spacing maximum **2m both ways**)	Kg	6479.00	97.50	6,31,702.50
13	Earthing Conductor: 50X6 mm (2.4Kg./Mtr.) **GI Flat** for Raiser from the burial earth mat to equipment, structure etc.)	Kg	1920.00	97.50	1,87,200.00
14	Earthing Device & Associated Accessories (Heavy duty GI Perforated Pipe of ID=40mm & OD=50mm with 3000mm long for treated Earth Pit) as per Drawing	No	40	1,365.00	54,600.00
	33, 11 and Station Trf Structure				
15	(125x70x5) mm RS GI joist 5Mtr (13.3kg / Mtr) (04 nos for one Power Transformer) for supporting of 33kV Cable & 11kV cable (Unit Wt=0.0665 MT) & 10 mm thick MS plate size 250X250 mm at the bottom of the RS Joist duly welded & the MS plate to be suitably grouted to the floor for the rigidity.	Kg	532.00	97.50	51,870.00
16	(100 x 50 x5) mm GI Channel (9.56kg / Mtr) (2Mtr - 06 nos for one Power Transformer) for supporting of 33kV & 11kV power Cable (Unit Wt=0.01912 MT)	Kg	229.44	97.50	22,370.40
17	GI Nuts & Bolts etc. for column and beam & Equipment Structures	Kg	100.00	101.40	10,140.00
18	Supply & Erection of GI Pipe of dia. 150mm, Class-B	Mtr.	150	1,607.00	2,41,050.00
19	High Density Polyethylene (HDPE) pipe 160 mm diameter.	KM	0.10	10,91,237.00	1,09,123.70
20	LTDB for 100KVA, 33/0.433kV Station Transformer	Nos	1	31,744.70	31,744.70
21	Supply and installation of 8way LDB with accessories	Nos.	0	8,960.00	-
	33 and 11 kv Power and Control, XLPE cables				
22	1C x 630mm2 33KV XLPE Cable (Armoured), A2XFY	KM	1.60	14,95,470.00	23,92,752.00
	3C x 95mm2 33KV XLPE Cable (Armoured), A2XFY With Spare	Mtr.	100.00	1,331.20	1,33,120.00
22.1	Supply of **Outdoor termination kits** Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG Cable kits for 1Core	No.s	24	4,901.00	1,17,624.00
22.2	Supply of **Indoor termination kits** Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG Cable kits for 1Core	No.s	24	6,100.00	1,46,400.00
	Supply of **Outdoor termination kits** Heat Shrinkable type suitable for 33kV, 3Core, 95sqmm, HT UG Cable kits for 3Core	No.s	4	25,199.20	1,00,796.80
23	3C x 400mm2 11KV XLPE Cable (Armoured), A2XFY	KM	1.40	19,50,000.00	27,30,000.00
24	Supply of **Indoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, HT UG cable for 3Core (Set)	No.s	24	12,456.60	2,98,958.40
25	Supply of **Outdoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, HT UG cable for 3Core (Set)	No.s	24	18,075.20	4,33,804.80
26	**Control Cables (Copper Armoured)**				
26.1	4 Core x 2.5 mm^2	Km	1.20	1,45,600.00	1,74,720.00
26.2	7 Core x 2.5 mm^2	Km	0.70	2,36,600.00	1,65,620.00
26.3	10 Core x 2.5 mm^2	Km	0.50	3,35,400.00	1,67,700.00
26.4	12 Core x 2.5 mm^2	Km	0.50	4,09,200.00	2,04,600.00
26.5	1 Core x 16 mm2 Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB	Km	0.30	1,24,606.20	37,381.86
27	**1.1 kV XLPE Power Cables**				
27.1	XLPE 4 Core x 150 mm2 (for Station Transformer output)	Km	0.15	7,40,620.00	1,11,093.00
27.2	XLPE 4 Core x 95 mm2 (for Oil Filtration Machine Connection)	Km	0.10	4,74,770.00	47,477.00
27.3	XLPE 4 Core x 25 mm2 (for Switchyard Lighting)	Km	0.30	1,75,420.00	52,626.00
27.4	XLPE 4 Core 16 mm2 (for Switchyard Lighting)	Km	0.30	1,09,400.91	32,820.27
27.5	XLPE 2 Core 16 mm2 (for Switchyard Lighting)	Km	0.30	65,758.50	19,727.55
	Battery & Battery Charger			-	-
28	48 V, 150 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery with 150AH)	Set	1	76,362.80	76,362.80
29	48V, Float cum Boost Battery Charger (15 A float charging, 20 A boost charging)	No	1	2,48,179.11	2,48,179.11
	Sub-station Lighting And Fire Fighting System				
30	Sub-Station Switchyard Lighting , Control Room Lighting (it includes supply of fixtures & Lamps (LED) with switch gear, GI Conduit etc.(120Wx 4 sets and 100Wx6 sets out side the control room, 20 Watt CFL tube-10 sets inside control room .Control Room wiring to be done with Copper wires as per the requirement (Lighting fixtures are to be fixed rigidly on the Column at a suitable height with GI tubular pole so that the required lux as per the technical specification is maintained).	Lot	1	15,10,922.17	15,10,922.17
31	1.5 Ton capacity Split Air Conditioning units with Remote control facility: Including supply of split Air conditioner 5 Star rated, voltage stabiliser, control boxes etc. for completing the A.C scheme. (As per specification) for control room.	No	4	1,07,923.01	4,31,692.05
32	1400 mm sweep 250Volt A/C Celling Fan	No	5	3,777.31	18,886.53
33	300 mm sweep 70W A/C Exhaust Fan (for Battery room and Toilet)	No	2	2,806.00	5,612.00

	Fire Detection Alarm System				
33.1	SITC of Main Fire ALARM Control Panel (UI /FM /Ulc/Vds Approved),Intelligent Addressable Modular Fire Alarm Control Panel based on 32 bit microprocessors including the following as per specification.,A. Battery charger,B SMF Batteries for 72 Hrs. back-up,C Enclosure,D. min.240 character LCD display,(Other specification as mentioned),E. The panel should be modular,deSouthernized, with CPU /master control unit, loop cards, relay and interface card by means of duplicated electronics means hardware redundancy with full functionality.,,F. The panel must provide MODBUS/ RS485 port for integration with SCADA.G. The loop should be capable to have at least 50 elements / devices.,	EA	1	1,62,588.50	1,62,588.50
33.2	SITC of Intelligent Addressable multi sensor Detector- (Smoke + Fixed Tempt. + Rate of rise tempt.) For ceiling (UL /FM /ULC/Vds Approved) inclusive base and other installation accessories. (must have inbuilt short circuit isolator,)	EA	6	2,522.00	15,132.00
33.3	SITC of Intelligent Addressable multi sensor Detector- (Smoke + Fixed Tempt. + Rate of rise tempt.) For trench (UL /FM /ULC/Vds Approved) inclusive base and other installation accessories. (must have inbuilt short circuit isolator,)	EA	2	2,522.00	5,044.00
33.4	SITC of Response Indicator (Twin LED transparent type)	EA	2	185.00	370.00
33.5	SITC of Addressable manual Call Point (must have inbuilt short circuit isolator,) (UL /FM /ULC/Vds Approved)	EA	1	3,271.99	3,271.99
33.6	SITC of Electronic Hooter/Multi tone sounder (must have inbuilt short circuit isolator,) (UL /FM /ULC/Vds Approved) Indoor type.	EA	1	3,127.00	3,127.00
33.7	SITC of 2 Core X 1.5 sq.mm copper conductor, armored, RED colour FRLS PVC sheathed signal Cable confirming to IS standards and specifications	Mtr	150	106.50	15,975.00
33.8	Supply & erection of 4C*2.5sqmm copper armoured FRLS cable confirming to IS standard with accessories (Gland, lug, saddle, etc.)	Mtr	15	168.00	2,520.00
33.9	Supply & erection of steel wire reinforced flexible conduct pipe (16MM) with all accessories.	Mtr	15	35.00	525.00
33.1	Supply & erection of Surge Arrester.	EA	1	3,405.00	3,405.00
33.11	Lightning Rod in Top of PSS Building	EA	1	3,000.00	3,000.00
34	**Fire Fighting System (portable and wheel mounted sets for control room)**				
34.1	Foam type- 9 Ltrs	No	2	6,475.38	12,950.76
34.2	CO_2 - 4.5 Kgs	No	2	12,950.76	25,901.52
34.3	Dry powder 6 Kg	No	2	7,756.26	15,512.51
34.4	Fire Bucket with Stand (4nos. in each Stand)	set	1	3,885.23	3,885.23
	AC & DC System for Auxiliary supply				
35	**AC System**				
35.1	ACDB (as per specification)	Lot	1	5,39,615.06	5,39,615.06
35.2	Main Lighting Distribution Board (as per specification)	Lot	1	2,15,846.02	2,15,846.02
35.3	Indoor Lighting Distribution Board as per specification	Lot	1	60,436.89	60,436.89
35.4	Receptable Panel near Power Transformer	No	1	19,426.14	19,426.14
36	**DC System**				
36.1	48 V DC Distribution Board as per specification .	No	1	2,69,807.53	2,69,807.53
37	Water Cooler with stainless steel stand	No	1	35,798.08	35,798.08
	Wall mounted water purifier system	No	1	3,977.56	3,977.56
38	Maintenance Testing Equipment as per Technical Specification	Lot	1	12,95,076.14	12,95,076.14
39	Tools and Plants (T&P's) Requirement as per Technical Specification	Lot	1	3,23,769.04	3,23,769.04
40	Office Furniture as per Technical Specification	Lot	1	10,79,230.12	10,79,230.12
41	**Supply of Materials for Installation of Power Transformer on Plinth (as per Drawing)**				
41.1	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr / Transformer each (Unit Wt=0.240 MT)	Nos	2	23,712.00	47,424.00
41.2	(300x300x10) mm GI plate 6 nos / Transformer each (Unit Wt=0.013 MT)	Nos	24	1,284.40	30,825.60
41.3	(65x65x5) mm GI angle of 5.4 mts length.4.9 kg/mtr. / Transformer each (Unit Wt=0.026 MT)	Nos	2	2,568.80	5,137.60
42	Chequered plate 1000X300X5.6mm thick for Cable Trench in side Control Room 12 Mtr	Kg	640.00	98.80	63,232.00
43	**33KV Line DP-2No's**				
	WPB 160x160 (11Mtr. Long, 30.44KG/Mtr.) for Station Transformer (GI)	Nos	2	34,322.00	68,644.00
43.1	13 Mtr. Long H-Pole	No	6	85,897.46	5,15,384.76
43.2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =(2x9.56x4.3)	KG	369.97	98.80	36,553.23
43.3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	17.84	98.80	1,762.75
43.4	Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required =(1x7.14x4.3)	KG	138.16	98.80	13,650.11
43.5	Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =(2x7.14x4.3)	KG	276.32	98.80	27,300.22
43.6	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's channel required =(4x7.14x4.3)	KG	552.64	98.80	54,600.44
43.7	50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	399.09	98.80	39,429.80
43.8	Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel required =(1x7.14x0.8)	KG	25.70	98.80	2,539.56
43.9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	7.86	98.80	776.27
43.1	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	6.89	98.80	680.24
43.11	Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel required =(2x9.56x0.5)	KG	43.02	98.80	4,250.38
43.12	Danger Plate, 2 no's.	No.	8	104.00	832.00
43.13	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	1.81	98.80	178.37
43.14	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair)	KG	24	98.80	2,371.20
43.15	H.T. Stay set (Complete)	Set	8	1,365.00	10,920.00
43.16	H.T. Stay Insulator Type-C (2 No's.)	No.	16	65.00	1,040.00
43.17	7/8 SWG Stay Wire 15kg /stay	K.g.	120	97.50	11,700.00
43.18	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	8	1,365.00	10,920.00
43.19	50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 24x2.36	KG	254.88	98.80	25,182.14
43.2	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	24	104.00	2,496.00
43.21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	10.83	98.80	1,070.00
43.22	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	12	13,455.00	1,61,460.00
43.22	Center Rotating, 33kV, 1250A, 25kA, Beam Mounted Single Isolator (Motorised) Double break Double Tandem operating pipe With Earth Switch, Base channel, Post insulator (For Incoming Line) - Outdoor Type	Set	3	93,054.00	2,79,162.00
	33 KV 200Amp AB Switch (For Stattion transformer)	set	1	19,630.00	19,630.00
	33kV HG Fuse with horn gap, support insulator and channel (for Station Trf. 100KVA, 33/0.433kV)	set	1	16,861.00	16,861.00
43.23	33KV pin insulator polymer	No.	12	624.00	7,488.00
43.24	H W fitting(B&S) 90KN,4 Bolt	No.	24	650.00	15,600.00
43.24	Disc insulator (B&S) 90 KN polymer	No.	24	1,495.00	35,880.00
43.25	PG Clamp for 232 sq.mm AAA conductor	NO.	24	1,495.00	35,880.00
43.26	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	99.68	101.40	10,107.05
43.27	Black Paint	Ltr	3	286.00	858.00
43.28	Yellow Colour Paint for Background	Ltr	5	286.00	1,430.00

44	**11KV Line DP-6 No's**				
44.1	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	No	12	34,322.00	4,11,864.00
44.2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required =(2x9.56x3)	KG	344.16	98.80	34,003.01
44.3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	23.79	98.80	2,350.33
44.4	Isolator switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr, each channel length 3 Mtr., 2 no's channel required =(7.14x3x2)	KG	257.04	98.80	25,395.55
44.5	Isolator Switch Side Support Channel 100X50X6mm,9.56 KG/Mtr., each channel length 0.35 mtr., 2 no's channel required =(9.56x2x0.35)	KG	40.15	98.80	3,967.02
44.6	Channel Support for down Pipe 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel required =(7.14x0.8x1)	KG	34.26	98.80	3,384.89
44.7	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.66 Mtr., 4 no's channel required =(7.14x3x4)	KG	514.08	98.80	50,791.10
44.8	50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 3.512 mtr., 4 nos angle required = (4.5x3.512x4)	KG	379.30	98.80	37,474.44
44.9	Danger Plate, 2 no's.	No.	12	104.00	1,248.00
44.1	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	3.61	98.80	356.75
44.11	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.551 Mtr. Length, 2 no's qty. required (1 Pair)	KG	36	98.80	3,556.80
44.12	H.T. Stay set (Complete)	Set	12	1,365.00	16,380.00
44.13	H.T. Stay Insulator Type-C	No.	12	65.00	780.00
44.14	7/10 SWG Stay Wire 15kg /stay	K.g.	180	97.50	17,550.00
44.15	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	12	1,365.00	16,380.00
44.16	50x6mm GI Flat for earthing, 2.36kg/mtr., (12.5 Mtr. For L.A, 3 Mtr for AB Switch Body, 2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 20.5x2.36	KG	339.84	97.50	33,134.40
44.17	GI barbed wire anticlimbing device 3 Kg. Per support, 2 no's qty. required =(2x3kg)	Kg	36	104.00	3,744.00
44.18	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	14.44	98.80	1,426.99
44.19	Lightning Arrester(11KV,10KA) (Station Class,class-2)	EA	18	4,615.00	83,070.00
44.2	11KV 400 AMP isolator with earth switch with PI(polymer)	Set	6	39,793.00	2,38,758.00
44.21	11 KV pin insulator polymer	No.	18	260.00	4,680.00
44.22	H W fitting(B&S) 70KN, 3Bolt	No.	36	455.00	16,380.00
44.23	Disc insulator (B&S) 70 KN polymer	No.	36	1,495.00	53,820.00
44.24	PG Clamp for 100 sq.mm AAA conductor	NO.	36	754.00	27,144.00
	100 mm2 AAAC, as per technical specification and scope of work.	KM	0.03	71,500.00	2,145.00
44.25	GI Nut , Bolt & Washer of different sizes (13.718 Kg each DP with AB Switch)	K.g.	82.31	101.40	8,346.03
44.26	Black Paint	Ltr	6	286.00	1,716.00
44.27	Yellow Colour Paint for Background	Ltr	12	286.00	3,432.00
	Sub-Total for SUPPLY OF EQUIPMENT & MATERIALS (In Rs.)				**7,03,62,846.63**
	Total Cost in Cr.				**7.04**
	ERECTION, TESTING & COMMISSIONING WORKS OF FOLLOWING EQUIPMENT (As per Technical Specification)				
	33kV Equipment (Indoor Type)				
1	**Erection, Commissioning, Testing of 33kV Equipment for (INDOOR Sub-Station)**				
1.1	33kV Incoming Line Feeder Indoor AIS Panel consisting of 36kV VCB Breaker (2 no.s), 33kV Outgoing Line Feeder Indoor AIS Panel consisting of 36kV VCB Breaker (1 no.s)Transformer Indoor AIS Panel (2no.s), 33kV Bus coupler Indoor AIS Panel (1 no.s) and 2 no PT panel - Total 7No's Switch panel board . CTR 800-400/5-5 for Incoming & Bus-coupler, 600-300/5-5-5 for Transformer . Bus Bar size 1250Amp. Each Breaker Rating is 1250Amp & Draw out type.The module shall be provided with complete Feeder & Transformer Feeder protection system to suit for SCADA (BCPU, Numerical Differential Relay having inbuilt of REF protection, Multi-function Meter & other provisions as per tech spec).Energy meter shall be provided on each Incoming & outgoing breaker.	Set	1	42,31,525.42	42,31,525.42
1.2	Erection , Commsioning and Testing of RMU 33KV 3WAY 630A (2ISLTR+2 BKR) (LLVV)	Set	0	15,000.00	-
	Erection, Commissioning, Testing of 11kV Equipment (Indoor Type)				-
2	30kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester (for 33kV Incoming/Outgoing Line, HT side of 3nos. Power Transformers and 33/0.433kV Station Transformer) - Outdoor Type with Surge Counter	Nos.	18	1,455.00	26,190.00
3	12kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester with out surge counter(For Transformers & Out Going Feeders) - Outdoor type	Nos.	24	1,455.00	34,920.00
4	11kV **Indoor Air Insulated switchgear Panel** consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for **Transformer Protection** Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No	2	18,480.00	36,960.00
5	11kV **Indoor Air Insulated switchgear Panel** consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for **Feeder protection** Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No	6	18,480.00	1,10,880.00
6	**11kV Bus-Coupler Indoor AIS Panel** consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No	1	18,480.00	18,480.00
7	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	2	18,480.00	36,960.00
	Erection, Commissioning, Testing of SCADA				
8	SCADA FOR Primary Substation	Set	1	-	-
	Erection, Commissioning, Testing of Transformer and RMU				
9	12.5 MVA, 33/11kV Power Transformer DYn11 (Outdoor Installation) with Accessories	No.	2	2,44,860.00	4,89,720.00
10	100 KVA 33/0.433kV Energy efficient Station Transformer along with all HT & LT termination	No	1	18,900.00	18,900.00
11	Erection, Testing & Commissioning of Transformer Monitoring Unit, as per technical specification and scope of work.	No	2.00	6,629.27	13,258.54
	Erection, Laying of Substation Earthing System GI				
12	Earthing Conductor 75X10 mm (5.89 Kg/Mtr.) GI Flat for laying (spacing maximum **2m both ways**)	Kg	6479.00	26.74	1,73,250.00
13	Earthing Conductor: 50X6 mm (2.4Kg./Mtr.) **GI Flat** for Raiser from the burial earth mat to equipment, structure etc.)	Kg	1920.00	21.83	41,920.00
14	Earthing Device & Associated Accessories (Heavy duty GI Perforated Pipe of ID=40mm & OD=50mm with 3000mm long for treated Earth Pit) as per Drawing	No	40	2,415.00	96,600.00
	Erection of System GI 33, 11 and Station Trf Structure				
15	(125x70x5) mm RS GI joist 5Mtr (13.3kg / Mtr) (04 nos for one Power Transformer) for supporting of 33kV Cable & 11kV cable (Unit Wt=0.0665 MT) & 10 mm thick MS plate size 250X250 mm at the bottom of the RS Joist duly welded & the MS plate to be suitably grouted to the floor for the rigidity.	Kg	532.00	57.02	30,333.33
16	(100 x 50 x5) mm GI Channel (9.56kg / Mtr) (2Mtr - 06 nos for one Power Transformer) for supporting of 33kV & 11kV power Cable (Unit Wt=0.01912 MT)	Kg	229.44	29.00	6,653.76
17	GI Nuts & Bolts etc. for column and beam & Equipment Structures	Kg	100.00	21.00	2,100.00
18	GI Pipe of dia. 150mm, Class-B	Mtr.	150.00	559.89	83,983.50
19	High Density Polyethylene (HDPE) pipe 160 mm diameter.	KM	0.10	3,18,000.00	31,800.00
20	LTDB for 100KVA, 33/0.433kV Station Transformer	Nos	1	768.60	768.60

	Laying of 11kV 33 and 11 kv Power and Control cables				-
21	Laying, Commissioning & Testing of 33kV, 1Core, 400sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by **open trench method**.	KM	1.60	2,80,497.64	4,48,796.22
22.1	Erection of **Outdoor termination kits** Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set.	24	2,327.04	55,848.96
22.2	Erection of **Indoor termination kits** Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set.	24	1,959.72	47,033.28
	Erection of 33kV 3CX95sqmm cable for Station Transformer (with Spare)	MTR	100	133.12	13,312.00
	Erection of Outdoor termination kits for Station Transformer	NO	4	2,519.92	10,079.68
23	Laying, Commissioning, Testing of 11kV, 3core, 400sqmm, aluminium, XLPE insulation armoured (extruded type) UG cable by **open trench method**.	KM	1.40	2,08,229.35	2,91,521.09
24.1	Erection of **Indoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	SET	24	1,470.29	35,286.96
24.2	Erection of **Outdoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	Set.	24	1,837.61	44,102.64
25	**Control Cables (Copper Armoured)**				
25.1	4 Core x 2.5 mm^2	Km	1.20	27,820.00	33,384.00
25.2	7 Core x 2.5 mm^2	Km	0.70	27,820.00	19,474.00
25.3	10 Core x 2.5 mm^2	Km	0.50	34,775.00	17,387.50
25.4	12 Core x 2.5 mm^2	Km	0.50	34,775.00	17,387.50
25.5	1 Core x 16 mm2 Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB	Km	0.30	20,865.00	6,259.50
26	**Laying of 1.1 kV XLPE Power Cables**				
26.1	XLPE 4 Core x 150 mm2 (for Station Transformer output)	Km	0.15	41,730.00	6,259.50
26.2	XLPE 4 Core x 95 mm2 (for Oil Filtration Machine Connection)	Km	0.10	38,948.00	3,894.80
26.3	XLPE 4 Core x 25 mm2 (for Switchyard Lighting)	Km	0.30	36,166.00	10,849.80
26.4	XLPE 4 Core 16 mm2 (for Switchyard Lighting)	Km	0.30	33,384.00	10,015.20
26.5	XLPE 2 Core 16 mm2 (for Switchyard Lighting)	Km	0.30	33,384.00	10,015.20
	Erection, Commissioning , Wiring & Testing of Battery & Battery Charger				
27	48 V, 150 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery with 150AH)	Set	1	6,955.00	6,955.00
28	48V, Float cum Boost Battery Charger (15 A float charging, 20 A boost charging)	No	1	6,955.00	6,955.00
	Erection, Commissioning , Wiring & Testing of Sub-station Lighting And Fire Fighting System				-
29	Sub-Station Switchyard Lighting , Control Room Lighting (it includes supply of fixtures & Lamps (LED) with switch gear, GI Conduit etc.(120Wx 4 sets and 100Wx6 sets out side the control room, 20 Watt CFL tube-10 sets inside control room .Control Room wiring to be done with Copper wires as per the requirement (Lighting fixtures are to be fixed rigidly on the Column at a suitable height with GI tubular pole so that the required lux as per the technical specification is maintained).	Lot	1	41,730.00	41,730.00
30	1.5 Ton capacity Split Air Conditioning units with Remote control facility: Including supply of split Air conditioner 5 Star rated, voltage stabiliser, control boxes etc. for completing the A.C scheme. (As per specification) for control room.	No	4	1,947.40	7,789.60
31	1400 mm sweep 250Volt A/C Celling Fan	No	5	139.10	695.50
32	300 mm sweep 70W A/C Exhaust Fan (for Battery room and Toilet)	No	2	139.10	278.20
33	**Erection, Commissioning of Fire Fighting System (portable and wheel mounted sets for control room)**				
33.1	Foam type- 9 Ltrs	No	2	69.55	139.10
33.2	CO_2 - 4.5 Kgs	No	2	69.55	139.10
33.3	Dry powder 6 Kg	No	2	69.55	139.10
33.4	Fire Bucket with Stand (4nos. in each Stand)	No	1	139.10	139.10
	Erection, Commissioning , Wiring & Testing of AC & DC System				
34	**AC System**				-
34.1	ACDB (as per specification)	Lot	1	5,564.00	4,280.00
34.2	Main Lighting Distribution Board (as per specification)	Lot	1	2,782.00	2,782.00
34.3	Indoor Lighting Distribution Board as per specification	Lot	1	2,782.00	2,782.00
34.4	Receptable Panel near Power Transformer	No	1	2,086.50	2,086.50
35	**DC System**				-
35.1	48 V DC Distribution Board as per specification .	No	1	2,782.00	2,782.00
	Water Cooler with stainless steel stand	No	1	1,325.85	1,325.85
36	Wall mounted water purifier system	No	1	1,325.85	1,325.85
37	**Commissioning & Testing of Maintenance Testing Equipment**	Lot	1	2,782.00	2,782.00
38	**Commissioning Tools and Plants (T&P's) Requirement**	Lot	1	695.50	695.50
39	**Commissioning Office Furniture**	Lot	1	1,391.00	1,391.00
	Laying of Materials for Installation of Power Transformer on Plinth (as per Drawing)				
40	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr / Transformer each (Unit Wt=0.240 MT)	Nos	2	1,112.80	2,225.60
41	Laying including Fabrication works (300x300x10) mm GI plate each (Unit Wt=0.007065MT)	Nos	24	128.44	3,082.56
	(65x65x5) mm GI angle of 5.4 mts length.4.9 kg/mtr. / Transformer each (Unit Wt=0.026 MT)	Nos	2	256.88	513.76
42	GI Chequered plate 1000X300X5.6mm thick for Cable Trench in side Control Room 12 Mtr	MT	0.64	8,346.00	5,341.44
43	**Construction of Cable Trench :** 2 tier 2 rows U-Type RCC Cable trench with M-20 Grade concrete: The internal width 2000 mm, depth 1005 mm, with 75X75X6 mm support angles fixed RCC wall of 175 X 175 mm, Raft of 175mm & with ladder type cable tray (45X45X5)mm two angles at both side having welded flats of 25X5 mm at a gap of 150mm) for Power & control Cable with RCC Trench Cover Slab as per technical Specification, approved drawing and Direction of Engineer Incharge. Complete work including earth work in excavation in all kind of soil & rock and refilling the cavity by selective soil, leveling the surface around the pit with disposal of surplus earth.	Mtr	0.00	23,041.98	-
44	Chequered plate 1000X300X5.6mm thick for Cable Trench in side Control Room 12 Mtr	Metric Ton	0.00	8,346.00	-
45	**Erection of 33KV Line DP-2No's**				
	Erection of 13 WPB Pole, including excavation, refilling, 1:1.5:3 , M20 Grade cement concreting of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H) and and zebra painting (In Black & Yellow Strips)	No	2.00	7,980.00	15,960.00
45.1	Erection of 13 Mtr.H Pole, including excavation, refilling, 1:1.5:3 , M20 Grade cement concreting of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H) and and zebra painting (In Black & Yellow Strips)	No	4	8,287.50	33,150.00
45.2	Installation & Fabrication of Top Channel 100X50X6mm@9.56 KG/MTR. X (4.4 x2) (GI)	KG	247.00	29.00	7,163.00
45.3	Installation of Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	11.89	29.00	344.81
45.4	Installation & Fabrication of Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required =(1x7.14x4.3)	KG	92.11	29.00	2,671.19
45.5	Installation & Fabrication of Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =(2x7.14x4.3)	KG	184.21	29.00	5,342.09
45.6	Installation & Fabrication of Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's channel required =(4x7.14x4.3)	KG	368.42	29.00	10,684.18
45.7	Installation & Fabrication of 50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	266.06	29.00	7,715.74
45.8	Installation & Fabrication of Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel required =(1x7.14x0.8)	KG	17.14	29.00	497.06
45.9	Installation & Fabrication of Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	5.24	29.00	151.96

45.1	Installation & Fabrication of Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	4.59	29.00	133.11
45.11	Installation & Fabrication of Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel required =(2x9.56x0.5)	KG	28.68	29.00	831.72
45.12	Installation of Danger Plate, 2 no's.	No.	6	54.60	327.60
45.13	Installation of Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	1.81	29.00	52.49
45.14	Fixing of complete 33KV stay set including 0.5Cum cement concrete foundation 1:2:4 size (500mm x 500mm x 800mm)	Pair	6	2,362.00	14,172.00
45.18	Sply &InstGI PIPE Earthing ,40mm dia 3 Mtr GI pipe & PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover	No.	8	5,250.00	42,000.00
45.19	Instalation of 50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 24x2.36	KM	0.096	52,400.00	5,030.40
45.2	Installation of GI barbed wire anticlimbing device 3 Kg. Per support	Kg	24	98.70	2,368.80
45.21	Installation of Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	7.22	29.00	209.38
45.22	ITC of Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	9	1,455.30	13,097.70
45.22	ITC OF Center Rotating, 33kV, 1250A, 25kA, Beam Mounted Single Isolator (Motorised) Double break Double Tandem operating pipe With Earth Switch, Base channel, Post insulator (For Incoming Line) - Outdoor Type	Set	2	15,939.00	31,878.00
	ITC 33 KV 200Amp AB Switch (For Stattion transformer)	No.	1.00	1,963.00	1,963.00
	ITC 33kV HG Fuse with horn gap, support insulator and channel (for Station Trf. 100KVA, 33/0.433kV)	No.	1.00	1,686.10	1,686.10
45.23	Installation of 33KV pin insulator polymer	No.	9	28.35	255.15
45.24	**Installation of** 33KV Polymer Disc Insulator (90KN- 120KN) along with Hardware fitting.	No.	18	47.25	850.50
45.25	**Installation of All type of Connector PG Clamp**	NO.	18	32.55	585.90
45.26	Installation of GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	66.45	21.00	1,395.45
	Installation of All type of Connector PG Clamp				
	Installation of GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	82.31	10.14	834.60
45.27	Painting of Pole in Black & Yellow strip	Ltr	0	277.00	-
46	**11KV Line DP-6 No's**				
46.1	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TP Southern Odisha Distribution Co. Ltd. specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	No	12	6,300.00	75,600.00
46.2	Installation & Fabrication of Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required =(2x9.56x3)	KG	344.16	29.00	9,980.64
46.3	Installation & Fabrication of Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	23.79	29.00	689.88
46.4	Installation & Fabrication of Isolator switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr, each channel length 3 Mtr., 2 no's channel required =(7.14x3x2)	KG	257.04	29.00	7,454.16
46.5	Installation & Fabrication of Isolator Switch Side Support Channel 100X50X6mm,9.56 KG/Mtr., each channel length 0.35 mtr., 2 no's channel required =(9.56x2x0.35)	KG	40.15	29.00	1,164.41
46.6	Installation & Fabrication of Channel Support for down Pipe 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel required =(7.14x0.8x1)	KG	34.27	29.00	993.89
46.7	Installation & Fabrication of Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.66 Mtr., 4 no's channel required =(7.14x3x4)	KG	514.08	29.00	14,908.32
46.8	Installation & Fabrication of 50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 3.512 mtr., 4 nos angle required = (4.5x3.512x4)	KG	379.30	29.00	10,999.58
46.9	Installation of Danger Plate, 2 no's.	No.	12	54.60	655.20
46.1	Installation of Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	3.61	29.00	104.71
46.11	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material	EA	12	2,362.00	28,344.00
46.15	Supply & Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TP Southern Odisha Distribution Co. Ltd. specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Earth Electrode, Salt, Charcoal, Nuts-Bolt ,40mm dia 3 Mtr GI pipe & PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba.	No.	12	5,250.00	63,000.00
46.16	Installtion of 50x6mm GI Flat for earthing, 2.36kg/mtr., (12.5 Mtr. For L.A, 3 Mtr for AB Switch Body, 2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 20.5x2.36	KM	0.005	52,400.00	262.00
46.17	Installtion of GI barbed wire anticlimbing device 3 Kg. Per support, 2 no's qty. required =(2x3kg)	SET	36	98.70	3,553.20
46.18	INST OF Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	14.44	29.00	418.85
46.19	Installation,Testing & comissioning of Lightning Arrester(11KV,10KA) (Station Class,class-2)	EA	18	1,455.30	26,195.40
46.2	Installation of 11KV 400 AMP isolator without earth switch with PI(polymer)	Set	6	10,115.00	60,690.00
46.21	Installtion of 11 KV pin insulator polymer	No.	18	28.35	510.30
46.22	Installation of 11KV Polymer Disc Insulator (45KN- 90KN) along with Hardware fitting for 11KV line.Nutbolts will be paid separately	No.	36	47.25	1,701.00
46.24	Installation of All type of Connector PG Clamp	NO.	36	32.55	1,171.80
46.25	Installation of GI Nut , Bolt & Washer of different sizes	K.g.	82.31	21.00	1,728.47
46.26	Painting of Pole in Black & Yellow strip	Ltr	0		-
	Erection, Testing & Commissioning of Fire Detection Alarm System, as per technical specification and scope of work.				
	Sub-Total for ERECTION,TESTING & COMMISSIONING WORKS (In Rs.)				**71,75,944.49**
	Total Cost in Cr.				**0.72**
-					
	Civil Works with supply of all materials like Cement, MS tor rod, Brick, Coarse & Fine Agregrates & Labour,T&P etc.				
1	Contour survey , plotting the contour on graph sheet and marking the finished ground level	Sqr Mtr	1,224.00	20.87	25,538.76
2	Cutting for Levelling and disposal of excess earth either in low laying area in sub-station or outside.	Cum	143.00	250.38	35,804.34
3	Filling of S/S area with borrowed earth (rolling & compacting of filled up soil before taking measurement).	Cum	2,320.00	486.85	11,29,492.00
4	**OUT DOOR DRAIN to DISCHARGE SWITCHYARD/ WATER FROM WASH BASIN AND CONTROL ROOM ROOF (10 mts**		-	-	-
4.1	Excavation in all type soil (1.35x10x0.7)	Cum	9.45	278.20	2,628.99
4.2	PCC (1:3:6) (1.35x10x0.1)	Cum	1.35	6,120.40	8,262.54
4.3	PCC (1:2:4) (0.3x10x0.05)	Cum	0.15	7,511.40	1,126.71
4.4	Brick Masonary with cement mortar (1:5) (0.25x10x0.925+1/2x0.15x0.93x10)+(0.25x10x0.925)	Cum	5.32	5,077.15	27,008.32
4.4	Plastering with Cement mortar(1:6) (2x0.25x10+2x0.925x10+1x0.925x10+1x1.0x10)	Sq. mtr.	42.75	139.10	5,946.53
5	**Switch Yard and COMPOUND WALL as per Drawing Schedule and Specification. For PILE Foundation for SBC Upto 10**		-	-	-
5.1	Construction of Compound-wall (with RCC column & beam with M-20 Grade concrete) along the property line of the sub-station as per technical specification and instruction of the Engineer in Charge.(the size of the bricks shall be 250mm having 1st class Fly-ash brick having compressive strength with 75kg/cm2). This also includes excavation in all types of soil or rocks, backfilling ,and disposal of excess earth . (Brick works rested on RCC Beam and RCC Column & footings , including Cement Plastering, Cement wash, Wall Painting two coats with weather coat. Provision of the boundary wall Fencing with M.S Grill of 700 mm height fixing at the top of the wall. It includes supply of all the materials & two coats of synthetic enamel paintings after primer application of the fencing .	Run. Mtr.	180.00	22,087.72	39,75,788.70
	Boring and casting 300 mm dia single under reamed pile of 3.00 m. long with R.C.C. M-20 using 20 mm down graded chips with cost of all materials, Steel Rods, labours, T&P etc. & all other machinaries required for Compound Wall work etc.complete in all respect as per latest specification & direction of the Engineer in charge at a spacing of 3.3m c/c	Nos	65	8,346.00	5,42,490.00
5.2	Switch Yard GI Chain Linking Fencing with 2 Mtr Height.	Run. Mtr.	60.00	6,500.00	3,90,000.00

6	**Power Transformer Foundation / One (5 MVA)**		-	-	-
6.1	Excavation in all type soil per Tfr.(3X3X1.1 mtr)	Cum	19.80	278.20	5,508.36
6.2	PCC (1:3:6) per Tfr.(3X3X0.075 mtr)	Cum	1.35	6,120.40	8,262.54
6.3	RCC (1:1.5:3) per Tfr. As per drawing	Cum	10.52	8,346.00	87,799.92
6.4	RRHG stone grouting with sand per Tfr.	Cum	9.00	2,503.80	22,534.20
7	**Construction of 100kVA 33/0.4 kV station Trf. Plinth**		-	-	-
7.1	Excavation in all type soil (2.5X2.5X0.750 mtr)	Cum	4.69	278.20	1,304.06
7.2	PCC (1:3:6) (2.5X2.5X0.075 mtr)	Cum	0.47	6,120.40	2,868.94
7.3	RCC (1:1.5:3) (1.5X1.5X0.1 mtr)	Cum	0.23	8,346.00	1,877.85
7.4	Brick Masonary work (2.5x2.5x.925+2x(.5 x1.5x2.25) (1:5)	Cum	61.19	5,077.15	3,10,658.12
7.5	Cement Plastering (1:6) (1.5x2.25x4)+(1.5x1.5) 20mm thick	Sq Mtr	15.75	139.10	2,190.83
8	**Construction of oil sump pit for Transformer (1.6 X 1.6 X 2.3)**		-	-	-
8.1	Excavation of Earth(2.0x2.0x2.1)	Cum	8.40	278.20	2,336.88
8.2	PCC (1:3:6) 2X2X0.1	Cum	0.40	6,120.40	2,448.16
8.3	RCC(1:1.5:3) 1.6X1.6X0.1 for Top Slab	Cum	0.26	8,346.00	2,136.58
8.4	Brick Masonary work(2x2.1+2x1.6)x0.25x2.3 (1:5)	Cum	4.26	5,077.15	21,603.27
8.5	Cement Plastering (1:6) 2.3 (4x2.1+ 4x1.6)+ 1.6x1.6	Sq.mtr	36.60	139.10	5,091.06
8.6	Drainage for Oil sump pit with 250 dia hume pipe	Mtr	24.00	973.70	23,368.80
9	**ROAD (6 Mtrs wide) Length of the road 20 mtrs as per Drawing Schedule- OPTCL/CIVIL/11-REV-B.**		-	-	-
9.1	Excavation in all type soil 0.5mx1mx6m	Cum	60.00	278.20	16,692.00
9.2	Boulder Packing 0.5mx1mx5m	Cum	90.00	2,503.80	2,25,342.00
9.3	Water base course -I 0.075mx1mx5m	Cum	13.50	2,782.00	37,557.00
9.4	Water base course -II 0.075mx1mx5m	Cum	13.50	2,782.00	37,557.00
9.5	PCC (1:2:4) 0.1mx1mx5m	Cum	18.00	7,511.40	1,35,205.20
	Fly ash Brick masonary in cement mortar (1:6) using the bricks of size 10" x 5" x 3" of crushing strength not less than 75 kg / centimetre square with dimensional tolerance 3% after immersing the bricks for 6 hours in water before use including hoisting to required height placing in position scaffolding, splays cutting, circular moulding, corbelling, chamfering and similar such type of work watering and curing etc. including cost, conveyance, royalty, cess, and taxes of all other materials machinaries scaffolding all labour T&P articles required for the work etc. complete in all respect as per the latest specification confirming to relevant IS Specification and direction of the Engineer-in-charge.	Cum	7.20	6,032.65	43,435.08
10	**(125x70x5) mm RS GI joist 5Mtr (STATION) as per Drawing Schedule- OPTCL/CIVIL/2-REV-B.**		-	-	-
10.1	Excavation with back filling L 1m x W 1 x D 2	Cum	8.00	278.20	2,225.60
10.2	PCC (1:3:6)	Cum	0.40	6,120.40	2,448.16
10.3	RCC (1:1.5:3)	Cum	12.00	8,346.00	1,00,152.00
11	**Baffle Wall**		-	-	-
11.1	Excavation with back filling 4.2mx0.75mx0.5m	Cum	1.58	278.20	438.17
11.2	PCC 1:3:6 4.2mx0.75mx0.1m	Cum	0.32	6,120.40	1,927.93
11.3	RCC 1:1.5:3 0.75x3.8x0.2+0.5x3.4x0.2+2.5x3x0.15	Cum	5.80	8,346.00	48,365.07
12	PCC (1:4:8) With cement For S/S area(75 mm) per Sq. mts.((8x16x0.075)	Cum	48.40	5,285.80	2,55,832.72
13	Metal Spreading 100 mm. per Sq. mts. Area of spreading.	Cum	36.20	2,086.50	75,531.30
	Switchgear Cum Control Room (22x10Mts) (column & beam based) (as per specification & Inclusive of doors, windows, collapsible gate, PHD fittings, electrification, inner cable trench, Two nos main doors with concrete pillars, beams) etc. as per Technical specification in Civil section. Layout Drawing		-	-	-
14	**Switchgear Cum Control Room For Pile foundation in FLOOD AREA (with SBC upto 10)**		-	-	-
14.1	Boring and casting 300 mm dia single under reamed pile of 5.00 m. long with R.C.C. M-20 using 20 mm down graded chips with cost of all materials, labours, T&P etc. & all other machinaries required for the work etc. Complete in all respect as per latest specification & direction of the Engineer in charge.	Nos	252	8,346.00	21,03,192.00
14.2	**Earth work in excavation of foundation trenches in all kinds of soil** including moorum, stony earth and earth mixed with boulders except sheet rock and boulders requiring blasting including dressing of sides and leveling the bed up to the required depth and depositing the excavated materials away from the work site within initial leads and lifts, including shoring, shuttering & dewatering (if required) with cost of labour,cess, hire & running charges of water pumps sundries , T & P & all other machinaries required for the work etc. Complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	470.80	306.02	1,44,074.22
14.3	**Supplying and filling in foundation and plinth with good river sand** well watered and rammed in layers not exceeding 23 cm in each layer including all leads and lifts, cost of all materials, labour,cess, sundries, T&P required for the work etc. Complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	791.60	1,001.52	7,92,803.23
14.4	Providing and lying plain **cement concrete of proportion (1:3:6)** in foundation and plinths using approved quality cement , 40 mm. size black hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels laid in layers not exceeding 15 cm. thick in each layer including cost, conveyance, loading, unloading, royalties and taxes of all materials and cost of all labours, cess, sundries, T&P & all other machinaries required for the work including shoring, shuttering and dewatering if required including hire & running charges of water pump etc. Complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	156.80	6,120.40	9,59,678.72
14.5	**K.B. Brick** masonary in cement mortar (1:6) using the bricks of size 10" x 5" x 3" of crushing strength not less than 100 kg / centimeter square with dimensional tolerance 3% after immersing the bricks for 6 hours in water before use including hoisting to required height placing in position scaffolding, splays cutting, circular moulding, corbelling, chamfering and similar such type of work watering and curing etc. including cost, conveyance, royalty, cess, and taxes of all other materials machinaries scaffolding all labour T&P articles required for the work etc. complete in all respect as per the latest specification confirming to relevant IS Specification and direction of the Engineer-in-charge.		-	-	-
14.5.1	**In Foundation and Plinth**	Cum	108.00	5,842.20	6,30,957.60
14.5.2	**Ground Floor**	Cum	222.80	5,842.20	13,01,642.16
14.6	**RCC work M-20** grade as per approved designs and drawings having a minimum compressive strength (in work test) 200 Kg./ Sqcm.in 15 cm. cubes at 28 days after mixing and test conducted in accordance with I.S.456 and I.S 516 using 12 mm. to 20 mm. size black hard crusher broken granite stone chips, screened and washed sharp sand for mortar of approved quality from approved quarry, to be mixed in concrete mixture with approved quality cement including hoisting, lowering, laying and compacting concrete by using vibrators, watering and curing for 28 days, centering and shuttering and finishing the exposed surface smooth providing grooves or beads wherever necessary including cost, conveyance, loading, unloading, royalties and taxes and cess of all materials, cost of all labours, sundries, T&P & all other machinaries required for the work but excluding cost and conveyance of M.S. or Tor steel and binding wires etc. Complete in all respect as per latest specification & direction of the Engineer in charge.		-	-	-
14.6.1	Pile cap & Grade beam	Cum	300.00	8,346.00	25,03,800.00
14.6.2	R.C.C. wall	Cum	70.80	8,346.00	5,90,896.80
14.6.3	Plinth Beam	Cum	24.40	8,346.00	2,03,642.40
14.6.4	Column & Beam- Ground Floor	Cum	144.00	8,346.00	12,01,824.00
14.6.5	Lintel-Ground Floor	Cum	8.80	8,346.00	73,444.80
14.6.6	65mm thick R.C.C.Chajja- Ground Floor	Sqm	88.40	765.05	67,630.42
14.6.7	Roof slab - Ground Floor	Cum	147.20	8,346.00	12,28,531.20
14.6.8	Staircase- Ground Floor	Cum	23.60	8,346.00	1,96,965.60
14.7	Cutting, Straightening coiled or bent up M.S. rods or Tor steel welding or jointing if necessary, bending, binding, tying the grills as required for R.C.C. works, providing fan hooks where necessary and hoisting, lowering and placing in proper position according to approved designs and drawings including cost, conveyance, loading, unloading, taxes of M.S. rods or Tor steel and binding wires of 18 to 20 gauge required for the work and cost of all labour, sundries, T&P and scaffolding complete in all respect as directed by the Engineer in charge (payment will be made according to the actual weight of M.S. rod / Tor steel consumed in the work and no separate payment will be made towards weight of binding wires which is to be borne by the contractor at his own cost etc. complete in all respect as per direction of the Engineer-in-charge.		-	-	-
14.7.1	Ground Floor	MT	72.00	76,505.00	55,08,360.00
14.8	Supplying, fitting and fixing **vitrified tile 60x60cm plain Ivory 8 to 10 mm thick** in floors of approved make with application of polymer modified cement based water resistant adhesive bed of required thickness of 10mm and filling joints with epoxy grout of approved quality including cost of all materials, takes labour T&P etc. required for the work etc. complete in all respect as per the latest specification and direction of the Engineer-in-charge.	Sqm	416.00	1,251.90	5,20,790.40
14.9	Supplying, fitting and fixing **vitrified tile 60x60cm plain Ivory 8 to 10 mm thick** in dado of approved make with application of polymer modified cement based water resistant adhesive bed of required thickness of 10mm and filling joints with epoxy grout of approved quality including cost of all materials, takes labour T&P etc. required for the work etc. complete in all respect as per the latest specification and direction of the Engineer-in-charge.	Sqm	36.80	1,251.90	46,069.92
14.10	Supplying, fitting and fixing **Floor tile of size 40cmx40 cm / 30cmx30cm in floors** on 25mm thick bed of cement mortar 1:1 (1cement : 1sand) jointed with neat cement slury mixed with pigment to match the shades of the tiles of required thickness of approved quality including cost of all materials, takes labour T&P etc. required for the work.etc complete in all respect as per the latest specification and direction of the Engineer-in-charge.	Sqm	20.40	1,112.80	22,701.12
14.11	Providing fitting fixing **Glazed /Ceramic tiles of size 20cmX30cm & 6.5 to 6.7mm thick of size up to 0.10sqm in wall dados skirting and** on 12mm thick cement plaster (1:3) jointed with neat cement slurry mixed with pigments to match the shade of the tiles including rubbing and polishing complete including cost of precast tiles etc. complete in all respect as per the latest specification and direction of the Engineer-in-charge.	Sqm	107.20	1,043.25	1,11,836.40
14.12	Supplying, fitting and fixing 5"x2½" size Dressed seasoned Sal wood chaukaths including cost, conveyance royality taxes of all materials. labour, all other machinaries, T & P articles required for the work complete in all respect as per the direction of the Engineer-in-Charge.	Cum	1.00	1,04,325.00	1,04,325.00
14.13	Supplying, fitting and fixing 30mm/32mm flush door shutter (Non-Sal hard wood frame fixed with 4mm BWR ply on both sides of frame.including cost conveyance royality taxes of all materials. labour, all other machinaries, T & P articles required for the work complete in all respect as per the direction of the Engineer-in-Charge.	Sqm	57.60	2,086.50	1,20,182.40
14.14	Providing and fixing of sliding windows of approved make to be febricated from roll formed sections made of pre-painted steel (base steel as per IS-513 of 0.6 mm thick "D" quality, galvanized as per IS-277 with zinc of 120 Gm/ Sqm.) including cost conveyance royality taxes of all materials. labour, all other machinaries, T & P articles required for the work complete in all respect as per the direction of the Engineer-in-Charge. DOUBLE SHUTTER SLIDING WINDOW	Sqm	124.00	3,060.20	3,79,464.80
14.15	Providing and fixing of FRP door frame including cost conveyance royality taxes of all materials. labour, all other machinaries, T & P articles required for the work complete in all respect as per the latest specification and direction of the Engineer-in-Charge.	Mtr	40.80	625.95	25,538.76
14.16	Providing and fixing of FRP door shutter including cost conveyance royality taxes of all materials. labour, all other machinaries, T & P articles required for the work complete in all respect as per the latest specification and direction of the Engineer-in-Charge.	Sqm	15.20	4,868.50	74,001.20
14.17	Providing **16mm. thick cement plaster** with cement mortar of mix **(1:6)** with approved quality cement with screened and washed sharp sand for mortar and finished smooth to the surface **over brick work** after racking out the joints including watering and curing, rounding of corners etc. complete with cost, conveyance, loading, unloading, royalties, cess, and taxes of all materials and cost of all labours, sundries, T&P and scaffolding required for the work etc. complete in all respect as desired by the Engineer in charge		-	-	-

14.17.1	**Ground Floor**	Sqm	2,499.60	166.92	4,17,233.23
14.18	Providing **12mm. thick cement plaster** with cement mortar of mix **(1:6)** with approved quality cement and screened and washed sharp sand for mortar and finished smooth to the surface **over brick work** after racking out the joints including watering and curing, rounding of corners etc. complete with cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials and cost of all labours, sundries, T&P and scaffolding required for the work etc. complete in all respect as desired by the Engineer in charger in charge		-	-	-
14.18.1	**Ground Floor**	Sqm	1,588.40	139.10	2,20,946.44
14.19	Providing **12mm. thick cement plaster** with cement mortar of mix **(1:3)** with approved quality cement with screened and washed sharp sand for mortar and finished smooth to the surface **in ceiling and R.C.C. surface after chipping the surface in all floors** including watering and curing, rounding of corners etc. complete with cost, conveyance, loading, unloading, royalties, cess, and taxes of all materials and cost of all labours, sundries, T&P and scaffolding required for the work etc. complete in all respect as desired by the Engineer in charge.		-	-	-
14.19.1	**Ground Floor**	Sqm	1,603.60	139.10	2,23,060.76
14.20	Providing and finishing the wall surface with two coat of **cement wash** including scaffolding, all labour, cost, conveyance, cess, taxes of all materials, T&P articles, brushes all other machineries required for the work complete in all respect confirming to relevant I.S. Specification and direction of the Engineer-in-Charge		-	-	-
14.20.1	**Ground Floor**	Sqm	5,655.20	8.35	47,198.30
14.21	Supplying fitting and fixing of M.S shutter made out of M.S Angle 40mmx40mmx6mmm, M.S.Flat 19 mm x 5 mm size, M.S. guide, top hood cover etc. as per design provided including cost, conveyance, royalities of all materials, cost of all labour, T&P articles required for the work etc. complete in all respect confirming to relevant I.S specification and direction of the Engineer-in Charge.	Kg	3,166.80	104.33	3,30,376.41
14.22	Supplying fitting and fixing of M.S grill made out of M.S M.S.Flat 19 mm x 5 mm size, as per design provided including cost, conveyance, royalities of all materials, cost of all labour, T&P articles required for the work etc. complete in all respect confirming to relevant I.S specification and direction of the Engineer-in Charge.	Kg	2,848.40	104.33	2,97,159.33
14.23	**Wall painting 2 coats with acrylic distemper** over one coat of wall primer of approved shade on new work to give an even shade in all floors at all height including scafolding cost of brushes including cost of paint cost conveyance royality of all materials labour,T&P articles required for the work etc. complete in all respect as per the latest specification and direction of the Engineer-in-charge.		-	-	-
14.23.1	**Ground Floor**	Sqm	3,725.20	13.91	51,817.53
14.24	**Painting two coats with weather coat** on exterior walls surface of approved quality and approved shade over a coat of primer in all floors at all height of approved quality and shade including cleaning and sand papering the surface and making the surface smooth with cost, conveyance, loading, unloading, and taxes of all materials, cost of all labour, sundries, T&P, scaffolding etc. required for the work complete in all respect as directed by Engineer-in-charge		-	-	-
14.24.1	**Ground Floor**	Sqm	1,930.00	20.87	40,269.45
14.25	**Painting two Coats with approved colour synthetic enamel paint** on wood / iron work in all floors at all height including scafolding cost conveyance royality of all materials labour,T&P articles required for the work etc. complete in all respect as per the latest specification and direction of the Engineer-in-charge.	Sqm	418.40	41.73	17,459.83
14.26	Providing **cement concrete (1:1.5:3)** using 12mm size black hard crusher broken granite stone chips, screened & washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels laid in layers not exceeding 15 cm. thick in each layer including cost, conveyance, loading, unloading, royalties and taxes of all materials and cost of all labours, cess, sundries, T&P & all other machinaries required for the work including shoring, shuttering and dewatering if required including hire & running charges of water pump etc. Complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	123.60	8,346.00	10,31,565.60
14.27	Supplying, fitting and fixing of stainless steel of 304 grade in hand railing using 50mm dia of 2mm thick circular pipe with Balustrade of size 32mm x 32mm x 2mm @ 0.90mtr. C/C and stainless square pipe bracing of size 32mm x 32mm x 2mm in 3 rows in stair case as per approved design and specification, buffing, polishing etc. with cost, conveyance, taxes of all materials, labour, T&P etc. required for the complete in all respect.	Mtr	68.00	2,086.50	1,41,882.00
14.28	Providing and fixing M.S. fan clamp type-I of 16mm dia M.S. bar bent to shape with hooked ends in R.C.C. slab during laying including painting the exposed portion of loop as per standard design complete as directed by the Engineer-in-charge.	Nos	120	208.65	25,038.00
14.29	Providing **12mm. thick cement plaster** in cement mortar of mix **(1:4)** with neat cement punning with approved quality cement with screened and washed sharp sand for mortar and finished smooth to the surface in ceiling and R.C.C. surface after chipping the surface in septic tank including watering and curing, rounding of corners etc. complete with cost, conveyance, loading, unloading, royalties, cess, and taxes of all materials and cost of all labours, sundries, T&P and scaffolding required for the work etc. complete in all respect as desired by the Engineer in charge.	Sqm	48.40	139.10	6,732.44
14.30	Providing neat cement punning with approved quality cement finished smooth to the surface etc. complete with cost, conveyance, loading, unloading, royalties, cess, and taxes of all materials and cost of all labours, sundries, T&P and scaffolding required for the work etc. complete in all respect as desired by the Engineer in charge.	Sqm	958.00	20.87	19,988.67
14.31	40 mm thick grading concrete with cement concrete (1:2:4) using 12mm and down graded b.h.g. chips to the roof surface **with** water proofing cement compound finished smooth over RCC slab including hoisting and laying in position watering and curing for required number of days finished to smooth surface and desired slope including cost conveyance, royalty and taxes of all materials, labour T&P articles required for the work etc. complete in all respect confirming to relevant I.S specification and direction of the Engineer-in-Charge.	Sqm	550.80	306.02	1,68,555.82
	Providing Fitting, fixing of Aluminium Door with OEL or equivalent anodized AL. door section as vertical member, as top, as bottom and middle member and 8mm plain glass fixed to door to be completed including all cost of labour T&P hire charges of drilling machine , labour charges etc.complete.	Sqm	14.20	4,309.02	61,188.07
	Supply & Fixing of alluminium Ventilator with 8 mm thick glass as per approved drawing	Sqm	0.92	4,309.02	3,964.30
	Finishing surface of wall with Acrylic wall Putty(water Based) of approved make and finished smooth and even surface to receive painting including cost of scaffolding staging charges with cost of all materials, taxes, labour, T&P etc. complete.	Sqm	742.00	344.72	2,55,782.98
	Septic Tank			-	-
	Earth work in excavation of foundation trenches in all kinds of soil including moorum, stony earth and earth mixed with boulders except sheet rock and boulders requiring blasting including dressing of sides and leveling the bed up to the required depth and depositing the excavated materials away from the work site within initial leads and lifts, including shoring, shuttering & dewatering (if required) with cost of labour,cess, hire & running charges of water pumps sundries , T & P & all other machinaries required for the work etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	10.60	379.20	4,019.49
	Supplying and filling in foundation and plinth with good river sand well watered and rammed in layers not exceeding 23 cm in each layer including all leads and lifts, cost of all materials, labour,cess, sundries, T&P required for the work etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	0.95	1,216.87	1,156.02
	Providing and lying plain cement concrete of proportion (1:3:6) in foundation and plinths using approved quality cement , 40 mm. size black hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels laid in layers not exceeding 15 cm. thick in each layer including cost, conveyance, loading, unloading, royalties and taxes of all materials and cost of all labours, cess, sundries, T&P & all other machinaries required for the work including shoring, shuttering and dewatering if required including hire & running charges of water pump etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	0.78	6,032.65	4,705.47
	RCC work M-20 grade as per approved designs and drawings having a minimum compressive strength (in work test) 200 Kg./ Sqcm.in 15 cm. cubes at 28 days after mixing and test conducted in accordance with I.S.456 and I.S 516 using 12 mm. to 20 mm. size black hard crusher broken granite stone chips, screened and washed sharp sand for mortar of approved quality from approved quarry, to be mixed in concrete mixture with approved quality cement including hoisting, lowering, laying and compacting concrete by using vibrators, watering and curing for 28 days, centering and shuttering and finishing the exposed surface smooth providing grooves or beads wherever necessary including cost, conveyance, loading, unloading, royalties and taxes and cess of all materials, cost of all labours, sundries, T&P & all other machinaries required for the work but excluding cost and conveyance of M.S. or Tor steel and binding wires etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	4.56	6,032.65	27,508.88
15	**P.H. Fitting (Internal & External) to Switch-Gear -Cum -Control Room**		-	-	-
15.1	Supplying all materials , labours , taxes and tools and plants for fitting and fixing of PVC pipes of following nominal bore conforming to ASTM-D-1785 (Schedule-80) including fittings and laying as per the site requirement etc., all complete including testing as per the direction and specification of Engineer-in-charge		-	-	-
15.1.1	15 mm dia	Mtr	15.00	139.10	2,086.50
15.1.2	20 mm dia	Mtr	20.00	173.88	3,477.50
15.1.3	25 mm dia	Mtr	15.00	243.43	3,651.38
15.1.4	40 mm dia	Mtr	20.00	278.20	5,564.00
15.1.5	50 mm dia	Mtr	20.00	347.75	6,955.00
15.2	Supplying all material, labour , T&P & fitting ,fixing the following different water supply fittings of approved make with including supply of all necessary jointing materials etc. all complete as directed by the Engineer-in-charge.		-	-	-
15.2.1	25 mm dia Ball valve	Nos	2	904.15	1,808.30
15.2.2	50 mm dia Ball valve	Nos	2	1,391.00	2,782.00
15.2.3	25 mm dia F.W. valve	Nos	2	904.15	1,808.30
15.2.4	50 mm dia F.W. valve	Nos	2	1,391.00	2,782.00
15.3	Supplying all labour T&P and cutting holes in brick masonry wall for taking pipes through and mending good the damages with supply of all required materials etc. complete as per the direction of the Engineer-incharge		0	-	-
15.3.1	For 15mm to 50mm CPVC pipe to pass in 125mm to 250mm thick wall	Nos	10	173.88	1,738.75
15.4	Supplying all labour T&P and materials and making grooves in brick walls vertically and horizontally to the required depth and width for fixing pipes & fittings of sizes 15mm dia to 25mm dia in the grooves, testing the pipe line against leakage, and filling the grooves with cement mortar(1:4) to bring the surface to original level including cost of mortars, curing and conveyance of materials etc. complete as per direction of the Engineer-in-charge.	Mtr	10	69.55	695.50
15.5	Supplying all materials , labour T&P and fittings of approved quality required for fixing of NP or CP Brass or GM fixtures of following sizes and specification with leak proof threaded joints tightened with spun yarn and white zinc or any tightened with spun yarn and white zinc or any including testing and rectification of detects, after testing complete as per direction of Engineer-in-charge.		0	-	-
15.5.1	Bibcock	Nos	5	208.65	1,043.25
15.5.2	Long Body Bibcock	Nos	2	417.30	834.60
15.5.3	Pillar cock	Nos	2	556.40	1,112.80
15.5.4	Angular stop cock	Nos	4	765.05	3,060.20

15.5.5	Soap Holder	Nos	2	104.33	208.65
15.5.6	Towel ring	Nos	2	208.65	417.30
15.5.7	Toilet paper holder	Nos	2	104.33	208.65
15.5.8	Glass self 22"	Nos	2	417.30	834.60
15.5.9	Towel rail 24"	Nos	2	486.85	973.70
15.5.10	Shower arm 190mm long light	Nos	2	973.70	1,947.40
15.5.11	CP Grating	Nos	2	104.33	208.65
15.5.12	Concealed stop cock	Nos	4	695.50	2,782.00
15.5.13	Connecting Pipe	Nos	2	208.65	417.30
15.5.14	Basin with pedestal	Nos	2	4,173.00	8,346.00
15.5.15	Providing and fixing vitreous China water closet (European with seat and lid), of Cerra Cascade "CASINO", CP brass buffers, 10 liter cascade dual flushing cistern hinges & rubber with fittings and brackets, 40 mm flush bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete, painting on brackets and making good the walls and floors wherever required.	Nos	1	20,865.00	20,865.00
15.5.16	Providing and fixing vitreous China water closet Indian type of Odisha pattern size (580mmx440mm) of approved quality with PVC Slimeline (Parryware make) 12.5 ltr capacity low level cistrn with hinges & rubber with fittings and brackets, 40 mm flush bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete, painting on brackets and making good the walls and floors wherever required.	Nos	1	5,842.20	5,842.20
15.5.17	Providing and fixing vitreous China water urinal of Cerra/Parry ware with fittings and brackets, flush bend of CP brass, and making good the walls and floors wherever required.	Nos	2	3,477.50	6,955.00
15.6	Supply of all materials, labour, T&P , fitting and fixing in all floors fixed type bevelled plate glass mirror of size 600mm x 450mm x 5.5mm thick best Indian make ,supply of 13mm thick asbestos backing and CP Brass screw including cost conveyance, taxes of all materials complete as per specification and direction of Engineer-in-charge(Make-Modi Guard/Belgium)	Nos	2	1,043.25	2,086.50
15.7	Supply of all materials, joining materials ,labour and T&P and laying UPVC SWR PIPES of Standard make with ISI Mark duly approved by the Engineer-in-charge including jointing, earthwork in excavation of trenches in all kind of soil to the required depth and refilling of pipe line trenches in 0.3048 mtrs layers with 300 mm deep sand around cushion duly watered and rammed or fixing to walls, floors with supply of necessary clamps, nails and cutting the pipe to length with wastage including supply of all Clamps, Clips, Endcaps & jointing materials etc., complete as per standard specification and direction of Engineer-in-charge.		0	-	-
15.7.1	100mm dia (ISI Marked)	Mtr	10	695.50	6,955.00
15.7.2	150mm dia (ISI Marked)	Mtr	25	834.60	20,865.00
15.8	Supplying all materials, labour T&P for jointing of the UPVC SWR SEWER pipe fittings of standard make duly approved by the Engineer-in-charge with joining material etc. suitably required for fixing on 100mm dia soil waste pipe complete with requisite testing as directed by Engineer-in-charge.		0	-	-
15.8.1	100mm dia "P" Trap	Nos	2	556.40	1,112.80
15.8.2	100mm dia Bend Plain	Nos	3	236.47	709.41
15.8.3	100mm Door Bend	Nos	3	208.65	625.95
15.8.4	100 mm dia Single Junction with Door	Nos	3	486.85	1,460.55
15.8.5	100 mm dia double Junction with Door	Nos	3	556.40	1,669.20
15.8.6	100mm dia Terminal Guard	Nos	2	278.20	556.40
15.8.7	100mm dia. Floor trap	Nos	3	347.75	1,043.25
15.9	Supplying all materials, labor T&P for jointing of the UPVC SWR SEWER pipes & fittings of standard make duly approved by the Engineer-in-charge suitably required for fixing on 100mm dia soil waste pipe complete with requisite testing as directed by Engineer-in-charge.		0	-	-
15.9.1	100mm Pipe	Nos	10	417.30	4,173.00
15.10	Fixing of UPVC vent pipes including labour & T&P all complete as directed by the Engineer-in-charge.		0	-	-
15.10.1	100mm Pipe	Mtr	4	556.40	2,225.60
15.10.2	100mm Vent Cowl	No	2	139.10	278.20
15.11	Supplying all materials labour T&P and constructing inspection chamber C.C.(1:4:8) on bed with hard stone metal size 40mm and 250mm K.B.Bricks work having crushing strength 75 Kg to 99 Kg/cm2 in cement mortar (1:4), R.C.C. roof slab with 500mm dia light pattern factory made SFRC M.H cover with frame, moulding and shaping the channel and benching with C.C. 1:2:4 with hard granite chips 12mm size, 12mm thick C.P 1:3 including cement punning inside, Cement plaster (1:3) outside the chamber, earth work in excavation in all kinds of soil and refilling the cavity around the chamber as per detail drawing & design and specification including cost, conveyance, taxes etc. all complete as directed by Engineer-in-charge.		0	-	-
15.11.1	750mmx 750mm x450mm	No	1	6,259.50	6,259.50
15.12	Providing and fixing 2000 litres capacity P.V.C Over head (Sintex make) tank with all piping and valve arrangement with all labour & materials ,including cost, T&P , scaffolding etc., complete as directed by the Engineer-in-charge.		0	-	-
15.12.1	2000 Ltr Capacity	No	1	23,647.00	23,647.00
15.13	Supplying all material, labour, T&P and constructing manhole chamber of size as mentioned below with 250mm nominal size K.B. Brick having crushing strength 75kg to 99kg /cm2 in CM 1:4 over a bed of 150mm thick C.C(1:4:8) using 40mm size HG metal, plastering with 12mm thick cement mortar (1:3) on internal and external surface, inside finish with neat cement punning, providing & fixing step iron of appropriate quality & size with 3 coats anticorrosive paint, RCC (1:1.5:3) cover slab using 20m & down size graded HG chips along with factory made reinforced concrete cover with frame including breaking of pipe line where ever necessary and earth work in excavation in all kind of soil & rock and refilling the cavity by selective soil, leveling the surface around the chamber with disposal of surplus earth if any to a distance of 50mt as per specification, design & drawing including cost of curing and all taxes , royality , cost , conveyance etc. all complete as directed by the Engineer-in-charge.	No	1	13,910.00	13,910.00
15.14	Supplying all material, labour, T&P and constructing 1.80m dia x 2.60m deep soak way pit with dry brick walling upto 2.00m height and 1st class K.B. Brickwork in cement mortar (1:6) for the remaining 06.60m height at top, 12mm thick cement plaster (1:4) inside and outside , 100mm thick gravel backing in the rear of well staining, 125mm thick RCC cover slab fitted with with iron lifting handles including earth work in excavation in all kind of soil & rock and refilling the cavity by selective soil, leveling the surface around the pit with disposal of surplus earth if any to a distance of 50mt including cost of curing and all taxes , royality , cost , conveyance etc. all complete as directed by the Engineer-in-charge.	No	1	16,692.00	16,692.00
16	**Watering system** like 150 mm dia, 100 Mtr deep bore well (PVC pipe to be used) 1 HP submersivele pump, switch yard water hydrant system for pouring water into the earth pits, tap for garden, including PVC pipes & other accessories required etc.	LS	1	2,08,650.00	2,08,650.00
17	Small wicket (GI) gate one in between Main Gate & Security shed & another in front of Customer Care room of size 1.5 mtr width X 2 mtrs height single leaf with locking arrangement etc. as per above.	No.	0	6,955.00	-
18	**RRHG retaing wall with 1:5 cement mortar Considering 0.6 mt height of retaining wall above the existing ground level per Meter as per Drawing TOTAL 74 Mtrs**		-	-	-
18.1	Excavation in all type of soil(0.8 Cum / Mtr)	Cum	105.60	347.75	36,722.40
18.2	PCC (1:4:8) 200 mm thick, With cement (0.2 Cum / Mtr)	Cum	26.40	5,564.00	1,46,889.60
18.3	PCC (1:2:4) 50 mm thick With cement (0.02 Cum / Mtr)	Cum	1.58	7,511.40	11,898.06
18.4	RRHG Cement Masonary (1:5) With cement (0.86 Cum / Mtr)	Cum	63.64	4,868.50	3,09,831.34
	Laying of cable trench with supply of GI Cable Trench material & all Civil works				-
	Laying of 2 tier 2 rows cable trench (internal width 1500 mm,depth 680 mm, with 75X75X6 mm support angles fixed RCC column of 250 X 250 mm & with ladder type cable tray (45X45X5mm two angles at both side having welded flats of 25X5 mm at a gap of 150mm) for Power & control Cable. It includes supply of GI Cable Trench materials, supply of all civil items as per site requirement and as per detail drawing & design and specification including cost, conveyance, taxes etc. all complete as directed by Engineer-in-charge.	Mtr	40.00	397.77	15,910.80
	Laying of 2 tier 1 rows cable trench (internal width 750 mm,depth 680 mm, with 65X65X6 mm support angles fixed RCC column of 250 X 250 mm & with ladder type cable tray (45X45X5mm two angles at both side having welded flats of 25X5 mm at a gap of 150mm) for Power & control Cable It includes supply of GI Cable Trench materials, supply of all civil items as per site requirement and as per detail drawing & design and specification including cost, conveyance, taxes etc. all complete as directed by Engineer-in-charge.	Mtr	35.00	397.77	13,921.95
	Laying of 2 tier 1 rows cable trench (internal width 500 mm,depth 580 mm, with 50X50X6 mm support angles fixed RCC column of 250 X 250 mm & with ladder type cable tray (45X45X5mm two angles at both side having welded flats of 25X5 mm at a gap of 150mm) for Power & control Cable. It includes supply of GI Cable Trench materials, supply of all civil items as per site requirement and as per detail drawing & design and specification including cost, conveyance, taxes etc. all complete as directed by Engineer-in-charge.	Mtr	25.00	397.77	9,944.25
	Excavation of Earth for 13 Mtr. long poles pit. (1000mm X 500mm X 2275mm) = 1.14 Cu.mtr.), as per technical specification and scope of work.	Cum	4.56	159.10	725.50
	Concreting of poles in ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55 Cu.mtr, as per technical specification and scope of work.	Cum	2.20	8,220.30	18,084.66
	Couping of poles in ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr, as per technical specification and scope of work.	Cum	0.45	8,220.30	3,699.14
	Excavation of Earth for 11 Mtr. long poles pit. (1000mm X 500mm X 1875mm) = 0.94 Cu.mtr.), as per technical specification and scope of work.	Cum	9.40	159.10	1,495.54
	Concreting of poles in ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45 Cu.mtr, as per technical specification and scope of work.	Cum	4.50	8,220.30	36,991.35
	Couping of poles in ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr, as per technical specification and scope of work.	Cum	1.125	8,220.30	9,247.84
	Fixing of stay set with 0.5Cum cement concrete foundation PCC 1:3:6 size (900mmx600mmx900mm) using 40mm BHG metal with all labor and material, including excavation and required backfilling, as per technical specification and scope of work.	No's.	14	1,988.78	27,842.92
	Making of earth chamber with 50mm thick RCC Slab (with 8mm rod) cover for earth pit of size 450mmX450mm X600 mm depth as per direction of Engg in Charge.	No's.	54	708.81	38,275.74
	Construction of 600mm dia Hume Pipe Single row culvert and approach road for Control room-cum- Swith gear room				-
	Earth work in excavation of foundation trenches in all kinds of soil including moorum, stony earth and earth mixed with boulders except sheet rock and boulders requiring blasting including dressing of sides and leveling the bed up to the required depth and depositing the excavated materials away from the work site within initial leads and lifts, including shoring, shuttering & dewatering (if required) with cost of labour,cess, hire & running charges of water pumps sundries , T & P & all other machinaries required for the work etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	14.90	291.69	4,346.18
	Supplying and filling in foundation and plinth with good river sand well watered and rammed in layers not exceeding 23 cm in each layer including all leads and lifts, cost of all materials, labour,cess, sundries, T&P required for the work etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	1.80	936.06	1,684.91
	Providing and lying plain cement concrete of proportion (1:3:6) in foundation and plinths using approved quality cement , 40 mm. size black hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels laid in layers not exceeding 15 cm. thick in each layer including cost, conveyance, loading, unloading, royalties and taxes of all materials and cost of all labours, cess, sundries, T&P & all other machinaries required for the work including shoring, shuttering and dewatering if required including hire & running charges of water pump etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	1.80	4,640.50	8,352.90
	Providing cement concrete of M-15 grade using 20mm down graded black hard crusher broken granite stone chips, screened & washed sharp sand of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels laid in layers not exceeding 15 cm. thick in each layer including cost, conveyance, loading, unloading, royalties and taxes of all materials and cost of all labours, cess, sundries, T&P & all other machinaries required for the work including shoring, shuttering and dewatering if required including hire & running charges of water pump etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	8.30	5,966.35	49,520.71
	Providing,laying and fixing in position R.C.C.hume pipes with collars jointed with cement mortar 1:3 complete with cost of all materials, and cost of all labours, cess, sundries, T&P & all other machinaries required for the work etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Mtr	7.50	11,591.02	86,932.65
	Providing rough stone dry packing for guard walls & retaining walls including cost conveyance of all materials and cost of all labours, cess, sundries, T&P etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	5.30	1,637.99	8,681.35

Annex-3 Load Growth (Unit BoQ)

	Rolling and compacting to sub grade or formation loosening by cutting ordinary earth for 0.15 Mtr. depth including watering and rolling by PRR as per specification and direction of Engineer-in-Charge. (Data for 100sqm x 0.15m= 15 Cum).	Cum	97.50	132.59	12,927.53
	Conveying from the stacks supplying, spreading morrum & sand mixture to proper camber and consolidation with H.R.R.including watering as per specification and direction of Engineer-in-Charge.	Cum	230.00	331.43	76,228.90
	Soling the road surface with soling stones including filling the interstices with moorum and rolling with PRR including cost conveyance of all materials and cost of all labours, cess, sundries, T&P etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	75.00	1,638.08	1,22,856.00
	Supplying and filling in sub base of road with borrowed earth including rolling & compacting all works complete as per specification and instruction of engineer. Payment shall be made for the compacted volume only as per spot levels taken at 2 intervals before start of work and after completion of the filling works.	Cum	780.00	291.64	2,27,479.20
19	Design & providing Galvanised Chain Linking Fencing with 2 Mtr Height around TRF specification.	Sq. mtr.	80.00	4,668.00	3,73,440.00
	Sub-Total for CIVIL WORKS with supply of all materials like Cement, MS tor rod, Brick, Coarse & Fine Agregrates & Labour,T&P etc. (In Rs.)				**3,19,93,005.11**
	Total Cost in Cr.				**3.20**
A	Total Cost for SUPPLY OF EQUIPMENT & MATERIALS (In Cr.)				7.04
B	Stock , Storage & Insurance @ 3 % of A				0.21
C	Sub - Total (A+B)				7.25
D	Contingency @ 3 % of C				0.22
E	Tools &Plants Charges @ 2% of C				0.14
F	Transportation @ 7.5% of C				0.54
G	**Sub - Total (C+D+E+F)**				**8.15**
H1	Total Cost for ERECTION,TESTING & COMMISSIONING WORKS (In Cr.)				0.72
H2	Total Cost for CIVIL WORKS with supply of all materials like Cement, MS tor rod, Brick, Coarse & Fine Agregrates & Labour,T&P etc. (In Cr.)				3.20
H3	Total Cost for Erection & Civil works (H1+H2)				**3.92**
I	**Total Cost of Erection & Civil works in Cr.(H3+H4)**				**3.92**
J	**Total Cost (G+I)**				**12.07**
K	Other Overhead /(including Supervision Charges) @ 6 % of J				-
L	Total Estimated Capital Cost i.e. J+K				**12.07**
M	GST @ 18% of L				2.17
N	CESS @ 1% of L				0.12
O	Inspection Charges (As per Gov. Notification)				0.00
P	**Total Estimate to be deposit in Cr @ L+M+N+O (In Cr.)**				**14.36**

Table 74 Cost Estimate for 33/11 KV,2X10 MVA PSS

2X10 MVA PSS

PART B: Construction of 33/11 KV Primary Substation with 2X5 MVA Trf., including complete Control Room Building and All Equipment Supply, Erection, Commissioning, Testing, Civil Works with supply of all materials, Labour, T&P etc. As per technical specification and scope of work

Sl. No.	DESCRIPTION OF ITEMS	Unit	Quantity	Unit Rate(In Rs.)	Amount(In Rs.)
	SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)				
	33kV Equipment (Indoor Type)				
1	**36kV Indoor Panel for 33/11kV Substation as detailed below**				
1.1	33kV Incoming Line Feeder Indoor AIS Panel consisting of 36kV VCB Breaker (2 no.s), Transformer Indoor AIS Panel (2no.s), 33kV Bus coupler Indoor AIS Panel (1 no.s) and 2 no PT panel - Total 7No's Switch panel board . CTR 800-400/5-5 for Incoming & Bus-coupler, 600-300/5-5-5 for Transformer . Bus Bar size 1250Amp. Each Breaker Rating is 1250Amp & Draw out type.The module shall be provided with complete Feeder & Transformer Feeder protection system to suit for SCADA (BCPU, Numerical Differential Relay having inbuilt of REF protection, Multi-function Meter & other provisions as per tech spec).Energy meter shall be provided on each Incoming & outgoing breaker.	Set	1	88,68,644.07	88,68,644.07
	11kV Equipment (Indoor Type)				
2	30kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester (for 33kV Incoming Line, HT side of 2nos. Power Transformers and 33/0.433kV Station Transformer) - Outdoor Type with Surge Counter	Nos.	12	13,455.00	1,61,460.00
3	12kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester with out surge counter(For Transformers & Out Going Feeders) - Outdoor type	Nos.	24	4,615.00	1,10,760.00
4	11kV **Indoor Air Insulated switchgear Panel** consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for **Transformer Protection** Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No	2	9,00,000.00	18,00,000.00
5	11kV **Indoor Air Insulated switchgear Panel** consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for **Feeder protection** Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No	6	8,50,000.00	51,00,000.00
6	**11kV Bus-Coupler Indoor AIS Panel** consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No	1	9,00,000.00	9,00,000.00
7	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	2	4,00,000.00	8,00,000.00
	SCADA				
8	SCADA FOR Primary Substation	Set	1	27,00,000.00	27,00,000.00
	Transformer and RMU			-	
9	10.0 MVA, 33/11kV Power Transformer DYn11 (Outdoor Installation) with Accessories	No.	2	1,32,89,700.00	2,65,79,400.00
10	100 KVA 33/0.433kV Energy efficient Station Transformer with HV & LV BOX	No	1	4,24,320.00	4,24,320.00
	Supply , Installation, Testing and Commissioning OF Transformer Monitoring Unit	No	2	3,50,000.00	7,00,000.00
	Substation Earthing System GI				
12	Earthing Conductor 75X10 mm (5.89 Kg/Mtr.) GI Flat for laying (spacing maximum **2m both ways**)	Kg	6479.00	97.50	6,31,702.50
13	Earthing Conductor: 50X6 mm (2.4Kg./Mtr.) **GI Flat** for Raiser from the burial earth mat to equipment, structure etc.)	Kg	1920.00	97.50	1,87,200.00
14	Earthing Device & Associated Accessories (Heavy duty GI Perforated Pipe of ID=40mm & OD=50mm with 3000mm long for treated Earth Pit) as per Drawing	No	40	1,365.00	54,600.00
	33, 11 and Station Trf Structure				
15	(125x70x5) mm RS GI joist 5Mtr (13.3kg / Mtr) (04 nos for one Power Transformer) for supporting of 33kV Cable & 11kV cable (Unit Wt=0.0665 MT) & 10 mm thick MS plate size 250X250 mm at the bottom of the RS Joist duly welded & the MS plate to be suitably grouted to the floor for the rigidity.	Kg	532.00	97.50	51,870.00
16	(100 x 50 x5) mm GI Channel (9.56kg / Mtr) (2Mtr - 06 nos for one Power Transformer) for supporting of 33kV & 11kV power Cable (Unit Wt=0.01912 MT)	Kg	229.44	97.50	22,370.40
17	GI Nuts & Bolts etc. for column and beam & Equipment Structures	Kg	100.00	101.40	10,140.00
18	Supply & Erection of GI Pipe of dia. 150mm, Class-B	Mtr.	150	1,607.00	2,41,050.00
19	High Density Polyethylene (HDPE) pipe 160 mm diameter.	KM	0.10	10,91,237.00	1,09,123.70
20	LTDB for 100KVA, 33/0.433kV Station Transformer	Nos	1	31,744.70	31,744.70
21	Supply and installation of 8way LDB with accessories	Nos.	0	8,960.00	-
	33 and 11 kv Power and Control, XLPE cables				
22	1C x 400mm2 33KV XLPE Cable (Armoured), A2XFY	KM	1.60	10,17,900.00	16,28,640.00
	3C x 95mm2 33KV XLPE Cable (Armoured), A2XFY With Spare	Mtr.	100.00	1,331.20	1,33,120.00
22.1	Supply of **Outdoor termination kits** Heat Shrinkable type suitable for 33kV, 1Core, 400sqmm, HT UG Cable kits for 1Core	No.s	16	8,929.70	1,42,875.20
22.2	Supply of **Indoor termination kits** Heat Shrinkable type suitable for 33kV, 1Core, 400sqmm, HT UG Cable kits for 1Core	No.s	16	6,802.90	1,08,846.40
	Supply of **Outdoor termination kits** Heat Shrinkable type suitable for 33kV, 3Core, 95sqmm, HT UG Cable kits for 3Core	No.s	4	25,199.20	1,00,796.80
23	3C x 400mm2 11KV XLPE Cable (Armoured), A2XFY	KM	1.40	19,50,000.00	27,30,000.00
24	Supply of **Indoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, HT UG cable for 3Core (Set)	No.s	24	12,456.60	2,98,958.40
25	Supply of **Outdoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, HT UG cable for 3Core (Set)	No.s	24	18,075.20	4,33,804.80
26	**Control Cables (Copper Armoured)**				
26.1	4 Core x 2.5 mm^2	Km	1.20	1,45,600.00	1,74,720.00
26.2	7 Core x 2.5 mm^2	Km	0.70	2,36,600.00	1,65,620.00
26.3	10 Core x 2.5 mm^2	Km	0.50	3,35,400.00	1,67,700.00
26.4	12 Core x 2.5 mm^2	Km	0.50	4,09,200.00	2,04,600.00
26.5	1 Core x 16 mm2 Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB	Km	0.30	1,24,606.20	37,381.86
27	**1.1 kV XLPE Power Cables**				
27.1	XLPE 4 Core x 150 mm2 (for Station Transformer output)	Km	0.15	7,40,620.00	1,11,093.00
27.2	XLPE 4 Core x 95 mm2 (for Oil Filtration Machine Connection)	Km	0.10	4,74,770.00	47,477.00
27.3	XLPE 4 Core x 25 mm2 (for Switchyard Lighting)	Km	0.30	1,75,420.00	52,626.00
27.4	XLPE 4 Core 16 mm2 (for Switchyard Lighting)	Km	0.30	1,09,400.91	32,820.27
27.5	XLPE 2 Core 16 mm2 (for Switchyard Lighting)	Km	0.30	65,758.50	19,727.55

	Battery & Battery Charger			-	-
28	48 V, 150 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery with 150AH)	Set	1	76,362.80	76,362.80
29	48V, Float cum Boost Battery Charger (15 A float charging, 20 A boost charging)	No	1	2,48,179.11	2,48,179.11
	Sub-station Lighting And Fire Fighting System				
30	Sub-Station Switchyard Lighting , Control Room Lighting (it includes supply of fixtures & Lamps (LED) with switch gear, GI Conduit etc.(120Wx 4 sets and 100Wx6 sets out side the control room, 20 Watt CFL tube-10 sets inside control room .Control Room wiring to be done with Copper wires as per the requirement (Lighting fixtures are to be fixed rigidly on the Column at a suitable height with GI tubular pole so that the required lux as per the technical specification is maintained).	Lot	1	15,10,922.17	15,10,922.17
31	1.5 Ton capacity Split Air Conditioning units with Remote control facility: Including supply of split Air conditioner 5 Star rated, voltage stabiliser, control boxes etc. for completing the A.C scheme. (As per specification) for control room.	No	4	1,07,923.01	4,31,692.05
32	1400 mm sweep 250Volt A/C Celling Fan	No	5	3,777.31	18,886.53
33	300 mm sweep 70W A/C Exhaust Fan (for Battery room and Toilet)	No	2	2,806.00	5,612.00
	Fire Detection Alarm System				
33.1	SITC of Main Fire ALARM Control Panel (UI /FM /Ulc/Vds Approved),Intelligent Addressable Modular Fire Alarm Control Panel based on 32 bit microprocessors including the following as per specification.,A. Battery charger,B SMF Batteries for 72 Hrs. back-up,C Enclosure,D. min.240 character LCD display,(Other specification as mentioned),E. The panel should be modular,deSouthernized, with CPU /master control unit, loop cards, relay and interface card by means of duplicated electronics means hardware redundancy with full functionality.,,F. The panel must provide MODBUS/ RS485 port for integration with SCADA.G. The loop should be capable to have at least 50 elements / devices.,	EA	1	1,62,588.50	1,62,588.50
33.2	SITC of Intelligent Addressable multi sensor Detector- (Smoke + Fixed Tempt. + Rate of rise tempt.) For ceiling (UL /FM /ULC/Vds Approved) inclusive base and other installation accessories. (must have inbuilt short circuit isolator,)	EA	6	2,522.00	15,132.00
33.3	SITC of Intelligent Addressable multi sensor Detector- (Smoke + Fixed Tempt. + Rate of rise tempt.) For trench (UL /FM /ULC/Vds Approved) inclusive base and other installation accessories. (must have inbuilt short circuit isolator,)	EA	2	2,522.00	5,044.00
33.4	SITC of Response Indicator (Twin LED transparent type)	EA	2	185.00	370.00
33.5	SITC of Addressable manual Call Point (must have inbuilt short circuit isolator,) (UL /FM /ULC/Vds Approved)	EA	1	3,271.99	3,271.99
33.6	SITC of Electronic Hooter/Multi tone sounder (must have inbuilt short circuit isolator,) (UL /FM /ULC/Vds Approved) Indoor type.	EA	1	3,127.00	3,127.00
33.7	SITC of 2 Core X 1.5 sq.mm copper conductor, armored, RED colour FRLS PVC sheathed signal Cable confirming to IS standards and specifications	Mtr	150	106.50	15,975.00
33.8	Supply & erection of 4C*2.5sqmm copper armoured FRLS cable confirming to IS standard with accessories (Gland, lug, saddle, etc.)	Mtr	15	168.00	2,520.00
33.9	Supply & erection of steel wire reinforced flexible conduct pipe (16MM) with all accessories.	Mtr	15	35.00	525.00
33.1	Supply & erection of Surge Arrester.	EA	1	3,405.00	3,405.00
33.11	Lightning Rod in Top of PSS Building	EA	1	3,000.00	3,000.00
34	**Fire Fighting System (portable and wheel mounted sets for control room)**				
34.1	Foam type- 9 Ltrs	No	2	6,475.38	12,950.76
34.2	CO_2 - 4.5 Kgs	No	2	12,950.76	25,901.52
34.3	Dry powder 6 Kg	No	2	7,756.26	15,512.51
34.4	Fire Bucket with Stand (4nos. in each Stand)	set	1	3,885.23	3,885.23
	AC & DC System for Auxiliary supply				
35	**AC System**				
35.1	ACDB (as per specification)	Lot	1	5,39,615.06	5,39,615.06
35.2	Main Lighting Distribution Board (as per specification)	Lot	1	2,15,846.02	2,15,846.02
35.3	Indoor Lighting Distribution Board as per specification	Lot	1	60,436.89	60,436.89
35.4	Receptable Panel near Power Transformer	No	1	19,426.14	19,426.14
36	**DC System**				
36.1	48 V DC Distribution Board as per specification .	No	1	2,69,807.53	2,69,807.53
37	Water Cooler with stainless steel stand	No	1	35,798.08	35,798.08
	Wall mounted water purifier system	No	1	3,977.56	3,977.56
38	Maintenance Testing Equipment as per Technical Specification	Lot	1	12,95,076.14	12,95,076.14
39	Tools and Plants (T&P's) Requirement as per Technical Specification	Lot	1	3,23,769.04	3,23,769.04
40	Office Furniture as per Technical Specification	Lot	1	10,79,230.12	10,79,230.12
41	**Supply of Materials for Installation of Power Transformer on Plinth (as per Drawing)**				
41.1	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr / Transformer each (Unit Wt=0.240 MT)	Nos	2	23,712.00	47,424.00
41.2	(300x300x10) mm GI plate 6 nos / Transformer each (Unit Wt=0.013 MT)	Nos	24	1,284.40	30,825.60
41.3	(65x65x5) mm GI angle of 5.4 mts length.4.9 kg/mtr. / Transformer each (Unit Wt=0.026 MT)	Nos	2	2,568.80	5,137.60
42	Chequered plate 1000X300X5.6mm thick for Cable Trench in side Control Room 12 Mtr	Kg	640.00	98.80	63,232.00
43	**33KV Line DP-2No's**				
	WPB 160x160 (11Mtr. Long, 30.44KG/Mtr.) for Station Transformer (GI)	Nos	2	34,322.00	68,644.00
43.1	13 Mtr. Long H-Pole	No	4	85,897.46	3,43,589.84
43.2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =(2x9.56x4.3)	KG	246.65	98.80	24,368.82
43.3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	11.89	98.80	1,175.17
43.4	Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required =(1x7.14x4.3)	KG	92.11	98.80	9,100.07
43.5	Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =(2x7.14x4.3)	KG	184.21	98.80	18,200.15
43.6	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's channel required =(4x7.14x4.3)	KG	368.42	98.80	36,400.29
43.7	50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	266.06	98.80	26,286.53
43.8	Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel required =(1x7.14x0.8)	KG	17.14	98.80	1,693.04
43.9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	5.24	98.80	517.51
43.1	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	4.59	98.80	453.49
43.11	Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel required =(2x9.56x0.5)	KG	28.68	98.80	2,833.58
43.12	Danger Plate, 2 no's.	No.	6	104.00	624.00
43.13	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	1.20	98.80	118.92
43.14	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair)	KG	18	98.80	1,778.40
43.15	H.T. Stay set (Complete)	Set	6	1,365.00	8,190.00
43.16	H.T. Stay Insulator Type-C (2 No's.)	No.	12	65.00	780.00
43.17	7/8 SWG Stay Wire 15kg /stay	K.g.	90	97.50	8,775.00
43.18	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	6	1,365.00	8,190.00
43.19	50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 24x2.36	KG	169.92	98.80	16,788.10
43.20	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	18	104.00	1,872.00
43.21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	7.22	98.80	713.34
43.22	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	9	13,455.00	1,21,095.00
43.23	Center Rotating, 33kV, 1250A, 25kA, Beam Mounted Single Isolator (Motorised) Double break Double Tandem operating pipe With Earth Switch, Base channel, Post insulator (For Incoming Line) - Outdoor Type	Set	2	93,054.00	1,86,108.00
43.24	33 KV 200Amp AB Switch (For Stattion transformer)	set	1	19,630.00	19,630.00
43.25	33kV HG Fuse with horn gap, support insulator and channel (for Station Trf. 100KVA, 33/0.433kV)	set	1	16,861.00	16,861.00
43.26	33KV pin insulator polymer	No.	9	624.00	5,616.00
43.27	H W fitting(B&S) 90KN,4 Bolt	No.	18	650.00	11,700.00
43.28	Disc insulator (B&S) 90 KN polymer	No.	18	1,495.00	26,910.00
43.29	PG Clamp for 232 sq.mm AAA conductor	NO.	18	1,495.00	26,910.00
43.30	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	66.45	101.40	6,738.03
43.31	Black Paint	Ltr	2	286.00	572.00
43.32	Yellow Colour Paint for Background	Ltr	4	286.00	1,144.00

44	**11KV Line DP-6 No's**				
44.1	WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.)	No	12	34,322.00	4,11,864.00
44.2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required =(2x9.56x3)	KG	344.16	98.80	34,003.01
44.3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	23.79	98.80	2,350.33
44.4	Isolator switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr, each channel length 3 Mtr., 2 no's channel required =(7.14x3x2)	KG	257.04	98.80	25,395.55
44.5	Isolator Switch Side Support Channel 100X50X6mm,9.56 KG/Mtr., each channel length 0.35 mtr., 2 no's channel required =(9.56x2x0.35)	KG	40.15	98.80	3,967.02
44.6	Channel Support for down Pipe 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel required =(7.14x0.8x1)	KG	34.26	98.80	3,384.89
44.7	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.66 Mtr., 4 no's channel required =(7.14x3x4)	KG	514.08	98.80	50,791.10
44.8	50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 3.512 mtr., 4 nos angle required = (4.5x3.512x4)	KG	379.30	98.80	37,474.44
44.9	Danger Plate, 2 no's.	No.	12	104.00	1,248.00
44.1	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	3.61	98.80	356.75
44.11	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.551 Mtr. Length, 2 no's qty. required (1 Pair)	KG	36	98.80	3,556.80
44.12	H.T. Stay set (Complete)	Set	12	1,365.00	16,380.00
44.13	H.T. Stay Insulator Type-C	No.	12	65.00	780.00
44.14	7/10 SWG Stay Wire 15kg /stay	K.g.	180	97.50	17,550.00
44.15	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	12	1,365.00	16,380.00
44.16	50x6mm GI Flat for earthing, 2.36kg/mtr., (12.5 Mtr. For L.A, 3 Mtr for AB Switch Body, 2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 20.5x2.36	KG	339.84	97.50	33,134.40
44.17	GI barbed wire anticlimbing device 3 Kg. Per support, 2 no's qty. required =(2x3kg)	Kg	36	104.00	3,744.00
44.18	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	14.44	98.80	1,426.99
44.19	Lightning Arrester(11KV,10KA) (Station Class,class-2)	EA	18	4,615.00	83,070.00
44.2	11KV 400 AMP isolator with earth switch with PI(polymer)	Set	6	39,793.00	2,38,758.00
44.21	11 KV pin insulator polymer	No.	18	260.00	4,680.00
44.22	H W fitting(B&S) 70KN, 3Bolt	No.	36	455.00	16,380.00
44.23	Disc insulator (B&S) 70 KN polymer	No.	36	1,495.00	53,820.00
44.24	PG Clamp for 100 sq.mm AAA conductor	NO.	36	754.00	27,144.00
	100 mm2 AAAC, as per technical specification and scope of work.	KM	0.03	71,500.00	2,145.00
44.25	GI Nut , Bolt & Washer of different sizes (13.718 Kg each DP with AB Switch)	K.g.	82.31	101.40	8,346.03
44.26	Black Paint	Ltr	6	286.00	1,716.00
44.27	Yellow Colour Paint for Background	Ltr	12	286.00	3,432.00
	Sub-Total for SUPPLY OF EQUIPMENT & MATERIALS (In Rs.)				**6,47,37,312.18**
	Total Cost in Cr.				**6.47**
	ERECTION, TESTING & COMMISSIONING WORKS OF FOLLOWING EQUIPMENT (As per Technical Specification)				
	33kV Equipment (Indoor Type)				
1	**Erection, Commissioning, Testing of 33kV Equipment for (INDOOR Sub-Station)**				
1.1	33kV Incoming Line Feeder Indoor AIS Panel consisting of 36kV VCB Breaker (2 no.s), Transformer Indoor AIS Panel (2no.s), 33kV Bus coupler Indoor AIS Panel (1 no.s) and 2 no PT panel - Total 7No's Switch panel board . CTR 800-400/5-5 for Incoming & Bus-coupler, 600-300/5-5-5 for Transformer . Bus Bar size 1250Amp. Each Breaker Rating is 1250Amp & Draw out type.The module shall be provided with complete Feeder & Transformer Feeder protection system to suit for SCADA (BCPU, Numerical Differential Relay having inbuilt of REF protection, Multi-function Meter & other provisions as per tech spec).Energy meter shall be provided on each	Set	1	35,26,271.19	35,26,271.19
1.2	Erection , Commsioning and Testing of RMU 33KV 3WAY 630A (2ISLTR+2 BKR) (LLVV)	Set	0	15,000.00	-
	Erection, Commissioning, Testing of 11kV Equipment (Indoor Type)				-
2	30kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester (for 33kV Incoming Line, HT side of 2nos. Power Transformers and 33/0.433kV Station Transformer) - Outdoor Type with Surge Counter	Nos.	12	1,455.00	17,460.00
3	12kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester with out surge counter(For Transformers & Out Going Feeders) - Outdoor type	Nos.	24	1,455.00	34,920.00
4	11kV **Indoor Air Insulated switchgear Panel** consisting of Breaker-1250A, Busbar-1250A(Copper) & CT (400-800/5-5-5A) for **Transformer Protection** Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No	2	18,480.00	36,960.00
5	11kV **Indoor Air Insulated switchgear Panel** consisting of Breaker-630A, Busbar-1250A (Copper), CT (300-600/5-5A) for **Feeder protection** Relays to be installed on the panel, Multi-function Meter to be installed above the panel, Energy meter to be installed on the panel, as per technical specification and scope of work.	No	6	18,480.00	1,10,880.00
6	**11kV Bus-Coupler Indoor AIS Panel** consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (400-800/5-5A) .Relays to be installed on the panel, as per technical specification and scope of work.	No	1	18,480.00	18,480.00
7	11kV, 2 Core, Single Phase, IVT (11/√3 kV / 110/√3-110/√3V), 3nos in a set, in a separate draw out chamber with Digital Voltmeter inside Control Room separately for Bus-1 & Bus-2 plug in type with disconnector.	Set	2	18,480.00	36,960.00
	Erection, Commissioning, Testing of SCADA				
8	SCADA FOR Primary Substation	Set	1	-	-
	Erection, Commissioning, Testing of Transformer and RMU				
9	10 MVA, 33/11kV Power Transformer DYn11 (Outdoor Installation) with Accessories	No.	2	1,69,785.00	3,39,570.00
10	100 KVA 33/0.433kV Energy efficient Station Transformer along with all HT & LT termination	No	1	18,900.00	18,900.00
11	Erection, Testing & Commissioning of Transformer Monitoring Unit, as per technical specification and scope of work.	No	2.00	6,629.27	13,258.54
	Erection, Laying of Substation Earthing System GI				
12	Earthing Conductor 75X10 mm (5.89 Kg/Mtr.) GI Flat for laying (spacing maximum **2m both ways**)	Kg	6479.00	26.74	1,73,250.00
13	Earthing Conductor: 50X6 mm (2.4Kg./Mtr.) **GI Flat** for Raiser from the burial earth mat to equipment, structure etc.)	Kg	1920.00	21.83	41,920.00
14	Earthing Device & Associated Accessories (Heavy duty GI Perforated Pipe of ID=40mm & OD=50mm with 3000mm long for treated Earth Pit) as per Drawing	No	40	2,415.00	96,600.00
	Erection of System GI 33, 11 and Station Trf Structure				
15	(125x70x5) mm RS GI joist 5Mtr (13.3kg / Mtr) (04 nos for one Power Transformer) for supporting of 33kV Cable & 11kV cable (Unit Wt=0.0665 MT) & 10 mm thick MS plate size 250X250 mm at the bottom of the RS Joist duly welded & the MS plate to be suitably grouted to the floor for the rigidity.	Kg	532.00	57.02	30,333.33
16	(100 x 50 x5) mm GI Channel (9.56kg / Mtr) (2Mtr - 06 nos for one Power Transformer) for supporting of 33kV & 11kV power Cable (Unit Wt=0.01912 MT)	Kg	229.44	29.00	6,653.76
17	GI Nuts & Bolts etc. for column and beam & Equipment Structures	Kg	100.00	21.00	2,100.00
18	GI Pipe of dia. 150mm, Class-B	Mtr.	150.00	559.89	83,983.50
19	High Density Polyethylene (HDPE) pipe 160 mm diameter.	KM	0.10	3,18,000.00	31,800.00
20	LTDB for 100KVA, 33/0.433kV Station Transformer	Nos	1	768.60	768.60
	Laying of 11kV 33 and 11 kv Power and Control cables				-
21	Laying, Commissioning & Testing of 33kV, 1Core, 400sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 400sqmm, XLPE cable as spare) in trefoil formation by **open trench method**.	KM	1.60	2,80,497.64	4,48,796.22
22.1	Erection of **Outdoor termination kits** Heat Shrinkable type suitable for 33kV, 1Core, 400sqmm, HT UG cable kits	Set.	16	2,327.04	37,232.64
22.2	Erection of **Indoor termination kits** Heat Shrinkable type suitable for 33kV, 1Core, 400sqmm, HT UG cable kits	Set.	16	1,959.72	31,355.52
	Erection of 33kV 3CX95sqmm cable for Station Transformer (with Spare)	MTR	100	133.12	13,312.00
	Erection of Outdoor termination kits for Station Transformer	NO	4	2,519.92	10,079.68
23	Laying, Commissioning, Testing of 11kV, 3core, 400sqmm, aluminium, XLPE insulation armoured (extruded type) UG cable by **open trench method**.	KM	1.40	2,08,229.35	2,91,521.09
24.1	Erection of **Indoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	SET	24	1,470.29	35,286.96

24.2	Erection of **Outdoor termination kits** Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	Set.	24	1,837.61	44,102.64
25	**Control Cables (Copper Armoured)**				
25.1	4 Core x 2.5 mm^2	Km	1.20	27,820.00	33,384.00
25.2	7 Core x 2.5 mm^2	Km	0.70	27,820.00	19,474.00
25.3	10 Core x 2.5 mm^2	Km	0.50	34,775.00	17,387.50
25.4	12 Core x 2.5 mm^2	Km	0.50	34,775.00	17,387.50
25.5	1 Core x 16 mm2 Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB	Km	0.30	20,865.00	6,259.50
26	**Laying of 1.1 kV XLPE Power Cables**				
26.1	XLPE 4 Core x 150 mm2 (for Station Transformer output)	Km	0.15	41,730.00	6,259.50
26.2	XLPE 4 Core x 95 mm2 (for Oil Filtration Machine Connection)	Km	0.10	38,948.00	3,894.80
26.3	XLPE 4 Core x 25 mm2 (for Switchyard Lighting)	Km	0.30	36,166.00	10,849.80
26.4	XLPE 4 Core 16 mm2 (for Switchyard Lighting)	Km	0.30	33,384.00	10,015.20
26.5	XLPE 2 Core 16 mm2 (for Switchyard Lighting)	Km	0.30	33,384.00	10,015.20
	Erection, Commissioning , Wiring & Testing of Battery & Battery Charger				
27	48 V, 150 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery with 150AH)	Set	1	6,955.00	6,955.00
28	48V, Float cum Boost Battery Charger (15 A float charging, 20 A boost charging)	No	1	6,955.00	6,955.00
	Erection, Commissioning , Wiring & Testing of Sub-station Lighting And Fire Fighting System				-
29	Sub-Station Switchyard Lighting , Control Room Lighting (it includes supply of fixtures & Lamps (LED) with switch gear, GI Conduit etc.(120Wx 4 sets and 100Wx6 sets out side the control room, 20 Watt CFL tube-10 sets inside control room .Control Room wiring to be done with Copper wires as per the requirement (Lighting fixtures are to be fixed rigidly on the Column at a suitable height with GI tubular pole so that the required lux as per the technical specification is maintained).	Lot	1	41,730.00	41,730.00
30	1.5 Ton capacity Split Air Conditioning units with Remote control facility: Including supply of split Air conditioner 5 Star rated, voltage stabiliser, control boxes etc. for completing the A.C scheme. (As per specification) for control room.	No	4	1,947.40	7,789.60
31	1400 mm sweep 250Volt A/C Celling Fan	No	5	139.10	695.50
32	300 mm sweep 70W A/C Exhaust Fan (for Battery room and Toilet)	No	2	139.10	278.20
33	**Erection, Commissioning of Fire Fighting System (portable and wheel mounted sets for control room)**				
33.1	Foam type- 9 Ltrs	No	2	69.55	139.10
33.2	CO_2 - 4.5 Kgs	No	2	69.55	139.10
33.3	Dry powder 6 Kg	No	2	69.55	139.10
33.4	Fire Bucket with Stand (4nos. in each Stand)	No	1	139.10	139.10
	Erection, Commissioning , Wiring & Testing of AC & DC System				
34	**AC System**				-
34.1	ACDB (as per specification)	Lot	1	5,564.00	4,280.00
34.2	Main Lighting Distribution Board (as per specification)	Lot	1	2,782.00	2,782.00
34.3	Indoor Lighting Distribution Board as per specification	Lot	1	2,782.00	2,782.00
34.4	Receptable Panel near Power Transformer	No	1	2,086.50	2,086.50
35	**DC System**				-
35.1	48 V DC Distribution Board as per specification .	No	1	2,782.00	2,782.00
	Water Cooler with stainless steel stand	No	1	1,325.85	1,325.85
36	Wall mounted water purifier system	No	1	1,325.85	1,325.85
37	**Commissioning & Testing of Maintenance Testing Equipment**	Lot	1	2,782.00	2,782.00
38	**Commissioning Tools and Plants (T&P's) Requirement**	Lot	1	695.50	695.50
39	**Commissioning Office Furniture**	Lot	1	1,391.00	1,391.00
	Laying of Materials for Installation of Power Transformer on Plinth (as per Drawing)				
40	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr / Transformer each (Unit Wt=0.240 MT)	Nos	2	1,112.80	2,225.60
41	Laying including Fabrication works (300x300x10) mm GI plate each (Unit Wt=0.007065MT)	Nos	24	128.44	3,082.56
	(65x65x5) mm GI angle of 5.4 mts length.4.9 kg/mtr. / Transformer each (Unit Wt=0.026 MT)	Nos	2	256.88	513.76
42	GI Chequered plate 1000X300X5.6mm thick for Cable Trench in side Control Room 12 Mtr	MT	0.64	8,346.00	5,341.44
43	**Construction of Cable Trench :** 2 tier 2 rows U-Type RCC Cable trench with M-20 Grade concrete: The internal width 2000 mm, depth 1005 mm, with 75X75X6 mm support angles fixed RCC wall of 175 X 175 mm, Raft of 175mm & with ladder type cable tray (45X45X5)mm two angles at both side having welded flats of 25X5 mm at a gap of 150mm) for Power & control Cable with RCC Trench Cover Slab as per technical Specification, approved drawing and Direction of Engineer Incharge. Complete work including earth work in excavation in all kind of soil & rock and refilling the cavity by selective soil, leveling the surface around the pit with disposal of surplus earth.	Mtr	0.00	23,041.98	-
44	Chequered plate 1000X300X5.6mm thick for Cable Trench in side Control Room 12 Mtr	Metric Ton	0.00	8,346.00	-
45	**Erection of 33KV Line DP-2No's**				
	Erection of 13 WPB Pole, including excavation, refilling, 1:1.5:3 , M20 Grade cement concreting of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H) and and zebra painting (In Black & Yellow Strips)	No	2.00	7,980.00	15,960.00
45.1	Erection of 13 Mtr.H Pole, including excavation, refilling, 1:1.5:3 , M20 Grade cement concreting of size - 500(B)x500(W)X2200(H) , and cooping of 500(B)x500(W)x450(H) and and zebra painting (In Black & Yellow Strips)	No	4	8,287.50	33,150.00
45.2	Installation & Fabrication of Top Channel 100X50X6mm@9.56 KG/MTR. X (4.4 x2) (GI)	KG	247.00	29.00	7,163.00
45.3	Installation of Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	11.89	29.00	344.81
45.4	Installation & Fabrication of Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required =(1x7.14x4.3)	KG	92.11	29.00	2,671.19
45.5	Installation & Fabrication of Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =(2x7.14x4.3)	KG	184.21	29.00	5,342.09
45.6	Installation & Fabrication of Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's channel required =(4x7.14x4.3)	KG	368.42	29.00	10,684.18
45.7	Installation & Fabrication of 50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	266.06	29.00	7,715.74
45.8	Installation & Fabrication of Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel required =(1x7.14x0.8)	KG	17.14	29.00	497.06
45.9	Installation & Fabrication of Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	5.24	29.00	151.96
45.1	Installation & Fabrication of Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	4.59	29.00	133.11
45.11	Installation & Fabrication of Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel required =(2x9.56x0.5)	KG	28.68	29.00	831.72
45.12	Installation of Danger Plate, 2 no's.	No.	6	54.60	327.60
45.13	Installation of Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	1.81	29.00	52.49
45.14	Fixing of complete 33KV stay set including 0.5Cum cement concrete foundation 1:2:4 size (500mm x 500mm x 800mm)	Pair	6	2,362.00	14,172.00
45.18	Sply &InstGI PIPE Earthing ,40mm dia 3 Mtr GI pipe & PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover	No.	8	5,250.00	42,000.00
45.19	Instalation of 50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 24x2.36	KM	0.096	52,400.00	5,030.40
45.2	Installation of GI barbed wire anticlimbing device 3 Kg. Per support	Kg	24	98.70	2,368.80
45.21	Installation of Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	7.22	29.00	209.38
45.22	ITC of Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	9	1,455.30	13,097.70
45.22	ITC OF Center Rotating, 33kV, 1250A, 25kA, Beam Mounted Single Isolator (Motorised) Double break Double Tandem operating pipe With Earth Switch, Base channel, Post insulator (For Incoming Line) - Outdoor Type	Set	2	15,939.00	31,878.00
	ITC 33 KV 200Amp AB Switch (For Stattion transformer)	No.	1.00	1,963.00	1,963.00
	ITC 33kV HG Fuse with horn gap, support insulator and channel (for Station Trf. 100KVA, 33/0.433kV)	No.	1.00	1,686.10	1,686.10
45.23	Installation of 33KV pin insulator polymer	No.	9	28.35	255.15
45.24	**Installation of** 33KV Polymer Disc Insulator (90KN- 120KN) along with Hardware fitting.	No.	18	47.25	850.50

45.25	**Installation of All type of Connector PG Clamp**	NO.	18	32.55	585.90
45.26	Installation of GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	66.45	21.00	1,395.45
	Installation of All type of Connector PG Clamp				
	Installation of GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	82.31	10.14	834.60
45.27	Painting of Pole in Black & Yellow strip	Ltr	0	277.00	-
46	**11KV Line DP-6 No's**				
46.1	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TP Southern Odisha Distribution Co. Ltd. specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	No	12	6,300.00	75,600.00
46.2	Installation & Fabrication of Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required =(2x9.56x3)	KG	344.16	29.00	9,980.64
46.3	Installation & Fabrication of Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	23.79	29.00	689.88
46.4	Installation & Fabrication of Isolator switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr, each channel length 3 Mtr., 2 no's channel required =(7.14x3x2)	KG	257.04	29.00	7,454.16
46.5	Installation & Fabrication of Isolator Switch Side Support Channel 100X50X6mm,9.56 KG/Mtr., each channel length 0.35 mtr., 2 no's channel required =(9.56x2x0.35)	KG	40.15	29.00	1,164.41
46.6	Installation & Fabrication of Channel Support for down Pipe 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel required =(7.14x0.8x1)	KG	34.27	29.00	993.89
46.7	Installation & Fabrication of Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.66 Mtr., 4 no's channel required =(7.14x3x4)	KG	514.08	29.00	14,908.32
46.8	Installation & Fabrication of 50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 3.512 mtr., 4 nos angle required = (4.5x3.512x4)	KG	379.30	29.00	10,999.58
46.9	Installation of Danger Plate, 2 no's.	No.	12	54.60	655.20
46.1	Installation of Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	3.61	29.00	104.71
46.11	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material	EA	12	2,362.00	28,344.00
46.15	Supply & Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TP Southern Odisha Distribution Co. Ltd. specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Earth Electrode, Salt, Charcoal, Nuts-Bolt ,40mm dia 3 Mtr GI pipe & PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba.	No.	12	5,250.00	63,000.00
46.16	Installtion of 50x6mm GI Flat for earthing, 2.36kg/mtr., (12.5 Mtr. For L.A, 3 Mtr for AB Switch Body, 2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 20.5x2.36	KM	0.005	52,400.00	262.00
46.17	Installtion of GI barbed wire anticlimbing device 3 Kg. Per support, 2 no's qty. required =(2x3kg)	SET	36	98.70	3,553.20
46.18	INST OF Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	14.44	29.00	418.85
46.19	Installation,Testing & comissioning of Lightning Arrester(11KV,10KA) (Station Class,class-2)	EA	18	1,455.30	26,195.40
46.2	Installation of 11KV 400 AMP isolator without earth switch with PI(polymer)	Set	6	10,115.00	60,690.00
46.21	Installtion of 11 KV pin insulator polymer	No.	18	28.35	510.30
46.22	Installation of 11KV Polymer Disc Insulator (45KN- 90KN) along with Hardware fitting for 11KV line.Nutbolts will be paid separately	No.	36	47.25	1,701.00
46.24	Installation of All type of Connector PG Clamp	NO.	36	32.55	1,171.80
46.25	Installation of GI Nut , Bolt & Washer of different sizes	K.g.	82.31	21.00	1,728.47
46.26	Painting of Pole in Black & Yellow strip	Ltr	0		-
	Erection, Testing & Commissioning of Fire Detection Alarm System, as per technical specification and scope of work.				
	Sub-Total for ERECTION,TESTING & COMMISSIONING WORKS (In Rs.)				**62,77,516.18**
	Total Cost in Cr.				**0.63**
-					
	Civil Works with supply of all materials like Cement, MS tor rod, Brick, Coarse & Fine Agregrates & Labour,T&P etc.				
1	Contour survey , plotting the contour on graph sheet and marking the finished ground level	Sqr Mtr	1,224.00	20.87	25,538.76
2	Cutting for Levelling and disposal of excess earth either in low laying area in sub-station or outside.	Cum	143.00	250.38	35,804.34
3	Filling of S/S area with borrowed earth (rolling & compacting of filled up soil before taking measurement).	Cum	2,320.00	486.85	11,29,492.00
4	**OUT DOOR DRAIN to DISCHARGE SWITCHYARD/ WATER FROM WASH BASIN AND CONTROL ROOM ROOF (10 mts**		-	-	-
4.1	Excavation in all type soil (1.35x10x0.7)	Cum	9.45	278.20	2,628.99
4.2	PCC (1:3:6) (1.35x10x0.1)	Cum	1.35	6,120.40	8,262.54
4.3	PCC (1:2:4) (0.3x10x0.05)	Cum	0.15	7,511.40	1,126.71
4.4	Brick Masonary with cement mortar (1:5) (0.25x10x0.925+1/2x0.15x0.93x10)+(0.25x10x0.925)	Cum	5.32	5,077.15	27,008.32
4.4	Plastering with Cement mortar(1:6) (2x0.25x10+2x0.925x10+1x0.925x10+1x1.0x10)	Sq. mtr.	42.75	139.10	5,946.53
5	**Switch Yard and COMPOUND WALL as per Drawing Schedule and Specification. For PILE Foundation for SBC Upto 10**		-	-	-
5.1	Construction of Compound-wall (with RCC column & beam with M-20 Grade concrete) along the property line of the sub-station as per technical specification and instruction of the Engineer in Charge.(the size of the bricks shall be 250mm having 1st class Fly-ash brick having compressive strength with 75kg/cm2). This also includes excavation in all types of soil or rocks, backfilling ,and disposal of excess earth . (Brick works rested on RCC Beam and RCC Column & footings , including Cement Plastering, Cement wash, Wall Painting two coats with weather coat. Provision of the boundary wall Fencing with M.S Grill of 700 mm height fixing at the top of the wall. It includes supply of all the materials & two coats of synthetic enamel paintings after primer application of the fencing .	Run. Mtr.	180.00	22,087.72	39,75,788.70
	Boring and casting 300 mm dia single under reamed pile of 3.00 m. long with R.C.C. M-20 using 20 mm down graded chips with cost of all materials, Steel Rods, labours, T&P etc. & all other machinaries required for Compound Wall work etc.complete in all respect as per latest specification & direction of the Engineer in charge at a spacing of 3.3m c/c	Nos	65	8,346.00	5,42,490.00
5.2	Switch Yard GI Chain Linking Fencing with 2 Mtr Height.	Run. Mtr.	60.00	6,500.00	3,90,000.00
6	**Power Transformer Foundation / One (5 MVA)**		-	-	-
6.1	Excavation in all type soil per Tfr.(3X3X1.1 mtr)	Cum	19.80	278.20	5,508.36
6.2	PCC (1:3:6) per Tfr.(3X3X0.075 mtr)	Cum	1.35	6,120.40	8,262.54
6.3	RCC (1:1.5:3) per Tfr. As per drawing	Cum	10.52	8,346.00	87,799.92
6.4	RRHG stone grouting with sand per Tfr.	Cum	9.00	2,503.80	22,534.20
7	**Construction of 100kVA 33/0.4 kV station Trf. Plinth**		-	-	-
7.1	Excavation in all type soil (2.5X2.5X0.750 mtr)	Cum	4.69	278.20	1,304.06
7.2	PCC (1:3:6) (2.5X2.5X0.075 mtr)	Cum	0.47	6,120.40	2,868.94
7.3	RCC (1:1.5:3) (1.5X1.5X0.1 mtr)	Cum	0.23	8,346.00	1,877.85
7.4	Brick Masonary work (2.5x2.5x.925+2x(.5 x1.5x2.25) (1:5)	Cum	61.19	5,077.15	3,10,658.12
7.5	Cement Plastering (1:6) (1.5x2.25x4)+(1.5x1.5) 20mm thick	Sq Mtr	15.75	139.10	2,190.83
8	**Construction of oil sump pit for Transformer (1.6 X 1.6 X 2.3)**		-	-	-
8.1	Excavation of Earth(2.0x2.0x2.1)	Cum	8.40	278.20	2,336.88
8.2	PCC (1:3:6) 2X2X0.1	Cum	0.40	6,120.40	2,448.16
8.3	RCC(1:1.5:3) 1.6X1.6X0.1 for Top Slab	Cum	0.26	8,346.00	2,136.58
8.4	Brick Masonary work(2x2.1+2x1.6)x0.25x2.3 (1:5)	Cum	4.26	5,077.15	21,603.27
8.5	Cement Plastering (1:6) 2.3 (4x2.1+ 4x1.6)+ 1.6x1.6	Sq.mtr	36.60	139.10	5,091.06
8.6	Drainage for Oil sump pit with 250 dia hume pipe	Mtr	24.00	973.70	23,368.80
9	**ROAD (6 Mtrs wide) Length of the road 20 mtrs as per Drawing Schedule- OPTCL/CIVIL/11-REV-B.**		-	-	-
9.1	Excavation in all type soil 0.5mx1mx6m	Cum	60.00	278.20	16,692.00
9.2	Boulder Packing 0.5mx1mx5m	Cum	90.00	2,503.80	2,25,342.00
9.3	Water base course -I 0.075mx1mx5m	Cum	13.50	2,782.00	37,557.00
9.4	Water base course -II 0.075mx1mx5m	Cum	13.50	2,782.00	37,557.00
9.5	PCC (1:2:4) 0.1mx1mx5m	Cum	18.00	7,511.40	1,35,205.20
	Fly ash Brick masonary in cement mortar (1:6) using the bricks of size 10" x 5" x 3" of crushing strength not less than 75 kg / centimetre square with dimensional tolerance 3% after immersing the bricks for 6 hours in water before use including hoisting to required height placing in position scaffolding, splays cutting, circular moulding, corbelling, chamfering and similar such type of work watering and curing etc. including cost, conveyance, royalty, cess, and taxes of all other materials machinaries scaffolding all labour T&P articles required for the work etc. complete in all respect as per the latest specification confirming to relevant IS Specification and direction of the Engineer-in-charge.	Cum	7.20	6,032.65	43,435.08
10	**(125x70x5) mm RS GI joist 5Mtr (STATION) as per Drawing Schedule- OPTCL/CIVIL/2-REV-B.**		-	-	-
10.1	Excavation with back filling L 1m x W 1 x D 2	Cum	8.00	278.20	2,225.60
10.2	PCC (1:3:6)	Cum	0.40	6,120.40	2,448.16
10.3	RCC (1:1.5:3)	Cum	12.00	8,346.00	1,00,152.00
11	**Baffle Wall**		-	-	-
11.1	Excavation with back filling 4.2mx0.75mx0.5m	Cum	1.58	278.20	438.17
11.2	PCC 1:3:6 4.2mx0.75mx0.1m	Cum	0.32	6,120.40	1,927.93
11.3	RCC 1:1.5:3 0.75x3.8x0.2+0.5x3.4x0.2+2.5x3x0.15	Cum	5.80	8,346.00	48,365.07
12	PCC (1:4:8) With cement For S/S area(75 mm) per Sq. mts.((8x16x0.075)	Cum	48.40	5,285.80	2,55,832.72
13	Metal Spreading 100 mm. per Sq. mts. Area of spreading.	Cum	36.20	2,086.50	75,531.30

	Switchgear Cum Control Room (22x10Mts) (column & beam based) (as per specification & inclusive of doors, windows, collapsible gate, PHD fittings, electrification, inner cable trench, Two nos main doors with concrete pillars, beams) etc. as per Technical specification in Civil section. Layout Drawing		-	-	-
14	**Switchgear Cum Control Room For Pile foundation in FLOOD AREA (with SBC upto 10)**		-	-	-
14.1	Boring and casting 300 mm dia single under reamed pile of 5.00 m. long with R.C.C. M-20 using 20 mm down graded chips with cost of all materials, labours, T&P etc. & all other machinaries required for the work etc. Complete in all respect as per latest specification & direction of the Engineer in charge.	Nos	252	8,346.00	21,03,192.00
14.2	**Earth work in excavation of foundation trenches in all kinds of soil** including moorum, stony earth and earth mixed with boulders except sheet rock and boulders requiring blasting including dressing of sides and leveling the bed up to the required depth and depositing the excavated materials away from the work site within initial leads and lifts, including shoring, shuttering & dewatering (if required) with cost of labour,cess, hire & running charges of water pumps sundries , T & P & all other machinaries required for the work etc. Complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	470.80	306.02	1,44,074.22
14.3	**Supplying and filling in foundation and plinth with good river sand** well watered and rammed in layers not exceeding 23 cm in each layer including all leads and lifts, cost of all materials, labour,cess, sundries, T&P required for the work etc. Complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	791.60	1,001.52	7,92,803.23
14.4	Providing and lying plain **cement concrete of proportion (1:3:6)** in foundation and plinths using approved quality cement , 40 mm. size black hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels laid in layers not exceeding 15 cm. thick in each layer including cost, conveyance, loading, unloading, royalties and taxes of all materials and cost of all labours, cess, sundries, T&P & all other machinaries required for the work including shoring, shuttering and dewatering if required including hire & running charges of water pump etc. Complete in all respect as per latest specification & direction of the Engineer in	Cum	156.80	6,120.40	9,59,678.72
14.5	**K.B. Brick** masonary in cement mortar (1:6) using the bricks of size 10" x 5" x 3" of crushing strength not less than 100 kg / centimeter square with dimensional tolerance 3% after immersing the bricks for 6 hours in water before use including hoisting to required height placing in position scaffolding, splays cutting, circular moulding, corbelling, chamfering and similar such type of work watering and curing etc. including cost, conveyance, royalty, cess, and taxes of all other materials machinaries scaffolding all labour T&P articles required for the work etc. complete in all respect as per the latest specification confirming to relevant IS Specification and direction of the Engineer-in-charge.		-	-	-
14.5.1	**In Foundation and Plinth**	Cum	108.00	5,842.20	6,30,957.60
14.5.2	**Ground Floor**	Cum	222.80	5,842.20	13,01,642.16
14.6	**RCC work M-20** grade as per approved designs and drawings having a minimum compressive strength (in work test) 200 Kg./ Sqcm.in 15 cm. cubes at 28 days after mixing and test conducted in accordance with I.S.456 and I.S 516 using 12 mm. to 20 mm. size black hard crusher broken granite stone chips, screened and washed sharp sand for mortar of approved quality from approved quarry, to be mixed in concrete mixture with approved quality cement including hoisting, lowering, laying and compacting concrete by using vibrators, watering and curing for 28 days, centering and shuttering and finishing the exposed surface smooth providing grooves or beads wherever necessary including cost, conveyance, loading, unloading, royalties and taxes and cess of all materials, cost of all labours, sundries, T&P & all other machinaries required for the work but excluding cost and conveyance of M.S. or Tor steel and binding wires etc. Complete in all respect as per latest specification & direction of the Engineer in charge.		-	-	-
14.6.1	Pile cap & Grade beam	Cum	300.00	8,346.00	25,03,800.00
14.6.2	R.C.C. wall	Cum	70.80	8,346.00	5,90,896.80
14.6.3	Plinth Beam	Cum	24.40	8,346.00	2,03,642.40
14.6.4	Column & Beam- Ground Floor	Cum	144.00	8,346.00	12,01,824.00
14.6.5	Lintel-Ground Floor	Cum	8.80	8,346.00	73,444.80
14.6.6	65mm thick R.C.C.Chajja- Ground Floor	Sqm	88.40	765.05	67,630.42
14.6.7	Roof slab - Ground Floor	Cum	147.20	8,346.00	12,28,531.20
14.6.8	Staircase- Ground Floor	Cum	23.60	8,346.00	1,96,965.60
14.7	Cutting, Straightening coiled or bent up M.S. rods or Tor steel welding or jointing if necessary, bending, binding, tying the grills as required for R.C.C. works, providing fan hooks where necessary and hoisting, lowering and placing in proper position according to approved designs and drawings including cost, conveyance, loading, unloading, taxes of M.S. rods or Tor steel and binding wires of 18 to 20 gauge required for the work and cost of all labour, sundries, T&P and scaffolding complete in all respect as directed by the Engineer in charge (payment will be made according to the actual weight of M.S. rod / Tor steel consumed in the work and no separate payment will be made towards weight of binding wires which is to be borne by the contractor at his own cost etc. complete in all respect as per direction of the Engineer-in-charge.		-	-	-
14.7.1	Ground Floor	MT	72.00	76,505.00	55,08,360.00
14.8	Supplying, fitting and fixing **vitrified tile 60x60cm plain Ivory 8 to 10 mm thick** in floors of approved make with application of polymer modified cement based water resistant adhesive bed of required thickness of 10mm and filling joints with epoxy grout of approved quality including cost of all materials, takes labour T&P etc. required for the work etc. complete in all respect as per the latest specification and direction of the Engineer-in-charge.	Sqm	416.00	1,251.90	5,20,790.40
14.9	Supplying, fitting and fixing **vitrified tile 60x60cm plain Ivory 8 to 10 mm thick** in dado of approved make with application of polymer modified cement based water resistant adhesive bed of required thickness of 10mm and filling joints with epoxy grout of approved quality including cost of all materials, takes labour T&P etc. required for the work etc. complete in all respect as per the latest specification and direction of the Engineer-in-charge.	Sqm	36.80	1,251.90	46,069.92
14.10	Supplying, fitting and fixing **Floor tile of size 40cmx40 cm / 30cmx30cm in floors** on 25mm thick bed of cement mortar 1:1 (1cement : 1sand) jointed with neat cement slury mixed with pigment to match the shades of the tiles of required thickness of approved quality including cost of all materials, takes labour T&P etc. required for the work.etc complete in all respect as per the latest specification and direction of the Engineer-in-charge.	Sqm	20.40	1,112.80	22,701.12
14.11	Providing fitting fixing **Glazed /Ceramic tiles of size 20cmX30cm & 6.5 to 6.7mm thick of size up to 0.10sqm in wall dados skirting and** on 12mm thick cement plaster (1:3) jointed with neat cement slurry mixed with pigments to match the shade of the tiles including rubbing and polishing complete including cost of precast tiles etc. complete in all respect as per the latest specification and direction of the Engineer-in-charge.	Sqm	107.20	1,043.25	1,11,836.40
14.12	Supplying, fitting and fixing 5"x2½" size Dressed seasoned Sal wood chaukaths including cost, conveyance royality taxes of all materials. labour, all other machinaries, T & P articles required for the work complete in all respect as per the direction of the Engineer-in-Charge.	Cum	1.00	1,04,325.00	1,04,325.00
14.13	Supplying, fitting and fixing 30mm/32mm flush door shutter (Non-Sal hard wood frame fixed with 4mm BWR ply on both sides of frame.including cost conveyance royality taxes of all materials. labour, all other machinaries, T & P articles required for the work complete in all respect as per the direction of the Engineer-in-Charge.	Sqm	57.60	2,086.50	1,20,182.40
14.14	Providing and fixing of sliding windows of approved make to be febricated from roll formed sections made of pre-painted steel (base steel as per IS-513 of 0.6 mm thick "D" quality, galvanized as per IS-277 with zinc of 120 Gm/ Sqm.) including cost conveyance royality taxes of all materials. labour, all other machinaries, T & P articles required for the work complete in all respect as per the direction of the Engineer-in-Charge. DOUBLE SHUTTER SLIDING WINDOW	Sqm	124.00	3,060.20	3,79,464.80
14.15	Providing and fixing of FRP door frame including cost conveyance royality taxes of all materials. labour, all other machinaries, T & P articles required for the work complete in all respect as per the latest specification and direction of the Engineer-in-Charge.	Mtr	40.80	625.95	25,538.76
14.16	Providing and fixing of FRP door shutter including cost conveyance royality taxes of all materials. labour, all other machinaries, T & P articles required for the work complete in all respect as per the latest specification and direction of the Engineer-in-Charge.	Sqm	15.20	4,868.50	74,001.20
14.17	Providing **16mm. thick cement plaster** with cement mortar of mix **(1:6)** with approved quality cement with screened and washed sharp sand for mortar and finished smooth to the surface **over brick work** after racking out the joints including watering and curing, rounding of corners etc. complete with cost, conveyance, loading, unloading, royalties, cess, and taxes of all materials and cost of all labours, sundries, T&P and scaffolding required for the work etc. complete in all respect as desired by the Engineer in charge		-	-	-
14.17.1	**Ground Floor**	Sqm	2,499.60	166.92	4,17,233.23
14.18	Providing **12mm. thick cement plaster** with cement mortar of mix **(1:6)** with approved quality cement and screened and washed sharp sand for mortar and finished smooth to the surface **over brick work** after racking out the joints including watering and curing, rounding of corners etc. complete with cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials and cost of all labours, sundries, T&P and scaffolding required for the work etc. complete in all respect as desired by the Engineer in charger in charge		-	-	-
14.18.1	**Ground Floor**	Sqm	1,588.40	139.10	2,20,946.44
14.19	Providing **12mm. thick cement plaster** with cement mortar of mix **(1:3)** with approved quality cement with screened and washed sharp sand for mortar and finished smooth to the surface **in ceiling and R.C.C. surface after chipping the surface in all floors** including watering and curing, rounding of corners etc. complete with cost, conveyance, loading, unloading, royalties, cess, and taxes of all materials and cost of all labours, sundries, T&P and scaffolding required for the work etc. complete in all respect as desired by the Engineer in charge.		-	-	-
14.19.1	**Ground Floor**	Sqm	1,603.60	139.10	2,23,060.76
14.20	Providing and finishing the wall surface with two coat of **cement wash** including scaffolding, all labour, cost, conveyance, cess, taxes of all materials, T&P articles, brushes all other machineries required for the work complete in all respect confirming to relevant I.S. Specification and direction of the Engineer-in-Charge		-	-	-
14.20.1	**Ground Floor**	Sqm	5,655.20	8.35	47,198.30
14.21	Supplying fitting and fixing of M.S shutter made out of M.S Angle 40mmx40mmx6mmm, M.S.Flat 19 mm x 5 mm size, M.S. guide, top hood cover etc. as per design provided including cost, conveyance, royalities of all materials, cost of all labour, T&P articles required for the work etc. complete in all respect confirming to relevant I.S specification and direction of the Engineer-in Charge.	Kg	3,166.80	104.33	3,30,376.41
14.22	Supplying fitting and fixing of M.S grill made out of M.S M.S.Flat 19 mm x 5 mm size, as per design provided including cost, conveyance, royalities of all materials, cost of all labour, T&P articles required for the work etc. complete in all respect confirming to relevant I.S specification and direction of the Engineer-in Charge.	Kg	2,848.40	104.33	2,97,159.33
14.23	**Wall painting 2 coats with acrylic distemper** over one coat of wall primer of approved shade on new work to give an even shade in all floors at all height including scafolding cost of brushes including cost of paint cost conveyance royality of all materials labour,T&P articles required for the work etc. complete in all respect as per the latest specification and direction of the Engineer-in-charge.		-	-	-
14.23.1	**Ground Floor**	Sqm	3,725.20	13.91	51,817.53
14.24	**Painting two coats with weather coat** on exterior walls surface of approved quality and approved shade over a coat of primer in all floors at all height of approved quality and shade including cleaning and sand papering the surface and making the surface smooth with cost, conveyance, loading, unloading, and taxes of all materials, cost of all labour, sundries, T&P, scaffolding etc. required for the work complete in all respect as directed by Engineer-in-charge		-	-	-
14.24.1	**Ground Floor**	Sqm	1,930.00	20.87	40,269.45
14.25	**Painting two Coats with approved colour synthetic enamel paint** on wood / iron work in all floors at all height including scafolding cost conveyance royality of all materials labour,T&P articles required for the work etc. complete in all respect as per the latest specification and direction of the Engineer-in-charge.	Sqm	418.40	41.73	17,459.83
14.26	Providing **cement concrete (1:1.5:3)** using 12mm size black hard crusher broken granite stone chips, screened & washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels laid in layers not exceeding 15 cm. thick in each layer including cost, conveyance, loading, unloading, royalties and taxes of all materials and cost of all labours, cess, sundries, T&P & all other machinaries required for the work including shoring, shuttering and dewatering if required including hire & running charges of water pump etc. Complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	123.60	8,346.00	10,31,565.60
14.27	Supplying, fitting and fixing of stainless steel of 304 grade in hand railing using 50mm dia of 2mm thick circular pipe with Balustrade of size 32mm x 32mm x 2mm @ 0.90mtr. C/C and stainless square pipe bracing of size 32mm x 32mm x 2mm in 3 rows in stair case as per approved design and specification, buffing, polishing etc. with cost, conveyance, taxes of all materials, labour, T&P etc. required for the complete in all respect.	Mtr	68.00	2,086.50	1,41,882.00
14.28	Providing and fixing M.S. fan clamp type-I of 16mm dia M.S. bar bent to shape with hooked ends in R.C.C. slab during laying including painting the exposed portion of loop as per standard design complete as directed by the Engineer-in-charge.	Nos	120	208.65	25,038.00
14.29	Providing **12mm. thick cement plaster** in cement mortar of mix **(1:4)** with neat cement punning with approved quality cement with screened and washed sharp sand for mortar and finished smooth to the surface in ceiling and R.C.C. surface after chipping the surface in septic tank including watering and curing, rounding of corners etc. complete with cost, conveyance, loading, unloading, royalties, cess, and taxes of all materials and cost of all labours, sundries, T&P and scaffolding required for the work etc. complete in all respect as desired by the Engineer in charge.	Sqm	48.40	139.10	6,732.44
14.30	Providing neat cement punning with approved quality cement finished smooth to the surface etc. complete with cost, conveyance, loading, unloading, royalties, cess, and taxes of all materials and cost of all labours, sundries, T&P and scaffolding required for the work etc. complete in all respect as desired by the Engineer in charge.	Sqm	958.00	20.87	19,988.67
14.31	40 mm thick grading concrete with cement concrete (1:2:4) using 12mm and down graded b.h.g. chips to the roof surface **with** water proofing cement compound finished smooth over RCC slab including hoisting and laying in position watering and curing for required number of days finished to smooth surface and desired slope including cost conveyance, royalty and taxes of all materials, labour T&P articles required for the work etc. complete in all respect confirming to relevant I.S specification and direction of the Engineer-in-Charge.	Sqm	550.80	306.02	1,68,555.82
	Providing Fitting, fixing of Aluminium Door with OEL or equivalent anodized AL. door section as vertical member, as top, as bottom and middle member and 8mm plain glass fixed to door to be completed including all cost of labour T&P hire charges of drilling machine , labour charges etc.complete.	Sqm	14.20	4,309.02	61,188.07
	Supply & Fixing of alluminium Ventilator with 8 mm thick glass as per approved drawing	Sqm	0.92	4,309.02	3,964.30
	Finishing surface of wall with Acrylic wall Putty(water Based) of approved make and finished smooth and even surface to receive painting including cost of scaffolding staging charges with cost of all materials, taxes, labour, T&P etc. complete.	Sqm	742.00	344.72	2,55,782.98

	Septic Tank			-	-
	Earth work in excavation of foundation trenches in all kinds of soil including moorum, stony earth and earth mixed with boulders except sheet rock and boulders requiring blasting including dressing of sides and leveling the bed up to the required depth and depositing the excavated materials away from the work site within initial leads and lifts, including shoring, shuttering & dewatering (if required) with cost of labour,cess, hire & running charges of water pumps sundries , T & P & all other machinaries required for the work etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	10.60	379.20	4,019.49
	Supplying and filling in foundation and plinth with good river sand well watered and rammed in layers not exceeding 23 cm in each layer including all leads and lifts, cost of all materials, labour,cess, sundries, T&P required for the work etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	0.95	1,216.87	1,156.02
	Providing and lying plain cement concrete of proportion (1:5:6) in foundation and plinths using approved quality cement , 40 mm. size black hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels laid in layers not exceeding 15 cm. thick in each layer including cost, conveyance, loading, unloading, royalties and taxes of all materials and cost of all labours, cess, sundries, T&P & all other machinaries required for the work including shoring, shuttering and dewatering if required etc.complete as per approved designs and drawings including minimum compressive strength of work test 20 Kg/ Sqcm in	Cum	0.78	6,032.65	4,705.47
	RCC work M-20 grade as per approved designs and drawings including minimum compressive strength of work test 200 Kg/ Sqcm in 15 cm. cubes at 28 days after mixing and test conducted in accordance with I.S.456 and I.S 516 using 12 mm. to 20 mm. size black hard crusher broken granite stone chips, screened and washed sharp sand for mortar of approved quality from approved quarry, to be mixed in concrete mixture with approved quality cement including hoisting, lowering, laying and compacting concrete by using vibrators, watering and curing for 28 days, centering and shuttering and finishing the exposed surface smooth providing grooves or beads	Cum	4.56	6,032.65	27,508.88
15	**P.H. Fitting (Internal & External) to Switch-Gear -Cum -Control Room**			-	-
15.1	Supplying all materials , labours , taxes and tools and plants for fitting and fixing of PVC pipes of following nominal bore conforming to ASTM-D-1785 (Schedule-80) including fittings and laying as per the site requirement etc., all complete including testing as per the direction and specification of Engineer-in-charge		-	-	-
15.1.1	15 mm dia	Mtr	15.00	139.10	2,086.50
15.1.2	20 mm dia	Mtr	20.00	173.88	3,477.50
15.1.3	25 mm dia	Mtr	15.00	243.43	3,651.38
15.1.4	40 mm dia	Mtr	20.00	278.20	5,564.00
15.1.5	50 mm dia	Mtr	20.00	347.75	6,955.00
15.2	Supplying all material, labour , T&P & fitting ,fixing the following different water supply fittings of approved make with including supply of all necessary jointing materials etc. all complete as directed by the Engineer-in-charge.		-	-	-
15.2.1	25 mm dia Ball valve	Nos	2	904.15	1,808.30
15.2.2	50 mm dia Ball valve	Nos	2	1,391.00	2,782.00
15.2.3	25 mm dia F.W. valve	Nos	2	904.15	1,808.30
15.2.4	50 mm dia F.W. valve	Nos	2	1,391.00	2,782.00
15.3	Supplying all labour T&P and cutting holes in brick masonry wall for taking pipes through and mending good the damages with supply of all required materials etc. complete as per the direction of the Engineer-incharge		0	-	-
15.3.1	For 15mm to 50mm CPVC pipe to pass in 125mm to 250mm thick wall	Nos	10	173.88	1,738.75
15.4	Supplying all labour T&P and materials and making grooves in brick walls vertically and horizontally to the required depth and width for fixing pipes & fittings of sizes 15mm dia to 25mm dia in the grooves, testing the pipe line against leakage, and filling the grooves with cement mortar(1:4) to bring the surface to original level including cost of mortars, curing and conveyance of materials etc. complete as per direction of the Engineer-in-charge.	Mtr	10	69.55	695.50
15.5	Supplying all materials , labour T&P and fittings of approved quality required for fixing of NP or CP Brass or GM fixtures of following sizes and specification with leak proof threaded joints tightened with spun yarn and white zinc or any tightened with spun yarn and white zinc or any including testing and rectification of detects, after testing complete as per direction of Engineer-in-charge.		0	-	-
15.5.1	Bibcock	Nos	5	208.65	1,043.25
15.5.2	Long Body Bibcock	Nos	2	417.30	834.60
15.5.3	Pillar cock	Nos	2	556.40	1,112.80
15.5.4	Angular stop cock	Nos	4	765.05	3,060.20
15.5.5	Soap Holder	Nos	2	104.33	208.65
15.5.6	Towel ring	Nos	2	208.65	417.30
15.5.7	Toilet paper holder	Nos	2	104.33	208.65
15.5.8	Glass self 22"	Nos	2	417.30	834.60
15.5.9	Towel rail 24"	Nos	2	486.85	973.70
15.5.10	Shower arm 190mm long light	Nos	2	973.70	1,947.40
15.5.11	CP Grating	Nos	2	104.33	208.65
15.5.12	Concealed stop cock	Nos	4	695.50	2,782.00
15.5.13	Connecting Pipe	Nos	2	208.65	417.30
15.5.14	Basin with pedestal	Nos	2	4,173.00	8,346.00
15.5.15	Providing and fixing vitreous China water closet (European with seat and lid), of Cerra Cascade "CASINO", CP brass buffers, 10 liter cascade dual flushing cistern hinges & rubber with fittings and brackets, 40 mm flush bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete, painting on brackets and making good the walls and floors wherever required.	Nos	1	20,865.00	20,865.00
15.5.16	Providing and fixing vitreous China water closet Indian type of Odisha pattern size (580mmx440mm) of approved quality with PVC Slimeline (Parryware make) 12.5 ltr capacity low level cistrn with hinges & rubber with fittings and brackets, 40 mm flush bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete, painting on brackets and making good the walls and floors wherever required.	Nos	1	5,842.20	5,842.20
15.5.17	Providing and fixing vitreous China water urinal of Cerra/Parry ware with fittings and brackets, flush bend of CP brass, and making good the walls and floors wherever required.	Nos	2	3,477.50	6,955.00
15.6	Supply of all materials, labour, T&P , fitting and fixing in all floors fixed type bevelled plate glass mirror of size 600mm x 450mm x 5.5mm thick best Indian make ,supply of 13mm thick asbestos backing and CP Brass screw including cost conveyance, taxes of all materials complete as per specification and direction of Engineer-in-charge(Make-Modi Guard/Belgium)	Nos	2	1,043.25	2,086.50
15.7	Supply of all materials, joining materials ,labour and T&P and laying UPVC SWR PIPES of Standard make with ISI Mark duly approved by the Engineer-in-charge including jointing, earthwork in excavation of trenches in all kind of soil to the required depth and refilling of pipe line trenches in 0.3048 mtrs layers with 300 mm deep sand around cushion duly watered and rammed or fixing to walls, floors with supply of necessary clamps, nails and cutting the pipe to length with wastage including supply of all Clamps, Clips, Endcaps & jointing materials etc., complete as per standard specification and direction of Engineer-in-charge.		0	-	-
15.7.1	100mm dia (ISI Marked)	Mtr	10	695.50	6,955.00
15.7.2	150mm dia (ISI Marked)	Mtr	25	834.60	20,865.00
15.8	Supplying all materials, labour T&P for jointing of the UPVC SWR SEWER pipe fittings of standard make duly approved by the Engineer-in-charge with joining material etc. suitably required for fixing on 100mm dia soil waste pipe complete with requisite testing as directed by Engineer-in-charge.		0	-	-
15.8.1	100mm dia "P" Trap	Nos	2	556.40	1,112.80
15.8.2	100mm dia Bend Plain	Nos	3	236.47	709.41
15.8.3	100mm Door Bend	Nos	3	208.65	625.95
15.8.4	100 mm dia Single Junction with Door	Nos	3	486.85	1,460.55
15.8.5	100 mm dia double Junction with Door	Nos	3	556.40	1,669.20
15.8.6	100mm dia Terminal Guard	Nos	2	278.20	556.40
15.8.7	100mm dia. Floor trap	Nos	3	347.75	1,043.25
15.9	Supplying all materials, labor T&P for jointing of the UPVC SWR SEWER pipes & fittings of standard make duly approved by the Engineer-in-charge suitably required for fixing on 100mm dia soil waste pipe complete with requisite testing as directed by Engineer-in-charge.		0	-	-
15.9.1	100mm Pipe	Nos	10	417.30	4,173.00
15.10	Fixing of UPVC vent pipes Including labour & T&P all complete as directed by the Engineer-in-charge.		0	-	-
15.10.1	100mm Pipe	Mtr	4	556.40	2,225.60
15.10.2	100mm Vent Cowl	No	2	139.10	278.20
15.11	Supplying all materials labour T&P and constructing inspection chamber C.C.(1:4:8) on bed with hard stone metal size 40mm and 250mm K.B.Bricks work having crushing strength 75 Kg to 99 Kg/cm2 in cement mortar (1:4), R.C.C. roof slab with 500mm dia light pattern factory made SFRC M.H cover with frame, moulding and shaping the channel and benching with C.C. 1:2:4 with hard granite chips 12mm size, 12mm thick C.P 1:3 including cement punning inside, Cement plaster (1:3) outside the chamber, earth work in excavation in all kinds of soil and refilling the cavity around the chamber as per detail drawing & design and specification including cost, conveyance, taxes etc. all complete as directed by Engineer-in-charge.		0	-	-
15.11.1	750mmx 750mm x450mm	No	1	6,259.50	6,259.50
15.12	Providing and fixing 2000 litres capacity P.V.C Over head (Sintex make) tank with all piping and valve arrangement with all labour & materials ,including cost, T&P , scaffolding etc., complete as directed by the Engineer-in-charge.		0	-	-
15.12.1	2000 Ltr Capacity	No	1	23,647.00	23,647.00
15.13	Supplying all material, labour, T&P and constructing manhole chamber of size as mentioned below with 250mm nominal size K.B. Brick having crushing strength 75kg to 99kg /cm2 in CM 1:4 over a bed of 150mm thick C.C(1:4:8) using 40mm size HG metal, plastering with 12mm thick cement mortar (1:3) on internal and external surface, inside finish with neat cement punning, providing & fixing step iron of appropriate quality & size with 3 coats anticorrosive paint, RCC (1:1.5:3) cover slab using 20m & down size graded HG chips along with factory made reinforced concrete cover with frame including breaking of pipe line where ever necessary and earth work in excavation in all kind of soil & rock and refilling the cavity by selective soil, leveling the surface around the chamber with disposal of surplus earth if any to a distance of 50mt as per specification, design & drawing including cost of curing and all taxes , royality , cost , conveyance etc. all complete as directed by the Engineer-in-charge.	No	1	13,910.00	13,910.00
15.14	Supplying all material, labour, T&P and constructing 1.80m dia x 2.60m deep soak way pit with dry brick walling upto 2.00m height and 1st class K.B. Brickwork in cement mortar (1:6) for the remaining 06.60m height at top, 12mm thick cement plaster (1:4) inside and outside , 100mm thick gravel backing in the rear of well staining, 125mm thick RCC cover slab fitted with with iron lifting handles including earth work in excavation in all kind of soil & rock and refilling the cavity by selective soil, leveling the surface around the pit with disposal of surplus earth if any to a distance of 50mt including cost of curing and all taxes , royality , cost , conveyance etc. all complete as directed by the Engineer-in-charge.	No	1	16,692.00	16,692.00

16	**Watering system** like 150 mm dia, 100 Mtr deep bore well (PVC pipe to be used) 1 HP submersivele pump, switch yard water hydrant system for pouring water into the earth pits, tap for garden, including PVC pipes & other accessories required etc.	LS	1	2,08,650.00	2,08,650.00
17	Small wicket (GI) gate one in between Main Gate & Security shed & another in front of Customer Care room of size 1.5 mtr width X 2 mtrs height single leaf with locking arrangement etc. as per above.	No.	0	6,955.00	-
18	**RRHG retaing wall with 1:5 cement mortar Considering 0.6 mt height of retaining wall above the existing ground level per Meter as per Drawing TOTAL 74 Mtrs**		-	-	-
18.1	Excavation in all type of soil(0.8 Cum / Mtr)	Cum	105.60	347.75	36,722.40
18.2	PCC (1:4:8) 200 mm thick. With cement (0.2 Cum / Mtr)	Cum	26.40	5,564.00	1,46,889.60
18.3	PCC (1:2:4) 50 mm thick With cement (0.02 Cum / Mtr)	Cum	1.58	7,511.40	11,898.06
18.4	RRHG Cement Masonary (1:5) With cement (0.86 Cum / Mtr)	Cum	63.64	4,868.50	3,09,831.34
	Laying of cable trench with supply of GI Cable Trench material & all Civil works				-
	Laying of 2 tier 2 rows cable trench (internal width 1500 mm,depth 680 mm, with 75X75X6 mm support angles fixed RCC column of 250 X 250 mm & with ladder type cable tray (45X45X5mm two angles at both side having welded flats of 25X5 mm at a gap of 150mm) for Power & control Cable. It includes supply of GI Cable Trench materials, supply of all civil items as per site requirement and as per detail drawing & design and specification including cost, conveyance, taxes etc. all complete as directed by Engineer-in-charge.	Mtr	40.00	397.77	15,910.80
	Laying of 2 tier 1 rows cable trench (internal width 750 mm,depth 680 mm, with 65X65X6 mm support angles fixed RCC column of 250 X 250 mm & with ladder type cable tray (45X45X5mm two angles at both side having welded flats of 25X5 mm at a gap of 150mm) for Power & control Cable It includes supply of GI Cable Trench materials, supply of all civil items as per site requirement and as per detail drawing & design and specification including cost, conveyance, taxes etc. all complete as directed by Engineer-in-charge.	Mtr	35.00	397.77	13,921.95
	Laying of 2 tier 1 rows cable trench (internal width 500 mm,depth 580 mm, with 50X50X6 mm support angles fixed RCC column of 250 X 250 mm & with ladder type cable tray (45X45X5mm two angles at both side having welded flats of 25X5 mm at a gap of 150mm) for Power & control Cable. It includes supply of GI Cable Trench materials, supply of all civil items as per site requirement and as per detail drawing & design and specification including cost, conveyance, taxes etc. all complete as directed by Engineer-in-charge.	Mtr	25.00	397.77	9,944.25
	Excavation of Earth for 13 Mtr. long poles pit. (1000mm X 500mm X 2275mm) = 1.14 Cu.mtr.), as per technical specification and scope of work.	Cum	4.56	159.10	725.50
	Concreting of poles in ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55 Cu.mtr, as per technical specification and scope of work.	Cum	2.20	8,220.30	18,084.66
	Couping of poles in ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr, as per technical specification and scope of work.	Cum	0.45	8,220.30	3,699.14
	Excavation of Earth for 11 Mtr. long poles pit. (1000mm X 500mm X 1875mm) = 0.94 Cu.mtr.), as per technical specification and scope of work.	Cum	9.40	159.10	1,495.54
	Concreting of poles in ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45 Cu.mtr, as per technical specification and scope of work.	Cum	4.50	8,220.30	36,991.35
	Couping of poles in ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr, as per technical specification and scope of work.	Cum	1.125	8,220.30	9,247.84
	Fixing of stay set with 0.5Cum cement concrete foundation PCC 1:3:6 size (900mmx600mmx900mm) using 40mm BHG metal with all labor and material, including excavation and required backfilling, as per technical specification and scope of work.	No's.	14	1,988.78	27,842.92
	Making of earth chamber with 50mm thick RCC Slab (with 8mm rod) cover for earth pit of size 450mmX450mm X600 mm depth as per direction of Engg in Charge.	No's.	54	708.81	38,275.74
	Construction of 600mm dia Hume Pipe Single row culvert and approach road for Control room-cum- Swith gear room				-
	Earth work in excavation of foundation trenches in all kinds of soil including moorum, stony earth and earth mixed with boulders except sheet rock and boulders requiring blasting including dressing of sides and leveling the bed up to the required depth and depositing the excavated materials away from the work site within initial leads and lifts, including shoring, shuttering & dewatering (if required) with cost of labour,cess, hire & running charges of water pumps sundries , T & P & all other machinaries required for the work etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	14.90	291.69	4,346.18
	Supplying and filling in foundation and plinth with good river sand well watered and rammed in layers not exceeding 23 cm in each layer including all leads and lifts, cost of all materials, labour,cess, sundries, T&P required for the work etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	1.80	936.06	1,684.91
	Providing and lying plain cement concrete of proportion (1:3:6) in foundation and plinths using approved quality cement , 40 mm. size black hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels laid in layers not exceeding 15 cm. thick in each layer including cost, conveyance, loading, unloading, royalties and taxes of all materials and cost of all labours, cess, sundries, T&P & all other machinaries required for the work including shoring, shuttering and dewatering if required including hire & running charges of water pump etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	1.80	4,640.50	8,352.90
	Providing cement concrete of M-15 grade using 20mm down graded black hard crusher broken granite stone chips, screened & washed sharp sand of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels laid in layers not exceeding 15 cm. thick in each layer including cost, conveyance, loading, unloading, royalties and taxes of all materials and cost of all labours, cess, sundries, T&P & all other machinaries required for the work including shoring, shuttering and dewatering if required including hire & running charges of water pump etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	8.30	5,966.35	49,520.71
	Providing,laying and fixing in position R.C.C.hume pipes with collars jointed with cement mortar 1:3 complete with cost of all materials, and cost of all labours, cess, sundries, T&P & all other machinaries required for the work etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Mtr	7.50	11,591.02	86,932.65
	Providing rough stone dry packing for guard walls & retaining walls including cost conveyance of all materials and cost of all labours, cess, sundries, T&P etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	5.30	1,637.99	8,681.35
	Rolling and compacting to sub grade or formation loosening by cutting ordinary earth for 0.15 Mtr. depth including watering and rolling by PRR as per specification and direction of Engineer-in-Charge. (Data for 100sqm x 0.15m= 15 Cum).	Cum	97.50	132.59	12,927.53
	Conveying from the stacks supplying, spreading morrum & sand mixture to proper camber and consolidation with H.R.R.including watering as per specification and direction of Engineer-in-Charge.	Cum	230.00	331.43	76,228.90
	Soling the road surface with soling stones including filling the interstices with moorum and rolling with PRR including cost conveyance of all materials and cost of all labours, cess, sundries, T&P etc.complete in all respect as per latest specification & direction of the Engineer in charge.	Cum	75.00	1,638.08	1,22,856.00
	Supplying and filling in sub base of road with borrowed earth including rolling & compacting all works complete as per specification and instruction of engineer. Payment shall be made for the compacted volume only as per spot levels taken at 2 intervals before start of work and after completion of the filling works.	Cum	780.00	291.64	2,27,479.20
19	Design & providing Galvanised Chain Linking Fencing with 2 Mtr Height around TRF specification.	Sq. mtr.	80.00	4,668.00	3,73,440.00
	Sub-Total for CIVIL WORKS with supply of all materials like Cement, MS tor rod, Brick, Coarse & Fine Agregrates & Labour,T&P etc. (In Rs.)				**3,19,93,005.11**
	Total Cost in Cr.				**3.20**
A	Total Cost for SUPPLY OF EQUIPMENT & MATERIALS (In Cr.)				6.47
B	Stock , Storage & Insurance @ 3 % of A				0.19
C	Sub - Total (A+B)				6.67
D	Contingency @ 3 % of C				0.20
E	Tools &Plants Charges @ 2% of C				0.13
F	Transportation @ 7.5% of C				0.50
G	**Sub - Total (C+D+E+F)**				**7.50**
H1	Total Cost for ERECTION,TESTING & COMMISSIONING WORKS (In Cr.)				0.63
H2	Total Cost for CIVIL WORKS with supply of all materials like Cement, MS tor rod, Brick, Coarse & Fine Agregrates & Labour,T&P etc. (In Cr.)				3.20
H3	Total Cost for Erection & Civil works (H1+H2)				**3.83**
I	**Total Cost of Erection & Civil works in Cr.(H3+H4)**				**3.83**
J	**Total Cost (G+I)**				**11.33**
K	Other Overhead /(including Supervision Charges) @ 6 % of J				-
L	Total Estimated Capital Cost i.e. J+K				**11.33**
M	GST @ 18% of L				2.04
N	CESS @ 1% of L				0.11
O	Inspection Charges (As per Gov. Notification)				0.00
P	**Total Estimate to be deposit in Cr @ L+M+N+O (In Cr.)**				**13.48**

Table 75 Cost Estimate for 33 KV RMU for New PSS

Cost Estimate for 33kV,4 Way RMU					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	RMU 33kV 4 Way	EA	1	24,50,000.00	24,50,000.00
2	Cross arm of 75X40X4.8mm GI Channel 3.7 mtr long 4Nos	Kg	105.67	97.50	10,303.02
3	50x6 mm GI flat	Kg	100.00	97.50	9,750.00
4	25x6 mm GI flat	Kg	50.00	97.50	4,875.00
5	Pre-Wired FRTU Panel with FRTU	No	1.00	1,21,744.00	1,21,744.00
6	Managed Layer2 Ethernet Switch (FRTU Panel)	No	1.00	1,00,000.00	1,00,000.00
7	Networking Accessories	No	1.00	72.00	72.00
8	CMR with Mounting Base for Digital Inputs	No	32.00	650.00	20,800.00
9	Interposing Relay for Digital Output	No	16.00	467.94	7,487.04
10	Battery Charger	No	1.00	15,385.00	15,385.00
11	Battery	No	1.00	8,333.00	8,333.00
12	4G Modem cum Router	No	1.00	18,500.00	18,500.00
13	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr	40.00	204.87	8,194.80
14	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr	40.00	305.58	12,223.20
15	Twisted Pair Shielded & Over all shielded Instrumentation Cable 5 P X 1.0 mm2, Armored for Analog Input	Mtr	40.00	275.23	11,009.20
16	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr	20.00	165.25	3,305.00
17	2 C X 4 mm2 Cable for DC Power Supply	Mtr	10.00	150.00	1,500.00
18	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr	20.00	148.43	2,968.60
19	Armored CAT6 SFTP Cable	Mtr	20.00	45.87	917.40
20	Un-Armored CAT6 SFTP Cable	Mtr	20.00	89.45	1,789.00
21	Multi Function Meter	No	2.00	18,651.00	37,302.00
22	Danger Plate, 1 no	No	8	104.00	832.00
23	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	0.30	97.50	29.34
24	GI Nut , Bolt & Washer of different sizes	Kg	50	101.40	5,070.00
25	33kV AL 3CX300 Sqmm XLPE Cable armoured	M	35	2,780.25	97,308.75
26	Heat shrinkable jointing kit for 3Cx300 mm² 33KV XLPE Cable(outdoor type)	No	6	43,231.50	2,59,389.00
27	Heat shrinkable jointing kit for 3Cx300 mm² 33KV XLPE Cable(indoor type)	EA	6	10,390.00	62,340.00
28	High Density Polyethelene (HDPE) pipe 160mm diameter, PE 80-PN4	M	90	775.40	69,786.00
29	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	2	1,365.00	2,730.00
30	Lug AL Crimping 95 Sqmm XLPE Single hole	EA	8	19.07	152.56
31	CONDUCTOR 148 SQ.MM. AAA	Mtr	60	106.60	6,396.00
A				**Total Cost of materials**	**33,50,491.91**
B				**Stock, Storage & Insurance i.e 3%**	**1,00,514.76**
C				**Sub Total C=A+B**	**34,51,006.66**
D				**Contigency @ 3% of C**	**1,03,530.20**
E				**Tools & Plants @ 2% of C**	**69,020.13**
F				**Transportation @ 7.5% of C**	**2,58,825.50**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**41,446.13**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**39,23,828.63**
	Civil & Services				
	BA will provide necessary Manpower,FRP Fencing & Ms Material for construction boundary wall fencing as per TPSODL Drawing, specification & GTP.	Sqm	26	4,095.00	1,06,470.00
	Installation, Testing and Commissioning of 33kV 3-way / 4-way/5Way Ring Main Unit (RMU) on existing structure/foundation as per TPSODL.Specification including grouting & HT Cable Connections,earthing Connections & minor site modifications. Scope of work excludes earthing chamber and construction of foundation.	EA	1	10,728.21	10,728.21
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	2	2,559.90	5,119.80
L				**Total Civil Part**	**1,22,318.01**
M				**Sub-Total M=K+L**	**40,46,146.63**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**40,46,146.63**
P				**GST @ 18% of Sub-Total O**	**7,28,306.39**
Q				**CESS @ 1% of Sub-Total O**	**40,461.47**
R				**Grand Total R=P+Q**	**48,14,914.49**

Table 76 Cost Estimate for 33 KV Bay at Existing PSS for connectivity to New PSS

Cost Estimate for Bay 33kV at Existing PSS with H Pole					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	Lightning Arrester (30kV,10kA) (Station Class,Class 3) with Surge Counter	EA	3	7,506.94	22,520.82
2	33kV 1250 Amp Outdoor VCB	EA	1	2,50,000.00	2,50,000.00
3	CT 33KV 1P O/D OIL 600-300-150/1-1-1A	EA	3	32,605.93	97,817.79
4	CRP WITH TRF DIFF+INBUILT O/C & EF RELAY	EA	1	3,93,570.00	3,93,570.00
5	PT 33KV O/D OIL FILLED	EA	3	22,850.00	68,550.00
6	33kV,1250A Double break (Turn & Twist centre rotating) isolator with earth switch with PI(Polymer)	Set	1	1,31,157.00	1,31,157.00
7	50x6 mm GI flat	Kg	300	97.50	29,250.00
8	Junction Box for CT or PT Structure	EA	2	5,909.09	11,818.18
9	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
10	13 MTR GI H POLE	EA	2	92,740.36	1,85,480.72
11	Top Channel 100X50X5mm, each channel length 4.3 mtr.	Kg	82.216	97.50	8,016.06
12	Double Pole Belting Channel 75X40X4.8mm., each channel length 4.3 Mtr	Kg	122.808	97.50	11,973.78
13	50X50X6mm,GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr.	Kg	88.686	97.50	8,646.89
14	Insulator Support Channel 75X40X4.8mm., each channel length 4.3 Mtr.	Kg	30.702	97.50	2,993.45
15	Isolator Support Channel 75X40X4.8mm., each channel length 4.3 Mtr.	Kg	61.404	97.50	5,986.89
16	Isolator Operating Down Pipe Support Channel 75X40X4.8mm.,of length 0.8 mtr.	Kg	5.712	97.50	556.92
17	Down Pipe Diagonal Support Angle 50X50X6mm, each angle length 0.388mtr.	Kg	1.75	97.50	170.24
18	Down Pipe Base Support Angle 50X50X6mm, each angle length 0.34mtr.	Kg	1.53	97.50	149.18
19	Isolator Support Side Channel 100X50X5mm, each channel length 0.5 mtr.	Kg	9.56	97.50	932.10
20	Fish Plate 50X8 mm.,each 0.280 mtr. Length	Kg	5.28	97.50	514.33
21	Danger Plate, 1 no	No	2	104.00	208.00
22	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	1.20	97.50	117.35
23	GI barbed wire anticlimbing device	Kg	6	104.00	624.00
24	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
25	GI Nut , Bolt & Washer of different sizes	Kg	107.00	101.40	10,849.80
26	CONDUCTOR AAA 232 SQMM	Mtr	300	203.45	61,035.00
27	33kV Disc insulator (B&S) 120KN polymer	No	12	1,872.00	22,464.00
28	33kV H/W fitting(B&S) 120KN,4 Bolt	EA	12	677.60	8,131.20
29	33kV,10kN pin insulator polymer	No	3	624.00	1,872.00
30	CLAMP PG FOR 232 SQMM AAA COND	No	6	1,495.00	8,970.00
31	12 bolted (M-12) "T" clamp for 232 mm² conductor	No	6	1,248.00	7,488.00
32	Chequered plate for Cable Trench	Sqm	40	5,250.00	2,10,000.00
33	4 Core x 2.5 mm2	Mtr	350.00	145.60	50,960.00
34	7 Core x 2.5 mm2	Mtr	300.00	236.60	70,980.00
35	10 Core x 2.5 mm2	Mtr	250.00	335.40	83,850.00
36	Black Paint	Ltr	1	286.00	286.00
37	Yellow Colour Paint for Background	L	2	212.77	425.54
A				**Total Cost of materials**	**17,78,154.93**
B				**Stock, Storage & Insurance i.e 3%**	**53,344.65**
C				**Sub Total C=A+B**	**18,31,499.57**
D				**Contigency @ 3% of C**	**54,944.99**
E				**Tools & Plants @ 2% of C**	**36,629.99**
F				**Transportation @ 7.5% of C**	**1,37,362.47**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**12,875.00**
H				**Erection Other @ 10%**	**1,37,237.99**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**22,10,550.01**
	Civil & Services				
	Installation/Erection of 14 Mtr.H Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,work ad civil work. The scope also includes providing of all civil material for concreting and couping. Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting and couping and earthing as per TPSODL standards and drawings. The scope of work include providing & laying of laying of 1:1.5:3 , M20 Grade cement concrete concrete of size - 600(B)x600(W)X2300(H) , and cooping of 600(B)x600(W)x450(H).Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	8,784.75	17,569.50
	33 KV- Supply of material for construction of foundation will scope of BA . ITC and wiring/laying cable to control panel/supply unit of equipment will be on BA scope . Civil Works of foundation/ Structure works include only of Civil foundation & structure as per TPSODL approved drawing ,GTP and specification. (New Foundation/ Supply of structure shall be paid as extra as per approved rates of BOQ)	EA	1.00	14,691.60	14,691.60
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7.00	2,559.90	17,919.30
	BA will excavate the cable trench length by providing all necessary tool, Manpower, pump etc suitable for HT & LT Cable laying.BA will supply neccessry barricades at the excavation site.	M3	66.69	735.00	49,017.15
	Providing and laying Reinforced Cement Concrete (RCC) of proportion M25 (as per design mix) from RMC Batching Plant, using approved quality of cement, 20mm & 10mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machineries required for the work etc., as directed by Engineer-in-Charge.	M3	7.296	8,400.00	61,283.25
	Providing and laying Plain Cement Concrete (PCC) of proportion (1:3:6) in foundations, Trench and plinths using approved quality of cement, 20mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machinaries required for the work etc., as directed by Engineer-in-Charge.	M3	5.850	5,386.50	31,511.03
	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in Cement mortar 1:4 (1 Cement : 4 Coarse sand) as per TPSODL specifcation. Scope includes supply of all material	M3	6.975	7,084.35	49,413.34
	12 mm Cement Plaster of mix - 1:6 (1 Cement : 6 Fine sand (50 % fine :50% coarse)) as per as per TPSODL specification. Scope includes supply of all material.	M2	123.99	291.90	36,192.68
	BA will Supply & Install prefabricated RCC Slabs (950x450x75)M30 Grade with supply of all civil material,Rods,bending & cutting	EA	67	5,150.25	3,45,066.75
L				**Total Civil Part**	**6,22,664.60**
M				**Sub-Total M=K+L**	**28,33,214.61**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**28,33,214.61**
P				**GST @ 18% of Sub-Total O**	**5,09,978.63**
Q				**CESS @ 1% of Sub-Total O**	**28,332.15**
R				**Grand Total R=P+Q**	**33,71,525.38**

Table 77 Cost Estimate for laying 33kV Under Ground Cable 1X630 Sqmm for connectivity to New PSS

Cost Estimate for 33kV Under Ground Cable by Open Trench & HDD Method					
	HDD Method(In KM)		0.5		
	Open Trench(In KM)		0.5		
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	33kV AL 1CX630 Sqmm XLPE Cable,armoured	M	3000	1,495.47	44,86,410.00
2	HDPE Pipe 10 Mtr(Spec PE80-PN8,110mm dia)	M	3060	357.60	10,94,256.00
3	Heat shrinkable jointing kit for 1Cx630 mm² 33KV XLPE Cable(Outdoor type)	EA	6	6,350.00	38,100.00
4	Heat shrinkable jointing kit for 1Cx630 mm² 33KV XLPE Cable(Straight type)	EA	9	11,900.00	1,07,100.00
A				**Total Cost of materials**	**57,25,866.00**
B				**Stock, Storage & Insurance i.e 3%**	**1,71,775.98**
C				**Sub Total C=A+B**	**58,97,641.98**
D				**Contigency @ 3% of C**	**1,76,929.26**
E				**Tools & Plants @ 2% of C**	**1,17,952.84**
F				**Transportation @ 7.5% of C**	**4,42,323.15**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**5,89,764.20**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**72,24,611.43**
	Civil & Services				
	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in charge. Note- All kind of excavation work with different size for plinth, Structure & other works will be considered under this line items Hard rock.	M3	480.00	1,370.25	6,57,720.00
	Supply, laying & fixing of 1st Class Fly Ash Brick for any types of work(Cable Laying etc) Note:- Rate will per Brick	EA	2174	11.55	25,109.70
	Shifting of excavated soil	M3	288.00	171.55	49,406.40
	BA will Back fill the cable excvation site with same earth.BA will provide necessary Tools,Machinery & Manpower for the activity.	M3	480.00	210.00	1,00,800.00
	BA will break Asphalt road & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works.BA will provide necessary Tools,Machinery & Manpower for the activity.	M3	240	1,012.20	2,42,928.00
	Supply and Installation of cable Route marker including transportation from site/tent, excavation, refilling, disposing of malba, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing.	EA	33	1,062.60	35,065.80
	Laying of 33 Kv XLPE Cable Underground by HDD Method with Heat sink type cable end termination with HDPE Pipe.	M	500	1,868.27	9,34,132.50
L				**Total Civil Part**	**20,45,162.40**
M				**Sub-Total M =K+L**	**92,69,773.83**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**92,69,773.83**
P				**GST @ 18% of Sub-Total O**	**16,68,559.29**
Q				**CESS @ 1% of Sub-Total O**	**92,697.74**
R				**Grand Total R=P+Q**	**1,10,31,030.85**

Table 78 Cost Estimate for laying 11kV Under Ground Cable 3X400 Sqmm for connectivity to New PSS

Cost Estimate for 11kV Under Ground Cable by Open Trench & HDD Method					
	HDD Method(In KM)		0.5		
	Open Trench(In KM)		0.5		
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	11kV AL 3CX400 Sqmm XLPE Cable armoured	M	1000	2,452.54	24,52,540.00
2	High Density Polyethelene (HDPE) pipe 160mm diameter, PE 80-PN4	M	1000	775.40	7,75,400.00
3	Heat shrinkable jointing kit for 3Cx400 mm² 11KV XLPE Cable(outdoor type)	No	6	18,075.20	1,08,451.20
4	Heat shrinkable jointing kit for 3Cx400 mm² 11KV XLPE Cable(Straight type)	No	9	32,912.10	2,96,208.90
A				**Total Cost of materials**	**36,32,600.10**
B				**Stock, Storage & Insurance i.e 3%**	**1,08,978.00**
C				**Sub Total C=A+B**	**37,41,578.10**
D				**Contigency @ 3% of C**	**1,12,247.34**
E				**Tools & Plants @ 2% of C**	**74,831.56**
F				**Transportation @ 7.5% of C**	**2,80,618.36**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**3,74,157.81**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**45,83,433.18**
	Civil & Services				
	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and lift upto 1.5 m, as directed by Engineer-in charge. Note- All kind of excavation work with different size for plinth, Structure & other works will be considered under this line items Hard rock.	M3	400.00	1,370.25	5,48,100.00
	Supply, laying & fixing of 1st Class Fly Ash Brick for any types of work(Cable Laying etc) Note:- Rate will per Brick	EA	2174	11.55	25,109.70
	Shifting of excavated soil	M3	240.00	171.55	41,172.00
	BA will Back fill the cable excvation site with same earth.BA will provide necessary Tools,Machinery & Manpower for the activity.	M3	400.00	210.00	84,000.00
	BA will break Asphalt road & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works.BA will provide necessary Tools,Machinery & Manpower for the activity.	M3	200	1,012.20	2,02,440.00
	Supply and Installation of cable Route marker including transportation from site/tent, excavation, refilling, disposing of malba, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing.	EA	33	1,062.60	35,065.80
	Laying of 11 Kv XLPE Cable Underground by HDD Method with Heat sink type cable end termination with HDPE Pipe.	M	500	1,868.27	9,34,132.50
L				**Total Civil Part**	**18,70,020.00**
M				**Sub-Total M =K+L**	**64,53,453.18**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**64,53,453.18**
P				**GST @ 18% of Sub-Total O**	**11,61,621.57**
Q				**CESS @ 1% of Sub-Total O**	**64,534.53**
R				**Grand Total R=P+Q**	**76,79,609.28**

Table 79 Cost Estimate for Augmentation of Power Transformer to 3.15 MVA

Cost Estimate for Power Transformer Augmentation to 3.15MVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	3.15MVA 33/11KV Power Transformer	No	1	41,31,270.00	41,31,270.00
2	CONDUCTOR AAA 232 SQMM	Mtr	15.00	203.45	3,051.75
3	CLAMP PG FOR 232 SQMM AAA COND	No	15.00	1,495.00	22,425.00
4	12 bolted (M-12) "T" clamp for 232 mm² conductor	No	6.00	1,248.00	7,488.00
5	GI Nut , Bolt & Washer of different sizes	Kg	20.00	101.40	2,028.00
6	50x6 mm GI flat	Kg	32	97.50	3,120.00
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	4	1,365.00	5,460.00
8	33KV Post Insulator	No	3	2,054.00	6,162.00
A				**Total Cost of materials**	**41,81,004.75**
B				**Stock, Storage & Insurance i.e 3%**	**1,25,430.14**
C				**Sub Total C=A+B**	**43,06,434.89**
D				**Contigency @ 3% of C**	**1,29,193.05**
E				**Tools & Plants @ 2% of C**	**86,128.70**
F				**Transportation @ 7.5% of C**	**3,22,982.62**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**2,12,760.41**
H				**Erection Other @ 10%**	**5,122.68**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**50,62,622.34**
	Civil & Services				
	"Dismantling of 1.6/3.15 33/11kV PTR, Loading, Transportation within 30 Kms, Unloading of same PTR if Required. Insurance during transportation shall be in TPSODL scope."	EA	1	53,130.00	53,130.00
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	100	78.75	7,875.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	4	2,559.90	10,239.60
L				**Total Civil Part**	**71,244.60**
M				**Sub-Total M =K+L**	**51,33,866.94**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**51,33,866.94**
P				**GST @ 18% of Sub-Total O**	**9,24,096.05**
Q				**CESS @ 1% of Sub-Total O**	**51,338.67**
R				**Grand Total R=P+Q**	**61,09,301.66**

Table 80 Cost Estimate for Augmentation of Power Transformer to 5 MVA

Cost Estimate for Power Transformer Augmentation to 5MVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	5MVA 33/11KV Power Transformer	EA	1	75,75,000.00	75,75,000.00
2	CONDUCTOR AAA 232 SQMM	Mtr	15.00	203.45	3,051.75
3	CLAMP PG FOR 232 SQMM AAA COND	No	15.00	1,495.00	22,425.00
4	12 bolted (M-12) "T" clamp for 232 mm² conductor	No	6.00	1,248.00	7,488.00
5	GI Nut , Bolt & Washer of different sizes	Kg	20.00	101.40	2,028.00
6	50x6 mm GI flat	Kg	32	97.50	3,120.00
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	4	1,365.00	5,460.00
8	33KV Post Insulator	No	3	2,054.00	6,162.00
A				**Total Cost of materials**	**76,24,734.75**
B				**Stock, Storage & Insurance i.e 3%**	**2,28,742.04**
C				**Sub Total C=A+B**	**78,53,476.79**
D				**Contigency @ 3% of C**	**2,35,604.30**
E				**Tools & Plants @ 2% of C**	**1,57,069.54**
F				**Transportation @ 7.5% of C**	**5,89,010.76**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**3,90,112.50**
H				**Erection Other @ 10%**	**5,122.68**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**92,30,396.57**
	Civil & Services				
	"Dismantling of 5/7.5/8 33/11kV PTR, Loading, Transportation within 30 Kms, Unloading of same PTR if Required. Insurance during transportation shall be in TPSODL scope."	EA	1	79,695.00	79,695.00
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	100	78.75	7,875.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	4	2,559.90	10,239.60
L				**Total Civil Part**	**97,809.60**
M				**Sub-Total M =K+L**	**93,28,206.17**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**93,28,206.17**
P				**GST @ 18% of Sub-Total O**	**16,79,077.11**
Q				**CESS @ 1% of Sub-Total O**	**93,282.06**
R				**Grand Total R=P+Q**	**1,11,00,565.34**

Table 81 Cost Estimate for Augmentation of Power Transformer to 8 MVA

Cost Estimate for Power Transformer Augmentation to 8MVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	8MVA 33/11KV Power Transformer with OLTC	EA	1	1,08,00,900.00	1,08,00,900.00
2	CONDUCTOR AAA 232 SQMM	Mtr	15.00	203.45	3,051.75
3	CLAMP PG FOR 232 SQMM AAA COND	No	15.00	1,495.00	22,425.00
4	12 bolted (M-12) "T" clamp for 232 mm² conductor	No	6.00	1,248.00	7,488.00
5	GI Nut , Bolt & Washer of different sizes	Kg	20.00	101.40	2,028.00
6	50x6 mm GI flat	Kg	32	97.50	3,120.00
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	4	1,365.00	5,460.00
8	33KV Post Insulator	No	3	2,054.00	6,162.00
A				**Total Cost of materials**	**1,08,50,634.75**
B				**Stock, Storage & Insurance i.e 3%**	**3,25,519.04**
C				**Sub Total C=A+B**	**1,11,76,153.79**
D				**Contigency @ 3% of C**	**3,35,284.61**
E				**Tools & Plants @ 2% of C**	**2,23,523.08**
F				**Transportation @ 7.5% of C**	**8,38,211.53**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**5,56,246.35**
H				**Erection Other @ 10%**	**5,122.68**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**1,31,34,542.05**
	Civil & Services				
	"Dismantling of 5/7.5/8 33/11kV PTR, Loading, Transportation within 30 Kms, Unloading of same PTR if Required. Insurance during transportation shall be in TPSODL scope."	EA	1	79,695.00	79,695.00
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	100	78.75	7,875.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	4	2,559.90	10,239.60
L				**Total Civil Part**	**97,809.60**
M				**Sub-Total M=K+L**	**1,32,32,351.65**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**1,32,32,351.65**
P				**GST @ 18% of Sub-Total O**	**23,81,823.30**
Q				**CESS @ 1% of Sub-Total O**	**1,32,323.52**
R				**Grand Total R=P+Q**	**1,57,46,498.46**

Table 82 Cost Estimate for Augmentation of Power Transformer to 10 MVA

Cost Estimate for Power Transformer Augmentation to 10MVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	10MVA 33/11KV Power Transformer with OLTC	EA	1	1,32,89,700.00	1,32,89,700.00
2	CONDUCTOR AAA 232 SQMM	Mtr	15.00	203.45	3,051.75
3	CLAMP PG FOR 232 SQMM AAA COND	No	15.00	1,495.00	22,425.00
4	12 bolted (M-12) "T" clamp for 232 mm² conductor	No	6.00	1,248.00	7,488.00
5	GI Nut , Bolt & Washer of different sizes	Kg	20.00	101.40	2,028.00
6	50x6 mm GI flat	Kg	32	97.50	3,120.00
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	4	1,365.00	5,460.00
8	33KV Post Insulator	No	3	2,054.00	6,162.00
A				**Total Cost of materials**	**1,33,39,434.75**
B				**Stock, Storage & Insurance i.e 3%**	**4,00,183.04**
C				**Sub Total C=A+B**	**1,37,39,617.79**
D				**Contigency @ 3% of C**	**4,12,188.53**
E				**Tools & Plants @ 2% of C**	**2,74,792.36**
F				**Transportation @ 7.5% of C**	**10,30,471.33**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**6,84,419.55**
H				**Erection Other @ 10%**	**5,122.68**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**1,61,46,612.25**
	Civil & Services				
	"Dismantling of 5/7.5/8 33/11kV PTR, Loading, Transportation within 30 Kms, Unloading of same PTR if Required. Insurance during transportation shall be in TPSODL scope."	EA	1	79,695.00	79,695.00
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	100	78.75	7,875.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	4	2,559.90	10,239.60
L				**Total Civil Part**	**97,809.60**
M				**Sub-Total M=K+L**	**1,62,44,421.85**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**1,62,44,421.85**
P				**GST @ 18% of Sub-Total O**	**29,23,995.93**
Q				**CESS @ 1% of Sub-Total O**	**1,62,444.22**
R				**Grand Total R=P+Q**	**1,93,30,862.00**

Table 83 Cost Estimate for Augmentation of Power Transformer to 12.5 MVA

Cost Estimate for Power Transformer Augmentation to 12.5MVA					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	12.5MVA 33/11KV Power Transformer with OLTC	EA	1	1,45,80,900.00	1,45,80,900.00
2	CONDUCTOR AAA 232 SQMM	Mtr	15.00	203.45	3,051.75
3	CLAMP PG FOR 232 SQMM AAA COND	No	15.00	1,495.00	22,425.00
4	12 bolted (M-12) "T" clamp for 232 mm² conductor	No	6.00	1,248.00	7,488.00
5	GI Nut , Bolt & Washer of different sizes	Kg	20.00	101.40	2,028.00
6	50x6 mm GI flat	Kg	32	97.50	3,120.00
7	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	4	1,365.00	5,460.00
8	33KV Post Insulator	No	3	2,054.00	6,162.00
A				**Total Cost of materials**	**1,46,30,634.75**
B				**Stock, Storage & Insurance i.e 3%**	**4,38,919.04**
C				**Sub Total C=A+B**	**1,50,69,553.79**
D				**Contigency @ 3% of C**	**4,52,086.61**
E				**Tools & Plants @ 2% of C**	**3,01,391.08**
F				**Transportation @ 7.5% of C**	**11,30,216.53**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**7,50,916.35**
H				**Erection Other @ 10%**	**5,122.68**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**1,77,09,287.05**
	Civil & Services				
	"Dismantling of 5/7.5/8 33/11kV PTR, Loading, Transportation within 30 Kms, Unloading of same PTR if Required. Insurance during transportation shall be in TPSODL scope."	EA	1	79,695.00	79,695.00
	Dismantling of Steel Structure and Nuts and Bolt including loading, transportation, unloading and staking of dismanled material at a proper place in TPSODL store(Central store at Berhampur for Berhampur,Aska,Berhampur City ,Bhanjanagar & at Jeypore store for Jeypore & Rayagada)	KG	100	78.75	7,875.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	4	2,559.90	10,239.60
L				**Total Civil Part**	**97,809.60**
M				**Sub-Total M =K+L**	**1,78,07,096.65**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**1,78,07,096.65**
P				**GST @ 18% of Sub-Total O**	**32,05,277.40**
Q				**CESS @ 1% of Sub-Total O**	**1,78,070.97**
R				**Grand Total R=P+Q**	**2,11,90,445.01**

Table 84 Cost Estimate for Relocation of released Power Transformer

Cost Estimate for Relocation of released Power Transformer					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	8MVA 33/11KV Power Transformer with OLTC	EA	1	1,08,00,900.00	1,08,00,900.00
A				**Total Cost of materials**	**1,08,00,900.00**
B				**Stock, Storage & Insurance i.e 3%**	**3,24,027.00**
C				**Sub Total C=A+B**	**1,11,24,927.00**
D				**Contigency @ 3% of C**	**3,33,747.81**
E				**Tools & Plants @ 2% of C**	**2,22,498.54**
F				**Transportation @ 7.5% of C**	**8,34,369.53**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**5,56,246.35**
H				**Erection Other @ 10%**	-
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=B+D+F**	**11,58,396.53**
	Civil & Services				
	Providing and laying Plain Cement Concrete (PCC) of proportion (1:3:6) in foundations, Trench and plinths using approved quality of cement, 20mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machinaries required for the work etc., as directed by Engineer-in-Charge.	M3	1.875	5,386.50	10,099.69
	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead up to 50 m and lift up to 1.5 m, as directed by Engineer-in-charge. Note- All kind of excavation work with different size for plinth, Structure & other works will be considered under this line items. All kinds of soil (exlcuding hard rock)	M3	60	315.00	18,900.00
	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in Cement mortar 1:4 (1 Cement : 4 Coarse sand) as per TPSODL specifcation. Scope includes supply of all material	M3	8	7,084.35	56,674.80
	12 mm Cement Plaster of mix - 1:6 (1 Cement : 6 Fine sand (50 % fine :50% coarse)) as per as per TPSODL specification. Scope includes supply of all material.	M2	0.75	291.90	218.93
	Providing and laying Reinforced Cement Concrete (RCC) of proportion M25 (as per design mix) from RMC Batching Plant, using approved quality of cement, 20mm & 10mm size hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to required levels in layers not exceeding 15cm thick in each layer including cost, conveyance, loading, unloading, royalties and taxes, cess, of all materials & cost of all labours, sundries, T&P and all other machineries required for the work etc., as directed by Engineer-in-Charge.	M3	25.83	8,400.00	2,16,972.00
L				**Total Civil Part**	**3,02,865.41**
M				**Sub-Total M =K+L**	**14,61,261.94**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**14,61,261.94**
P				**GST @ 18% of Sub-Total O**	**2,63,027.15**
Q				**CESS @ 1% of Sub-Total O**	**14,612.62**
R				**Grand Total R=P+Q**	**17,38,901.71**

Table 85 Cost Estimate for Augmentation of Distribution Transformer to 25 KVA

Cost Estimate for Augmentation of 25kVA Distribution Transformer(3-ph)					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	25 KVA,11/0.43KV(Al) Transformer	No	1	69,940.00	69,940.00
2	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
3	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
4	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
5	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
6	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
7	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
8	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
9	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
10	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
11	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
12	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
13	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
14	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
15	Back Clamp for Transformer belting angle of length 0.576 mtr	Kg	3.62	97.50	352.68
16	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
17	11kV AB Switch 200A 3pole 50Hz Horizontal Type	Set	1	9,555.00	9,555.00
18	HG Fuse(11KV 200A 3 Pole 50Hz) with PI	Set	1	7,956.00	7,956.00
19	LT Distribution Box with MCCB for 25KVA S/S	No	1	19,409.00	19,409.00
20	1.1kV Al 1CX95 Sq.mm Un-armoured Cable	M	32	100.68	3,221.76
21	Gland for 1.1kV Al 1CX95 Sq.mm	EA	4	116.55	466.20
22	Lug AL Crimping 25 Sqmm XLPE Single hole	EA	4	4.77	19.08
23	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
24	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
25	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
26	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
27	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
28	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
29	25x6 mm GI flat	Kg	11.7	97.50	1,140.75
30	Three Phase DT(3 phase 4 wire LTCT 50/5A)	No	1	1,235.00	1,235.00
31	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
32	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
33	CABLE 1.1KV AL 4CX 50 SQMM XLPE ARMORED	M	10	297.81	2,978.10
34	CABLE GLAND FOR 4C X 50 SQ.MM CC,DC	EA	4	657.00	2,628.00
A				**Total Cost of materials**	**1,75,336.39**
B				**Stock, Storage & Insurance i.e 3%**	**5,260.09**
C				**Sub Total C=A+B**	**1,80,596.48**
D				**Contigency @ 3% of C**	**5,417.89**
E				**Tools & Plants @ 2% of C**	**3,611.93**
F				**Transportation @ 7.5% of C**	**13,544.74**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**3,601.91**
H				**Erection Other @ 10%**	**9,871.66**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**2,16,644.62**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
L				**Total Civil Part**	**17,919.30**
M				**Sub-Total M=K+L**	**2,34,563.92**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**2,34,563.92**
P				**GST @ 18% of Sub-Total O**	**42,221.51**
Q				**CESS @ 1% of Sub-Total O**	**2,345.64**
R				**Grand Total R=P+Q**	**2,79,131.06**

Table 86 Cost Estimate for Augmentation of Distribution Transformer to 25 KVA-with Plinth

Cost Estimate for Augmentation of 25kVA Distribution Transformer(3-ph) with Plinth					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	25 KVA,11/0.43KV(Al) Transformer	No	1	69,940.00	69,940.00
2	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
3	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
4	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
5	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
6	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
7	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
8	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
9	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
10	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
11	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
12	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
13	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
14	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
15	Back Clamp for Transformer belting angle of length 0.576 mtr	Kg	3.62	97.50	352.68
16	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
17	11kV AB Switch 200A 3pole 50Hz Horizontal Type	Set	1	9,555.00	9,555.00
18	HG Fuse(11KV 200A 3 Pole 50Hz) with PI	Set	1	7,956.00	7,956.00
19	LT Distribution Box with MCCB for 25KVA S/S	No	1	19,409.00	19,409.00
20	1.1kV Al 1CX95 Sq.mm Un-armoured Cable	M	32	100.68	3,221.76
21	Gland for 1.1kV Al 1CX95 Sq.mm	EA	4	116.55	466.20
22	Lug AL Crimping 25 Sqmm XLPE Single hole	EA	4	4.77	19.08
23	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
24	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
25	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
26	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
27	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
28	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
29	25x6 mm GI flat	Kg	11.7	97.50	1,140.75
30	Three Phase DT(3 phase 4 wire LTCT 50/5A)	No	1	1,235.00	1,235.00
31	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
32	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
33	CABLE 1.1KV AL 4CX 50 SQMM XLPE ARMORED	M	10	297.81	2,978.10
34	CABLE GLAND FOR 4C X 50 SQ.MM CC,DC	EA	4	657.00	2,628.00
A				**Total Cost of materials**	**1,75,336.39**
B				**Stock, Storage & Insurance i.e 3%**	**5,260.09**
C				**Sub Total C=A+B**	**1,80,596.48**
D				**Contigency @ 3% of C**	**5,417.89**
E				**Tools & Plants @ 2% of C**	**3,611.93**
F				**Transportation @ 7.5% of C**	**13,544.74**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**3,601.91**
H				**Erection Other @ 10%**	**9,871.66**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**2,16,644.62**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
	Construction of Plinth with Brick, Mortar, 12 mm cement plaster and for 250-1000KVA transformer as per TPSODL drawing.Scope of work includes excavation of earth,supply of Civil material for construction, desposal of extra malba as per EIC instruction.	EA	1	31,878.00	31,878.00
L				**Total Civil Part**	**49,797.30**
M				**Sub-Total M=K+L**	**2,66,441.92**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**2,66,441.92**
P				**GST @ 18% of Sub-Total O**	**47,959.55**
Q				**CESS @ 1% of Sub-Total O**	**2,664.42**
R				**Grand Total R=P+Q**	**3,17,065.88**

Table 87 Cost Estimate for Augmentation of Distribution Transformer to 63 KVA

Cost Estimate for Augmentation of 63kVA Distribution Transformer(3-ph)					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	63 KVA,11/0.43KV(Al) Transformer	No	1	1,12,450.00	1,12,450.00
2	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
3	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
4	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
5	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
6	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
7	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
8	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
9	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
10	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
11	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
12	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
13	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
14	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
15	Back Clamp for Transformer belting angle of length 0.576 mtr	Kg	3.62	97.50	352.68
16	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
17	11kV AB Switch 200A 3pole 50Hz Horizontal Type	Set	1	9,555.00	9,555.00
18	HG Fuse(11KV 200A 3 Pole 50Hz) with PI	Set	1	7,956.00	7,956.00
19	LT Distribution Box with MCCB for 63KVA S/S	EA	1	41,195.76	41,195.76
20	1.1kV Al 1CX95 Sq.mm Un-armoured Cable	M	32	100.68	3,221.76
21	Gland for 1.1kV Al 1CX95 Sq.mm	EA	4	116.55	466.20
22	Lug AL Crimping 95 Sqmm XLPE Single hole	EA	4	19.07	76.28
23	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
24	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
25	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
26	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
27	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
28	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
29	25x6 mm GI flat	Kg	11.7	97.50	1,140.75
30	Three Phase DT(3 phase 4 wire LTCT 100/5A)	No	1	845.00	845.00
31	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
32	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
33	CABLE 1.1KV AL 4CX 95 SQMM XLPE ARMORED	M	7	502.39	3,623.24
34	CABLE GLAND FOR 4C X 95 SQ.MM CC,DC	No	4	26.00	104.00
A				**Total Cost of materials**	**2,37,421.49**
B				**Stock, Storage & Insurance i.e 3%**	**7,122.64**
C				**Sub Total C=A+B**	**2,44,544.13**
D				**Contigency @ 3% of C**	**7,336.32**
E				**Tools & Plants @ 2% of C**	**4,890.88**
F				**Transportation @ 7.5% of C**	**18,340.81**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**5,791.18**
H				**Erection Other @ 10%**	**11,887.90**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**2,92,791.22**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
L				**Total Civil Part**	**17,919.30**
M				**Sub-Total M=K+L**	**3,10,710.52**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**3,10,710.52**
P				**GST @ 18% of Sub-Total O**	**55,927.89**
Q				**CESS @ 1% of Sub-Total O**	**3,107.11**
R				**Grand Total R=P+Q**	**3,69,745.52**

Table 88 Cost Estimate for Augmentation of Distribution Transformer to 63 KVA-with Plinth

Cost Estimate for Augmentation of 63kVA Distribution Transformer(3-ph) with Plinth					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	63 KVA,11/0.43KV(Al) Transformer	No	1	1,12,450.00	1,12,450.00
2	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
3	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
4	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
5	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
6	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
7	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
8	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
9	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
10	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
11	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
12	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
13	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
14	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
15	Back Clamp for Transformer belting angle of length 0.576 mtr	Kg	3.62	97.50	352.68
16	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
17	11kV AB Switch 200A 3pole 50Hz Horizontal Type	Set	1	9,555.00	9,555.00
18	HG Fuse(11KV 200A 3 Pole 50Hz) with PI	Set	1	7,956.00	7,956.00
19	LT Distribution Box with MCCB for 63KVA S/S	EA	1	41,195.76	41,195.76
20	1.1kV Al 1CX95 Sq.mm Un-armoured Cable	M	32	100.68	3,221.76
21	Gland for 1.1kV Al 1CX95 Sq.mm	EA	4	116.55	466.20
22	Lug AL Crimping 95 Sqmm XLPE Single hole	EA	4	19.07	76.28
23	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
24	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
25	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
26	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
27	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
28	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
29	25x6 mm GI flat	Kg	12	97.50	1,140.75
30	Three Phase DT(3 phase 4 wire LTCT 100/5A)	No	1	845.00	845.00
31	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
32	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
33	CABLE 1.1KV AL 4CX 95 SQMM XLPE ARMORED	M	7	502.39	3,623.24
34	CABLE GLAND FOR 4C X 95 SQ.MM CC,DC	No	4	26.00	104.00
A				**Total Cost of materials**	**2,37,421.49**
B				**Stock, Storage & Insurance i.e 3%**	**7,122.64**
C				**Sub Total C=A+B**	**2,44,544.13**
D				**Contigency @ 3% of C**	**7,336.32**
E				**Tools & Plants @ 2% of C**	**4,890.88**
F				**Transportation @ 7.5% of C**	**18,340.81**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**5,791.18**
H				**Erection Other @ 10%**	**11,887.90**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**2,92,791.22**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
	Construction of Plinth with Brick, Mortar, 12 mm cement plaster and for 250-1000KVA transformer as per TPSODL drawing.Scope of work includes excavation of earth,supply of Civil material for construction, desposal of extra malba as per EIC instruction.	EA	1	31,878.00	31,878.00
L				**Total Civil Part**	**49,797.30**
M				**Sub-Total M =K+L**	**3,42,588.52**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**3,42,588.52**
P				**GST @ 18% of Sub-Total O**	**61,665.93**
Q				**CESS @ 1% of Sub-Total O**	**3,425.89**
R				**Grand Total R=P+Q**	**4,07,680.34**

Table 89 Cost Estimate for Augmentation of Distribution Transformer to 100 KVA

Cost Estimate for Augmentation of 100kVA Distribution Transformer(3-ph)					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	100 KVA,11/0.43KV(Al) Transformer	No	1	1,52,100.00	1,52,100.00
2	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
3	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
4	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
5	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
6	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
7	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
8	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
9	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
10	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
11	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
12	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
13	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
14	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
15	Back Clamp for Transformer belting angle of length 0.576 mtr	Kg	3.62	97.50	352.68
16	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
17	11kV AB Switch 200A 3pole 50Hz Horizontal Type	Set	1	9,555.00	9,555.00
18	HG Fuse(11KV 200A 3 Pole 50Hz) with PI	Set	1	7,956.00	7,956.00
19	LT Distribution Box with MCCB for 100KVA S/S	EA	1	45,400.00	45,400.00
20	1.1kV Al 1CX150 Sq.mm Un-armoured Cable	M	32	155.20	4,966.40
21	Gland for 1.1kV Al 1CX150 Sq.mm	EA	4	128.30	513.20
22	Lug AL Crimping 150 Sqmm XLPE Single hole	EA	4	16.30	65.20
23	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
24	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
25	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
26	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
27	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
28	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
29	25x6 mm GI flat	Kg	8.79	97.50	857.03
30	Three Phase DT(3 phase 4 wire LTCT 200/5)	No	1	1,235.00	1,235.00
31	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
32	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
33	CABLE 1.1KV AL 4CX 95 SQMM XLPE ARMORED	M	7	502.39	3,516.73
34	CABLE GLAND FOR 4C X 95 SQ.MM CC,DC	No	4	26.00	104.00
A				**Total Cost of materials**	**2,83,056.06**
B				**Stock, Storage & Insurance i.e 3%**	**8,491.68**
C				**Sub Total C=A+B**	**2,91,547.74**
D				**Contigency @ 3% of C**	**8,746.43**
E				**Tools & Plants @ 2% of C**	**5,830.95**
F				**Transportation @ 7.5% of C**	**21,866.08**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**7,833.15**
H				**Erection Other @ 10%**	**12,504.31**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**3,48,328.67**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
L				**Total Civil Part**	**17,919.30**
M				**Sub-Total M=K+L**	**3,66,247.97**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**3,66,247.97**
P				**GST @ 18% of Sub-Total O**	**65,924.63**
Q				**CESS @ 1% of Sub-Total O**	**3,662.48**
R				**Grand Total R=P+Q**	**4,35,835.08**

Table 90 Cost Estimate for Augmentation of Distribution Transformer to 100 KVA-with Plinth

Cost Estimate for Augmentation of 100kVA Distribution Transformer(3-ph) with Plinth					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	100 KVA,11/0.43KV(Al) Transformer	No	1	1,52,100.00	1,52,100.00
2	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
3	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
4	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
5	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
6	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
7	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
8	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
9	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
10	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
11	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
12	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
13	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
14	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
15	Back Clamp for Transformer belting angle of length 0.576 mtr	Kg	3.62	97.50	352.68
16	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
17	11kV AB Switch 200A 3pole 50Hz Horizontal Type	Set	1	9,555.00	9,555.00
18	HG Fuse(11KV 200A 3 Pole 50Hz) with PI	Set	1	7,956.00	7,956.00
19	LT Distribution Box with MCCB for 100KVA S/S	EA	1	45,400.00	45,400.00
20	1.1kV Al 1CX150 Sq.mm Un-armoured Cable	M	32	155.20	4,966.40
21	Gland for 1.1kV Al 1CX150 Sq.mm	EA	4	128.30	513.20
22	Lug AL Crimping 150 Sqmm XLPE Single hole	EA	4	16.30	65.20
23	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
24	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
25	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
26	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
27	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
28	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
29	25x6 mm GI flat	Kg	9	97.50	857.03
30	Three Phase DT(3 phase 4 wire LTCT 200/5)	No	1	1,235.00	1,235.00
31	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
32	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
33	CABLE 1.1KV AL 4CX 95 SQMM XLPE ARMORED	M	7	502.39	3,516.73
34	CABLE GLAND FOR 4C X 95 SQ.MM CC,DC	No	4	26.00	104.00
A				**Total Cost of materials**	**2,83,056.06**
B				**Stock, Storage & Insurance i.e 3%**	**8,491.68**
C				**Sub Total C=A+B**	**2,91,547.74**
D				**Contigency @ 3% of C**	**8,746.43**
E				**Tools & Plants @ 2% of C**	**5,830.95**
F				**Transportation @ 7.5% of C**	**21,866.08**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**7,833.15**
H				**Erection Other @ 10%**	**12,504.31**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**3,48,328.67**
	Civil & Services				
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
	Construction of Plinth with Brick, Mortar, 12 mm cement plaster and for 250-1000KVA transformer as per TPSODL drawing.Scope of work includes excavation of earth,supply of Civil material for construction, desposal of extra malba as per EIC instruction.	EA	1	31,878.00	31,878.00
L				**Total Civil Part**	**49,797.30**
M				**Sub-Total M =K+L**	**3,98,125.97**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**3,98,125.97**
P				**GST @ 18% of Sub-Total O**	**71,662.67**
Q				**CESS @ 1% of Sub-Total O**	**3,981.26**
R				**Grand Total R=P+Q**	**4,73,769.90**

Table 91 Cost Estimate for Augmentation of Distribution Transformer to 250 KVA

Cost Estimate for Augmentation to 250kVA Distribution Transformer(3-ph)					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	250 KVA,11/0.43KV Transformer	EA	1	6,05,000.00	6,05,000.00
2	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
3	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
4	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
5	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
6	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
7	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
8	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
9	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
10	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
11	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
12	11kV AB Switch 400A 3pole 50Hz Horizontal Type	Set	1	15,405.00	15,405.00
13	HG Fuse(11KV 400A 3 Pole 50Hz) with PI	Set	1	14,989.00	14,989.00
14	LT Distribution Box with MCCB for 250KVA S/S	EA	1	75,017.80	75,017.80
15	1.1kV Al 1CX300 Sq.mm Un-armoured Cable	Mtr	32	496.60	15,891.20
16	Gland for 1.1kV Al 1CX300 Sq.mm	No	8	67.60	540.80
17	Lug AL Crimping 300 Sqmm XLPE Single hole	EA	8	54.43	435.44
18	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
19	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
20	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
21	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
22	GI Nut , Bolt & Washer of different sizes	Kg	19	101.40	1,910.17
23	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
24	25x6 mm GI flat	Kg	6	97.50	585.00
25	Three Phase DT(3 phase 4 wire LTCT 400/5)	No	1	1,235.00	1,235.00
26	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
27	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
28	CABLE 1.1KV AL 4CX 150 SQMM XLPE ARMORED	M	5	800.00	4,000.00
29	CABLE GLAND FOR 4C X 150 SQ.MM CC,DC	No	4	39.00	156.00
A				**Total Cost of materials**	**7,80,927.30**
B				**Stock, Storage & Insurance i.e 3%**	**23,427.82**
C				**Sub Total C=A+B**	**8,04,355.11**
D				**Contigency @ 3% of C**	**24,130.65**
E				**Tools & Plants @ 2% of C**	**16,087.10**
F				**Transportation @ 7.5% of C**	**60,326.63**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**31,157.50**
H				**Erection Other @ 10%**	**17,136.35**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**9,53,193.35**
	Civil & Services				
	Construction of Plinth with Brick, Mortar, 12 mm cement plaster and for 250-1000KVA transformer as per TPSODL drawing.Scope of work includes excavation of earth,supply of Civil material for construction, desposal of extra malba as per EIC instruction.	EA	1	31,878.00	31,878.00
	BA will provide necessary Manpower,FRP Fencing & Ms Material for construction boundary wall fencing as per TPSODL Drawing, specification & GTP.	Sqm	18	4,095.00	73,710.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
L				**Total Civil Part**	**1,23,507.30**
M				**Sub-Total M=K+L**	**10,76,700.65**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**10,76,700.65**
P				**GST @ 18% of Sub-Total O**	**1,93,806.12**
Q				**CESS @ 1% of Sub-Total O**	**10,767.01**
R				**Grand Total R=P+Q**	**12,81,273.77**

Table 92 Cost Estimate for Augmentation of Distribution Transformer to 500 KVA

Cost Estimate for Augmentation to 500kVA Distribution Transformer(3-ph)					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	500 KVA,11/0.43KVTransformer	EA	1	12,15,000.00	12,15,000.00
2	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
3	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
4	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
5	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
6	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
7	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
8	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
9	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
10	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
11	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
12	11kV AB Switch 400A 3pole 50Hz Horizontal Type	Set	1	15,405.00	15,405.00
13	HG Fuse(11KV 400A 3 Pole 50Hz) with PI	Set	1	14,989.00	14,989.00
14	LT Distribution Box with MCCB for 500KVA S/S	No	1	1,26,568.00	1,26,568.00
15	1.1kV Al 1CX630 Sq.mm Un-armoured Cable	M	64	585.93	37,499.52
16	Gland for 1.1kV Al 1CX630 Sq.mm	EA	8	1,084.50	8,676.00
17	Lug AL Crimping 630 Sqmm XLPE Single hole	EA	8	133.39	1,067.12
18	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
19	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
20	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
21	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
22	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
23	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
24	25x6 mm GI flat	Kg	6	97.50	585.00
25	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
26	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
27	CABLE 1.1KV AL 4CX 630 SQMM XLPE ARMORED	Mtr	10	2,116.40	21,164.00
28	CABLE GLAND FOR 4C X 300 SQ.MM CC,DC	EA	4	3,162.60	12,650.40
A				**Total Cost of materials**	**15,01,393.92**
B				**Stock, Storage & Insurance i.e 3%**	**45,041.82**
C				**Sub Total C=A+B**	**15,46,435.74**
D				**Contigency @ 3% of C**	**46,393.07**
E				**Tools & Plants @ 2% of C**	**30,928.71**
F				**Transportation @ 7.5% of C**	**1,15,982.68**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**62,572.50**
H				**Erection Other @ 10%**	**28,514.41**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**18,30,827.12**
	Civil & Services				
	Construction of Plinth with Brick, Mortar, 12 mm cement plaster and for 250-1000KVA transformer as per TPSODL drawing.Scope of work includes excavation of earth,supply of Civil material for construction, desposal of extra malba as per EIC instruction.	EA	1	31,878.00	31,878.00
	BA will provide necessary Manpower,FRP Fencing & Ms Material for construction boundary wall fencing as per TPSODL Drawing, specification & GTP.	Sqm	20	4,095.00	81,900.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
L				**Total Civil Part**	**1,31,697.30**
M				**Sub-Total M=K+L**	**19,62,524.42**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**19,62,524.42**
P				**GST @ 18% of Sub-Total O**	**3,53,254.39**
Q				**CESS @ 1% of Sub-Total O**	**19,625.24**
R				**Grand Total R=P+Q**	**23,35,404.06**

Table 93 Cost Estimate for new Distribution Transformer 25 KVA

Cost Estimate for Installation of New 25kVA Distribution Transformer(3-ph)					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	25 KVA,11/0.43KV(Al) Transformer	No	1	69,940.00	69,940.00
2	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
3	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
4	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
5	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
6	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
7	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
8	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
9	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
10	AB Switch Operating Pipe Channel Support 75X40X4.8 mm,,of length 0.625mtr	Kg	4.46	97.50	435.09
11	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
12	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
13	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
14	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
15	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
16	Back Clamp for Transformer belting angle of length 0.576 mtr	Kg	3.62	97.50	352.68
17	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
18	11kV AB Switch 200A 3pole 50Hz Horizontal Type	Set	1	9,555.00	9,555.00
19	HG Fuse(11KV 200A 3 Pole 50Hz) with PI	Set	1	7,956.00	7,956.00
20	LT Distribution Box with MCCB for 25KVA S/S	No	1	19,409.00	19,409.00
21	Earthing of Support (Coil Type)	No	2	215.80	431.60
22	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.524	97.50	51.09
23	H.T Stay clamp	Pair	2	162.50	325.00
24	H.T 11kV Stay set (Complete)	Set	2	1,365.00	2,730.00
25	H.T Stay Insulator	No	2	65.00	130.00
26	7/10 SWG Stay Wire	Kg	20	97.50	1,950.00
27	1.1kV Al 1CX95 Sq.mm Un-armoured Cable	M	32	100.68	3,221.76
28	Gland for 1.1kV Al 1CX95 Sq.mm	EA	4	116.55	466.20
29	Lug AL Crimping 25 Sqmm XLPE Single hole	EA	4	4.77	19.08
30	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
31	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
32	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
33	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
34	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
35	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
36	25x6 mm GI flat	Kg	6	97.50	585.00
37	Black Paint	Ltr	1	286.00	286.00
38	Yellow Colour Paint for Background	L	2	212.77	425.54
39	Three Phase DT(3 phase 4 wire LTCT 50/5A)	No	4	1,235.00	4,940.00
40	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
41	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
42	CABLE 1.1KV AL 4CX 50 SQMM XLPE ARMORED	M	10	297.81	2,978.10
43	CABLE GLAND FOR 4C X 50 SQ.MM CC,DC	EA	4	657.00	2,628.00
A				**Total Cost of materials**	**2,53,457.91**
B				**Stock, Storage & Insurance i.e 3%**	**7,603.74**
C				**Sub Total C=A+B**	**2,61,061.65**
D				**Contigency @ 3% of C**	**7,831.85**
E				**Tools & Plants @ 2% of C**	**5,221.23**
F				**Transportation @ 7.5% of C**	**19,579.62**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**3,601.91**
H				**Erection Other @ 10%**	**10,245.75**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**3,07,542.02**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	2	2,504.25	5,008.50
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
	BA will provide necessary Manpower,Chain link Fencing,Barbed Wire & Ms Material for construction fencing as per TPSODL Drawing, specification & GTP.	SQM	20	3,276.00	65,520.00
L				**Total Civil Part**	**1,01,803.80**
M				**Sub-Total M=K+L**	**4,09,345.82**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**4,09,345.82**
P				**GST @ 18% of Sub-Total O**	**73,682.25**
Q				**CESS @ 1% of Sub-Total O**	**4,093.46**
R				**Grand Total R=P+Q**	**4,87,121.52**

Table 94 Cost Estimate for new Distribution Transformer 63 KVA

Cost Estimate for Installation of New 63kVA Distribution Transformer(3-ph)					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	63 KVA,11/0.43KV(Al) Transformer	No	1	1,12,450.00	1,12,450.00
2	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
3	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
4	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
5	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
6	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
7	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
8	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
9	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
10	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
11	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
12	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
13	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
14	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
15	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
16	Back Clamp for Transformer belting angle of length 0.576 mtr	Kg	3.62	97.50	352.68
17	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
18	11kV AB Switch 200A 3pole 50Hz Horizontal Type	Set	1	9,555.00	9,555.00
19	HG Fuse(11KV 200A 3 Pole 50Hz) with PI	Set	1	7,956.00	7,956.00
20	LT Distribution Box with MCCB for 63KVA S/S	EA	1	41,195.76	41,195.76
21	Earthing of Support (Coil Type)	No	2	215.80	431.60
22	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.524	97.50	51.09
23	H.T Stay clamp	Pair	2	162.50	325.00
24	H.T 11kV Stay set (Complete)	Set	2	1,365.00	2,730.00
25	H.T Stay Insulator	No	2	65.00	130.00
26	7/10 SWG Stay Wire	Kg	2	97.50	195.00
27	1.1kV Al 1CX95 Sq.mm Un-armoured Cable	M	32	100.68	3,221.76
28	Gland for 1.1kV Al 1CX95 Sq.mm	EA	4	116.55	466.20
29	Lug AL Crimping 95 Sqmm XLPE Single hole	EA	4	19.07	76.28
30	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
31	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
32	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
33	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
34	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
35	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
36	25x6 mm GI flat	Kg	6	97.50	585.00
37	Black Paint	Ltr	1	286.00	286.00
38	Yellow Colour Paint for Background	L	2	212.77	425.54
39	Three Phase DT(3 phase 4 wire LTCT 100/5A)	No	4	845.00	3,380.00
40	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
41	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
42	CABLE 1.1KV AL 4CX 95 SQMM XLPE ARMORED	M	10	502.39	5,023.90
43	CABLE GLAND FOR 4C X 95 SQ.MM CC,DC	No	4	26.00	104.00
A				**Total Cost of materials**	**3,14,018.67**
B				**Stock, Storage & Insurance i.e 3%**	**9,420.56**
C				**Sub Total C=A+B**	**3,23,439.23**
D				**Contigency @ 3% of C**	**9,703.18**
E				**Tools & Plants @ 2% of C**	**6,468.78**
F				**Transportation @ 7.5% of C**	**24,257.94**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**5,791.18**
H				**Erection Other @ 10%**	**12,285.75**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**3,81,946.06**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	2	2,504.25	5,008.50
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
	BA will provide necessary Manpower,Chain link Fencing,Barbed Wire & Ms Material for construction fencing as per TPSODL Drawing, specification & GTP.	SQM	20	3,276.00	65,520.00
L				**Total Civil Part**	**1,01,803.80**
M				**Sub-Total M =K+L**	**4,83,749.86**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**4,83,749.86**
P				**GST @ 18% of Sub-Total O**	**87,074.97**
Q				**CESS @ 1% of Sub-Total O**	**4,837.50**
R				**Grand Total R=P+Q**	**5,75,662.33**

Table 95 Cost Estimate for new Distribution Transformer 63 KVA-with Plinth

Cost Estimate for Installation of New 63kVA Distribution Transformer(3-ph) with Plinth					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	63 KVA,11/0.43KV(Al) Transformer	No	1	1,12,450.00	1,12,450.00
2	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
3	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
4	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
5	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
6	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
7	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
8	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
9	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
10	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
11	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
12	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
13	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
14	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
15	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
16	Back Clamp for Transformer belting angle of length 0.576 mtr	Kg	3.62	97.50	352.68
17	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
18	11kV AB Switch 200A 3pole 50Hz Horizontal Type	Set	1	9,555.00	9,555.00
19	HG Fuse(11KV 200A 3 Pole 50Hz) with PI	Set	1	7,956.00	7,956.00
20	LT Distribution Box with MCCB for 63KVA S/S	EA	1	41,195.76	41,195.76
21	Earthing of Support (Coil Type)	No	2	215.80	431.60
22	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	0.524	97.50	51.09
23	H.T Stay clamp	Pair	2	162.50	325.00
24	H.T 11kV Stay set (Complete)	Set	2	1,365.00	2,730.00
25	H.T Stay Insulator	No	2	65.00	130.00
26	7/10 SWG Stay Wire	Kg	2	97.50	195.00
27	1.1kV Al 1CX95 Sq.mm Un-armoured Cable	M	32	100.68	3,221.76
28	Gland for 1.1kV Al 1CX95 Sq.mm	EA	4	116.55	466.20
29	Lug AL Crimping 95 Sqmm XLPE Single hole	EA	4	19.07	76.28
30	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
31	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
32	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
33	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
34	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
35	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
36	25x6 mm GI flat	Kg	6	97.50	585.00
37	Black Paint	Ltr	1	286.00	286.00
38	Yellow Colour Paint for Background	L	2	212.77	425.54
39	Three Phase DT(3 phase 4 wire LTCT 100/5A)	No	4	845.00	3,380.00
40	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
41	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
42	CABLE 1.1KV AL 4CX 95 SQMM XLPE ARMORED	M	10	502.39	5,023.90
43	CABLE GLAND FOR 4C X 95 SQ.MM CC,DC	No	4	26.00	104.00
A				**Total Cost of materials**	**3,14,018.67**
B				**Stock, Storage & Insurance i.e 3%**	**9,420.56**
C				**Sub Total C=A+B**	**3,23,439.23**
D				**Contigency @ 3% of C**	**9,703.18**
E				**Tools & Plants @ 2% of C**	**6,468.78**
F				**Transportation @ 7.5% of C**	**24,257.94**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**5,791.18**
H				**Erection Other @ 10%**	**12,285.75**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**3,81,946.06**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	2	2,504.25	5,008.50
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
	BA will provide necessary Manpower,Chain link Fencing,Barbed Wire & Ms Material for construction fencing as per TPSODL Drawing, specification & GTP.	SQM	20	3,276.00	65,520.00
	Construction of Plinth with Brick, Mortar, 12 mm cement plaster and for 250-1000KVA transformer as per TPSODL drawing.Scope of work includes excavation of earth,supply of Civil material for construction, desposal of extra malba as per EIC instruction.	EA	1	31,878.00	31,878.00
L				**Total Civil Part**	**1,33,681.80**
M				**Sub-Total M=K+L**	**5,15,627.86**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**5,15,627.86**
P				**GST @ 18% of Sub-Total O**	**92,813.01**
Q				**CESS @ 1% of Sub-Total O**	**5,156.28**
R				**Grand Total R=P+Q**	**6,13,597.15**

Table 96 Cost Estimate for new Distribution Transformer 100 KVA

Cost Estimate for Installation of New 100kVA Distribution Transformer(3-ph)					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	100 KVA,11/0.43KV(Al) Transformer	No	1	1,52,100.00	1,52,100.00
2	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
3	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
4	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
5	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
6	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
7	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
8	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
9	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
10	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
11	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
12	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
13	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
14	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
15	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
16	Back Clamp for Transformer belting angle of length 0.576 mtr	Kg	3.62	97.50	352.68
17	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
18	11kV AB Switch 200A 3pole 50Hz Horizontal Type	Set	1	9,555.00	9,555.00
19	HG Fuse(11KV 200A 3 Pole 50Hz) with PI	Set	1	7,956.00	7,956.00
20	LT Distribution Box with MCCB for 100KVA S/S	EA	1	45,400.00	45,400.00
21	Earthing of Support (Coil Type)	No	2	215.80	431.60
22	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	1	97.50	51.09
23	H.T Stay clamp	Pair	2	162.50	325.00
24	H.T 11kV Stay set (Complete)	Set	2	1,365.00	2,730.00
25	H.T Stay Insulator	No	2	65.00	130.00
26	7/10 SWG Stay Wire	Kg	20	97.50	1,950.00
27	1.1kV Al 1CX150 Sq.mm Un-armoured Cable	M	32	155.20	4,966.40
28	Gland for 1.1kV Al 1CX150 Sq.mm	EA	4	128.30	513.20
29	Lug AL Crimping 150 Sqmm XLPE Single hole	EA	4	16.30	65.20
30	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
31	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
32	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
33	CONDUCTOR 100 SQMM AAA	Mtr	10	71.50	715.00
34	GI Nut , Bolt & Washer of different sizes	Kg	19	101.40	1,902.26
35	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
36	25x6 mm GI flat	Kg	6	97.50	585.00
37	Black Paint	Ltr	1	286.00	286.00
38	Yellow Colour Paint for Background	L	2	212.77	425.54
39	Three Phase DT(3 phase 4 wire LTCT 200/5)	No	4	1,235.00	4,940.00
40	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
41	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
42	CABLE 1.1KV AL 4CX 95 SQMM XLPE ARMORED	M	10	502.39	5,023.90
43	CABLE GLAND FOR 4C X 95 SQ.MM CC,DC	No	4	26.00	104.00
A				**Total Cost of materials**	**3,62,485.24**
B				**Stock, Storage & Insurance i.e 3%**	**10,874.56**
C				**Sub Total C=A+B**	**3,73,359.79**
D				**Contigency @ 3% of C**	**11,200.79**
E				**Tools & Plants @ 2% of C**	**7,467.20**
F				**Transportation @ 7.5% of C**	**28,001.98**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**7,833.15**
H				**Erection Other @ 10%**	**13,013.09**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**4,40,876.01**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	2	2,504.25	5,008.50
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
	BA will provide necessary Manpower,FRP Fencing & Ms Material for construction boundary wall fencing as per TPSODL Drawing, specification & GTP.	RM	20	4,095.00	81,900.00
L				**Total Civil Part**	**1,18,183.80**
M				**Sub-Total M =K+L**	**5,59,059.81**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**5,59,059.81**
P				**GST @ 18% of Sub-Total O**	**1,00,630.76**
Q				**CESS @ 1% of Sub-Total O**	**5,590.60**
R				**Grand Total R=P+Q**	**6,65,281.17**

Table 97 Cost Estimate for new Distribution Transformer 100 KVA-with Plinth

Cost Estimate for Installation of New 100kVA Distribution Transformer(3-ph) with Plinth					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	100 KVA,11/0.43KV(Al) Transformer	No	1	1,52,100.00	1,52,100.00
2	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
3	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
4	Transformer Base Channel 100X50X5mm,each channel length 2.8 mtr	Kg	53.54	97.50	5,219.76
5	Transformer Side Belting angle 75X40X4.8mm,each channel length 0.5 mtr	Kg	7.14	97.50	696.15
6	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
7	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
8	Transformer Belting angle 50X50X6mm of length 2.8mtr with side angle	Kg	25.20	97.50	2,457.00
9	Transformer Bottom fixing angle 50X50X6mm,each angle length 0.310 mtr	Kg	2.79	97.50	272.03
10	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
11	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
12	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
13	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
14	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
15	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
16	Back Clamp for Transformer belting angle of length 0.576 mtr	Kg	3.62	97.50	352.68
17	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
18	11kV AB Switch 200A 3pole 50Hz Horizontal Type	Set	1	9,555.00	9,555.00
19	HG Fuse(11KV 200A 3 Pole 50Hz) with PI	Set	1	7,956.00	7,956.00
20	LT Distribution Box with MCCB for 100KVA S/S	EA	1	45,400.00	45,400.00
21	Earthing of Support (Coil Type)	No	2	215.80	431.60
22	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	1	97.50	51.09
23	H.T Stay clamp	Pair	2	162.50	325.00
24	H.T 11kV Stay set (Complete)	Set	2	1,365.00	2,730.00
25	H.T Stay Insulator	No	2	65.00	130.00
26	7/10 SWG Stay Wire	Kg	20	97.50	1,950.00
27	1.1kV Al 1CX150 Sq.mm Un-armoured Cable	M	32	155.20	4,966.40
28	Gland for 1.1kV Al 1CX150 Sq.mm	EA	4	128.30	513.20
29	Lug AL Crimping 150 Sqmm XLPE Single hole	EA	4	16.30	65.20
30	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
31	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
32	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
33	CONDUCTOR 100 SQMM AAA	Mtr	10	71.50	715.00
34	GI Nut , Bolt & Washer of different sizes	Kg	19	101.40	1,896.18
35	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
36	25x6 mm GI flat	Kg	6	97.50	585.00
37	Black Paint	Ltr	1	286.00	286.00
38	Yellow Colour Paint for Background	L	2	212.77	425.54
39	Three Phase DT(3 phase 4 wire LTCT 200/5)	No	4	1,235.00	4,940.00
40	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
41	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
42	CABLE 1.1KV AL 4CX 95 SQMM XLPE ARMORED	M	10	502.39	5,023.90
43	CABLE GLAND FOR 4C X 95 SQ.MM CC,DC	No	4	26.00	104.00
A				**Total Cost of materials**	**3,62,479.15**
B				**Stock, Storage & Insurance i.e 3%**	**10,874.37**
C				**Sub Total C=A+B**	**3,73,353.53**
D				**Contigency @ 3% of C**	**11,200.61**
E				**Tools & Plants @ 2% of C**	**7,467.07**
F				**Transportation @ 7.5% of C**	**28,001.51**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**7,833.15**
H				**Erection Other @ 10%**	**13,012.46**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**4,40,868.33**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	2	2,504.25	5,008.50
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
	BA will provide necessary Manpower,FRP Fencing & Ms Material for construction boundary wall fencing as per TPSODL Drawing, specification & GTP.	RM	20	4,095.00	81,900.00
	Construction of Plinth with Brick, Mortar, 12 mm cement plaster and for 250-1000KVA transformer as per TPSODL drawing.Scope of work includes excavation of earth,supply of Civil material for construction, desposal of extra malba as per EIC instruction.	EA	1	31,878.00	31,878.00
L				**Total Civil Part**	**1,50,061.80**
M				**Sub-Total M=K+L**	**5,90,930.13**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**5,90,930.13**
P				**GST @ 18% of Sub-Total O**	**1,06,367.42**
Q				**CESS @ 1% of Sub-Total O**	**5,909.30**
R				**Grand Total R=P+Q**	**7,03,206.85**

Table 98 Cost Estimate for new Distribution Transformer 250 KVA

Cost Estimate for Installation of New 250kVA Distribution Transformer(3-ph)					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	250 KVA,11/0.43KV Transformer	EA	1	6,05,000.00	6,05,000.00
2	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
3	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
4	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
5	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
6	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
7	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
8	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
9	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
10	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
11	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
12	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
13	11kV AB Switch 400A 3pole 50Hz Horizontal Type	Set	1	15,405.00	15,405.00
14	HG Fuse(11KV 400A 3 Pole 50Hz) with PI	Set	1	14,989.00	14,989.00
15	LT Distribution Box with MCCB for 250KVA S/S	EA	1	75,017.80	75,017.80
16	Earthing of Support (Coil Type)	No	2	215.80	431.60
17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	1	97.50	51.09
18	H.T Stay clamp	Pair	2	162.50	325.00
19	H.T 11kV Stay set (Complete)	Set	2	1,365.00	2,730.00
20	H.T Stay Insulator	No	2	65.00	130.00
21	7/10 SWG Stay Wire	Kg	20	97.50	1,950.00
22	1.1kV Al 1CX300 Sq.mm Un-armoured Cable	Mtr	64	496.60	31,782.40
23	Gland for 1.1kV Al 1CX300 Sq.mm	No	8	67.60	540.80
24	Lug AL Crimping 300 Sqmm XLPE Single hole	EA	8	54.43	435.44
25	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
26	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
27	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
28	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
29	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
30	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
31	25x6 mm GI flat	Kg	6	97.50	585.00
32	Black Paint	Ltr	1	286.00	286.00
33	Yellow Colour Paint for Background	L	2	212.77	425.54
34	Three Phase DT(3 phase 4 wire LTCT 400/5)	No	4	1,235.00	4,940.00
35	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
36	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
37	CABLE 1.1KV AL 4CX 150 SQMM XLPE ARMORED	M	10	800.00	8,000.00
38	CABLE GLAND FOR 4C X 150 SQ.MM CC,DC	No	4	39.00	156.00
A				**Total Cost of materials**	**8,79,613.59**
B				**Stock, Storage & Insurance i.e 3%**	**26,388.41**
C				**Sub Total C=A+B**	**9,06,002.00**
D				**Contigency @ 3% of C**	**27,180.06**
E				**Tools & Plants @ 2% of C**	**18,120.04**
F				**Transportation @ 7.5% of C**	**67,950.15**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**31,157.50**
H				**Erection Other @ 10%**	**19,628.61**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**10,70,038.36**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	2	2,504.25	5,008.50
	Construction of Plinth with Brick, Mortar, 12 mm cement plaster and for 250-1000KVA transformer as per TPSODL drawing.Scope of work includes excavation of earth,supply of Civil material for construction, desposal of extra malba as per EIC instruction.	EA	1	31,878.00	31,878.00
	BA will provide necessary Manpower,FRP Fencing & Ms Material for construction boundary wall fencing as per TPSODL Drawing, specification & GTP.	Sqm	20	4,095.00	81,900.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
L				**Total Civil Part**	**1,50,061.80**
M				**Sub-Total M=K+L**	**12,20,100.16**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**12,20,100.16**
P				**GST @ 18% of Sub-Total O**	**2,19,618.03**
Q				**CESS @ 1% of Sub-Total O**	**12,201.00**
R				**Grand Total R=P+Q**	**14,51,919.19**

Table 99 Cost Estimate for new Distribution Transformer 500 KVA

Cost Estimate for Installation of New 500kVA Distribution Transformer(3-ph)					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	500 KVA,11/0.43KV Transformer	EA	1	12,15,000.00	12,15,000.00
2	POLE WPB GI 160X152 11 MTR	EA	2	34,321.52	68,643.04
3	Top Channel 100X50X5mm, each channel length 2.8 mtr.	Kg	53.54	97.50	5,219.76
4	AB Switch Mounting Channel 75X40X4.8mm GI Channel 2.8 mtr long	Kg	39.98	97.50	3,898.44
5	HG Fuse mounting channel 75X40X4.8mm of length 2.8 mtr	Kg	39.98	97.50	3,898.44
6	Back Clamp for LTDB of length 0.801 mtr	Kg	5.03	97.50	490.45
7	AB Switch Operating Pipe Channel Support 75X40X4.8 mm.,of length 0.625mtr	Kg	4.46	97.50	435.09
8	AB Switch Bottom Support Channel 75X40X4.8 mm of length 0.330 mtr.	Kg	4.71	97.50	459.46
9	Braking Support Channel for operating pipe 50X8mm of length 0.5 mtr.	Kg	1.57	97.50	153.08
10	Support Channel for TPMO operating Rod 75X40X4.8mm of length 0.388 mtr.	Kg	5.54	97.50	540.21
11	LTDB supporting channel 75X40X4.8mm of length 3.0 mtr	Kg	21.42	97.50	2,088.45
12	Lightning Arrester (9kV,10kA) DH Class	No	3	1,300.00	3,900.00
13	11kV AB Switch 400A 3pole 50Hz Horizontal Type	Set	1	15,405.00	15,405.00
14	HG Fuse(11KV 400A 3 Pole 50Hz) with PI	Set	1	14,989.00	14,989.00
15	LT Distribution Box with MCCB for 500KVA S/S	No	1	1,26,568.00	1,26,568.00
16	Earthing of Support (Coil Type)	No	2	215.80	431.60
17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	1	97.50	51.09
18	H.T Stay clamp	Pair	2	162.50	325.00
19	H.T 11kV Stay set (Complete)	Set	2	1,365.00	2,730.00
20	H.T Stay Insulator	No	2	65.00	130.00
21	7/10 SWG Stay Wire	Kg	20	97.50	1,950.00
22	1.1kV Al 1CX630 Sq.mm Un-armoured Cable	M	64	585.93	37,499.52
23	Gland for 1.1kV Al 1CX630 Sq.mm	EA	8	1,084.50	8,676.00
24	Lug AL Crimping 630 Sqmm XLPE Single hole	EA	8	133.39	1,067.12
25	11kV Disc insulator (B&S) 70KN polymer	No	3	1,495.00	4,485.00
26	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	3	455.00	1,365.00
27	CLAMP PG FOR 100 SQMM CONDUCTOR	No	3	754.00	2,262.00
28	CONDUCTOR 100 SQMM AAA	Mtr	15	71.50	1,072.50
29	GI Nut , Bolt & Washer of different sizes	Kg	20	101.40	2,028.00
30	40mm nominal bore GI pipe (medium gauge) earthing device with 3 mtr .Long	No	7	1,365.00	9,555.00
31	25x6 mm GI flat	Kg	6	97.50	585.00
32	Black Paint	Ltr	1	286.00	286.00
33	Yellow Colour Paint for Background	L	2	212.77	425.54
34	Three Phase DT(3 phase 4 wire LTCT 800/5)	No	4	1,300.00	5,200.00
35	THREE PHASE WHOLE CURRENT MTR BOX	EA	1	529.00	529.00
36	METER SMART 3P4W LTCT 100/5A	EA	1	5,410.00	5,410.00
37	CABLE 1.1KV AL 4CX 630 SQMM XLPE ARMORED	Mtr	10	2,116.40	21,164.00
38	CABLE GLAND FOR 4C X 300 SQ.MM CC,DC	EA	4	3,162.60	12,650.40
A				**Total Cost of materials**	**15,81,566.19**
B				**Stock, Storage & Insurance i.e 3%**	**47,446.99**
C				**Sub Total C=A+B**	**16,29,013.18**
D				**Contigency @ 3% of C**	**48,870.40**
E				**Tools & Plants @ 2% of C**	**32,580.26**
F				**Transportation @ 7.5% of C**	**1,22,175.99**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	**62,572.50**
H				**Erection Other @ 10%**	**29,099.73**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**19,24,312.05**
	Civil & Services				
	Installation/Erection of 11 Mtr long, RS JOIST/WPB Pole including loading and unloading, transportation from site/tent upto 10 Km., excavation, refilling, flooding with water, ramming/compacting of foundation as per TPSODL specifications and drawing including removal & disposal of extra malba as per instruction of EIC. The scope of work include providing & laying of 1:1.5:3 , M20, concrete of size - 500(B)x500(W)X1800(H) , and cooping of 500(B)x500(W)x450(H), Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	EA	2	6,678.00	13,356.00
	Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.	EA	2	2,504.25	5,008.50
	Construction of Plinth with Brick, Mortar, 12 mm cement plaster and for 250-1000KVA transformer as per TPSODL drawing.Scope of work includes excavation of earth,supply of Civil material for construction, desposal of extra malba as per EIC instruction.	EA	1	31,878.00	31,878.00
	BA will provide necessary Manpower,FRP Fencing & Ms Material for construction boundary wall fencing as per TPSODL Drawing, specification & GTP.	Sqm	20	4,095.00	81,900.00
	Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/Rinl) with earth chamber as per TPSODL specification and drawing (Each pit resistance will be measured and recorded and shall be as per IS). Scope include supply of all required material like Salt, Charcoal, Nuts-Bolt ,PVC Pipe PCC ,and brick work for earthing chamber (Size: 2'x2') and RCC or other suitable slab cover(earth resistance measurement and with in limit to be achieved by BA).Scope of work also includes leveling & ramming of earth and removal of extra malba. Earting Pipe is to be issued by TPSODL.	EA	7	2,559.90	17,919.30
L				**Total Civil Part**	**1,50,061.80**
M				**Sub-Total M=K+L**	**20,74,373.85**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**20,74,373.85**
P				**GST @ 18% of Sub-Total O**	**3,73,387.29**
Q				**CESS @ 1% of Sub-Total O**	**20,743.74**
R				**Grand Total R=P+Q**	**24,68,504.88**

Table 100 Cost Estimate for 11 KV 2-Ph to 3-Ph conversion

Cost Estimate for 11kV Line Phase Conversion					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	11kV,5kN pin insulator polymer	No	18	260.00	4,680.00
2	Top bracket 100X50X5mm GI channel for 11kV	No	18	195.00	3,510.00
3	11kV H/W fitting(B&S) 70KN,3 Bolt	Set	6	455.00	2,730.00
4	GI Nut , Bolt & Washer of different sizes	Kg	4.75	101.40	481.65
5	11kV Disc insulator (B&S) 70KN polymer	No	6	1,495.00	8,970.00
6	CLAMP PG FOR 100 SQMM CONDUCTOR	No	6	754.00	4,524.00
7	CONDUCTOR 100 SQMM AAA	Mtr	1030.00	71.50	73,645.00
A				**Total Cost of materials**	**98,540.65**
B				**Stock, Storage & Insurance i.e 3%**	**2,956.22**
C				**Sub Total C=A+B**	**1,01,496.87**
D				**Contigency @ 3% of C**	**3,044.91**
E				**Tools & Plants @ 2% of C**	**2,029.94**
F				**Transportation @ 7.5% of C**	**7,612.27**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**10,149.69**
I				**Erection PSC Pole @ 20%**	
K				**Sub Total K=C+D+E+F+G+H+I**	**1,24,333.67**
L				**Other Over Head (Including Supervision charges)@ 6% of K**	-
M				**Sub-Total M-K+L**	**1,24,333.67**
N				**GST @ 18% of Sub-Total M**	**22,380.06**
O				**CESS @ 1% of Sub-Total M**	**1,243.34**
P				**Grand Total P=N+O**	**1,47,957.06**

Table 101 Cost Estimate for LT line Augmentation to 35 Sqmm AB Cable

Cost Estimate for LT Line Augmentation to 4X35+1X35+1X16 mm2					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 9 METER 300 KG	No	8	3,900.00	31,200.00
2	1.1KV LT AB Cable 4x35+1x35+1x16mm2	KM	1.03	1,61,083.00	1,65,915.49
3	RCC base Plate	EA	8	408.00	3,264.00
4	BOARD DANGER 400/440 VOLT	No	8	104.00	832.00
5	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	2.41	97.50	234.70
6	GI barbed wire anticlimbing device	Kg	24.00	104.00	2,496.00
7	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
8	Pole clamp for EYE hook for XLPE Aerial bunched Cable	Pair	8.00	260.00	2,080.00
9	Suspension Clamp	Pair	8.00	442.00	3,536.00
10	Eye hook	No	8.00	78.00	624.00
11	Earthing of Support (Coil Type)	No	8	215.80	1,726.40
12	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	2	97.50	204.36
13	LT Distribution Box Polycarbonate	EA	13	925.00	12,025.00
14	Cap cable end	EA	48	192.79	9,253.94
15	IPC 50-150, 50-150 SQ.MM ST.LT Type A	EA	12	50.00	600.00
16	IPC EP 95 LT ABC 16-95 & 1.5-16 SQMM ST.LT Type C	No	3	104.00	312.00
17	IPC KZ 2X150 LTABC 25-150 & 6-35(50) sqmm Type B	No	3	52.00	156.00
18	STEEL STRAP SIZE 20 MMX50 M LONG	ROL	4	1,564.71	6,258.83
19	BUCKLES FOR STEEL STRAP (1 EA = 100 NOS)	EA	4	705.00	2,820.00
20	Cable 1.1kV Al 4CX25 Sq.mm Armoured	M	52	175.42	9,121.84
21	Gland for 1.1kV Al 4CX25 Sq.mm	EA	13	369.00	4,797.00
22	GI Nut , Bolt & Washer of different sizes	Kg	4	101.40	405.60
23	Lug AL Crimping 25 Sqmm XLPE Single hole	EA	52	4.77	248.04
24	FRP CROSS ARM 1070MM 415V	EA	26	1,040.38	27,049.86
25	2C X 4sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	200	49.76	9,952.00
26	2C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	100	75.16	7,516.00
27	4C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	100	95.42	9,542.00
28	Tie Plastic Black size 7.6mmX380mm	Lot	40	420.00	16,800.00
29	Tie Plastic size 9mmX265mm	Lot	60	735.00	44,100.00
30	Black Paint	Ltr	4	286.00	1,144.00
31	Yellow Colour Paint for Background	L	8	212.77	1,702.16
A				**Total Cost of materials**	**3,76,151.94**
B				**Stock, Storage & Insurance i.e 3%**	**11,284.56**
C				**Sub Total C=A+B**	**3,87,436.49**
D				**Contigency @ 3% of C**	**11,623.09**
E				**Tools & Plants @ 2% of C**	**7,748.73**
F				**Transportation @ 7.5% of C**	**29,057.74**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**35,236.89**
I				**Erection PSC Pole @ 20%**	**6,427.20**
K				**Sub Total K=C+D+E+F+G+H+I**	**4,77,530.15**
	Civil & Services				
	Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	8	6,678.00	53,424.00
	Dismantling of 9/8 Mtr. PCC/Joist Pole (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	3	945.00	2,835.00
	Dismantling of varous size of LT AB Cable from over head line, recoiling, loading,transportation, unloading and staking at a proper place in safe position/BA site store.	M	1030	23.63	24,333.75
L				**Total Civil Part**	**80,592.75**
M				**Sub-Total M =K+L**	**5,58,122.90**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**5,58,122.90**
P				**GST @ 18% of Sub-Total O**	**1,00,462.12**
Q				**CESS @ 1% of Sub-Total O**	**5,581.23**
R				**Grand Total R=P+Q**	**6,64,166.25**

Table 102 Cost Estimate for LT line Augmentation to 50 Sqmm AB Cable

Cost Estimate for LT Line Augmentation to 4X50+1X50+1X16 mm2					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 9 METER 300 KG	No	8	3,900.00	31,200.00
2	1.1KV LT AB Cable 4x50+1x50+1x16mm2	KM	1.03	1,98,018.01	2,03,958.55
3	RCC base Plate	EA	8	408.00	3,264.00
4	BOARD DANGER 400/440 VOLT	No	8	104.00	832.00
5	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	2.41	97.50	234.70
6	GI barbed wire anticlimbing device	Kg	24.00	104.00	2,496.00
7	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
8	Pole clamp for EYE hook for XLPE Aerial bunched Cable	Pair	8.00	260.00	2,080.00
9	Suspension Clamp	Pair	8.00	442.00	3,536.00
10	Eye hook	No	8.00	78.00	624.00
11	Earthing of Support (Coil Type)	No	8	215.80	1,726.40
12	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	2	97.50	204.36
13	LT Distribution Box Polycarbonate	EA	13	925.00	12,025.00
14	Cap cable end	EA	48	192.79	9,253.94
15	IPC 50-150, 50-150 SQ.MM ST.LT Type A	EA	12	50.00	600.00
16	IPC EP 95 LT ABC 16-95 & 1.5-16 SQMM ST.LT Type C	No	3	104.00	312.00
17	IPC KZ 2X150 LTABC 25-150 & 6-35(50) sqmm Type B	No	3	52.00	156.00
18	STEEL STRAP SIZE 20 MMX50 M LONG	ROL	4	1,564.71	6,258.83
19	BUCKLES FOR STEEL STRAP (1 EA = 100 NOS)	EA	4	705.00	2,820.00
20	Cable 1.1kV Al 4CX25 Sq.mm Armoured	M	52	175.42	9,121.84
21	Gland for 1.1kV Al 4CX25 Sq.mm	EA	13	369.00	4,797.00
22	GI Nut , Bolt & Washer of different sizes	Kg	4	101.40	405.60
23	Lug AL Crimping 25 Sqmm XLPE Single hole	EA	52	4.77	248.04
24	FRP CROSS ARM 1070MM 415V	EA	26	1,040.38	27,049.86
25	2C X 4sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	200	49.76	9,952.00
26	2C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	100	75.16	7,516.00
27	4C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	100	95.42	9,542.00
28	Tie Plastic Black size 7.6mmX380mm	Lot	40	420.00	16,800.00
29	Tie Plastic size 9mmX265mm	Lot	60	735.00	44,100.00
30	Black Paint	Ltr	4	286.00	1,144.00
31	Yellow Colour Paint for Background	L	8	212.77	1,702.16
A				**Total Cost of materials**	**4,14,195.00**
B				**Stock, Storage & Insurance i.e 3%**	**12,425.85**
C				**Sub Total C=A+B**	**4,26,620.85**
D				**Contigency @ 3% of C**	**12,798.63**
E				**Tools & Plants @ 2% of C**	**8,532.42**
F				**Transportation @ 7.5% of C**	**31,996.56**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**39,155.33**
I				**Erection PSC Pole @ 20%**	**6,427.20**
K				**Sub Total K=C+D+E+F+G+H+I**	**5,25,530.98**
	Civil & Services				
	Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	8	6,678.00	53,424.00
	Dismantling of 9/8 Mtr. PCC/Joist Pole (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	3	945.00	2,835.00
	Dismantling of varous size of LT AB Cable from over head line, recoiling, loading,transportation, unloading and staking at a proper place in safe position/BA site store.	M	1030	23.63	24,333.75
L				**Total Civil Part**	**80,592.75**
M				**Sub-Total M =K+L**	**6,06,123.73**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**6,06,123.73**
P				**GST @ 18% of Sub-Total O**	**1,09,102.27**
Q				**CESS @ 1% of Sub-Total O**	**6,061.24**
R				**Grand Total R=P+Q**	**7,21,287.24**

Table 103 Cost Estimate for LT line Augmentation to 95 Sqmm AB Cable

Cost Estimate for LT Line Augmentation to 4X95+1X95+1X16 mm2					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 9 METER 300 KG	No	8	3,900.00	31,200.00
2	1.1KV LT AB Cable 4x95+1x95+1x16mm2	KM	1.03	3,68,637.85	3,79,696.99
3	RCC base Plate	EA	8	408.00	3,264.00
4	BOARD DANGER 400/440 VOLT	No	8	104.00	832.00
5	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	2.41	97.50	234.70
6	GI barbed wire anticlimbing device	Kg	24.00	104.00	2,496.00
7	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	2.41	97.50	234.70
8	Pole clamp for EYE hook for XLPE Aerial bunched Cable	Pair	8.00	260.00	2,080.00
9	Suspension Clamp	Pair	8.00	442.00	3,536.00
10	Eye hook	No	8.00	78.00	624.00
11	Earthing of Support (Coil Type)	No	8	215.80	1,726.40
12	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	2	97.50	204.36
13	LT Distribution Box Polycarbonate	EA	13	925.00	12,025.00
14	Cap cable end	EA	48	192.79	9,253.94
15	IPC 50-150, 50-150 SQ.MM ST.LT Type A	EA	12	50.00	600.00
16	IPC EP 95 LT ABC 16-95 & 1.5-16 SQMM ST.LT Type C	No	3	104.00	312.00
17	IPC KZ 2X150 LTABC 25-150 & 6-35(50) sqmm Type B	No	3	52.00	156.00
18	STEEL STRAP SIZE 20 MMX50 M LONG	ROL	4	1,564.71	6,258.83
19	BUCKLES FOR STEEL STRAP (1 EA = 100 NOS)	EA	4	705.00	2,820.00
20	Cable 1.1kV Al 4CX25 Sq.mm Armoured	M	52	175.42	9,121.84
21	Gland for 1.1kV Al 4CX25 Sq.mm	EA	13	369.00	4,797.00
22	GI Nut , Bolt & Washer of different sizes	Kg	4	101.40	405.60
23	Lug AL Crimping 25 Sqmm XLPE Single hole	EA	52	4.77	248.04
24	FRP CROSS ARM 1070MM 415V	EA	26	1,040.38	27,049.86
25	2C X 4sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	200	49.76	9,952.00
26	2C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	100	75.16	7,516.00
27	4C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	100	95.42	9,542.00
28	Tie Plastic Black size 7.6mmX380mm	Lot	40	420.00	16,800.00
29	Tie Plastic size 9mmX265mm	Lot	60	735.00	44,100.00
30	Black Paint	Ltr	4	286.00	1,144.00
31	Yellow Colour Paint for Background	L	8	212.77	1,702.16
A				**Total Cost of materials**	**5,89,933.43**
B				**Stock, Storage & Insurance i.e 3%**	**17,698.00**
C				**Sub Total C=A+B**	**6,07,631.43**
D				**Contigency @ 3% of C**	**18,228.94**
E				**Tools & Plants @ 2% of C**	**12,152.63**
F				**Transportation @ 7.5% of C**	**45,572.36**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**57,256.39**
I				**Erection PSC Pole @ 20%**	**6,427.20**
K				**Sub Total K=C+D+E+F+G+H+I**	**7,47,268.95**
	Civil & Services				
	Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	8	6,678.00	53,424.00
	Dismantling of 9/8 Mtr. PCC/Joist Pole (Serviceable Pole) after digging the pit and taking out the pole, transportation and stacking the pole at a proper place in safe position within 10km /site store and refilling the pit with loose earth and ramming including removal and disposal of malba at proper location as per instruction of EIC.	EA	3	945.00	2,835.00
	Dismantling of varous size of LT AB Cable from over head line, recoiling, loading,transportation, unloading and staking at a proper place in safe position/BA site store.	M	1030	23.63	24,333.75
L				**Total Civil Part**	**80,592.75**
M				**Sub-Total M =K+L**	**8,27,861.70**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**8,27,861.70**
P				**GST @ 18% of Sub-Total O**	**1,49,015.11**
Q				**CESS @ 1% of Sub-Total O**	**8,278.62**
R				**Grand Total R=P+Q**	**9,85,155.43**

Table 104 Cost Estimate for new LT Line using 35 Sqmm AB Cable

Cost Estimate for New LT Line of 4X35+1X35+1X16 mm2					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 9 METER 300 KG	No	33	3,900.00	1,28,700.00
2	1.1KV LT AB Cable 4x35+1x35+1x16mm2	KM	1.03	1,61,083.00	1,65,915.49
3	RCC base Plate	EA	33	408.00	13,464.00
4	BOARD DANGER 400/440 VOLT	No	33	104.00	3,432.00
5	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	9.93	97.50	968.15
6	GI barbed wire anticlimbing device	Kg	99.00	104.00	10,296.00
7	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	9.93	97.50	968.15
8	Pole clamp for EYE hook for XLPE Aerial bunched Cable	Pair	33.00	260.00	8,580.00
9	Suspension Clamp	Pair	23.00	442.00	10,166.00
10	Eye hook	No	23.00	78.00	1,794.00
11	Conductor Dead End Clamp	No	10.00	84.50	845.00
12	LT Stay Set (Complete)	Set	10	676.00	6,760.00
13	LT Stay Insulator	No	10	39.00	390.00
14	LT Stay clamp	Pair	10	143.00	1,430.00
15	7/12 SWG Stay Wire	Kg	100	97.50	9,750.00
16	Earthing of Support (Coil Type)	No	33	215.80	7,121.40
17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	9	97.50	842.99
18	LT Distribution Box Polycarbonate	EA	16	925.00	14,800.00
19	Cap cable end	EA	258	192.79	49,739.95
20	IPC 50-150, 50-150 SQ.MM ST.LT Type A	EA	12	50.00	600.00
21	IPC EP 95 LT ABC 16-95 & 1.5-16 SQMM ST.LT Type C	No	3	104.00	312.00
22	IPC KZ 2X150 LTABC 25-150 & 6-35(50) sqmm Type B	No	3	52.00	156.00
23	STEEL STRAP SIZE 20 MMX50 M LONG	ROL	4	1,564.71	6,258.83
24	BUCKLES FOR STEEL STRAP (1 EA = 100 NOS)	EA	4	705.00	2,820.00
25	Cable 1.1kV Al 4CX25 Sq.mm Armoured	M	68	175.42	11,928.56
26	Gland for 1.1kV Al 4CX25 Sq.mm	EA	17	369.00	6,273.00
27	GI Nut , Bolt & Washer of different sizes	Kg	16.5	101.40	1,673.10
28	Lug AL Crimping 25 Sqmm XLPE Single hole	EA	68	4.77	324.36
29	FRP CROSS ARM 1070MM 415V	EA	34	1,040.38	35,372.90
30	2C X 4sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	300	49.76	14,928.00
31	2C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	200	75.16	15,032.00
32	4C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	204	95.42	19,507.66
33	Tie Plastic Black size 7.6mmX380mm	Lot	40	420.00	16,800.00
34	Tie Plastic size 9mmX265mm	Lot	60	735.00	44,100.00
35	Black Paint	Ltr	16.5	286.00	4,719.00
36	Yellow Colour Paint for Background	L	33	212.77	7,021.41
A				**Total Cost of materials**	**6,23,789.94**
B				**Stock, Storage & Insurance i.e 3%**	**18,713.70**
C				**Sub Total C=A+B**	**6,42,503.64**
D				**Contigency @ 3% of C**	**19,275.11**
E				**Tools & Plants @ 2% of C**	**12,850.07**
F				**Transportation @ 7.5% of C**	**48,187.77**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**47,897.01**
I				**Erection PSC Pole @ 20%**	**26,512.20**
K				**Sub Total K=C+D+E+F+G+H+I**	**7,97,225.81**
	Civil & Services				
	Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	33	6,678.00	2,20,374.00
	Fixing of complete LT line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	SET	10	2,504.25	25,042.50
L				**Total Civil Part**	**2,45,416.50**
M				**Sub-Total M =K+L**	**10,42,642.31**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	-
O				**Sub-Total O=M+N**	**10,42,642.31**
P				**GST @ 18% of Sub-Total O**	**1,87,675.62**
Q				**CESS @ 1% of Sub-Total O**	**10,426.42**
R				**Grand Total R=P+Q**	**12,40,744.35**

Table 105 Cost Estimate for new LT Line using 50 Sqmm AB Cable

Cost Estimate for New LT Line of 4X50+1X50+1X16 mm2					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 9 METER 300 KG	No	33	3,900.00	1,28,700.00
2	1.1KV LT AB Cable 4x50+1x50+1x16mm2	KM	1.03	1,98,018.01	2,03,958.55
3	RCC base Plate	EA	33	408.00	13,464.00
4	BOARD DANGER 400/440 VOLT	No	33	104.00	3,432.00
5	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	9.93	97.50	968.15
6	GI barbed wire anticlimbing device	Kg	99.00	104.00	10,296.00
7	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	9.93	97.50	968.15
8	Pole clamp for EYE hook for XLPE Aerial bunched Cable	Pair	33.00	260.00	8,580.00
9	Suspension Clamp	Pair	23.00	442.00	10,166.00
10	Eye hook	No	23.00	78.00	1,794.00
11	Conductor Dead End Clamp	No	10.00	84.50	845.00
12	LT Stay Set (Complete)	Set	10	676.00	6,760.00
13	LT Stay Insulator	No	10	39.00	390.00
14	LT Stay clamp	Pair	10	143.00	1,430.00
15	7/12 SWG Stay Wire	Kg	100	97.50	9,750.00
16	Earthing of Support (Coil Type)	No	33	215.80	7,121.40
17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	9	97.50	842.99
18	LT Distribution Box Polycarbonate	EA	16	925.00	14,800.00
19	Cap cable end	EA	258	192.79	49,739.95
20	IPC 50-150, 50-150 SQ.MM ST.LT Type A	EA	12	50.00	600.00
21	IPC EP 95 LT ABC 16-95 & 1.5-16 SQMM ST.LT Type C	No	3	104.00	312.00
22	IPC KZ 2X150 LTABC 25-150 & 6-35(50) sqmm Type B	No	3	52.00	156.00
23	STEEL STRAP SIZE 20 MMX50 M LONG	ROL	4	1,564.71	6,258.83
24	BUCKLES FOR STEEL STRAP (1 EA = 100 NOS)	EA	4	705.00	2,820.00
25	Cable 1.1kV Al 4CX25 Sq.mm Armoured	M	68	175.42	11,928.56
26	Gland for 1.1kV Al 4CX25 Sq.mm	EA	17	369.00	6,273.00
27	GI Nut , Bolt & Washer of different sizes	Kg	16.5	101.40	1,673.10
28	Lug AL Crimping 25 Sqmm XLPE Single hole	EA	68	4.77	324.36
29	FRP CROSS ARM 1070MM 415V	EA	34	1,040.38	35,372.90
30	2C X 4sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	300	49.76	14,928.00
31	2C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	200	75.16	15,032.00
32	4C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	204	95.42	19,507.66
33	Tie Plastic Black size 7.6mmX380mm	Lot	40	420.00	16,800.00
34	Tie Plastic size 9mmX265mm	Lot	60	735.00	44,100.00
35	Black Paint	Ltr	16.5	286.00	4,719.00
36	Yellow Colour Paint for Background	L	33	212.77	7,021.41
A				**Total Cost of materials**	**6,61,833.00**
B				**Stock, Storage & Insurance i.e 3%**	**19,854.99**
C				**Sub Total C=A+B**	**6,81,687.99**
D				**Contigency @ 3% of C**	**20,450.64**
E				**Tools & Plants @ 2% of C**	**13,633.76**
F				**Transportation @ 7.5% of C**	**51,126.60**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**51,815.45**
I				**Erection PSC Pole @ 20%**	**26,512.20**
K				**Sub Total K=C+D+E+F+G+H+I**	**8,45,226.64**
	Civil & Services				
	Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	33	6,678.00	2,20,374.00
	Fixing of complete LT line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	SET	10	2,504.25	25,042.50
L				**Total Civil Part**	**2,45,416.50**
M				**Sub-Total M=K+L**	**10,90,643.14**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**10,90,643.14**
P				**GST @ 18% of Sub-Total O**	**1,96,315.77**
Q				**CESS @ 1% of Sub-Total O**	**10,906.43**
R				**Grand Total R=P+Q**	**12,97,865.34**

Table 106 Cost Estimate for new LT Line using 95 Sqmm AB Cable

Cost Estimate for New LT Line of 4X50+1X50+1X16 mm2					
Sl No	**Description of Item**	**Unit**	**Quantity**	**Unit Rate(In Rs.)**	**Amount(In Rs.)**
1	POLE PSC 9 METER 300 KG	No	33	3,900.00	1,28,700.00
2	1.1KV LT AB Cable 4x95+1x95+1x16mm2	KM	1.03	3,68,637.85	3,79,696.99
3	RCC base Plate	EA	33	408.00	13,464.00
4	BOARD DANGER 400/440 VOLT	No	33	104.00	3,432.00
5	Back Clamp for danger Plate 25X3 mm. flat, length of 0.510mtr 1 no	Kg	9.93	97.50	968.15
6	GI barbed wire anticlimbing device	Kg	99.00	104.00	10,296.00
7	Back Clamp for Barbed wire anticlimbing device 25X3mm. flat,length of 0.510mtr	Kg	9.93	97.50	968.15
8	Pole clamp for EYE hook for XLPE Aerial bunched Cable	Pair	33.00	260.00	8,580.00
9	Suspension Clamp	Pair	23.00	442.00	10,166.00
10	Eye hook	No	23.00	78.00	1,794.00
11	Conductor Dead End Clamp	No	10.00	84.50	845.00
12	LT Stay Set (Complete)	Set	10	676.00	6,760.00
13	LT Stay Insulator	No	10	39.00	390.00
14	LT Stay clamp	Pair	10	143.00	1,430.00
15	7/12 SWG Stay Wire	Kg	100	97.50	9,750.00
16	Earthing of Support (Coil Type)	No	33	215.80	7,121.40
17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.	Kg	9	97.50	842.99
18	LT Distribution Box Polycarbonate	EA	16	925.00	14,800.00
19	Cap cable end	EA	258	192.79	49,739.95
20	IPC 50-150, 50-150 SQ.MM ST.LT Type A	EA	12	50.00	600.00
21	IPC EP 95 LT ABC 16-95 & 1.5-16 SQMM ST.LT Type C	No	3	104.00	312.00
22	IPC KZ 2X150 LTABC 25-150 & 6-35(50) sqmm Type B	No	3	52.00	156.00
23	STEEL STRAP SIZE 20 MMX50 M LONG	ROL	4	1,564.71	6,258.83
24	BUCKLES FOR STEEL STRAP (1 EA = 100 NOS)	EA	4	705.00	2,820.00
25	Cable 1.1kV Al 4CX25 Sq.mm Armoured	M	68	175.42	11,928.56
26	Gland for 1.1kV Al 4CX25 Sq.mm	EA	17	369.00	6,273.00
27	GI Nut , Bolt & Washer of different sizes	Kg	16.5	101.40	1,673.10
28	Lug AL Crimping 25 Sqmm XLPE Single hole	EA	68	4.77	324.36
29	FRP CROSS ARM 1070MM 415V	EA	34	1,040.38	35,372.90
30	2C X 4sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	300	49.76	14,928.00
31	2C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	200	75.16	15,032.00
32	4C X 10sq. mm. Armoured Aluminium Cable - XLPE Insulated	M	204	95.42	19,507.66
33	Tie Plastic Black size 7.6mmX380mm	Lot	40	420.00	16,800.00
34	Tie Plastic size 9mmX265mm	Lot	60	735.00	44,100.00
35	Black Paint	Ltr	16.5	286.00	4,719.00
36	Yellow Colour Paint for Background	L	33	212.77	7,021.41
A				**Total Cost of materials**	**8,37,571.44**
B				**Stock, Storage & Insurance i.e 3%**	**25,127.14**
C				**Sub Total C=A+B**	**8,62,698.58**
D				**Contigency @ 3% of C**	**25,880.96**
E				**Tools & Plants @ 2% of C**	**17,253.97**
F				**Transportation @ 7.5% of C**	**64,702.39**
G				**Erection Transformer/Breaker/WPB/H Pole/Joist Poles @ 5%**	
H				**Erection Other @ 10%**	**69,916.51**
I				**Erection PSC Pole @ 20%**	**26,512.20**
K				**Sub Total K=C+D+E+F+G+H+I**	**10,66,964.61**
	Civil & Services				
	Installation/Erection of 9 MTR PSC Pole including loading and unloading, transportation from site/tent upto 10 Kms., excavation,Includes and civil work. The scope also includes providing of all civil material for concreting . Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 10KM), Excavation for grouting, including concreting as per TPSODL standards and drawings.Concreting to be done with PCC-1:1.5:3. of size - 500x500x1500 and ,Padding 500x500x150mm.Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing	EA	33	6,678.00	2,20,374.00
	Fixing of complete LT line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPSODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	SET	10	2,504.25	25,042.50
L				**Total Civil Part**	**2,45,416.50**
M				**Sub-Total M=K+L**	**13,12,381.11**
N				**Other Over Head (Including Supervision charges)@ 6% of M**	**-**
O				**Sub-Total O=M+N**	**13,12,381.11**
P				**GST @ 18% of Sub-Total O**	**2,36,228.60**
Q				**CESS @ 1% of Sub-Total O**	**13,123.81**
R				**Grand Total R=P+Q**	**15,61,733.52**

ANNEXURE 4

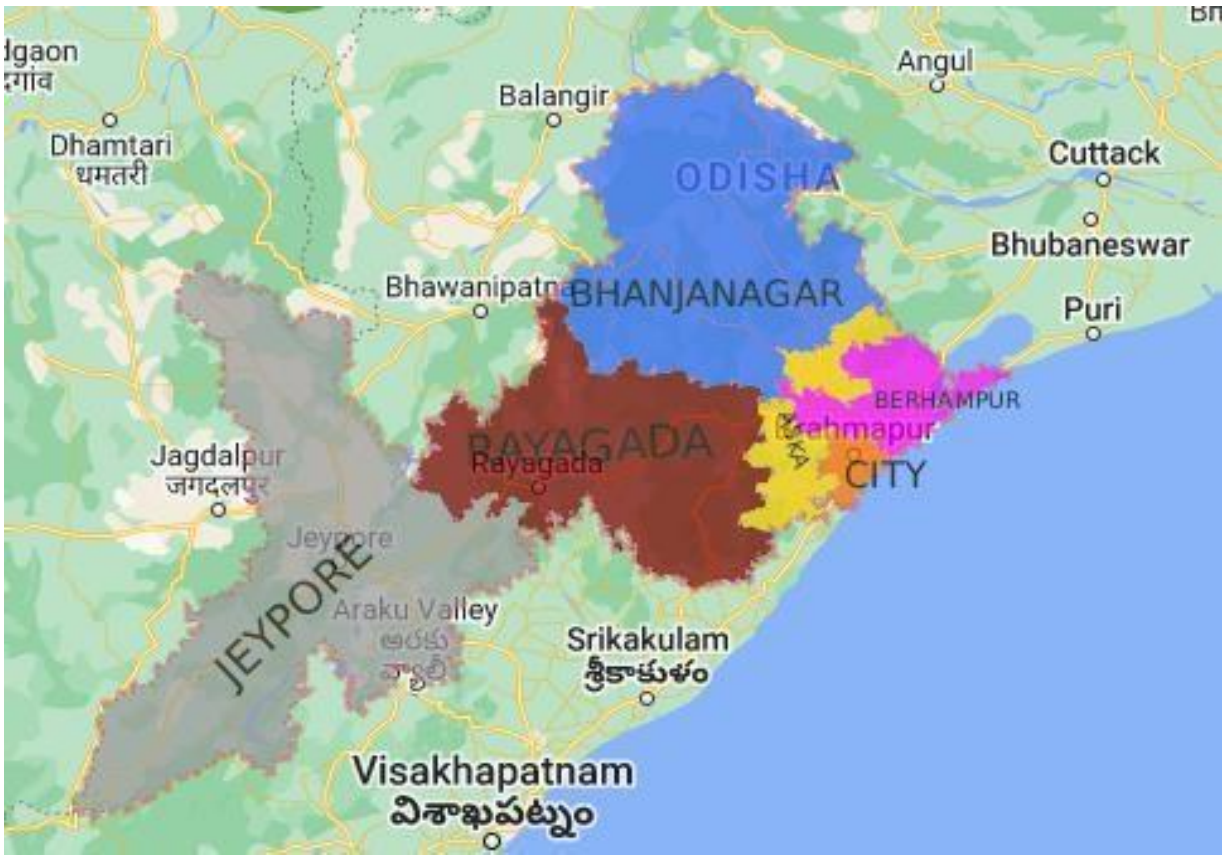
TPSODL

TPSODL

TP SOUTHERN ODISHA
DISTRICT LIMITED

(A Joint Venture of Tata Power and Government of Odisha)

Network Study and Analysis Report



Tata Power Southern Odisha Distribution Ltd.

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1. OBJECTIVE OF STUDY:

Load flow (LF) is one of the most important elements to study and analyze power system operation for network planning. The purpose is to understand how power flows around the electrical network. Carrying out a load flow study assists the engineer in designing & operation team whether the network is operating efficiently or not. It analyses whether sufficient power is being supplied by the Transmission grid, equipment is correctly sized to cater the load, reactive power compensation is correctly placed and transformer taps are optimized ornot.

The main objective of this study is to evaluate the 33&11kV network in TPSODL licensed area to check technical loss assessment and Quality of Power supply. Activities carried out to achieve this objective are:

- Create detailed electrical network of 33kV &11 KV with all relevant technical details.
- Identify the abnormal conditions in the network as per present loading conditions.
- Calculation of accurate technical losses with different loading condition on 33kV & 11kV Network using CYMDIST analysis tool.
- Calculations of Segregated technical losses (Transformers, Lines and Cables etc.)
- Evaluating the 33kV &11 KV Network's adequacy to meet load demand as per load estimated for a particular year.
- Identification of abnormal conditions (Under Voltage, Over Voltage & Over loading of equipment) in 33kV & 11 KV network as per loading of year 2023 & future.
- Use load growth factors for 33kV &11 KV network and perform Load growth studies for next 5 years.
- Assessment of technical losses in the present system & loss conditions after load growth in the next 5 years.
- Identify network reinforcement for catering 5 year load demand.
- Evaluating the power supply quality (Voltage regulation)
- Ensuring adequacy of the Network to serve the objectives of schemes like '24x7 Power for all' which mandates uninterrupted power supply to consumers.

Power flows are an important part of power system operation and planning. The outcomes of Network load flow study are given below

A) Technical loss Assessment
B) Feeder loading
C) Voltage Profile Assessment

1.1. Pre-requisites:

A power distribution system built on any electrical network develops gradually in response to the growth in demand for the electrical energy in the area it serves. The load growth is witnessednot only in terms of increment in its value at a given point, but also geographically over the years. The unpredictable nature of load growth impacts the operation and performance of the distribution network. In order to improve the performance of the network one needs to analyzethe existing distribution network and optimize it, such that it can cater the future load with high reliability and reduction in technical losses. Following details captured from the field to start the network study:

1. Electrical Network data / SLDs for 33kV &11 KV Lines, Power Transformer and Distribution transformers
2. Connected load details at each Transformer level.
3. Peak loading of all Lines

1.2. Approach:

In this part of Study, following activities are completed:

2. Network Data Collection:

Existing network data for all 33kV &11 KV feeders is used from Single line diagrams which were collected from TPSODL divisional offices. The same Network Model is updated in CYMDIST with necessary details regarding the 33kV &11 KV network equipment like:

a. Conductors, line length for the purpose of preparing single line diagram giving the details about Primary substation, Distribution transformers, cables and conductor length etc.

b. Technical details of 33kV &11 KV Overhead and Underground network, etc.

c. Peak Load details.

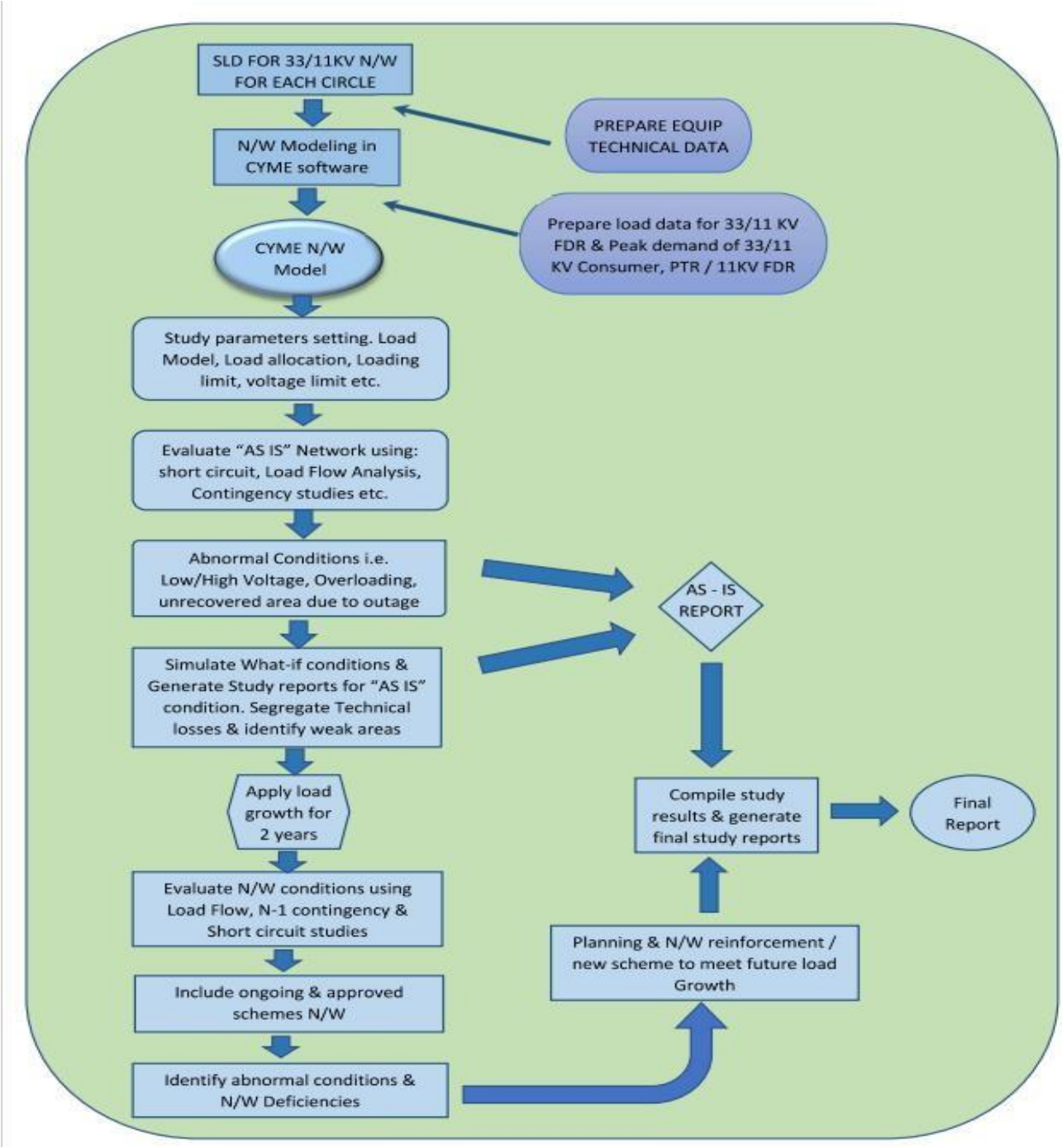
3. Network Modelling:

The collected network data is used to prepare the power distribution network model of 33kV &11 KV network in a Network analysis software (CYMDIST). This network model involves 33kV &11 KV feeder, transformer & loads etc. These models are used to simulate the network to find

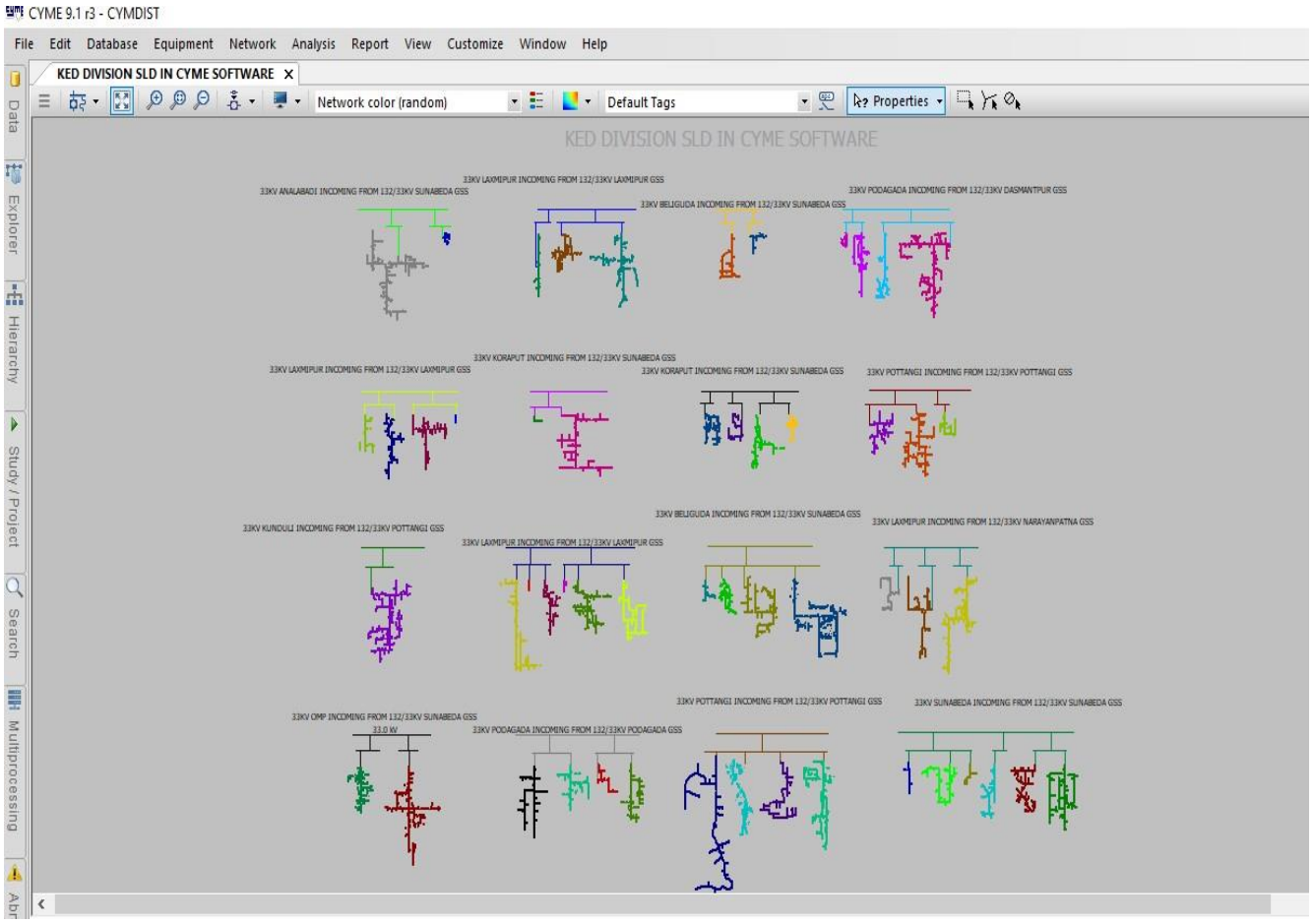
out the technical losses, voltage regulation in the system. The network details (Conductor type, length, switches etc) were fed to network model in CYMDIST using soft copies of SLDs collected from divisional offices.

3.1. The "Base-Case" Analysis & Analysis after applying load growth:

Load flow analysis is carried out through CYMDIST software. Feeder loading Summary that contains the Loading of grids (feeder wise) and the technical losses are evaluated and reported by above Load flow software. Abnormal conditions such as overloading of cables, conductors and transformers are also reported.



Electrical Network Up-dation



Mapping of Circuits, involved configuring the attributes- line length, cable/conductor type and positive sequence impedances.

Mapping of Transformers, involved configuring the attributes- kVA Rating, Voltage Ratio, No-load Losses, % impedances, X/R Ratio and Vector Group.

3.2. Technical loss Assessment: -

The load flow studies of the TPSODL's Power Distribution Network have been carried out for loading of the network corresponding to the date and time of the recorded Peak Load. The network Losses calculated from the load flow studies correspond to the Losses in the Network at the Peak load condition. This losses are not representative figure for the entire year since the load on the network varies with seasons and the load profile also varies over the day.

To account for these variations in Network Loading, Loss Load Factor has been calculated and applied on assessed technical loss at Peak Load to derive Average Loss of TPSODL's Sub-transmission network over the year.

3.3. Representation of 11KV SLD modelled in CYME

3.3.1 Allocation of load

In case of 33kV &11 KV study, the respective 33kV &11 KV peak load were allocated at the sending end of 33kV &11 KVfeeders.

3.3.2 Load Flow Analysis

The load flow analysis was carried out using the inbuilt load flow module of CYME Software. The load flow studies of the TPSODL's Power Distribution Network has been carried out for loading of the network corresponding to the date and time of the recorded Peak Load.

3.3.3 Report Generation

Customized Reports were extracted from the software after the load flow analysis. These Reports comprise of Total Loss in the Electrical Network and details of losses in Transformers, 33kV &11 KV line & cables,

3.3.4 Loss Load Factor (LLF)

Loss Load Factor = $0.8 \times LF^2 + 0.2 \times LF$

Load factor (LF) is the ratio between the average load to peak load.

Load Factor = Average Load/ Peak Load = 0.55 (for 33kV) & 0.5 (for 11 KV).

LLF calculated =0.35 (for 33kV) & 0.3 (for 11 KV).

4. TPSODL33kV&11KV Network Loss assessment Circle wise:

33kV &11 KV circle wise network loss calculated through load flow studies is given below

Following approved schemes are mapped in CYME software for undertaking load flow study

- CAPEX for FY 22,23&24
- ODSSP-IV
- CMPDP
- SACI
- SDMF-State Disaster & Mitigation Fund
- Supplementary Capex for Berhampur city -Schemes to improve reliability

3kV &11 KV Loss level is expected to be 2.95% and 5.11% respectively after execution of the all above planned schemes

4.1. 33KV Circle wise Loss report

Circle	Total Peak Load (KW) (A)	Total Average Load (KW) (B=A*H)	Line Losses (KW)(C)	Cable Losses (KW) (D)	Transformer Load Losses (KW) (E)	Transformer No-Load Losses (KW) (F)	Total Losses (KW) (G=C+D +E+F)	Load Factor- (H)	LLF(I)= 0.2*H+ 0.8(H)^2	Distributed loss (Kw) @2.5%-J =(G*2.5%)	Total Loss with LLF (in kW) K=F+I *(C+D+E+J)	Loss% I=K/B
Aska	99867.75	54927.26	3615.19	4.06	460.30	255.72	4335.28	0.55	0.35	108.38	1721.50	3.13%
Berhampur	121718.65	66945.26	2444.40	197.74	567.23	234.35	3443.72	0.55	0.35	86.09	1387.76	2.07%
City	85205.30	46862.91	858.23	41.65	214.70	183.40	1297.99	0.55	0.35	32.45	584.87	1.25%
Rayagada	89025.28	48963.90	1985.21	0.00	170.76	493.75	2649.71	0.55	0.35	66.24	1271.52	2.60%
Jeypore	210842.83	115963.56	9205.26	0.00	452.28	785.20	10442.74	0.55	0.35	261.07	4256.71	3.67%
Bhanjanagar	99720.40	54846.22	4861.74	0.00	185.91	420.36	5468.00	0.55	0.35	136.70	2234.88	4.07%
TOTAL	**706380**	**388509**	**22970**	**243**	**2051**	**2373**	**27637**	**0.55**	**0.35**	**691**	**11457**	**2.95%**

4.2. 11kV Circle wise Loss report

Circle	Total Peak Load(KW) (A)	Total Average Load(KW) (B=A*H)	Line Losses (KW)(C)	Cable Losses (KW) (D)	Transformer Load Losses (KW) (E)	Transformer No-Load Losses (KW) (F)	Total Losses (KW) (G=C+D+E+F)	Load Factor -(H)	LLF(I)=0.2*H+.8(H)^2 LLF(I)=0.2*H+	Distributed loss (Kw) @2.5%- J=(G*2.5%)	Total Loss with LLF (in kW) K=F+I*(C+D+E+J)	Loss % I=K/B
Aska	79694.87	39847.44	2404.76	0.32	645.53	769.83	3820.44	0.50	0.30	95.51	1713.67	4.30%
Berhampur	118219.9	59109.98	3872.58	7.56	959.06	965.73	5804.94	0.50	0.30	145.12	2461.03	4.16%
City	154711.7	77355.88	4230.04	97.05	2804.75	911.01	8042.85	0.50	0.30	201.07	3110.88	4.02%
Bhanjanagar	114846.7	57423.36	3500.23	0.30	974.31	1924.67	6399.51	0.50	0.30	159.99	3315.11	5.77%
Rayagada	114759.1	57379.56	3027.12	0.27	946.79	1638.57	5612.75	0.50	0.30	140.32	2872.92	5.01%
Jeypore	231842.0	115921.0	12222.59	0.36	2196.20	2881.31	17300.46	0.50	0.30	432.51	7336.81	6.33%
Total	**814074**	**407037**	**29257.32**	**105.88**	**8526.63**	**9091.12**	**46980.94**	**0.50**	**0.30**	**1174.52**	**20810.42**	**5.11%**

4.3. 33kV &11kV Feeder Overloading Details

33kV & 11 KV Feeder overloading is considered for loading of the feeder beyond 80% of their installed capacity (as per conductor size) with considering 5 yrs. load growth.

Total 11 No's of 33kV overloaded feeders and 58 No's of 11kV overloaded feeders are identified under 5 yrs. load growth through load flow studies.

5 Yrs. Load Growth-33kV overloaded feeders				
Circle	**No. of 33kV Feeders**	**No. of Feeders Overloaded**	**% of Feeder Overloaded**	**Considered under CAPEX FY 25&26 (for Mitigation Overloading)**
City	13	2	15%	1
Berhampur	20	3	15%	1
Aska	16	1	6%	1
Bhanjanagar	20	2	10%	1
Rayagada	25	0	_	_
Jeypore	53	3	6%	2
TOTAL	**147**	**11**		**6***

Total 58 No's of 11kV overloaded feeder are identified under load growth 5 yrs. through load flow studies.

5 Yrs. Load Growth-11kV overloaded feeders				
Circle	**No. of 11kV Feeders**	**No. of Feeders Overloaded**	**% of Feeder Overloaded**	**Considered under CAPEX FY 25&26, CMPDP and Urban Capex**
City	81	22	27%	19
Berhampur	112	1	1%	1
Aska	80	3	4%	3
Bhanjanagar	182	4	2%	4
Rayagada	177	8	5%	2
Jeypore	278	20	7%	13
TOTAL	**910**	**58**	**6%**	**42***

**-Remaining feeders are not considered since overloading is not expected in next 2,3 years on these feeders. The same has also been confirmed with operations field staff These balance feeders will be considered for mitigation in next Capex planning as per requirement.*

4.4. Details of the low Voltage observed at 33kV &11kV Feeders

Total 17 nos. 33kV feeders and 179 nos. 11kV feeders will be facing low voltage issue as per load flow study with 5 yrs. Load growth.

5 Yrs. Load Growth-33kV feeders with undervoltage issue				
Circle	**No. of 33kV Feeders**	**No. of Feeders Low Voltage**	**% of Feeder having low voltage Issue**	**Considered under CAPEX FY 25&26 (for Mitigation of Low Voltage)**
City	13		_	
Berhampur	20	1	5%	
Aska	16	1	6%	1
Bhanjanagar	20	4	20%	
Rayagada	25	2	8%	1
Jeypore	53	9	17%	4
TOTAL	**147**	**17**		**6***

5 Yrs. Load Growth-11kV feeders with undervoltage issue				
Circle	**No. of 11kV Feeders**	**No. of Feeders Low Voltage**	**% of Feeder having low voltage Issue**	**Considered under CAPEX FY 25&26**
City	81	10	12%	4
Berhampur	112	25	22%	8
Aska	80	5	6%	3
Bhanjanagar	182	34	18%	11
Rayagada	177	24	14%	6
Jeypore	278	81	29%	11
TOTAL	**910**	**179**	**19%**	**43***

**-Remaining feeders are not considered since under voltages are not expected in next 2,3 years on these feeders. The same has also been confirmed with operations field staff. These balance feeders will be considered for mitigation in next Capex planning as per requirement.*

5. Annexure :

a) 33kV Load Flow study Report

List of 33kV Overloaded Feeders along with respective overloaded sections: - (Considering 5years Load Growth)

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
1	Aska	AED-I	SORODA (DHARAKOTE)	16764509	84
2	Aska	AED-I	SORODA (DHARAKOTE)	16764502	84
3	Aska	AED-I	SORODA (DHARAKOTE)	10998961	84
4	Aska	AED-I	SORODA (DHARAKOTE)	10966311	84
5	Aska	AED-I	SORODA (DHARAKOTE)	10979777	84
6	Aska	AED-I	SORODA (DHARAKOTE)	10984533	84
7	Aska	AED-I	SORODA (DHARAKOTE)	10980698	84
8	Aska	AED-I	SORODA (DHARAKOTE)	10994716	84
9	Aska	AED-I	SORODA (DHARAKOTE)	10951241	84
10	Aska	AED-I	SORODA (DHARAKOTE)	10993523	84
11	Aska	AED-I	SORODA (DHARAKOTE)	10975929	84
12	Aska	AED-I	SORODA (DHARAKOTE)	10974207	84
13	Aska	AED-I	SORODA (DHARAKOTE)	10947352	84
14	Aska	AED-I	SORODA (DHARAKOTE)	10995430	84
15	Aska	AED-I	SORODA (DHARAKOTE)	10985048	84
16	Aska	AED-I	SORODA (DHARAKOTE)	10984538	84
17	Aska	AED-I	SORODA (DHARAKOTE)	10995172	84
18	Aska	AED-I	SORODA (DHARAKOTE)	10960818	84
19	Aska	AED-I	SORODA (DHARAKOTE)	10997265	84
20	Aska	AED-I	SORODA (DHARAKOTE)	10968688	84
21	Aska	AED-I	SORODA (DHARAKOTE)	10989073	84
22	Aska	AED-I	SORODA (DHARAKOTE)	10981948	84
23	Aska	AED-I	SORODA (DHARAKOTE)	10984810	84
24	Aska	AED-I	SORODA (DHARAKOTE)	10980191	84
25	Aska	AED-I	SORODA (DHARAKOTE)	10963482	84
26	Aska	AED-I	SORODA (DHARAKOTE)	10975982	84
27	Aska	AED-I	SORODA (DHARAKOTE)	10961322	84
28	Aska	AED-I	SORODA (DHARAKOTE)	10962814	84
29	Aska	AED-I	SORODA (DHARAKOTE)	10998331	84
30	Aska	AED-I	SORODA (DHARAKOTE)	10957707	84
31	Aska	AED-I	SORODA (DHARAKOTE)	10955106	84
32	Aska	AED-I	SORODA (DHARAKOTE)	10997096	84
33	Aska	AED-I	SORODA (DHARAKOTE)	10965590	84
34	Aska	AED-I	SORODA (DHARAKOTE)	10998748	84
35	Aska	AED-I	SORODA (DHARAKOTE)	10965007	84
36	Aska	AED-I	SORODA (DHARAKOTE)	10960113	84
37	Aska	AED-I	SORODA (DHARAKOTE)	10961616	84
38	Aska	AED-I	SORODA (DHARAKOTE)	10984792	84

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
39	Aska	AED-I	SORODA (DHARAKOTE)	10968390	84
40	Aska	AED-I	SORODA (DHARAKOTE)	10982208	84
41	Aska	AED-I	SORODA (DHARAKOTE)	10960948	84
42	Aska	AED-I	SORODA (DHARAKOTE)	10978484	84
43	Aska	AED-I	SORODA (DHARAKOTE)	10983953	84
44	Aska	AED-I	SORODA (DHARAKOTE)	10998073	84
45	Aska	AED-I	SORODA (DHARAKOTE)	10992518	84
46	Aska	AED-I	SORODA (DHARAKOTE)	10980072	84
47	Aska	AED-I	SORODA (DHARAKOTE)	10961817	84
48	Aska	AED-I	SORODA (DHARAKOTE)	10985782	84
49	Aska	AED-I	SORODA (DHARAKOTE)	10968108	84
50	Aska	AED-I	SORODA (DHARAKOTE)	10996617	84
51	Aska	AED-I	SORODA (DHARAKOTE)	10999288	84
52	Aska	AED-I	SORODA (DHARAKOTE)	10947333	84
53	Aska	AED-I	SORODA (DHARAKOTE)	10945744	84
54	Aska	AED-I	SORODA (DHARAKOTE)	10964764	84
55	Aska	AED-I	SORODA (DHARAKOTE)	10982076	84
56	Aska	AED-I	SORODA (DHARAKOTE)	10993593	84
57	Aska	AED-I	SORODA (DHARAKOTE)	10976285	84
58	Aska	AED-I	SORODA (DHARAKOTE)	10965706	84
59	Aska	AED-I	SORODA (DHARAKOTE)	10992370	84
60	Aska	AED-I	SORODA (DHARAKOTE)	10966082	84
61	Aska	AED-I	SORODA (DHARAKOTE)	10988309	84
62	Aska	AED-I	SORODA (DHARAKOTE)	10972268	84
63	Aska	AED-I	SORODA (DHARAKOTE)	10978993	84
64	Aska	AED-I	SORODA (DHARAKOTE)	10998638	84
65	Aska	AED-I	SORODA (DHARAKOTE)	10958186	84
66	Aska	AED-I	SORODA (DHARAKOTE)	10986765	84
67	Aska	AED-I	SORODA (DHARAKOTE)	10987101	84
68	Aska	AED-I	SORODA (DHARAKOTE)	10990793	84
69	Aska	AED-I	SORODA (DHARAKOTE)	10979854	84
70	Aska	AED-I	SORODA (DHARAKOTE)	10975063	84
71	Aska	AED-I	SORODA (DHARAKOTE)	10960596	84
72	Aska	AED-I	SORODA (DHARAKOTE)	10994672	84
73	Aska	AED-I	SORODA (DHARAKOTE)	10991588	84
74	Aska	AED-I	SORODA (DHARAKOTE)	10977836	84
75	Aska	AED-I	SORODA (DHARAKOTE)	10958885	84
76	Aska	AED-I	SORODA (DHARAKOTE)	10964818	84
77	Aska	AED-I	SORODA (DHARAKOTE)	10989234	84
78	Aska	AED-I	SORODA (DHARAKOTE)	10957066	84
79	Aska	AED-I	SORODA (DHARAKOTE)	10986644	84
80	Aska	AED-I	SORODA (DHARAKOTE)	10979103	84
81	Aska	AED-I	SORODA (DHARAKOTE)	10968489	84
82	Aska	AED-I	SORODA (DHARAKOTE)	10971235	84
83	Aska	AED-I	SORODA (DHARAKOTE)	10997835	84

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
84	Aska	AED-I	SORODA (DHARAKOTE)	10960402	84
85	Aska	AED-I	SORODA (DHARAKOTE)	10950355	84
86	Aska	AED-I	SORODA (DHARAKOTE)	10964914	84
87	Aska	AED-I	SORODA (DHARAKOTE)	10995824	84
88	Aska	AED-I	SORODA (DHARAKOTE)	10998086	84
89	Aska	AED-I	SORODA (DHARAKOTE)	10953979	84
90	Aska	AED-I	SORODA (DHARAKOTE)	10996625	84
91	Aska	AED-I	SORODA (DHARAKOTE)	10997762	84
92	Aska	AED-I	SORODA (DHARAKOTE)	10985460	84
93	Aska	AED-I	SORODA (DHARAKOTE)	10959103	84
94	Aska	AED-I	SORODA (DHARAKOTE)	10970586	84
95	Aska	AED-I	SORODA (DHARAKOTE)	10977722	84
96	Aska	AED-I	SORODA (DHARAKOTE)	10973793	84
97	Aska	AED-I	SORODA (DHARAKOTE)	10955823	84
98	Aska	AED-I	SORODA (DHARAKOTE)	10954917	84
99	Aska	AED-I	SORODA (DHARAKOTE)	10951059	84
100	Aska	AED-I	SORODA (DHARAKOTE)	10956627	84
101	Aska	AED-I	SORODA (DHARAKOTE)	10986838	84
102	Aska	AED-I	SORODA (DHARAKOTE)	10997522	84
103	Aska	AED-I	SORODA (DHARAKOTE)	10955616	84
104	Aska	AED-I	SORODA (DHARAKOTE)	10977067	84
105	Aska	AED-I	SORODA (DHARAKOTE)	10980617	84
106	Aska	AED-I	SORODA (DHARAKOTE)	10959775	84
107	Aska	AED-I	SORODA (DHARAKOTE)	10986600	84
108	Aska	AED-I	SORODA (DHARAKOTE)	10998915	84
109	Aska	AED-I	SORODA (DHARAKOTE)	10959989	84
110	Aska	AED-I	SORODA (DHARAKOTE)	10955736	84
111	Aska	AED-I	SORODA (DHARAKOTE)	10983772	84
112	Aska	AED-I	SORODA (DHARAKOTE)	10962211	84
113	Aska	AED-I	SORODA (DHARAKOTE)	10955182	84
114	Aska	AED-I	SORODA (DHARAKOTE)	10986027	84
115	Aska	AED-I	SORODA (DHARAKOTE)	10987165	84
116	Aska	AED-I	SORODA (DHARAKOTE)	10974161	84
117	Aska	AED-I	SORODA (DHARAKOTE)	10977512	84
118	Aska	AED-I	SORODA (DHARAKOTE)	10988896	84
119	Aska	AED-I	SORODA (DHARAKOTE)	10998763	84
120	Aska	AED-I	SORODA (DHARAKOTE)	10995853	84
121	Aska	AED-I	SORODA (DHARAKOTE)	10982049	84
122	Aska	AED-I	SORODA (DHARAKOTE)	10984726	84
123	Aska	AED-I	SORODA (DHARAKOTE)	10997054	84
124	Aska	AED-I	SORODA (DHARAKOTE)	10982915	84
125	Aska	AED-I	SORODA (DHARAKOTE)	10956426	84
126	Aska	AED-I	SORODA (DHARAKOTE)	10972017	84
127	Aska	AED-I	SORODA (DHARAKOTE)	10964415	84
128	Aska	AED-I	SORODA (DHARAKOTE)	10993753	84

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
129	Aska	AED-I	SORODA (DHARAKOTE)	10975594	84
130	Aska	AED-I	SORODA (DHARAKOTE)	10968484	84
131	Aska	AED-I	SORODA (DHARAKOTE)	10958038	84
132	Aska	AED-I	SORODA (DHARAKOTE)	10978796	84
133	Aska	AED-I	SORODA (DHARAKOTE)	10956310	84
134	Aska	AED-I	SORODA (DHARAKOTE)	11037298	84
135	Aska	AED-I	SORODA (DHARAKOTE)	11037304	84
136	Aska	AED-I	SORODA (DHARAKOTE)	10948258	84
137	Aska	AED-I	SORODA (DHARAKOTE)	10998206	84
138	Aska	AED-I	SORODA (DHARAKOTE)	10959468	84
139	Aska	AED-I	SORODA (DHARAKOTE)	10981906	84
140	Aska	AED-I	SORODA (DHARAKOTE)	10995122	84
141	Aska	AED-I	SORODA (DHARAKOTE)	10958046	84
142	Aska	AED-I	SORODA (DHARAKOTE)	10946841	84
143	Aska	AED-I	SORODA (DHARAKOTE)	10982996	84
144	Aska	AED-I	SORODA (DHARAKOTE)	10998367	84
145	Aska	AED-I	SORODA (DHARAKOTE)	10960834	84
146	Aska	AED-I	SORODA (DHARAKOTE)	10992124	84
147	Aska	AED-I	SORODA (DHARAKOTE)	10995029	84
148	Aska	AED-I	SORODA (DHARAKOTE)	10992557	84
149	Aska	AED-I	SORODA (DHARAKOTE)	10972407	84
150	Aska	AED-I	SORODA (DHARAKOTE)	10998933	84
151	Aska	AED-I	SORODA (DHARAKOTE)	10984479	84
152	Aska	AED-I	SORODA (DHARAKOTE)	10987626	84
153	Aska	AED-I	SORODA (DHARAKOTE)	10992119	84
154	Aska	AED-I	SORODA (DHARAKOTE)	10984283	84
155	Aska	AED-I	SORODA (DHARAKOTE)	10949996	84
156	Aska	AED-I	SORODA (DHARAKOTE)	10977072	84
157	Aska	AED-I	SORODA (DHARAKOTE)	10952767	84
158	Aska	AED-I	SORODA (DHARAKOTE)	10986042	84
159	Aska	AED-I	SORODA (DHARAKOTE)	10981687	84
160	Aska	AED-I	SORODA (DHARAKOTE)	10992436	84
161	Aska	AED-I	SORODA (DHARAKOTE)	10981642	84
162	Aska	AED-I	SORODA (DHARAKOTE)	10981357	84
163	Aska	AED-I	SORODA (DHARAKOTE)	10990361	84
164	Aska	AED-I	SORODA (DHARAKOTE)	10972279	84
165	Aska	AED-I	SORODA (DHARAKOTE)	10946096	84
166	Aska	AED-I	SORODA (DHARAKOTE)	10947934	84
167	Aska	AED-I	SORODA (DHARAKOTE)	10989207	84
168	Aska	AED-I	SORODA (DHARAKOTE)	10971054	84
169	Aska	AED-I	SORODA (DHARAKOTE)	10992046	84
170	Aska	AED-I	SORODA (DHARAKOTE)	10962803	84
171	Aska	AED-I	SORODA (DHARAKOTE)	10965002	84
172	Berhampur	GNED	KHALLIKOTE	18797704	82.6
173	Berhampur	GNED	KHALLIKOTE	10986683	82.6

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
174	Berhampur	GNED	KHALLIKOTE	10971427	82.6
175	Berhampur	GNED	KHALLIKOTE	10991395	82.6
176	Berhampur	GNED	KHALLIKOTE	10978035	82.6
177	Berhampur	GNED	KHALLIKOTE	10963228	82.6
178	Berhampur	GNED	KHALLIKOTE	10970225	82.6
179	Berhampur	GNED	KHALLIKOTE	10987715	82.6
180	Berhampur	GNED	KHALLIKOTE	10974518	82.6
181	Berhampur	GNED	KHALLIKOTE	10953783	82.6
182	Berhampur	GNED	KHALLIKOTE	10983383	82.6
183	Berhampur	GNED	KHALLIKOTE	10997229	82.6
184	Berhampur	GNED	KHALLIKOTE	10988014	82.6
185	Berhampur	GNED	KHALLIKOTE	10998920	82.6
186	Berhampur	GNED	KHALLIKOTE	10986688	82.6
187	Berhampur	GNED	KHALLIKOTE	10960051	82.6
188	Berhampur	GNED	KHALLIKOTE	10982633	82.6
189	Berhampur	GNED	KHALLIKOTE	10947497	82.6
190	Berhampur	GNED	KHALLIKOTE	10993851	82.6
191	Berhampur	GNED	KHALLIKOTE	10990232	82.6
192	Berhampur	GNED	KHALLIKOTE	10955336	82.6
193	Berhampur	GNED	KHALLIKOTE	10976240	82.6
194	Berhampur	GNED	KHALLIKOTE	10981002	82.6
195	Berhampur	GNED	KHALLIKOTE	10988314	82.6
196	Berhampur	GNED	KHALLIKOTE	10988133	82.6
197	Berhampur	GNED	KHALLIKOTE	10988935	82.6
198	Berhampur	GNED	KHALLIKOTE	10952109	82.6
199	Berhampur	GNED	KHALLIKOTE	10959636	82.6
200	Berhampur	GNED	KHALLIKOTE	10950007	82.6
201	Berhampur	GNED	KHALLIKOTE	10953930	82.6
202	Berhampur	GNED	KHALLIKOTE	10962602	82.6
203	Berhampur	GNED	KHALLIKOTE	10981650	82.6
204	Berhampur	GNED	KHALLIKOTE	10981268	82.6
205	Berhampur	GNED	KHALLIKOTE	10972918	82.6
206	Berhampur	GNED	KHALLIKOTE	10970639	82.6
207	Berhampur	GNED	KHALLIKOTE	10970385	82.6
208	Berhampur	GNED	KHALLIKOTE	10974083	82.6
209	Berhampur	GNED	KHALLIKOTE	10947295	82.6
210	Berhampur	GNED	KHALLIKOTE	10949829	82.6
211	Berhampur	GNED	KHALLIKOTE	10995164	82.6
212	Berhampur	GNED	KHALLIKOTE	10996910	82.6
213	Berhampur	GNED	KHALLIKOTE	10971974	82.6
214	Berhampur	GNED	KHALLIKOTE	10996743	82.6
215	Berhampur	GNED	KHALLIKOTE	10981706	82.6
216	Berhampur	GNED	KHALLIKOTE	10947205	82.6
217	Berhampur	GNED	KHALLIKOTE	10948658	82.6
218	Berhampur	GNED	KHALLIKOTE	10971342	82.6

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
219	Berhampur	GNED	KHALLIKOTE	10955502	82.6
220	Berhampur	GNED	KHALLIKOTE	10970870	82.6
221	Berhampur	GNED	KHALLIKOTE	10971763	82.6
222	Berhampur	GNED	KHALLIKOTE	10998262	82.6
223	Berhampur	GNED	KHALLIKOTE	10996132	82.6
224	Berhampur	GNED	KHALLIKOTE	10982525	82.6
225	Berhampur	GNED	KHALLIKOTE	10963723	82.6
226	Berhampur	GNED	KHALLIKOTE	10966130	82.6
227	Berhampur	GNED	KHALLIKOTE	10964583	82.6
228	Berhampur	GNED	KHALLIKOTE	10965518	82.6
229	Berhampur	GNED	KHALLIKOTE	10974393	82.6
230	Berhampur	GNED	KHALLIKOTE	10959408	82.6
231	Berhampur	GNED	KHALLIKOTE	10961424	82.6
232	Berhampur	GNED	KHALLIKOTE	10961860	82.6
233	Berhampur	GNED	KHALLIKOTE	10951751	82.6
234	Berhampur	GNED	KHALLIKOTE	10968944	82.6
235	Berhampur	GNED	KHALLIKOTE	10985879	82.6
236	Berhampur	GNED	KHALLIKOTE	10991993	82.6
237	Berhampur	GNED	KHALLIKOTE	10954362	82.6
238	Berhampur	GNED	KHALLIKOTE	10969452	82.6
239	Berhampur	GNED	KHALLIKOTE	10975568	82.6
240	Berhampur	GNED	KHALLIKOTE	10975905	82.6
241	Berhampur	GNED	KHALLIKOTE	10998730	82.6
242	Berhampur	GNED	KHALLIKOTE	10965443	82.6
243	Berhampur	GNED	KHALLIKOTE	10984202	82.7
244	Berhampur	GNED	KHALLIKOTE	10990162	82.7
245	Berhampur	GNED	KHALLIKOTE	10990656	82.7
246	Berhampur	GNED	KHALLIKOTE	10979705	82.7
247	Berhampur	GNED	KHALLIKOTE	10985956	82.7
248	Berhampur	GNED	KHALLIKOTE	10960062	82.7
249	Berhampur	GNED	KHALLIKOTE	10981171	82.7
250	Berhampur	GNED	KHALLIKOTE	10992828	82.7
251	Berhampur	GNED	KHALLIKOTE	10964222	82.7
252	Berhampur	GNED	KHALLIKOTE	10992930	82.7
253	Berhampur	GNED	KHALLIKOTE	10994845	82.7
254	Berhampur	GNED	KHALLIKOTE	10972228	82.7
255	Berhampur	GNED	KHALLIKOTE	10947194	82.7
256	Berhampur	GNED	KHALLIKOTE	10992866	82.7
257	Berhampur	GNED	KHALLIKOTE	10958316	82.7
258	Berhampur	GNED	KHALLIKOTE	10965800	82.7
259	Berhampur	GNED	KHALLIKOTE	16766152	82.7
260	Berhampur	GNED	KHALLIKOTE	10973582	82.7
261	Berhampur	GNED	KHALLIKOTE	10955250	82.7
262	Berhampur	GNED	TISCO	19917638	135.3
263	Berhampur	GNED	TISCO	16912446	135.3

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
264	Berhampur	GNED	TISCO	10981541	135.3
265	Berhampur	GNED	TISCO	10954395	135.3
266	Berhampur	GNED	TISCO	10950505	135.3
267	Berhampur	GNED	TISCO	10952816	135.3
268	Berhampur	GNED	TISCO	10955426	135.3
269	Berhampur	GNED	TISCO	10956659	135.3
270	Berhampur	GNED	TISCO	10982891	135.3
271	Berhampur	GNED	TISCO	10999143	135.3
272	Berhampur	GNED	TISCO	10984207	135.3
273	Berhampur	GNED	TISCO	10990855	135.3
274	Berhampur	GNED	TISCO	10968526	135.3
275	Berhampur	GNED	TISCO	10982279	135.3
276	Berhampur	GNED	TISCO	10955556	135.3
277	Berhampur	GNED	TISCO	10990381	135.3
278	Berhampur	GNED	TISCO	10960140	135.3
279	Berhampur	GNED	TISCO	10977441	135.3
280	Berhampur	GNED	TISCO	10965499	135.3
281	Berhampur	GNED	TISCO	10970144	135.3
282	Berhampur	GNED	TISCO	10996075	135.3
283	Berhampur	GNED	TISCO	10978886	135.3
284	Berhampur	GNED	TISCO	10973465	135.3
285	Berhampur	GNED	TISCO	10963877	135.3
286	Berhampur	GNED	TISCO	10958752	135.3
287	Berhampur	GNED	TISCO	10990609	135.3
288	Berhampur	GNED	TISCO	10952428	135.3
289	Berhampur	GNED	TISCO	10976716	135.3
290	Berhampur	GNED	TISCO	10962383	135.3
291	Berhampur	GNED	TISCO	10977391	135.3
292	Berhampur	GNED	TISCO	10962827	135.3
293	Berhampur	GNED	TISCO	10991512	135.3
294	Berhampur	GNED	TISCO	10982944	135.3
295	Berhampur	GNED	TISCO	10991382	135.3
296	Berhampur	GNED	TISCO	10996080	135.3
297	Berhampur	GNED	TISCO	10967055	135.3
298	Berhampur	GNED	TISCO	10993422	135.3
299	Berhampur	GNED	TISCO	10988914	135.3
300	Berhampur	GNED	TISCO	10951187	135.3
301	Berhampur	GNED	TISCO	10969253	135.3
302	Berhampur	GNED	TISCO	10968588	135.3
303	Berhampur	GNED	TISCO	10955141	135.3
304	Berhampur	GNED	TISCO	10991988	135.3
305	Berhampur	GNED	TISCO	10962515	135.3
306	Berhampur	GNED	TISCO	10961508	135.3
307	Berhampur	GNED	TISCO	10991028	135.3
308	Berhampur	GNED	TISCO	10998720	135.3

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
309	Berhampur	GNED	TISCO	10950219	135.3
310	Berhampur	GNED	TISCO	10975710	135.3
311	Berhampur	GNED	TISCO	10977386	135.3
312	Berhampur	GNED	TISCO	10977152	135.3
313	Berhampur	GNED	TISCO	10993505	135.3
314	Berhampur	GNED	TISCO	10970824	135.3
315	Berhampur	GNED	TISCO	10947519	135.3
316	Berhampur	GNED	TISCO	10967047	135.4
317	Berhampur	GNED	TISCO	10983551	135.4
318	Berhampur	GNED	TISCO	10995770	135.4
319	Berhampur	GNED	TISCO	10946006	135.4
320	Berhampur	GNED	TISCO	10992013	135.4
321	Berhampur	GNED	TISCO	10986136	135.4
322	Berhampur	GNED	TISCO	10989958	135.4
323	Berhampur	GNED	TISCO	10993965	135.4
324	Berhampur	GNED	TISCO	10991733	135.4
325	Berhampur	GNED	TISCO	10971149	135.4
326	Berhampur	GNED	TISCO	10946876	135.4
327	Berhampur	GNED	TISCO	10978554	135.4
328	Berhampur	GNED	TISCO	10957417	135.4
329	Berhampur	GNED	TISCO	10980717	135.4
330	Berhampur	GNED	TISCO	10997169	135.4
331	Berhampur	GNED	TISCO	10998395	135.4
332	Berhampur	GNED	TISCO	10952797	135.4
333	Berhampur	GNED	TISCO	10947262	135.4
334	Berhampur	GNED	TISCO	10953824	135.4
335	Berhampur	GNED	TISCO	10986555	135.4
336	Berhampur	GNED	TISCO	10974576	135.4
337	Berhampur	GNED	TISCO	10992917	135.4
338	Berhampur	GNED	TISCO	10981615	135.4
339	Berhampur	GNED	TISCO	10987621	135.4
340	Berhampur	GNED	TISCO	10986008	135.4
341	Berhampur	GNED	TISCO	10980275	135.4
342	Berhampur	GNED	TISCO	10983617	135.4
343	Berhampur	GNED	TISCO	10953357	135.4
344	Berhampur	GNED	TISCO	10975990	135.4
345	Berhampur	GNED	TISCO	10974491	135.4
346	Berhampur	GNED	TISCO	10951171	135.4
347	Berhampur	GNED	TISCO	10986268	135.4
348	Berhampur	GNED	TISCO	10974281	135.4
349	Berhampur	GNED	TISCO	10952914	135.4
350	Berhampur	GNED	TISCO	10993840	135.4
351	Berhampur	GNED	TISCO	10966801	135.4
352	Berhampur	GNED	TISCO	10949436	135.4
353	Berhampur	GNED	TISCO	10956193	135.4

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
354	Berhampur	GNED	TISCO	10989060	135.4
355	Berhampur	GNED	TISCO	10948940	135.4
356	Berhampur	GNED	TISCO	10955948	135.4
357	Berhampur	GNED	TISCO	10994721	135.4
358	Berhampur	GNED	TISCO	10983137	135.4
359	Berhampur	GNED	TISCO	10968043	135.4
360	Berhampur	GNED	TISCO	10948690	135.4
361	Berhampur	GNED	TISCO	10998633	135.4
362	Berhampur	GNED	TISCO	10950067	135.4
363	Berhampur	GNED	TISCO	10968401	135.4
364	Berhampur	GNED	TISCO	10959657	135.4
365	Berhampur	GNED	TISCO	10962289	135.4
366	Berhampur	GNED	TISCO	10968537	135.4
367	Berhampur	GNED	TISCO	10992807	135.4
368	Berhampur	GNED	TISCO	10983185	135.4
369	Berhampur	GNED	TISCO	10982182	135.4
370	Berhampur	GNED	TISCO	10986123	135.4
371	Berhampur	GNED	TISCO	10970407	135.4
372	Berhampur	GNED	TISCO	10950192	135.4
373	Berhampur	GNED	TISCO	10992077	135.4
374	Berhampur	GNED	TISCO	10990902	135.4
375	Berhampur	GNED	TISCO	10988701	135.4
376	Berhampur	GNED	TISCO	10982313	135.4
377	Berhampur	GNED	TISCO	10949091	135.4
378	Berhampur	GNED	TISCO	10995354	135.4
379	Berhampur	GNED	TISCO	10957055	135.4
380	Berhampur	GNED	TISCO	10960891	135.4
381	Berhampur	GNED	TISCO	10989521	135.4
382	Berhampur	GNED	TISCO	10973355	135.4
383	Berhampur	GNED	TISCO	10959278	135.4
384	Berhampur	GNED	TISCO	10961938	135.4
385	Berhampur	GNED	TISCO	10955989	135.4
386	Berhampur	GNED	TISCO	10951833	135.4
387	Berhampur	GNED	TISCO	10965664	135.4
388	Berhampur	GNED	TISCO	10987964	135.4
389	Berhampur	GNED	TISCO	10969084	135.4
390	Berhampur	GNED	TISCO	10952272	135.4
391	Berhampur	GNED	TISCO	10998096	135.4
392	Berhampur	GNED	TISCO	10946694	135.4
393	Berhampur	GNED	TISCO	10993569	135.4
394	Berhampur	GNED	TISCO	10953256	135.4
395	Berhampur	GNED	TISCO	10948878	135.4
396	Berhampur	GNED	TISCO	10983293	135.4
397	Berhampur	GNED	TISCO	10966042	135.4
398	Berhampur	GNED	TISCO	14929106	135.4

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
399	Berhampur	GNED	TISCO	14929110	135.4
400	Berhampur	GNED	TISCO	14929102	135.4
401	Berhampur	GNED	RAMBHA	14928999	133.9
402	Berhampur	GNED	RAMBHA	14928992	133.9
403	Berhampur	GNED	RAMBHA	10985932	133.9
404	Berhampur	GNED	RAMBHA	10949977	133.9
405	Berhampur	GNED	RAMBHA	10991578	133.9
406	Berhampur	GNED	RAMBHA	10964185	133.9
407	Berhampur	GNED	RAMBHA	10960845	133.9
408	Berhampur	GNED	RAMBHA	10984337	133.9
409	Berhampur	GNED	RAMBHA	10963707	133.9
410	Berhampur	GNED	RAMBHA	10996354	133.9
411	Berhampur	GNED	RAMBHA	10976561	133.9
412	Berhampur	GNED	RAMBHA	10982229	133.9
413	Berhampur	GNED	RAMBHA	10953433	133.9
414	Berhampur	GNED	RAMBHA	10978647	133.9
415	Berhampur	GNED	RAMBHA	10996278	133.9
416	Berhampur	GNED	RAMBHA	10997631	133.9
417	Berhampur	GNED	RAMBHA	10988496	133.9
418	Berhampur	GNED	RAMBHA	10993200	133.9
419	Berhampur	GNED	RAMBHA	10964975	133.9
420	Berhampur	GNED	RAMBHA	10961231	133.9
421	Berhampur	GNED	RAMBHA	10954846	133.9
422	Berhampur	GNED	RAMBHA	10971070	133.9
423	Berhampur	GNED	RAMBHA	10984368	133.9
424	Berhampur	GNED	RAMBHA	10972942	133.9
425	Berhampur	GNED	RAMBHA	10992876	133.9
426	Berhampur	GNED	RAMBHA	10985829	133.9
427	Berhampur	GNED	RAMBHA	10979288	133.9
428	Berhampur	GNED	RAMBHA	10968255	133.9
429	Berhampur	GNED	RAMBHA	10983462	133.9
430	Berhampur	GNED	RAMBHA	10987024	133.9
431	Berhampur	GNED	RAMBHA	10986105	133.9
432	Berhampur	GNED	RAMBHA	10992235	133.9
433	Berhampur	GNED	RAMBHA	10966734	133.9
434	Berhampur	GNED	RAMBHA	10981184	133.9
435	Berhampur	GNED	RAMBHA	10961750	133.9
436	Berhampur	GNED	RAMBHA	10979212	133.9
437	Berhampur	GNED	RAMBHA	10964607	133.9
438	Berhampur	GNED	RAMBHA	10979439	133.9
439	Berhampur	GNED	RAMBHA	10988545	133.9
440	Berhampur	GNED	RAMBHA	10983892	133.9
441	Berhampur	GNED	RAMBHA	10954977	133.9
442	Berhampur	GNED	RAMBHA	10994024	133.9
443	Berhampur	GNED	RAMBHA	10994267	133.9

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
444	Berhampur	GNED	RAMBHA	10983583	133.9
445	Berhampur	GNED	RAMBHA	10983356	133.9
446	Berhampur	GNED	RAMBHA	10987490	133.9
447	Berhampur	GNED	RAMBHA	10952531	133.9
448	Berhampur	GNED	RAMBHA	10948492	133.9
449	Berhampur	GNED	RAMBHA	10982472	133.9
450	Berhampur	GNED	RAMBHA	10979460	133.9
451	Berhampur	GNED	RAMBHA	10949273	133.9
452	Berhampur	GNED	RAMBHA	10955296	133.9
453	Berhampur	GNED	RAMBHA	10960262	133.9
454	Berhampur	GNED	RAMBHA	10968758	133.9
455	Berhampur	GNED	RAMBHA	10972338	133.9
456	Berhampur	GNED	RAMBHA	10977828	133.9
457	Berhampur	GNED	RAMBHA	10998172	133.9
458	Berhampur	GNED	RAMBHA	10987903	133.9
459	Berhampur	GNED	RAMBHA	10954790	133.9
460	Berhampur	GNED	RAMBHA	10983441	133.9
461	Berhampur	GNED	RAMBHA	10990253	133.9
462	Berhampur	GNED	RAMBHA	10974101	133.9
463	Berhampur	GNED	RAMBHA	10960615	133.9
464	Berhampur	GNED	RAMBHA	10992912	134.0
465	Berhampur	GNED	RAMBHA	10951666	134.0
466	Berhampur	GNED	RAMBHA	10963651	134.0
467	Berhampur	GNED	RAMBHA	10991963	134.0
468	Berhampur	GNED	RAMBHA	10984843	134.0
469	Berhampur	GNED	RAMBHA	10973870	134.0
470	Berhampur	GNED	RAMBHA	10978436	134.0
471	Berhampur	GNED	RAMBHA	10974014	134.0
472	Berhampur	GNED	RAMBHA	10959745	134.0
473	Berhampur	GNED	RAMBHA	10946014	134.0
474	Berhampur	GNED	RAMBHA	10990808	134.0
475	Berhampur	GNED	RAMBHA	10988259	134.0
476	Berhampur	GNED	RAMBHA	10992064	134.0
477	Berhampur	GNED	RAMBHA	10965058	134.0
478	Berhampur	GNED	RAMBHA	10981413	134.0
479	Berhampur	GNED	RAMBHA	10947713	134.0
480	Berhampur	GNED	RAMBHA	10980249	134.0
481	Berhampur	GNED	RAMBHA	10952055	134.0
482	Berhampur	GNED	RAMBHA	10973708	134.0
483	Berhampur	GNED	RAMBHA	10964118	134.0
484	Berhampur	GNED	RAMBHA	10981866	134.0
485	Berhampur	GNED	RAMBHA	10992649	134.0
486	Berhampur	GNED	RAMBHA	10970447	134.0
487	Berhampur	GNED	RAMBHA	10992526	134.0
488	Berhampur	GNED	RAMBHA	10997611	134.0

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
489	Berhampur	GNED	RAMBHA	10995545	134.0
490	Berhampur	GNED	RAMBHA	10956177	134.0
491	Berhampur	GNED	RAMBHA	10976711	134.0
492	Berhampur	GNED	RAMBHA	10987816	134.0
493	Berhampur	GNED	RAMBHA	10998252	134.0
494	Berhampur	GNED	RAMBHA	10980465	134.0
495	Berhampur	GNED	RAMBHA	10950165	134.0
496	Berhampur	GNED	RAMBHA	10966753	134.0
497	Berhampur	GNED	RAMBHA	10983717	134.0
498	Berhampur	GNED	RAMBHA	10969202	134.0
499	Berhampur	GNED	RAMBHA	10970415	134.0
500	Berhampur	GNED	RAMBHA	10981901	134.0
501	Berhampur	GNED	RAMBHA	10979119	134.0
502	Berhampur	GNED	RAMBHA	10979721	134.0
503	Berhampur	GNED	RAMBHA	10980830	134.0
504	Berhampur	GNED	RAMBHA	10994361	134.0
505	Berhampur	GNED	RAMBHA	10993531	134.0
506	Berhampur	GNED	RAMBHA	10999244	134.0
507	Berhampur	GNED	RAMBHA	10997814	134.0
508	Berhampur	GNED	RAMBHA	10989945	134.0
509	Berhampur	GNED	RAMBHA	10986726	134.0
510	Berhampur	GNED	RAMBHA	10993879	134.0
511	Berhampur	GNED	RAMBHA	10974655	134.0
512	Berhampur	GNED	RAMBHA	10984146	134.0
513	Berhampur	GNED	RAMBHA	10955320	134.0
514	Berhampur	GNED	RAMBHA	10987806	134.0
515	Berhampur	GNED	RAMBHA	10970998	134.0
516	Berhampur	GNED	RAMBHA	10998971	134.0
517	Berhampur	GNED	RAMBHA	10983017	134.0
518	Berhampur	GNED	RAMBHA	10996682	134.0
519	Berhampur	GNED	RAMBHA	10965328	134.0
520	Berhampur	GNED	RAMBHA	10985510	134.0
521	Berhampur	GNED	RAMBHA	10982336	134.0
522	Berhampur	GNED	RAMBHA	10990007	134.0
523	Berhampur	GNED	RAMBHA	10994792	134.0
524	Berhampur	GNED	RAMBHA	10984119	134.0
525	Berhampur	GNED	RAMBHA	10952957	134.0
526	Berhampur	GNED	RAMBHA	10960997	134.0
527	Berhampur	GNED	RAMBHA	10971720	134.0
528	Berhampur	GNED	RAMBHA	10996687	134.0
529	Berhampur	GNED	RAMBHA	10966114	134.0
530	Berhampur	GNED	RAMBHA	10974720	134.0
531	Berhampur	GNED	RAMBHA	10965280	134.0
532	Berhampur	GNED	RAMBHA	10993955	134.0
533	Berhampur	GNED	RAMBHA	14928390	134.0

Sl No	Circle	Division	33kV Feeder	Section Id	Loading (%)
534	Berhampur	GNED	RAMBHA	14928394	134.0
535	Berhampur	GNED	RAMBHA	14928073	131.2
536	City	BED-I	AMBAPUA	1727635	88.9
537	City	BED-I	AMBAPUA	1736899	90.7
538	City	BED-I	AMBAPUA	1736909	90.7
539	City	BED-I	AMBAPUA	1736919	90.7
540	City	BED-I	MKCG EXPRESS	1724993	80.5
541	City	BED-I	MKCG EXPRESS	1725003	80.5
542	City	BED-I	MKCG EXPRESS	1725010	80.5
543	City	BED-I	MKCG EXPRESS	1725020	80.5
544	City	BED-I	MKCG EXPRESS	1725027	80.5
545	City	BED-I	MKCG EXPRESS	1725037	80.5
546	City	BED-I	MKCG EXPRESS	1725061	80.5
547	City	BED-I	MKCG EXPRESS	1725071	80.5
548	City	BED-I	MKCG EXPRESS	1725078	80.5
549	City	BED-I	MKCG EXPRESS	1725088	80.5
550	City	BED-I	MKCG EXPRESS	1725095	80.5
551	City	BED-I	MKCG EXPRESS	1725105	80.5
552	Bhanjanagar	BoED	BOUDH	2262	103.6
553	Bhanjanagar	BoED	MANAMUNDA	2275	96.3
554	Jeypore	NED	NABARNGPUR	1743	92.4
555	Jeypore	NED	NABARNGPUR	523	113.7
556	Jeypore	NED	NABARNGPUR	512	111.1
557	Jeypore	NED	NABARNGPUR	510	111.2
558	Jeypore	NED	UMERKOTE	565	88.6
559	Jeypore	NED	BEHEDA FDR	572	137.1
560	Jeypore	NED	BEHEDA FDR	574	111.8

b)11kV Load Flow study Report

List of 11kV Overloaded Feeders along with respective overloaded sections: - (Considering 5years Load Growth)

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
1	Aska	AED-2	11KV-BUGUDA TOWN	11KV-BUGUDA TOWN-1	100.6
2	Aska	AED-2	11KV-BUGUDA TOWN	11KV-BUGUDA TOWN-2	100.4
3	Aska	AED-2	11KV-BUGUDA TOWN	11KV-BUGUDA TOWN-4	99.6
4	Aska	AED-2	11KV-BUGUDA TOWN	11KV-BUGUDA TOWN-6	99.2
5	Aska	AED-2	11KV-BUGUDA TOWN	11KV-BUGUDA TOWN-7	97.6
6	Aska	AED-2	11KV-BUGUDA TOWN	11KV-BUGUDA TOWN-9	96.6
7	Aska	AED-2	11KV-BUGUDA TOWN	11KV-BUGUDA TOWN-10	94.1
8	Aska	AED-2	11KV-BUGUDA TOWN	11KV-BUGUDA TOWN-12	92.5
9	Aska	AED-2	11KV-BUGUDA TOWN	11KV-BUGUDA TOWN-23	83.3
10	Aska	AED-2	11KV-BUGUDA TOWN	11KV-BUGUDA TOWN-25	82.9
11	Aska	GSED	11KV-DIGAPAHANDI	11KV-DIGAPAHANDI1	84.6

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
12	Aska	GSED	11KV-DIGAPAHANDI	11KV-DIGAPAHANDI142	82.1
13	Berhampur	GNED	11KV-MILL	11KV-MILL2	97.4
14	Berhampur	GNED	11KV-MILL	11KV-MILL4	91.0
15	Berhampur	GNED	11KV-MILL	11KV-MILL7	89.7
16	Berhampur	GNED	11KV-MILL	11KV-MILL10	88.4
17	Berhampur	GNED	11KV-MILL	11KV-MILL16	86.3
18	Berhampur	GNED	11KV-MILL	11KV-MILL19	86.0
19	Berhampur	GNED	11KV-MILL	11KV-MILL21	115.7
20	Berhampur	GNED	11KV-MILL	11KV-MILL23	115.4
21	Berhampur	GNED	11KV-MILL	11KV-MILL25	113.6
22	Berhampur	GNED	11KV-MILL	11KV-MILL27	111.9
23	Berhampur	GNED	11KV-MILL	11KV-MILL29	82.7
24	Berhampur	GNED	11KV-MILL	11KV-MILL31	82.7
25	Berhampur	GNED	11KV-MILL	11KV-MILL35	81.3
26	Berhampur	GNED	11KV-MILL	11KV-MILL37	81.0
27	City	BED-1	11_SEC21-F04_HARIPUR	6266270	101.3
28	City	BED-1	11_SEC21-F04_HARIPUR	19860546	101.3
29	City	BED-1	11_SEC21-F04_HARIPUR	19860465	101.3
30	City	BED-1	11_SEC21-F04_HARIPUR	19919977	101.3
31	City	BED-1	11_SEC21-F04_HARIPUR	19860521	101.3
32	City	BED-1	11_SEC21-F04_HARIPUR	19919994	101.3
33	City	BED-1	11_SEC21-F04_HARIPUR	19920008	101.3
34	City	BED-1	11_SEC21-F04_HARIPUR	19860467	101.3
35	City	BED-1	11_SEC21-F04_HARIPUR	19860435	101.3
36	City	BED-1	11_SEC21-F04_HARIPUR	19860571	101.3
37	City	BED-1	11_SEC21-F04_HARIPUR	19860605	101.3
38	City	BED-1	11_SEC21-F04_HARIPUR	19860639	101.3
39	City	BED-1	11_SEC21-F04_HARIPUR	19920022	101.3
40	City	BED-1	11_SEC21-F04_HARIPUR	19920039	101.3
41	City	BED-1	11_SEC21-F04_HARIPUR	19920053	101.3
42	City	BED-1	11_SEC21-F04_HARIPUR	19920070	101.3
43	City	BED-1	11_SEC21-F04_HARIPUR	19920087	101.3
44	City	BED-1	11_SEC21-F04_HARIPUR	19860641	101.3
45	City	BED-1	11_SEC21-F04_HARIPUR	19860607	101.3
46	City	BED-1	11_SEC21-F04_HARIPUR	19860750	101.3
47	City	BED-1	11_SEC21-F04_HARIPUR	19858883	101.3
48	City	BED-1	11_SEC21-F04_HARIPUR	19858892	101.3
49	City	BED-1	11_SEC21-F04_HARIPUR	19858857	101.3
50	City	BED-1	11_SEC21-F04_HARIPUR	19858866	101.3
51	City	BED-1	11_SEC21-F04_HARIPUR	19858824	101.3
52	City	BED-1	11_SEC21-F04_HARIPUR	19858789	101.3
53	City	BED-1	11_SEC21-F04_HARIPUR	19858798	101.3
54	City	BED-1	11_SEC21-F04_HARIPUR	19858755	101.3
55	City	BED-1	11_SEC21-F04_HARIPUR	19858728	101.3
56	City	BED-1	11_SEC21-F04_HARIPUR	19858705	101.3

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
57	City	BED-1	11_SEC21-F04_HARIPUR	19858684	101.3
58	City	BED-1	11_SEC21-F04_HARIPUR	19858663	101.3
59	City	BED-1	11_SEC21-F04_HARIPUR	19858642	101.3
60	City	BED-1	11_SEC21-F04_HARIPUR	19858621	101.3
61	City	BED-1	11_SEC21-F04_HARIPUR	19858601	101.3
62	City	BED-1	11_SEC21-F04_HARIPUR	19858574	101.3
63	City	BED-1	11_SEC21-F04_HARIPUR	19858581	101.3
64	City	BED-1	11_SEC21-F04_HARIPUR	19858546	101.3
65	City	BED-1	11_SEC21-F04_HARIPUR	19858523	101.3
66	City	BED-1	11_SEC21-F04_HARIPUR	19858503	101.3
67	City	BED-1	11_SEC21-F04_HARIPUR	19858472	101.3
68	City	BED-1	11_SEC21-F04_HARIPUR	19858479	101.3
69	City	BED-1	11_SEC21-F04_HARIPUR	19858442	101.3
70	City	BED-1	11_SEC21-F04_HARIPUR	19860793	101.3
71	City	BED-1	11_SEC21-F04_HARIPUR	19860794	101.3
72	City	BED-1	11_SEC21-F04_HARIPUR	19920094	101.3
73	City	BED-1	11_SEC21-F04_HARIPUR	19920104	101.3
74	City	BED-1	11_SEC21-F04_HARIPUR	19920114	101.3
75	City	BED-1	11_SEC21-F04_HARIPUR	19920124	101.3
76	City	BED-1	11_SEC21-F04_HARIPUR	19920134	101.3
77	City	BED-1	11_SEC21-F04_HARIPUR	19920144	101.3
78	City	BED-1	11_SEC21-F04_HARIPUR	19920154	101.3
79	City	BED-1	11_SEC21-F04_HARIPUR	19920164	101.3
80	City	BED-1	11_SEC21-F04_HARIPUR	19920174	101.3
81	City	BED-1	11_SEC21-F04_HARIPUR	19920184	101.3
82	City	BED-1	11_SEC21-F04_HARIPUR	19920194	101.3
83	City	BED-1	11_SEC21-F04_HARIPUR	19920204	101.3
84	City	BED-1	11_SEC21-F04_HARIPUR	19920214	101.3
85	City	BED-1	11_SEC21-F04_HARIPUR	19920225	101.3
86	City	BED-1	11_SEC21-F04_HARIPUR	19920235	101.3
87	City	BED-1	11_SEC21-F04_HARIPUR	19920245	101.3
88	City	BED-1	11_SEC21-F04_HARIPUR	19920255	101.3
89	City	BED-1	11_SEC21-F04_HARIPUR	19920266	101.3
90	City	BED-1	11_SEC21-F04_HARIPUR	19920283	101.3
91	City	BED-1	11_SEC21-F04_HARIPUR	19920293	101.3
92	City	BED-1	11_SEC21-F04_HARIPUR	19920323	101.3
93	City	BED-1	11_SEC21-F04_HARIPUR	19920330	101.3
94	City	BED-1	11_SEC21-F04_HARIPUR	19920343	101.3
95	City	BED-1	11_SEC21-F04_HARIPUR	19920353	101.3
96	City	BED-1	11_SEC21-F04_HARIPUR	19920373	101.3
97	City	BED-1	11_SEC21-F04_HARIPUR	6266293	101.3
98	City	BED-1	11_SEC21-F04_HARIPUR	4192733	101.3
99	City	BED-1	11_SEC21-F04_HARIPUR	4195081	101.3
100	City	BED-1	11_SEC21-F04_HARIPUR	4243436	101.3
101	City	BED-1	11_SEC21-F04_HARIPUR	19920392	101.3

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
102	City	BED-1	11_SEC21-F04_HARIPUR	4276238	101.3
103	City	BED-1	11_SEC21-F04_HARIPUR	4287831	101.3
104	City	BED-1	11_SEC21-F04_HARIPUR	4289883	155.9
105	City	BED-1	11_SEC21-F04_HARIPUR	4182307	155.9
106	City	BED-1	11_SEC21-F04_HARIPUR	4245703	155.2
107	City	BED-1	11_SEC21-F04_HARIPUR	4238800	155.2
108	City	BED-1	11_SEC21-F04_HARIPUR	4205543	155.2
109	City	BED-1	11_SEC21-F04_HARIPUR	4207629	155.2
110	City	BED-1	11_SEC21-F04_HARIPUR	4283222	155.2
111	City	BED-1	11_SEC21-F04_HARIPUR	4498533	155.2
112	City	BED-1	11_SEC21-F04_HARIPUR	4291438	155.2
113	City	BED-1	11_SEC21-F04_HARIPUR	4209741	155.2
114	City	BED-1	11_SEC21-F04_HARIPUR	4209207	155.2
115	City	BED-1	11_SEC21-F04_HARIPUR	4185153	155.2
116	City	BED-1	11_SEC21-F04_HARIPUR	4290524	155.2
117	City	BED-1	11_SEC21-F04_HARIPUR	4241367	154.8
118	City	BED-1	11_SEC21-F04_HARIPUR	4291723	154.8
119	City	BED-1	11_SEC21-F04_HARIPUR	4209586	154.8
120	City	BED-1	11_SEC21-F04_HARIPUR	4289831	154.8
121	City	BED-1	11_SEC21-F04_HARIPUR	4233153	154.8
122	City	BED-1	11_SEC21-F04_HARIPUR	4278747	154.8
123	City	BED-1	11_SEC21-F04_HARIPUR	4269572	154.8
124	City	BED-1	11_SEC21-F04_HARIPUR	4252792	154.8
125	City	BED-1	11_SEC21-F04_HARIPUR	4198706	154.8
126	City	BED-1	11_SEC21-F04_HARIPUR	4203143	154.8
127	City	BED-1	11_SEC21-F04_HARIPUR	4223008	154.8
128	City	BED-1	11_SEC21-F04_HARIPUR	4182715	152.9
129	City	BED-1	11_SEC21-F04_HARIPUR	4244851	152.9
130	City	BED-1	11_SEC21-F04_HARIPUR	4219730	152.9
131	City	BED-1	11_SEC21-F04_HARIPUR	4231210	152.9
132	City	BED-1	11_SEC21-F04_HARIPUR	4186397	152.9
133	City	BED-1	11_SEC21-F04_HARIPUR	4222194	152.9
134	City	BED-1	11_SEC21-F04_HARIPUR	4264838	149.7
135	City	BED-1	11_SEC21-F04_HARIPUR	4196723	149.7
136	City	BED-1	11_SEC21-F04_HARIPUR	4270573	145.4
137	City	BED-1	11_SEC21-F04_HARIPUR	4210774	145.4
138	City	BED-1	11_SEC21-F04_HARIPUR	4238570	145.4
139	City	BED-1	11_SEC21-F04_HARIPUR	4198766	145.4
140	City	BED-1	11_SEC21-F04_HARIPUR	4260660	145.4
141	City	BED-1	11_SEC21-F04_HARIPUR	4264040	145.4
142	City	BED-1	11_SEC21-F04_HARIPUR	4182432	145.4
143	City	BED-1	11_SEC21-F04_HARIPUR	4253774	145.4
144	City	BED-1	11_SEC21-F04_HARIPUR	4190053	145.4
145	City	BED-1	11_SEC21-F04_HARIPUR	4262742	145.4
146	City	BED-1	11_SEC21-F04_HARIPUR	4189734	145.4

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
147	City	BED-1	11_SEC21-F04_HARIPUR	4229763	145.4
148	City	BED-1	11_SEC21-F04_HARIPUR	4216993	145.4
149	City	BED-1	11_SEC21-F04_HARIPUR	4231832	145.4
150	City	BED-1	11_SEC21-F04_HARIPUR	4289054	145.4
151	City	BED-1	11_SEC21-F04_HARIPUR	4252029	145.4
152	City	BED-1	11_SEC21-F04_HARIPUR	4211873	145.4
153	City	BED-1	11_SEC21-F04_HARIPUR	4223064	145.4
154	City	BED-1	11_SEC21-F04_HARIPUR	4228815	145.4
155	City	BED-1	11_SEC21-F04_HARIPUR	4267682	145.4
156	City	BED-1	11_SEC21-F04_HARIPUR	4262292	145.4
157	City	BED-1	11_SEC21-F04_HARIPUR	4217196	145.4
158	City	BED-1	11_SEC21-F04_HARIPUR	4223246	145.4
159	City	BED-1	11_SEC21-F04_HARIPUR	4176964	145.4
160	City	BED-1	11_SEC21-F04_HARIPUR	4221144	145.4
161	City	BED-1	11_SEC21-F04_HARIPUR	4228657	145.4
162	City	BED-1	11_SEC21-F04_HARIPUR	4175267	145.3
163	City	BED-1	11_SEC21-F04_HARIPUR	4288168	145.3
164	City	BED-1	11_SEC21-F04_HARIPUR	4199703	145.3
165	City	BED-1	11_SEC21-F04_HARIPUR	4289408	145.3
166	City	BED-1	11_SEC21-F04_HARIPUR	4278627	145.3
167	City	BED-1	11_SEC21-F04_HARIPUR	4206826	145.3
168	City	BED-1	11_SEC21-F04_HARIPUR	4254755	140.8
169	City	BED-1	11KV- FULTA/ANKULI NH	11KV- FULTA-229	129.3
170	City	BED-1	11KV- FULTA/ANKULI NH	11KV- FULTA-231	123.2
171	City	BED-1	11KV- FULTA/ANKULI NH	11KV- FULTA-232	123.2
172	City	BED-1	11KV- FULTA/ANKULI NH	11KV- FULTA-246	111.7
173	City	BED-1	11KV- FULTA/ANKULI NH	11KV- FULTA-256	105.7
174	City	BED-1	11KV- FULTA/ANKULI NH	11KV- FULTA-258	103.4
175	City	BED-1	11KV- HILLPATNA	11KV- HILLPATNA-87	121.0
176	City	BED-1	11KV- HILLPATNA	11KV- HILLPATNA-102	99.8
177	City	BED-1	11KV- LANJIPALLI	11KV- LANJIPALLI-309	80.9
178	City	BED-1	11KV- LANJIPALLI	11KV- LANJIPALLI-310	90.2
179	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6138	85.6
180	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6139	85.6
181	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6141	84.2
182	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6142	84.2
183	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6143	84.2
184	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6144	84.2
185	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6145	84.2
186	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6146	84.2

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
187	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6147	84.2
188	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6148	84.2
189	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6149	84.2
190	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6576	84.2
191	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6150	84.2
192	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6373	96.8
193	City	BED-1	11KV-AMBAPUA	11KV-AMBAPUA-6430	107.6
194	City	BED-1	11KV-ANKULI	11KV-ANKULI-0	107.7
195	City	BED-1	11KV-ANKULI	11KV-ANKULI-1	103.6
196	City	BED-1	11KV-ANKULI	11KV-ANKULI-41	144.3
197	City	BED-1	11 KV F-2 KHODA SINGH	85	85.2
198	City	BED-1	11 KV F-2 KHODA SINGH	11KV-AMBAPUA111	85.2
199	City	BED-1	11 KV F-2 KHODA SINGH	11KV-AMBAPUA114	81.3
200	City	BED-1	11KV-NILACHALNAGAR	11KV-NILACHALNAGAR-0	141.2
201	City	BED-1	11KV-NILACHALNAGAR	11KV-NILACHALNAGAR-69	82.8
202	City	BED-1	11KV-CITY HOSPITAL(MEDICAL)	11KV-CITY HOSPITAL(MEDICAL)-277	81.8
203	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6138	90.8
204	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6139	90.8
205	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6140	90.8
206	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6141	90.8
207	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6142	90.8
208	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6143	90.8
209	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6144	90.8
210	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6145	90.8
211	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6147	90.0
212	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6149	90.0
213	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6151	87.9
214	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6154	87.4
215	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6157	86.5
216	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6159	86.5
217	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6161	86.5
218	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6162	86.5
219	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6163	86.5
220	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6164	85.7
221	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6167	85.1
222	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6170	84.6
223	City	BED-1	11KV-OLD BUS STAND	11KV-OLD BUS STAND-6175	81.6
224	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-163	119.2
225	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-164	119.2
226	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-165	119.2
227	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-167	119.2
228	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-168	119.2
229	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-170	118.9
230	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-172	118.0
231	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-175	117.0

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
232	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-177	180.2
233	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-191	106.8
234	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-193	104.4
235	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-211	91.9
236	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-213	91.9
237	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-215	87.0
238	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-240	127.2
239	City	BED-1	11KV-TATABENZ	11KV-TATABENZ-278	111.1
240	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-I	11KV-BOUDH TOWN NO-I1	88.2
241	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-I	11KV-BOUDH TOWN NO-I2	88.2
242	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-I	11KV-BOUDH TOWN NO-I3	88.2
243	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-I	11KV-BOUDH TOWN NO-I18	82.3
244	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-II	11KV-BOUDH TOWN NO-II1	129.8
245	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-II	11KV-BOUDH TOWN NO-II2	129.8
246	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-II	11KV-BOUDH TOWN NO-II3	129.8
247	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-II	11KV-BOUDH TOWN NO-II5	126.0
248	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-II	11KV-BOUDH TOWN NO-II7	126.0
249	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-II	11KV-BOUDH TOWN NO-II9	125.0
250	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-II	11KV-BOUDH TOWN NO-II12	124.1
251	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-II	11KV-BOUDH TOWN NO-II14	92.9
252	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-II	11KV-BOUDH TOWN NO-II15	92.9
253	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-II	11KV-BOUDH TOWN NO-II60	91.9
254	Bhanjanagar	BOED	11KV-BOUDH TOWN NO-II	11KV-BOUDH TOWN NO-II62	81.5
255	Rayagada	GED	11KV-GUNUPUR COURT	11KV-GUNUPUR COURT-6138	104.2
256	Rayagada	GED	11KV-GUNUPUR COURT	11KV-GUNUPUR COURT-6139	97.0
257	Rayagada	GED	11KV-GUNUPUR TOWN	11KV-GUNUPUR TOWN-6138	97.6
258	Rayagada	GED	11KV-GUNUPUR TOWN	11KV-GUNUPUR TOWN-6139	95.6
259	Berhampur	GNED	11KV-MILL	11KV-MILL2	97.4
260	Berhampur	GNED	11KV-MILL	11KV-MILL4	91.0
261	Berhampur	GNED	11KV-MILL	11KV-MILL7	89.7
262	Berhampur	GNED	11KV-MILL	11KV-MILL10	88.4
263	Berhampur	GNED	11KV-MILL	11KV-MILL16	86.3
264	Berhampur	GNED	11KV-MILL	11KV-MILL19	86.0

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
265	Berhampur	GNED	11KV-MILL	11KV-MILL21	115.7
266	Berhampur	GNED	11KV-MILL	11KV-MILL23	115.4
267	Berhampur	GNED	11KV-MILL	11KV-MILL25	113.6
268	Berhampur	GNED	11KV-MILL	11KV-MILL27	111.9
269	Berhampur	GNED	11KV-MILL	11KV-MILL29	82.7
270	Berhampur	GNED	11KV-MILL	11KV-MILL31	82.7
271	Berhampur	GNED	11KV-MILL	11KV-MILL35	81.3
272	Berhampur	GNED	11KV-MILL	11KV-MILL37	81.0
273	Jeypore	MED	11KV-SIKHAPALLY	11KV-SIKHAPALLY-1	84.2
274	Jeypore	MED	11KV-SIKHAPALLY	11KV-SIKHAPALLY-2	84.2
275	Jeypore	MED	11KV-SIKHAPALLY	11KV-SIKHAPALLY-3	84.2
276	Jeypore	MED	11KV_MV-72	11KV_MV-72275	80.9
277	Jeypore	MED	11KV-KOTAMETA	11KV-KOTAMETA-109	80.9
278	Jeypore	NED	11KV-CHUTIAGUDA	11KV-CHUTIAGUDA-27	103.6
279	Jeypore	NED	11KV-CHUTIAGUDA	11KV-CHUTIAGUDA-35	82.5
280	Jeypore	NED	11KV-EKAMBA	11KV-EKAMBA-275	83.4
281	Jeypore	NED	11KV-EKAMBA	11KV-EKAMBA-277	83.0
282	Jeypore	NED	11KV-NABRANGPUR TOWN NO. - II	11KV-NABRANGPUR TOWN NO. - II-6138	207.4
283	Jeypore	NED	11KV-NABRANGPUR TOWN NO. - II	11KV-NABRANGPUR TOWN NO. - II-6140	106.8
284	Jeypore	NED	11KV-NABRANGPUR TOWN NO. - II	11KV-NABRANGPUR TOWN NO. - II-6145	105.5
285	Jeypore	NED	11KV-NABRANGPUR TOWN NO. - II	11KV-NABRANGPUR TOWN NO. - II-6148	102.6
286	Jeypore	NED	11KV-NABRANGPUR TOWN NO. - II	11KV-NABRANGPUR TOWN NO. - II-6150	86.0
287	Jeypore	NED	11KV-NABRANGPUR TOWN NO. - II	11KV-NABRANGPUR TOWN NO. - II-6151	86.0
288	Jeypore	NED	11KV-NABRANGPUR TOWN NO. - II	11KV-NABRANGPUR TOWN NO. - II-74	83.7
289	Jeypore	NED	11KV-NABRANGPUR TOWN NO. - II	11KV-NABRANGPUR TOWN NO. - II-6181	83.5
290	Jeypore	NED	11KV-NABRANGPUR TOWN NO. - II	11KV-NABRANGPUR TOWN NO. - II-6184	83.3
291	Jeypore	NED	11KV-NABRANGPUR TOWN NO. - II	11KV-NABRANGPUR TOWN NO. - II-6187	82.1
292	Jeypore	NED	11KV-NABRANGPUR TOWN NO. - II	11KV-NABRANGPUR TOWN NO. - II-6190	81.3
293	Jeypore	NED	NABRANGPUR TOWN NO-I	NABRANGPUR TOWN NO-I-45	89.3
294	Jeypore	NED	NABRANGPUR TOWN NO-I	NABRANGPUR TOWN NO-I-47	88.9
295	Jeypore	NED	NABRANGPUR TOWN NO-I	NABRANGPUR TOWN NO-I-50	87.5
296	Jeypore	NED	NABRANGPUR TOWN NO-I	NABRANGPUR TOWN NO-I-55	82.5

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
297	Jeypore	NED	NABRANGPUR TOWN NO-I	NABRANGPUR TOWN NO-I-59	80.3
298	Jeypore	NED	11KV-CHHATABEDA	11KV-CHHATABEDA-1	112.1
299	Jeypore	NED	11KV-CHHATABEDA	11KV-CHHATABEDA-6	110.6
300	Jeypore	NED	11KV-CHHATABEDA	11KV-CHHATABEDA-10	106.8
301	Jeypore	NED	11KV-CHHATABEDA	11KV-CHHATABEDA-12	106.1
302	Jeypore	NED	11KV-CHHATABEDA	11KV-CHHATABEDA-14	105.6
303	Jeypore	NED	11KV-CHHATABEDA	11KV-CHHATABEDA-15	98.5
304	Jeypore	NED	11KV-CHHATABEDA	11KV-CHHATABEDA-46	96.2
305	Jeypore	NED	11KV-CHHATABEDA	11KV-CHHATABEDA-48	94.7
306	Jeypore	NED	11KV-CHHATABEDA	11KV-CHHATABEDA-49	88.6
307	Jeypore	NED	11KV-CHHATABEDA	11KV-CHHATABEDA-74	87.1
308	Jeypore	NED	11KV-CHHATABEDA	11KV-CHHATABEDA-77	86.5
309	Jeypore	NED	11KV-TURUDIHI	11KV-TURUDIHI-6138	81.3
310	Jeypore	NED	11KV-TURUDIHI	11KV-TURUDIHI-6140	80.8
311	Jeypore	NED	11KV-TURUDIHI	11KV-TURUDIHI-6143	80.3
312	Jeypore	NED	11KV -UMERKOTA TOWN	11KV -UMERKOTA TOWN-1	91.6
313	Jeypore	NED	11KV -UMERKOTA TOWN	11KV -UMERKOTA TOWN-5	90.0
314	Jeypore	NED	11KV- D.N.K	11KV- D.N.K-152	93.3
315	Rayagada	PKED	11KV-TOWN 4	11KV-TOWN 4-191	108.4
316	Rayagada	PKED	11KV-RURAL	11KV-RURAL-6138	102.2
317	Rayagada	PKED	11KV-RURAL	11KV-RURAL-6140	102.2
318	Rayagada	PKED	11KV-RURAL	11KV-RURAL-6142	101.0
319	Rayagada	PKED	11KV-RURAL	11KV-RURAL-6145	99.7
320	Rayagada	PKED	11KV-RURAL	11KV-RURAL-6148	96.5
321	Rayagada	PKED	11KV-RURAL	11KV-RURAL-6157	83.2
322	City	BED-3	11KV-HALDIAPADAR	11KV-HALDIAPADAR-277	119.5
323	City	BED-3	11KV-HALDIAPADAR	11KV-HALDIAPADAR-328	86.8
324	City	BED-3	11KV-TULU	11KV-TULU1	95.6
325	City	BED-3	11KV-TULU	11KV-TULU2	95.6
326	City	BED-3	11KV-TULU	11KV-TULU3	95.7
327	City	BED-3	11KV-TULU	11KV-TULU4	95.3
328	City	BED-3	11KV-TULU	11KV-TULU7	93.9
329	City	BED-3	11KV-TULU	11KV-TULU12	130.7
330	City	BED-3	11KV-TULU	11KV-TULU26	126.9
331	City	BED-3	11KV-TULU	11KV-TULU28	126.9
332	City	BED-3	11KV-TULU	11KV-TULU30	126.7
333	City	BED-3	11KV-TULU	11KV-TULU77	110.6
334	City	BED-3	11KV-TULU	11KV-TULU80	109.7
335	City	BED-3	11KV-TULU	11KV-TULU83	108.8
336	City	BED-3	11KV-TULU	11KV-TULU86	108.4
337	City	BED-3	11KV-TULU	11KV-TULU89	107.0
338	City	BED-3	11KV-TULU	11KV-TULU91	107.0
339	City	BED-3	11KV-TULU	11KV-TULU121	103.5

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
340	City	BED-3	11KV-TULU	11KV-TULU124	102.1
341	City	BED-3	11KV-TULU	11KV-TULU127	101.8
342	City	BED-3	11KV-TULU	11KV-TULU130	101.4
343	City	BED-3	11KV-TULU	11KV-TULU132	100.6
344	City	BED-3	11KV-TULU	11KV-TULU136	99.2
345	City	BED-3	11KV-TULU	11KV-TULU142	96.5
346	City	BED-3	11KV-LUCHAPADA	11KV-LOCHAPADA-6138	129.5
347	City	BED-3	11KV-LUCHAPADA	11KV-LOCHAPADA-6139	124.2
348	City	BED-3	11KV-LUCHAPADA	11KV-LOCHAPADA-6140	113.7
349	City	BED-3	11KV-LUCHAPADA	11KV-LOCHAPADA-6142	93.0
350	City	BED-3	11KV-LUCHAPADA	11KV-LOCHAPADA-6144	130.5
351	City	BED-3	11KV-LUCHAPADA	11KV-LOCHAPADA-6146	125.1
352	City	BED-3	11KV-LUCHAPADA	11KV-LOCHAPADA-6148	85.0
353	City	BED-3	11KV-NIMAKHANDI	11KV-NIMAKHANDI-74	93.4
354	City	BED-3	11KV-NIMAKHANDI	11KV-NIMAKHANDI-75	131.0
355	City	BED-3	11KV-NIMAKHANDI	11KV-NIMAKHANDI-77	92.9
356	City	BED-3	11KV-NIMAKHANDI	11KV-NIMAKHANDI-79	89.7
357	City	BED-3	11KV-NIMAKHANDI	11KV-NIMAKHANDI-81	87.3
358	City	BED-3	11KV-NIMAKHANDI	11KV-NIMAKHANDI-89	87.3
359	City	BED-2	11KV- ASKA ROAD(1)	11KV- ASKA ROAD(1)-50	99.6
360	City	BED-2	11KV- ASKA ROAD(1)	11KV- ASKA ROAD(1)-51	99.6
361	City	BED-2	11KV- ASKA ROAD(1)	11KV- ASKA ROAD(1)-52	99.6
362	City	BED-2	11KV- ASKA ROAD(1)	11KV- ASKA ROAD(1)-53	99.6
363	City	BED-2	11KV- ASKA ROAD(1)	11KV- ASKA ROAD(1)-57	87.0
364	City	BED-2	11KV- ASKA ROAD(1)	11KV- ASKA ROAD(1)-58	87.0
365	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-131	124.2
366	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-136	115.1
367	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-137	115.1
368	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-139	111.4
369	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-140	111.4
370	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-141	111.4
371	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-143	109.5
372	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-144	109.5
373	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-145	109.5
374	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-146	109.5
375	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-147	109.5
376	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-148	104.2
377	City	BED-2	11KV- CITY HOSPITAL	11KV- CITY HOSPITAL-159	104.2
378	City	BED-2	11KV-SANABAZAR	11KV-AMBASALA.-193	94.0
379	City	BED-2	11KV-SANABAZAR	11KV-AMBASALA.-197	94.0
380	City	BED-2	11KV-SANABAZAR	11KV-AMBASALA.-199	94.0
381	City	BED-2	11KV-SANABAZAR	11KV-AMBASALA.-201	87.8
382	City	BED-2	11KV-SANABAZAR	11KV-AMBASALA.-203	82.5
383	City	BED-2	11KV-SANABAZAR	11KV-AMBASALA.-213	82.5
384	City	BED-2	11KV-SANABAZAR	11KV-AMBASALA.-216	81.3

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
385	City	BED-2	11KV-SANABAZAR	11KV-AMBASALA.-219	80.5
386	City	BED-2	11KV-URBAN-BANK-ROAD	11KV-URBAN BANK ROAD-6143	96.1
387	City	BED-2	11KV-URBAN-BANK-ROAD	11KV-URBAN BANK ROAD-6147	87.2
388	City	BED-2	11KV-URBAN-BANK-ROAD	11KV-URBAN BANK ROAD-6148	87.2
389	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM1-1	111.5
390	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM2	111.5
391	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM3	111.5
392	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM4	111.5
393	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM6	110.2
394	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM16	107.6
395	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM18	106.3
396	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM20	105.1
397	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM30	104.5
398	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM32	104.1
399	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM33	103.8
400	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM51	89.1
401	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM56	86.9
402	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM58	86.7
403	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM59	86.7
404	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM64	92.4
405	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM80	91.0
406	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM66	83.9
407	City	BED-2	11KV_GOSANINUAGAM	11KV-GOSANINUAGAM68	82.5
408	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6138	186.5
409	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6139	186.5
410	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6144	175.7
411	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6145	166.6
412	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6147	166.6
413	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6148	166.6
414	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6150	157.5
415	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6151	157.5
416	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6152	157.2
417	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6153	156.9
418	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6155	147.6
419	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6156	147.3
420	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6157	147.3
421	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6160	146.4
422	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6161	144.5
423	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6170	134.1
424	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6171	134.1
425	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6172	134.1
426	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6173	133.9
427	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6174	133.4

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
428	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6178	131.7
429	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6179	92.2
430	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6180	92.2
431	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6187	82.8
432	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6188	82.4
433	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6189	81.9
434	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6191	81.4
435	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6194	80.9
436	City	BED-2	11KV-GANDHINAGAR-II	11KV-GANDHINAGAR-II-6195	80.4
437	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY1	138.3
438	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY2	138.3
439	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY4	138.3
440	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY5	138.3
441	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY9	137.3
442	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY11	137.3
443	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY15	125.9
444	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY17	124.0
445	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY20	122.8
446	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY22	113.0
447	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY25	103.3
448	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY28	102.8
449	City	BED-2	11KV-HOUSING BOARD COLONY	11KV-HOUSING BOARD COLONY30	102.8
450	Aska	AED-1	11KV-MUNDAMAREI	11KV-MUNDAMAREI-6138	112.1
451	Aska	AED-1	11KV-MUNDAMAREI	11KV-MUNDAMAREI-6139	112.1
452	Aska	AED-1	11KV-MUNDAMAREI	11KV-MUNDAMAREI-6140	112.1
453	Aska	AED-1	11KV-MUNDAMAREI	11KV-MUNDAMAREI-6143	111.2
454	Aska	AED-1	11KV-MUNDAMAREI	11KV-MUNDAMAREI-6144	111.2
455	Aska	AED-1	11KV-MUNDAMAREI	11KV-MUNDAMAREI-6146	110.1
456	Aska	AED-1	11KV-MUNDAMAREI	11KV-MUNDAMAREI-6153	107.4
457	Aska	AED-1	11KV-MUNDAMAREI	11KV-MUNDAMAREI-6156	104.2
458	Aska	AED-1	11KV-MUNDAMAREI	11KV-MUNDAMAREI-6166	98.7
459	Aska	AED-1	11KV-MUNDAMAREI	11KV-MUNDAMAREI-6167	94.1
460	Aska	AED-1	11KV-MUNDAMAREI	11KV-MUNDAMAREI-6168	93.6
461	Rayagada	RED	11KV-AMBADOLA	11KV-AMBADOLA-45	118.2

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
462	Rayagada	RED	11KV-AMBADOLA	11KV-AMBADOLA-47	117.8
463	Rayagada	RED	11KV-AMBADOLA	11KV-AMBADOLA-69	111.2
464	Rayagada	RED	11KV-AMBADOLA	11KV-AMBADOLA-72	111.0
465	Rayagada	RED	11KV-AMBADOLA	11KV-AMBADOLA-75	110.6
466	Rayagada	RED	11KV-AMBADOLA	11KV-AMBADOLA-122	104.6
467	Rayagada	RED	11KV-AMBADOLA	11KV-AMBADOLA-124	104.2
468	Rayagada	RED	11KV-AMBADOLA	11KV-AMBADOLA-142	100.0
469	Rayagada	RED	11KV-MUNIGUDA	11KV-MUNIGUDA-450	127.7
470	Rayagada	RED	11KV-MUNIGUDA	11KV-MUNIGUDA-452	125.5
471	Rayagada	RED	11KV- TOWN 2	11KV- TOWN 2-112	97.8
472	Rayagada	RED	11KV- TOWN 2	11KV- TOWN 2-113	97.8
473	Rayagada	RED	11KV- TOWN 2	11KV- TOWN 2-114	85.6
474	Rayagada	RED	11KV- TOWN 2	11KV- TOWN 2-142	84.7
475	Rayagada	RED	11KV- TOWN 2	11KV- TOWN 2-174	84.6
476	Rayagada	RED	11KV-TIKIRI TOWN	11KV-TIKIRI TOWN-74	103.2
477	Rayagada	RED	11KV-TIKIRI TOWN	11KV-TIKIRI TOWN-75	99.6
478	Rayagada	RED	11KV-TIKIRI TOWN	11KV-TIKIRI TOWN-79	93.4
479	Rayagada	RED	11KV-TIKIRI TOWN	11KV-TIKIRI TOWN-80	93.4
480	Bhanjanagar	PED	11KV_BALIGUDA HIGH SCHOOL	11KV_BALIGUDA HIGH SCHOOL-1	80.7
481	Bhanjanagar	PED	11KV-PHULBANI TOWN NO.- I-MARKET	11KV-PHULBANI TOWN NO.- I-MARKET-15762	97.5
482	Bhanjanagar	PED	11KV-PHULBANI TOWN NO.- I-MARKET	11KV-PHULBANI TOWN NO.- I-MARKET-15763	97.5
483	Jeypore	JED	11KV-BORIGUMMA TOWN	11KV-BORIGUMMA TOWN-6138	117.7
484	Jeypore	JED	11KV-KOTPAD TOWN	11KV-KOTPAD TOWN0	83.4
485	Jeypore	JED	11KV-KOTPAD TOWN	11KV-KOTPAD TOWN16	81.6
486	Jeypore	JED	11KV-KOTPAD TOWN	11KV-KOTPAD TOWN18	81.0
487	Jeypore	JED	11KV-DANGERPAUNSI	11KV-DANGERPAUNSI-6138	89.1
488	Jeypore	JED	11KV-DANGERPAUNSI	11KV-DANGERPAUNSI-6140	88.7
489	Jeypore	JED	11KV-DANGERPAUNSI	11KV-DANGERPAUNSI-6143	88.5
490	Jeypore	JED	11KV-DANGERPAUNSI	11KV-DANGERPAUNSI-6149	85.5
491	Jeypore	JED	11KV-DANGERPAUNSI	11KV-DANGERPAUNSI-6152	85.3
492	Jeypore	JED	11KV-DANGERPAUNSI	11KV-DANGERPAUNSI-6182	80.7
493	Jeypore	JED	11KV-LAMTAPUT	11KV-LAMTAPUT-27	90.1
494	Jeypore	JED	11KV-LAMTAPUT	11KV-LAMTAPUT-28	90.1
495	Jeypore	JED	11KV-LAMTAPUT	11KV-LAMTAPUT-34	87.7
496	Jeypore	JED	11KV-LAMTAPUT	11KV-LAMTAPUT-36	86.3
497	Jeypore	JED	11KV-LAMTAPUT	11KV-LAMTAPUT-37	82.9
498	Jeypore	JED	11KV-LAMTAPUT	11KV-LAMTAPUT-38	82.9
499	Jeypore	JED	11KV-LAMTAPUT	11KV-LAMTAPUT-40	81.3
500	Jeypore	JED	11KV-JEYPORE NO 1	11KV-JEYPORE NO 1-277	95.2
501	Jeypore	JED	11KV-JEYPORE NO 1	11KV-JEYPORE NO 1-280	91.5
502	Jeypore	JED	11KV-JEYPORE NO 1	11KV-JEYPORE NO 1-282	90.0
503	Jeypore	JED	11KV-JEYPORE NO 1	11KV-JEYPORE NO 1-288	88.0

S.no	Circle	Division	11kV Feeder	Section Id	Loading (%)
504	Jeypore	JED	11KV-JEYPORE NO 1	11KV-JEYPORE NO 1-290	87.6
505	Jeypore	JED	11KV-JEYPORE NO 1	11KV-JEYPORE NO 1-292	86.1
506	Jeypore	JED	11KV-JEYPORE TOWN 1	11KV-JEYPORE TOWN 1-74	101.3
507	Jeypore	JED	11KV-JEYPORE TOWN 1	11KV-JEYPORE TOWN 1-76	100.3
508	Jeypore	JED	11KV-JEYPORE TOWN 1	11KV-JEYPORE TOWN 1-77	99.3
509	Jeypore	JED	11KV-JEYPORE TOWN 1	11KV-JEYPORE TOWN 1-79	99.1
510	Jeypore	JED	11KV-JEYPORE TOWN 1	11KV-JEYPORE TOWN 1-81	98.0
511	Jeypore	JED	11KV-JEYPORE TOWN 1	11KV-JEYPORE TOWN 1-87	88.6
512	Jeypore	JED	11KV-JEYPORE TOWN 1	11KV-JEYPORE TOWN 1-88	88.6
513	Jeypore	JED	11KV-JEYPORE TOWN 1	11KV-JEYPORE TOWN 1-90	82.3
514	Jeypore	JED	11KV-AMBAGUDA	11KV-AMBAGUDA-6147	95.4
515	Jeypore	JED	11KV-AMBAGUDA	11KV-AMBAGUDA-6150	91.1
516	Jeypore	JED	11KV-AMBAGUDA	11KV-AMBAGUDA-6152	91.1
517	Jeypore	JED	11KV-AMBAGUDA	11KV-AMBAGUDA-6153	91.1
518	Jeypore	JED	11KV-AMBAGUDA	11KV-AMBAGUDA-6155	90.1
519	Jeypore	JED	11KV-AMBAGUDA	11KV-AMBAGUDA-6158	88.3
520	Jeypore	JED	11KV-AMBAGUDA	11KV-AMBAGUDA-6168	84.3
521	Jeypore	JED	11KV-AMBAGUDA	11KV-AMBAGUDA-6170	84.3
522	Jeypore	JED	11KV-AMBAGUDA	11KV-AMBAGUDA-6172	83.9
523	Jeypore	JED	11KV-AMBAGUDA	11KV-AMBAGUDA-6175	82.1
524	Jeypore	JED	11KV-AMBAGUDA	11KV-AMBAGUDA-6177	82.1
525	Jeypore	KED	11KV-ANALABADI	11KV-ANALABADI-1	104.3
526	Jeypore	KED	11KV-ANALABADI	11KV-ANALABADI-3	102.8
527	Jeypore	KED	11KV-ANALABADI	11KV-ANALABADI-58	86.8
528	Jeypore	KED	KORAPUT NO_I	KORAPUT NO_I-4	106.4
529	Jeypore	KED	KORAPUT NO_I	KORAPUT NO_I-9	101.6
530	Jeypore	KED	KORAPUT NO_I	KORAPUT NO_I-12	99.2
531	Jeypore	KED	KORAPUT NO_I	KORAPUT NO_I-14	97.9
532	Jeypore	KED	KORAPUT NO_I	KORAPUT NO_I-19	93.4

33kV Feeders with under voltage issues: - (Considering 5 years Load Growth)

Sl No	Circle	Division	33kV Feeder	Voltage(kV)
1	ASKA	AED-I	33KV Soroda (Dharakote)	29.8
2	BERHAMPUR	GNED	33KV Malud	28.8
3	BHANJANAGAR	BHANJANAGAR	33KV Soroda	29.1
4	BHANJANAGAR	BOUDH	33KV Manamunda	25.7
5	BHANJANAGAR	BOUDH	33KV Purunakatak	29.6
6	BHANJANAGAR	PHULBANI	33KV Raikia	25.3
7	RAYAGADA	RAYAGADA	33kV Muniguda	29.1
8	RAYAGADA	GUNUPUR	33kV Gunupur	29.9
9	JEYPORE	JEYPORE	33kV Boriguma	29.1
10	JEYPORE	JEYPORE	33kV Kundra	29.9
11	JEYPORE	KORAPUT	33kV Laxmipur	29.96
12	JEYPORE	KORAPUT	33kV Nandapur	28.8

Sl No	Circle	Division	33kV Feeder	Voltage(kV)
13	JEYPORE	NABARANGPUR	33KV NABARANGPUR	29.8
14	JEYPORE	NABARANGPUR	33kV Kodinga	26.5
15	JEYPORE	NABARANGPUR	33kV Jharigaon	25.7
16	JEYPORE	NABARANGPUR	33kV Beheda	21.7
17	JEYPORE	MALKANGIRI	33kV Mathili	26.1

11kV Feeders with under voltage issues: - (Considering 5 years Load Growth)

Sno	Circle-Division	Feeder Name	Voltage(kV)
1	Aska-AED-2	11KV- GOLIA FEEDER	9.49
2	Aska-AED-2	11KV-KANIARY	9.68
3	Aska-AED-2	11KV-KARCHULI	9.00
4	Aska-AED-2	11LV-BARIDA	9.30
5	City-BED-1	11KV-AMBAPUA(GANPATI NAGAR)	9.63
6	City-BED-1	11KV-COURTPETA	9.64
7	City-BED-1	11KV-SIDHARTH NAGAR	9.55
8	City-BED-3	11KV-BORIGAON	9.97
9	City-BED-3	11KV-GURUNTHI	9.46
10	City-BED-3	11KV-LATHI	9.12
11	City-BED-3	11KV-MAHUDA	9.96
12	City-BED-3	11KV-RANDHA	9.93
13	City-BED-3	11KV-SASANPADAR	9.62
14	City-BED-3	11KV-SURALA	9.52
15	Bhanjanagar-BNED	11KV DURGAPRASAD PROPOSED	10.01
16	Bhanjanagar-BNED	11KV-BANKATARA	9.84
17	Bhanjanagar-BNED	11KV-NUAGAM	9.81
18	Bhanjanagar-BOED	11KV- BAGHIAPADA2	9.87
19	Bhanjanagar-BOED	11KV- BAHIRA	8.93
20	Bhanjanagar-BOED	11KV- BAUNSUNI	9.97
21	Bhanjanagar-BOED	11KV- DAHYA	9.04
22	Bhanjanagar-BOED	11KV- MANIKPUR	9.29
23	Bhanjanagar-BOED	11KV- TELIBANDHA	9.83
24	Bhanjanagar-BOED	11KV-BAMUNDA	9.68
25	Bhanjanagar-BOED	11KV-BILASPUR	9.74
26	Bhanjanagar-BOED	11KV-DAPALA	8.75
27	Bhanjanagar-BOED	11KV-KARADI	9.48
28	Bhanjanagar-BOED	11KV-SULIA	9.54
29	Rayagada-GED	11KV KENDUGUDA	9.71
30	Rayagada-GED	11KV-DHEPAGUDA	8.39
31	Rayagada-GED	11KV-GHANATRI	9.93
32	Rayagada-GED	11KV-JAGANATHPUR	8.96
33	Rayagada-GED	11KV-KUJENDRI	9.90
34	Rayagada-GED	11KV-MK RAI	7.97
35	Rayagada-GED	11KV-SIRIGUDA	8.41

Sno	Circle-Division	Feeder Name	Voltage(kV)
36	Berhampur-GNED	11KV -CHAMAKHANDI	9.69
37	Berhampur-GNED	11KV- KANHEIPUR	8.97
38	Berhampur-GNED	11KV- KHANDADEULI	8.97
39	Berhampur-GNED	11KV- PALUR	9.48
40	Berhampur-GNED	11KV_BAJRAKOTE	9.90
41	Berhampur-GNED	11KV_K.P.GADA	9.39
42	Berhampur-GNED	11KV_MORADA	9.91
43	Berhampur-GNED	11KV-BARHAMPUR	9.00
44	Berhampur-GNED	11KV-CHIKILIBANIA	8.62
45	Berhampur-GNED	11KV-KODOLA	9.85
46	Berhampur-GNED	11KV-NARAYANI	9.77
47	Berhampur-GNED	11KV-NUAPADA	9.32
48	Berhampur-GNED	11KV-SYAMASUNDARPUR	9.18
49	Aska-GSED	11KV-DIGAPAHANDI RURAL	9.91
50	Berhampur-HED	11KV- KHALLINGI	9.72
51	Berhampur-HED	11KV_ASKA	9.64
52	Berhampur-HED	11KV_KONKARADA	9.72
53	Berhampur-HED	11KV_PUNANDA	9.51
54	Berhampur-HED	11KV-DHABALAPUR	9.44
55	Berhampur-HED	11KV-PUTIAPADAR	9.89
56	Berhampur-HED	11KV-SARU	9.89
57	Jeypore-JED	11KV-BALLEL	9.73
58	Jeypore-JED	11KV-DANDABADI	9.21
59	Jeypore-JED	11KV-DENGUPADAR	9.10
60	Jeypore-JED	11KV-GIRLA	9.42
61	Jeypore-JED	11KV-KATHARGADA	9.81
62	Jeypore-JED	11KV-OLD RAMAGIRI	9.95
63	Jeypore-JED	11KV-PHAMPUNI	9.86
64	Jeypore-JED	11KV-SARGIGUDA	9.40
65	Jeypore-JED	11KV-PATRAPUT	9.40
66	Jeypore-JED	11KV-SILPONDI_PALLIBA	9.03
67	Jeypore-JED	11KV-UDILIGADA	9.52
68	Jeypore-JED	11KV-UMURI	9.97
69	Jeypore-KED	11KV BADEL	9.26
70	Jeypore-KED	11KV HATGUDA/CHATUA	9.96
71	Jeypore-KED	11KV KOTIYA	9.28
72	Jeypore-KED	11KV_KUNDULI	9.04
73	Jeypore-KED	11KV-CHAMPI	9.66
74	Jeypore-KED	11KV-COFFEE BOARD	9.96
75	Jeypore-KED	11KV-DIGUGABADAR- PUKALI	9.17
76	Jeypore-KED	11KV-KUNTES	9.65
77	Jeypore-KED	11KV-NANDAPUR RURAL	9.93
78	Jeypore-KED	11KV-NILABADI	9.90
79	Jeypore-KED	11KV-PADUA	4.91
80	Jeypore-KED	11KV-PADUGUDA	7.12
81	Jeypore-KED	11KV-PODAGADA	9.10

Sno	Circle-Division	Feeder Name	Voltage(kV)
82	Jeypore-KED	11KV-PUJARIPUT	9.07
83	Jeypore-KED	11KV-SEMILIGUDA	9.87
84	Jeypore-KED	11KV-SUNKI	8.94
85	Jeypore-MED	11KV - KORKONDA TOWN	9.79
86	Jeypore-MED	11KV - MUDULIPADA	9.96
87	Jeypore-MED	11KV MAHARAJPALLY	9.25
88	Jeypore-MED	11KV -MENDUKULI	8.11
89	Jeypore-MED	11KV_DORAGUDA	8.98
90	Jeypore-MED	11KV_JANBAI	9.61
91	Jeypore-MED	11KV_MV - 55	9.58
92	Jeypore-MED	11KV_SADASHIVPUR	9.54
93	Jeypore-MED	11KV_UNDRUKONDA	2.86
94	Jeypore-MED	11KV-BADADURAL	9.45
95	Jeypore-MED	11KV-BHEJANGIWADA FEEDER	8.14
95	Jeypore-MED	11KV-PANGAM	9.80
96	Jeypore-MED	11KV-CHALLANGUDA	8.96
97	Jeypore-MED	11KV-DAM SITE	9.76
98	Jeypore-MED	11KV-GUMMA TOWN	9.93
99	Jeypore-MED	11KV-MV - 83	9.00
100	Jeypore-MED	11KV-MV-7	9.09
102	Jeypore-MED	11KV-SALIM	9.81
103	Jeypore-MED	11KV-UDULIBEDA	6.60
104	Jeypore-NED	11KV- SILATI	4.49
105	Jeypore-NED	11KV JODAPARA	8.62
106	Jeypore-NED	11KV JODINGA	9.37
107	Jeypore-NED	11KV KATAGAM	8.95
108	Jeypore-NED	11KV NEW DEBAGAM	9.85
109	Jeypore-NED	11KV NEW PUJARIGUDA	6.81
110	Jeypore-NED	11KV NEW RAJODA	9.80
111	Jeypore-NED	11KV UDAYAPUR	9.28
112	Jeypore-NED	11KV_CHATAGUDA	9.25
113	Jeypore-NED	11KV-B. MALIGUDA	9.15
114	Jeypore-NED	11KV-BEHEDA	9.02
115	Jeypore-NED	11KV-BEHERAMUNDA	9.31
116	Jeypore-NED	11KV-BURJA	8.85
117	Jeypore-NED	11KV-CHIRMA	8.68
118	Jeypore-NED	11KV-DEOBANDH	8.69
119	Jeypore-NED	11KV-DEULI	9.96
120	Jeypore-NED	11KV-DIGI-SALPA	9.76
121	Jeypore-NED	11KV-DONDAMUNDA	8.66
122	Jeypore-NED	11KV-DONGRA	9.05
123	Jeypore-NED	11KV-JAGANNATHPUR	9.07
124	Jeypore-NED	11KV-JAMUGUDA	9.01
125	Jeypore-NED	11KV-JATABAHAL	9.34
126	Jeypore-NED	11KV-JHALIAGUDA	9.20
127	Jeypore-NED	11KV-KANTA/KONGRA	9.28

Sno	Circle-Division	Feeder Name	Voltage(kV)
128	Jeypore-NED	11KV-KHANDA	9.92
129	Jeypore-NED	11KV-KONDAPURI	9.04
130	Jeypore-NED	11KV-MANGRA CHARAGUDA	9.20
131	Jeypore-NED	11KV-MENDABADA	9.73
132	Jeypore-NED	11KV-NANDAHANDI	9.28
133	Jeypore-NED	11KV-PATRAPUT	9.02
134	Jeypore-NED	11KV-PUJARIGUDA	9.16
135	Jeypore-NED	11KV-SIRISI	9.07
136	Jeypore-NED	11KV-SUKIGAON	7.98
137	Jeypore-NED	11KV-TEMARA PROPOSED	9.05
138	Bhanjanagar-PED	11KV BALANPADA	9.89
139	Bhanjanagar-PED	11KV KATRANGIA	9.95
140	Bhanjanagar-PED	11KV RURAL PROPOSED-BANDHAGUDA	7.65
141	Bhanjanagar-PED	11KV-BATAGUDA	9.88
142	Bhanjanagar-PED	11KV-BELGHAR	9.04
143	Bhanjanagar-PED	11KV-DURGAPANGA	9.47
144	Bhanjanagar-PED	11KV-KAINJHAR	8.76
145	Bhanjanagar-PED	11KV-KUDUTULI	9.01
146	Bhanjanagar-PED	11KV-KURTAMAGADA	9.92
147	Bhanjanagar-PED	11KV-LINEPADA	9.28
148	Bhanjanagar-PED	11KV-MALIKAPADI	9.78
149	Bhanjanagar-PED	11KV-MANDAKIA	9.79
150	Bhanjanagar-PED	11KV-MANDASAR	9.79
151	Bhanjanagar-PED	11KV-MANIKESWAR	9.48
152	Bhanjanagar-PED	11KV-MUNDIGADA	9.77
153	Bhanjanagar-PED	11KV-PABURIA	9.56
154	Bhanjanagar-PED	11KV-PHULBANI COLLEGE	9.80
155	Bhanjanagar-PED	11KV-PHULBANI SAHI	9.36
156	Bhanjanagar-PED	11KV-SADINGIA	9.96
157	Bhanjanagar-PED	11KV-SIRITIGUDA	9.73
158	Rayagada-PKED	11KV NEW RURAL	8.83
159	Rayagada-PKED	11KV-CHANDRAGIRI	9.80
160	Rayagada-PKED	11KV_ANTARABA	8.10
161	Rayagada-PKED	11KV_SAMBALPUR	9.27
162	Rayagada-PKED	11KV-BIRIKOTE	8.39
163	Berhampur-PSED	11KV- ANGRAGAON OLD	9.88
164	Berhampur-PSED	11KV- MATHASARASING	8.46
165	Berhampur-PSED	11KV-ANGARAGAON NEW	9.89
166	Berhampur-PSED	11KV-BADABARAGAM	9.98
167	Berhampur-PSED	11KV-PURUSHOTTAMPUR	10.00
168	Rayagada-RED	11KV GUMA	9.51
169	Rayagada-RED	11KV-CHANDRAGIRI	9.01
170	Rayagada-RED	11KV-DANGASIL	9.40
171	Rayagada-RED	11KV-DURGI	9.71
172	Rayagada-RED	11KV-GORAKHPUR	9.04
173	Rayagada-RED	11KV-HANUMANTHPUR	9.46

Sno	Circle-Division	Feeder Name	Voltage(kV)
174	Rayagada-RED	11KV-J K PUR	9.84
175	Rayagada-RED	11KV-KUTRAGADA	9.77
176	Rayagada-RED	11KV-MAJHIGUDA	9.91
177	Rayagada-RED	11KV-RURAL (PITAMAHAL)	9.94
178	Rayagada-RED	11KV-TIKIRI RURAL	9.96

D) Estimated reduction of Loss for 33kV lines considered for Conductor upgradation and Load diversion under Capex FY25 and 26 is given below as per Load Flow study.

Sl No	Dist	Circle-Division	33kV Feeder	Case	Proposal	Total Average Load(kW)	Total Losses	Load Factor	Loss Load factor	Distributed loss @2.5%(KW)	Total Loss with LLF(KW)	Loss (%)	Saving in %
1	Ganjam	Aska-AED-I	SORODA (Dharakote)	Ex	Upgradation	6072.8	627.8	0.55	0.35	15.7	462.5	8%	0.76%
				Pr		6034.8	558.5	0.55	0.35	14.0	413.6	7%	
2	Ganjam	Aska-AED-II	KS NAGAR	Ex	Upgradation	4341.0	159.0	0.55	0.35	4.0	124.0	3%	0.42%
				Pr		4326.4	132.4	0.55	0.35	3.3	105.3	2%	
3	Ganjam	City-BED-III	KANISI	Ex	Upgradation	3825.0	196.3	0.55	0.35	4.9	144.3	4%	0.10%
				Pr		3821.8	190.5	0.55	0.35	4.8	140.3	4%	
4	Ganjam	City-BED-III	BERHAMPUR CHIKITI	Ex	Upgradation	3828.0	230.1	0.55	0.35	5.8	174.2	5%	0.14%
				Pr		3823.7	222.2	0.55	0.35	5.6	168.6	4%	
5	Ganjam	City-BED-III	AMBAPUA	Ex	Upgradation	4614.3	143.0	0.55	0.35	3.6	122.7	3%	0.03%
				Pr		4613.1	140.8	0.55	0.35	3.5	121.1	3%	
6	Ganjam	Berhampur-GNED	TISCO	Ex	Upgradation	3170.6	283.1	0.55	0.35	7.1	203.7	6%	0.55%
				Pr		3156.5	257.4	0.55	0.35	6.4	185.5	6%	
7	Ganjam	Berhampur-PSED	BALIA	Ex	Upgradation	2814.4	124.0	0.55	0.35	3.1	101.0	4%	0.33%
				Pr		2807.0	110.5	0.55	0.35	2.8	91.5	3%	
8	Ganjam	Bhanjangar-BNED	BELAGUNTHA	Ex	Upgradation	2908.8	195.9	0.55	0.35	4.9	152.4	5%	0.33%
				Pr		2900.6	181.7	0.55	0.35	4.5	142.5	5%	
9	Ganjam	Bhanjangar-BNED	KB PUR	Ex	Upgradation	1693.3	38.2	0.55	0.35	1.0	32.3	2%	0.21%
				Pr		1690.5	33.2	0.55	0.35	0.8	28.7	2%	
10	BOUDH	Bhanjangar-BoED	BOUDH	Ex	Upgradation	5508.3	404.5	0.55	0.35	10.1	302.2	5%	2.56%
				Pr		4362.5	164.4	0.55	0.35	4.1	127.6	3%	
11	Nabarangpur	Jeypore-NED	NABARANGPUR	Ex	Upgradation	5883.5	414.4	0.55	0.35	10.4	307.2	5%	0.45%
				Pr		5862.0	375.5	0.55	0.35	9.4	279.7	5%	
12	Nabarangpur	Jeypore-NED	UMERKOTE	Ex	Upgradation & Load Diversion	10640.7	1569.7	0.55	0.35	39.2	1135.1	11%	6.34%
				Pr		4690.0	266.5	0.55	0.35	6.7	202.9	4%	
13	Nabarangpur	Jeypore-NED	BEHEDA	Ex	Upgradation & Load Diversion	12496.2	3094.9	0.55	0.35	77.4	2217.8	18%	0.65%
				Pr		7793.8	1855.9	0.55	0.35	46.4	1332.3	17%	

Sl No	Dist	Circle-Division	33kV Feeder	Case	Proposal	Total Average Load(kW)	Total Losses	Load Factor	Loss Load factor	Distributed loss @2.5%(KW)	Total Loss with LLF(KW)	Loss (%)	Saving in %
14	Malkanagiri	Jeypore-MED	CHITRAKONDA	Ex	Upgradation	4175.9	169.4	0.55	0.35	4.2	142.3	3%	0.25%
				Pr		4167.7	154.3	0.55	0.35	3.9	131.7	3%	
15	Malkanagiri	Jeypore-MED	MALKANGIRI	Ex	Upgradation	4899.9	362.4	0.55	0.35	9.1	276.9	6%	0.54%
				Pr		4878.8	323.5	0.55	0.35	8.1	249.5	5%	
16	Koraput	Jeypore-KED	LAXMIPUR	Ex	Upgradation	2738.7	173.5	0.55	0.35	4.3	152.3	6%	0.33%
				Pr		2731.1	159.9	0.55	0.35	4.0	142.8	5%	
17	Koraput	Jeypore-KED	KORAPUT	Ex	Upgradation	4171.3	138.3	0.55	0.35	3.5	113.4	3%	0.13%
				Pr		4167.1	130.5	0.55	0.35	3.3	107.9	3%	
18	Gajapati	Rayagada-PKED	KASINAGAR	Ex	Upgradation	1766.2	119.3	0.55	0.35	3.0	97.5	6%	0.01%
				Pr		1766.1	119.0	0.55	0.35	3.0	97.3	6%	
19	Gajapati	Rayagada-PKED	UPALADA	Ex	Load Diversion	3272.7	226.3	0.55	0.35	5.7	175.9	5%	0.02%
				Pr		3272.3	225.2	0.55	0.35	5.6	175.2	5%	
20	Gajapati	Rayagada-PKED	RAMGIRI	Ex	Load Diversion	1369.2	94.8	0.55	0.35	2.4	84.4	6%	0.01%
				Pr		1369.0	94.5	0.55	0.35	2.4	84.2	6%	

TPSODL

Estimated reduction of Loss for 11kV lines considered for Conductor upgradation and Load diversion under Capex FY25 and 26 is given below as per Load Flow study.

S.no	Dist.	Circle-Division	11kV Feeder	Case	Proposal	Total Average Load(kW)	Total Losses(kW)	Load Factor-	Load Loss Factor	Distributed loss @2.5%(KW)	Total Loss with LLF (KW)	Loss%	Saving in %
1	Ganjam	Aska-AED-1	Aska Bus stand	Ex	Upgradation	976.88	69.51	0.5	0.3	1.74	32.82	3.36%	0.01%
	Ganjam	Aska-AED-1	Aska Bus stand	Pr	Upgradation	976.7	69.13	0.5	0.3	1.73	32.71	3.35%	
2	Ganjam	Aska-AED-1	Mundamurai	Ex	Upgradation	1147.48	265.75	0.5	0.3	6.64	90.42	7.88%	3.96%
	Ganjam	Aska-AED-1	Mundamurai	Pr	Upgradation	1066.72	104.21	0.5	0.3	2.61	41.83	3.92%	
3	Ganjam	Aska-AED-1	College square	Ex	Upgradation	1163.72	131.83	0.5	0.3	3.3	50.41	4.33%	0.30%
	Ganjam	Aska-AED-1	College square	Pr	Upgradation	1157.5	119.37	0.5	0.3	2.98	46.66	4.03%	
4	Ganjam	Aska-AED-1	Bhetanai	Ex	Upgradation	543.77	61.56	0.5	0.3	1.54	31.13	5.72%	0.15%
	Ganjam	Aska-AED-1	Bhetanai	Pr	Upgradation	542.24	58.5	0.5	0.3	1.46	30.24	5.58%	
5	Ganjam	Aska-AED-1	Nuagam	Ex	Upgradation	1170.22	70.78	0.5	0.3	1.77	25.89	2.21%	0.00%
	Ganjam	Aska-AED-1	Nuagam	Pr	Upgradation	1170.19	70.73	0.5	0.3	1.77	25.88	2.21%	
6	Ganjam	Aska-AED-1	Rugumu	Ex	Upgradation	461.71	51.47	0.5	0.3	1.29	20.61	4.46%	1.05%
	Ganjam	Aska-AED-1	Rugumu	Pr	Upgradation	453.06	34.2	0.5	0.3	0.86	15.45	3.41%	
7	Ganjam	Aska-AED-1	Baradabili	Ex	Upgradation	510.36	40	0.5	0.3	1	22.2	4.35%	0.36%
	Ganjam	Aska-AED-1	Baradabili	Pr	Upgradation	506.95	33.16	0.5	0.3	0.83	20.21	3.99%	
8	Ganjam	Aska-AED-2	K.S.Nagar Town	Ex	Upgradation	1214.71	64.89	0.5	0.3	1.62	33.49	2.76%	0.13%
	Ganjam	Aska-AED-2	K.S.Nagar Town	Pr	Upgradation	1211.85	59.18	0.5	0.3	1.48	31.79	2.62%	
9	Ganjam	Aska-AED-2	Barida	Ex	Upgradation	749.58	53.73	0.5	0.3	1.34	20.72	2.76%	0.15%
	Ganjam	Aska-AED-2	Barida	Pr	Upgradation	747.6	49.77	0.5	0.3	1.24	19.52	2.61%	
10	Ganjam	Aska-AED-2	Buguda Town	Ex	Upgradation	1298.54	198.59	0.5	0.3	4.96	71.04	5.47%	1.53%
	Ganjam	Aska-AED-2	Buguda Town	Pr	Upgradation	1263.18	127.87	0.5	0.3	3.2	49.78	3.94%	
11	Ganjam	Aska-AED-2	Karchulli	Ex	Upgradation	936.65	243.89	0.5	0.3	6.1	93.66	10.00%	0.03%
	Ganjam	Aska-AED-2	Karchulli	Pr	Upgradation	936.08	242.74	0.5	0.3	6.07	93.33	9.97%	
12	Ganjam	Aska-AED-2	Sialia	Ex	Upgradation	1055.78	129.2	0.5	0.3	3.23	44.89	4.25%	0.02%

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	Ganjam	Aska-AED-2	Sialia	Pr	Upgradation	1050.03	127.78	0.5	0.3	3.19	44.46	4.23%	
13	Ganjam	Aska-AED-2	Kaniary	Ex	Upgradation	823.5	131.17	0.5	0.3	3.28	46.96	5.70%	0.02%
	Ganjam	Aska-AED-2	Kaniary	Pr	Upgradation	823.22	130.63	0.5	0.3	3.27	46.8	5.69%	
14	Ganjam	Aska-AED-2	A. Kardabadi	Ex	Upgradation	98.48	5.92	0.5	0.3	0.15	5.43	5.51%	0.00%
	Ganjam	Aska-AED-2	A. Kardabadi	Pr	Upgradation	98.48	5.91	0.5	0.3	0.15	5.43	5.51%	
15	Ganjam	Aska-AED-2	Badamahuri	Ex	Upgradation	227.11	13.99	0.5	0.3	0.35	9.1	4.01%	0.00%
	Ganjam	Aska-AED-2	Badamahuri	Pr	Upgradation	226.89	13.53	0.5	0.3	0.34	9.09	4.01%	
16	Ganjam	Aska-GSED	Digapahandi Town	Ex	Upgradation	1097.01	86.5	0.5	0.3	2.16	39.78	3.63%	0.64%
	Ganjam	Aska-GSED	Digapahandi Town	Pr	Upgradation	1084.64	61.74	0.5	0.3	1.54	32.43	2.99%	
17	Ganjam	Aska-GSED	Patrapur	Ex	Upgradation	599.84	29.84	0.5	0.3	0.75	12.6	2.10%	0.31%
	Ganjam	Aska-GSED	Patrapur	Pr	Upgradation	596.65	23.44	0.5	0.3	0.59	10.67	1.79%	
18	Ganjam	Berhampur-GNED	Matikhalo	Ex	Upgradation	598.94	25.94	0.5	0.3	0.65	12.39	2.07%	0.00%
	Ganjam	Berhampur-GNED	Matikhalo	Pr	Upgradation	598.94	25.94	0.5	0.3	0.65	12.39	2.07%	
19	Ganjam	Berhampur-GNED	Langleshwar	Ex	Upgradation	424.3	29.14	0.5	0.3	0.73	15.13	3.57%	0.11%
	Ganjam	Berhampur-GNED	Langleshwar	Pr	Upgradation	423.47	27.49	0.5	0.3	0.69	14.64	3.46%	
20	Ganjam	Berhampur-HED	Adapada	Ex	Upgradation	888.83	85.47	0.5	0.3	2.14	31.23	3.51%	0.54%
	Ganjam	Berhampur-HED	Adapada	Pr	Upgradation	880.43	68.66	0.5	0.3	1.72	26.14	2.97%	
21	Ganjam	Berhampur-HED	Sheragada Town	Ex	Upgradation	729.36	66.96	0.5	0.3	1.67	26.18	3.59%	0.91%
	Ganjam	Berhampur-HED	Sheragada Town	Pr	Upgradation	717.83	43.88	0.5	0.3	1.1	19.24	2.68%	
22	Ganjam	Berhampur-HED	Dhabalpur	Ex	Upgradation	679.4	167.44	0.5	0.3	4.19	57.27	8.43%	3.40%
	Ganjam	Berhampur-HED	Dhabalpur	Pr	Upgradation	637.4	83.4	0.5	0.3	2.08	32.08	5.03%	

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23	Ganjam	Berhampur-HED	Kurula	Ex	Upgradation	493.7	46.64	0.5	0.3	1.17	20.54	4.16%	0.06%
	Ganjam	Berhampur-HED	Kurula	Pr	Upgradation	493.2	45.64	0.5	0.3	1.14	20.25	4.11%	
24	Ganjam	Berhampur-HED	Badakhandi	Ex	Upgradation	595.23	72.73	0.5	0.3	1.82	31.25	5.25%	0.59%
	Ganjam	Berhampur-HED	Badakhandi	Pr	Upgradation	588.79	59.85	0.5	0.3	1.5	27.45	4.66%	
25	Ganjam	Berhampur-PSED	Pandia	Ex	Upgradation	721.72	65.48	0.5	0.3	1.64	29.34	4.06%	0.00%
	Ganjam	Berhampur-PSED	Pandia	Pr	Upgradation	721.69	65.42	0.5	0.3	1.64	29.32	4.06%	
26	Ganjam	Berhampur-PSED	Badabaragam	Ex	Upgradation	676.23	85.87	0.5	0.3	2.15	28.84	4.27%	0.16%
	Ganjam	Berhampur-PSED	Badabaragam	Pr	Upgradation	674.34	82.1	0.5	0.3	2.05	27.69	4.11%	
27	Ganjam	Berhampur-PSED	Jamuni	Ex	Upgradation	461.63	44.6	0.5	0.3	1.11	20.14	4.36%	0.38%
	Ganjam	Berhampur-PSED	Jamuni	Pr	Upgradation	458.48	38.29	0.5	0.3	0.96	18.28	3.99%	
28	Ganjam	Berhampur-PSED	Dhunkapada	Ex	Upgradation	254.86	11.03	0.5	0.3	0.28	9.13	3.58%	0.00%
	Ganjam	Berhampur-PSED	Dhunkapada	Pr	Upgradation	254.88	11.07	0.5	0.3	0.28	9.14	3.59%	
29	Ganjam	Berhampur-PSED	Rumagada	Ex	Upgradation	567.63	39.62	0.5	0.3	0.99	19.96	3.52%	0.00%
	Ganjam	Berhampur-PSED	Rumagada	Pr	Upgradation	567.63	39.62	0.5	0.3	0.99	19.96	3.52%	
30	Ganjam	Berhampur-PSED	New Angargaon	Ex	Upgradation	553.14	79.35	0.5	0.3	1.98	33.78	6.11%	0.03%
	Ganjam	Berhampur-PSED	New Angargaon	Pr	Upgradation	552.86	78.77	0.5	0.3	1.97	33.61	6.08%	
31	Ganjam	Bhanjanagar-BNED	Nuagaon	Ex	Upgradation	738.77	116.48	0.5	0.3	2.91	45.95	6.22%	1.25%

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	Ganjam	Bhanjanagar-BNED	Nuagaon	Pr	Upgradation	693.8	79.06	0.5	0.3	1.98	34.44	4.96%	
32	Ganjam	Bhanjanagar-BNED	Belguntha Town	Ex	Upgradation	795.85	33.69	0.5	0.3	0.84	17.87	2.25%	0.09%
	Ganjam	Bhanjanagar-BNED	Belguntha Town	Pr	Upgradation	794.55	31.09	0.5	0.3	0.78	17.09	2.15%	
33	Ganjam	Bhanjanagar-BNED	College	Ex	Upgradation	1033.24	47.87	0.5	0.3	1.2	23.5	2.27%	0.01%
	Ganjam	Bhanjanagar-BNED	College	Pr	Upgradation	1033	47.38	0.5	0.3	1.18	23.35	2.26%	
34	Ganjam	Bhanjanagar-BNED	Lunijhola	Ex	Upgradation	552.79	84.23	0.5	0.3	2.11	28.51	5.16%	1.76%
	Ganjam	Bhanjanagar-BNED	Lunijhola	Pr	Upgradation	535.81	50.29	0.5	0.3	1.26	18.21	3.40%	
35	Ganjam	Bhanjanagar-BNED	J.N Prasad Town	Ex	Upgradation	278.48	11.59	0.5	0.3	0.29	7.1	2.55%	0.16%
	Ganjam	Bhanjanagar-BNED	J.N Prasad Town	Pr	Upgradation	277.68	9.99	0.5	0.3	0.25	6.63	2.39%	
36	Boudh	Bhanjanagar-BOED	Town-2	Ex	Upgradation	1353.82	116.86	0.5	0.3	2.92	49.8	3.68%	0.91%
	Boudh	Bhanjanagar-BOED	Town-2	Pr	Upgradation	1332	73.2	0.5	0.3	1.83	36.83	2.77%	
37	Boudh	Bhanjanagar-BOED	Town-1	Ex	Upgradation	928.06	42.27	0.5	0.3	1.06	21.72	2.34%	0.18%
	Boudh	Bhanjanagar-BOED	Town-1	Pr	Upgradation	925.19	36.54	0.5	0.3	0.91	20	2.16%	
38	Boudh	Bhanjanagar-BOED	Sulia	Ex	Upgradation	1383.55	165.63	0.5	0.3	4.14	90.38	6.53%	0.01%
	Boudh	Bhanjanagar-BOED	Sulia	Pr	Upgradation	1383.27	165.09	0.5	0.3	4.13	90.25	6.52%	
39	Boudh	Bhanjanagar-BOED	Bamanda	Ex	Upgradation	734.45	95.65	0.5	0.3	2.39	53.45	7.28%	0.54%
	Boudh	Bhanjanagar-BOED	Bamanda	Pr	Upgradation	726.27	79.28	0.5	0.3	1.98	48.93	6.74%	

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40	Kandhmal	Bhanjanagar-PED	Balliguda High School	Ex	Upgradation	1011.21	67.95	0.5	0.3	1.7	30.36	3.00%	0.45%
	Kandhmal	Bhanjanagar-PED	Balliguda High School	Pr	Upgradation	1003.25	52.03	0.5	0.3	1.3	25.59	2.55%	
41	Kandhmal	Bhanjanagar-PED	College Feeder	Ex	Upgradation	753.25	106.71	0.5	0.3	2.67	41.82	5.55%	1.92%
	Kandhmal	Bhanjanagar-PED	College Feeder	Pr	Upgradation	727.29	54.77	0.5	0.3	1.37	26.4	3.63%	
42	Kandhmal	Bhanjanagar-PED	Bazar Feeder	Ex	Upgradation	961.45	59.65	0.5	0.3	1.49	24.65	2.56%	0.55%
	Kandhmal	Bhanjanagar-PED	Bazar Feeder	Pr	Upgradation	952.34	41.43	0.5	0.3	1.04	19.14	2.01%	
43	Kandhmal	Bhanjanagar-PED	Tikabali Town	Ex	Upgradation	354.23	33.36	0.5	0.3	0.83	15.75	4.45%	0.75%
	Kandhmal	Bhanjanagar-PED	Tikabali Town	Pr	Upgradation	349.42	23.73	0.5	0.3	0.59	12.93	3.70%	
44	Ganjam	City-BED-1	Ambapua	Ex	Upgradation	1616.79	138.98	0.5	0.3	3.47	65.66	4.06%	0.24%
	Ganjam	City-BED-1	Ambapua	Pr	Upgradation	1609.79	124.97	0.5	0.3	3.12	61.51	3.82%	
45	Ganjam	City-BED-1	Ajodhya nagar	Ex	Upgradation	803.38	32.09	0.5	0.3	0.8	19.23	2.39%	0.01%
	Ganjam	City-BED-1	Ajodhya nagar	Pr	Upgradation	803.25	31.83	0.5	0.3	0.8	19.15	2.38%	
46	Ganjam	City-BED-1	Lanjipalli	Ex	Upgradation	1578.67	69.72	0.5	0.3	1.74	30.12	1.91%	0.08%
	Ganjam	City-BED-1	Lanjipalli	Pr	Upgradation	2161.5	89.32	0.5	0.3	2.23	39.5	1.83%	
47	Ganjam	City-BED-1	Raghunathpur	Ex	Upgradation	591.37	36.75	0.5	0.3	0.92	20.63	3.49%	0.23%
	Ganjam	City-BED-1	Raghunathpur	Pr	Upgradation	588.88	31.76	0.5	0.3	0.79	19.16	3.25%	
48	Ganjam	City-BED-1	Siddharth Nagar	Ex	Upgradation	1369.44	70.15	0.5	0.3	1.75	28.86	2.11%	0.00%
	Ganjam	City-BED-1	Siddharth Nagar	Pr	Upgradation	1369.43	70.12	0.5	0.3	1.75	28.85	2.11%	
49	Ganjam	City-BED-1	Komapalli	Ex	Upgradation	1148.94	56.31	0.5	0.3	1.41	24.68	2.15%	0.22%
	Ganjam	City-BED-1	Komapalli	Pr	Upgradation	1144.64	47.71	0.5	0.3	1.19	22.1	1.93%	
50	Ganjam	City-BED-1	Haripur	Ex	Upgradation	2245.11	490.65	0.5	0.3	12.27	172.53	7.68%	1.79%
	Ganjam	City-BED-1	Haripur	Pr	Upgradation	2174.68	340.82	0.5	0.3	8.52	128.27	5.90%	

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51	Ganjam	City-BED-1	Boxipalli	Ex	Upgradation	623.53	50.55	0.5	0.3	1.26	33.1	5.31%	0.00%
	Ganjam	City-BED-1	Boxipalli	Pr	Upgradation	623.51	50.5	0.5	0.3	1.26	33.09	5.31%	
52	Ganjam	City-BED-1	Tanganapalli	Ex	Upgradation	509.28	51.43	0.5	0.3	1.29	25.23	4.95%	0.02%
	Ganjam	City-BED-1	Tanganapalli	Pr	Upgradation	509.12	51.1	0.5	0.3	1.28	25.14	4.94%	
53	Ganjam	City-BED-2	Gandhinagar-2	Ex	Upgradation	2939.84	344.4	0.5	0.3	8.61	120.59	4.10%	0.00%
	Ganjam	City-BED-2	Gandhinagar-2	Pr	Upgradation	2939.76	344.25	0.5	0.3	8.61	120.54	4.10%	
54	Ganjam	City-BED-2	City Hospital(Amagada)	Ex	Upgradation	2119	126.79	0.5	0.3	3.17	52	2.45%	0.01%
	Ganjam	City-BED-2	City Hospital(Amagada)	Pr	Upgradation	2118.72	126.25	0.5	0.3	3.16	51.84	2.45%	
55	Ganjam	City-BED-2	Old Berhampur	Ex	Upgradation	2366.1	123.85	0.5	0.3	3.1	51.49	2.18%	0.00%
	Ganjam	City-BED-2	Old Berhampur	Pr	Upgradation	2313.27	118.41	0.5	0.3	2.96	50.23	2.17%	
56	Ganjam	City-BED-2	Gossinuagaon	Ex	Upgradation	1812.78	185.2	0.5	0.3	4.63	68.92	3.80%	0.19%
	Ganjam	City-BED-2	Gossinuagaon	Pr	Upgradation	1785.95	171.43	0.5	0.3	4.29	64.52	3.61%	
57	Ganjam	City-BED-2	Ballipada	Ex	Upgradation	449.01	28.08	0.5	0.3	0.7	12.09	2.69%	0.39%
	Ganjam	City-BED-2	Ballipada	Pr	Upgradation	446	22.05	0.5	0.3	0.55	10.28	2.30%	
58	Ganjam	City-BED-3	Haldiapadar	Ex	Upgradation	1145.81	106.67	0.5	0.3	2.67	43.49	3.80%	0.82%
	Ganjam	City-BED-3	Haldiapadar	Pr	Upgradation	1129.38	73.81	0.5	0.3	1.85	33.64	2.98%	
59	Ganjam	City-BED-3	Nimakhandi	Ex	Upgradation	1446.58	436.62	0.5	0.3	10.92	139.27	9.63%	1.63%
	Ganjam	City-BED-3	Nimakhandi	Pr	Upgradation	1614.2	403.25	0.5	0.3	10.08	129.13	8.00%	
60	Ganjam	City-BED-3	Sasanpadar	Ex	Upgradation	677.25	82.98	0.5	0.3	2.07	34.53	5.10%	0.24%
	Ganjam	City-BED-3	Sasanpadar	Pr	Upgradation	674.25	76.96	0.5	0.3	1.92	32.75	4.86%	
61	Ganjam	City-BED-3	Tulu	Ex	Upgradation	1564.95	473.91	0.5	0.3	11.85	162.11	10.36%	0.43%
	Ganjam	City-BED-3	Tulu	Pr	Upgradation	1591.23	459.89	0.5	0.3	11.5	157.99	9.93%	
62	Ganjam	City-BED-3	Sorola	Ex	Upgradation	503.06	78.57	0.5	0.3	1.96	46.33	9.21%	0.03%
	Ganjam	City-BED-3	Sorola	Pr	Upgradation	502.76	77.98	0.5	0.3	1.95	46.17	9.18%	
63	Ganjam	City-BED-3	Golanthara	Ex	Upgradation	144.51	5.68	0.5	0.3	0.14	4.25	2.94%	0.01%
	Ganjam	City-BED-3	Golanthara	Pr	Upgradation	144.49	5.65	0.5	0.3	0.14	4.24	2.93%	

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64	Ganjam	City-BED-3	Lathi	Ex	Upgradation	608.52	74.78	0.5	0.3	1.87	29.47	4.84%	0.71%
	Ganjam	City-BED-3	Lathi	Pr	Upgradation	600.69	59.13	0.5	0.3	1.48	24.81	4.13%	
65	Ganjam	City-BED-3	Sukunda	Ex	Upgradation	170.58	12.86	0.5	0.3	0.32	9.3	5.45%	0.20%
	Ganjam	City-BED-3	Sukunda	Pr	Upgradation	169.91	11.53	0.5	0.3	0.29	8.93	5.26%	
66	Ganjam	City-BED-3	Sumandi/Suvani	Ex	Upgradation	211.9	9.78	0.5	0.3	0.24	7.86	3.71%	0.00%
	Ganjam	City-BED-3	Sumandi/Suvani	Pr	Upgradation	211.9	9.77	0.5	0.3	0.24	7.86	3.71%	
67	Koraput	Jeypore-JED	Jeypore Town	Ex	Upgradation	1019.73	73.93	0.5	0.3	1.85	32.88	3.22%	0.00%
	Koraput	Jeypore-JED	Jeypore Town	Pr	Upgradation	1019.68	73.84	0.5	0.3	1.85	32.86	3.22%	
68	Koraput	Jeypore-JED	Borriguma Town	Ex	Upgradation	920.64	74.78	0.5	0.3	1.87	33.84	3.68%	0.65%
	Koraput	Jeypore-JED	Borriguma Town	Pr	Upgradation	910.01	53.5	0.5	0.3	1.34	27.51	3.02%	
69	Koraput	Jeypore-JED	Kotpad	Ex	Upgradation	681.65	32.61	0.5	0.3	0.82	26.26	3.85%	0.06%
	Koraput	Jeypore-JED	Kotpad	Pr	Upgradation	680.86	31.03	0.5	0.3	0.78	25.81	3.79%	
70	Koraput	Jeypore-JED	Lingrajnagar	Ex	Upgradation	759.42	48.21	0.5	0.3	1.21	22.49	2.96%	0.01%
	Koraput	Jeypore-JED	Lingrajnagar	Pr	Upgradation	759.34	48.06	0.5	0.3	1.2	22.44	2.96%	
71	Koraput	Jeypore-JED	Brahmingaon	Ex	Upgradation	390.04	29.88	0.5	0.3	0.75	15.75	4.04%	0.33%
	Koraput	Jeypore-JED	Brahmingaon	Pr	Upgradation	387.72	25.23	0.5	0.3	0.63	14.39	3.71%	
72	Koraput	Jeypore-JED	Sariguda	Ex	Upgradation	421.09	75.29	0.5	0.3	1.88	28.88	6.86%	0.28%
	Koraput	Jeypore-JED	Sariguda	Pr	Upgradation	418.8	70.8	0.5	0.3	1.77	27.55	6.58%	
73	Koraput	Jeypore-KED	Koraput No1	Ex	Upgradation	1550.55	105.25	0.5	0.3	2.63	45.61	2.94%	0.43%
	Koraput	Jeypore-KED	Koraput No1	Pr	Upgradation	1793.87	105.28	0.5	0.3	2.63	45.02	2.51%	
74	Koraput	Jeypore-KED	Koraput No2	Ex	Upgradation	998.53	60.15	0.5	0.3	1.5	25.5	2.55%	0.21%
	Koraput	Jeypore-KED	Koraput No2	Pr	Upgradation	1099.25	58.89	0.5	0.3	1.47	25.78	2.35%	
75	Koraput	Jeypore-KED	Champi	Ex	Upgradation	338.89	53.32	0.5	0.3	1.33	23.71	7.00%	1.54%
	Koraput	Jeypore-KED	Champi	Pr	Upgradation	328.91	33.34	0.5	0.3	0.83	17.95	5.46%	
76	Koraput	Jeypore-KED	Dasmantpur Town	Ex	Upgradation	254.82	10.67	0.5	0.3	0.27	6.39	2.51%	0.10%
	Koraput	Jeypore-KED	Dasmantpur Town	Pr	Upgradation	254.39	9.81	0.5	0.3	0.25	6.14	2.41%	
77	Koraput	Jeypore-KED	Chapper	Ex	Upgradation	213.47	14.41	0.5	0.3	0.36	7.25	3.40%	0.06%

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	Koraput	Jeypore-KED	Chapper	Pr	Upgradation	213.23	13.94	0.5	0.3	0.35	7.11	3.33%	
78	Koraput	Jeypore-KED	Bileiguda/Semiliguda Town Feeder	Ex	Upgradation	468.23	19.69	0.5	0.3	0.49	9.06	1.94%	0.07%
	Koraput	Jeypore-KED	Bileiguda/Semiliguda Town Feeder	Pr	Upgradation	467.68	18.58	0.5	0.3	0.46	8.73	1.87%	
79	Malkangiri	Jeypore-MED	DNK	Ex	Upgradation	1091.29	50.91	0.5	0.3	1.27	25.44	2.33%	0.04%
	Malkangiri	Jeypore-MED	DNK	Pr	Upgradation	1090.61	49.55	0.5	0.3	1.24	25.04	2.30%	
80	Malkangiri	Jeypore-MED	Sikhapally	Ex	Upgradation	873.42	365.14	0.5	0.3	9.13	116.8	13.37%	0.69%
	Malkangiri	Jeypore-MED	Sikhapally	Pr	Upgradation	934.09	370.02	0.5	0.3	9.25	118.46	12.68%	
81	Malkangiri	Jeypore-MED	Balimela Town	Ex	Upgradation	907.68	35.85	0.5	0.3	0.9	15.05	1.66%	0.00%
	Malkangiri	Jeypore-MED	Balimela Town	Pr	Upgradation	907.67	35.85	0.5	0.3	0.9	15.05	1.66%	
82	Malkangiri	Jeypore-MED	Khairput Town	Ex	Upgradation	254.41	8.83	0.5	0.3	0.22	5.18	2.04%	0.04%
	Malkangiri	Jeypore-MED	Khairput Town	Pr	Upgradation	254.25	8.52	0.5	0.3	0.21	5.09	2.00%	
83	Nabrangpur	Jeypore-NED	Chatabeda	Ex	Upgradation	949.92	743.17	0.5	0.3	18.58	235.3	24.77%	8.60%
	Nabrangpur	Jeypore-NED	Chatabeda	Pr	Upgradation	1101.3	548.88	0.5	0.3	13.72	178.08	16.17%	
84	Nabrangpur	Jeypore-NED	Sukhigaon	Ex	Upgradation	707.49	234.66	0.5	0.3	5.87	82.51	11.66%	1.42%
	Nabrangpur	Jeypore-NED	Sukhigaon	Pr	Upgradation	697.57	197.11	0.5	0.3	4.93	71.49	10.25%	
85	Nabrangpur	Jeypore-NED	Chutiaguda	Ex	Upgradation	628.71	76.26	0.5	0.3	1.91	25.51	4.06%	1.00%
	Nabrangpur	Jeypore-NED	Chutiaguda	Pr	Upgradation	617.8	54.49	0.5	0.3	1.36	18.87	3.05%	
86	Nabrangpur	Jeypore-NED	Nabrangpur Town-1	Ex	Upgradation	1363.34	353.79	0.5	0.3	8.84	119.71	8.78%	0.38%
	Nabrangpur	Jeypore-NED	Nabrangpur Town-1	Pr	Upgradation	1315.3	323.15	0.5	0.3	8.08	110.54	8.40%	
87	Nabrangpur	Jeypore-NED	SILATI	Ex	Upgradation	710.92	340.89	0.5	0.3	8.52	113.65	15.99%	2.61%
	Nabrangpur	Jeypore-NED	SILATI	Pr	Upgradation	746.39	292.82	0.5	0.3	7.32	99.84	13.38%	
88	Rayagada	Rayagada-GED	Dhepaguda	Ex	Upgradation	297.67	96.14	0.5	0.3	2.4	37.37	12.56%	0.02%
	Rayagada	Rayagada-GED	Dhepaguda	Pr	Upgradation	297.56	95.92	0.5	0.3	2.4	37.31	12.54%	
89	Rayagada	Rayagada-GED	Gudari Town	Ex	Upgradation	635.23	29.6	0.5	0.3	0.74	13.57	2.14%	0.12%

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	Rayagada	Rayagada-GED	Gudari Town	Pr	Upgradation	633.98	27.08	0.5	0.3	0.68	12.81	2.02%	
90	Rayagada	Rayagada-GED	Jagnathpur	Ex	Upgradation	339.71	85.16	0.5	0.3	2.13	37.89	11.15%	0.79%
	Rayagada	Rayagada-GED	Jagnathpur	Pr	Upgradation	333.76	73.25	0.5	0.3	1.83	34.6	10.37%	
91	Rayagada	Rayagada-GED	Suludi	Ex	Upgradation	220.76	20.58	0.5	0.3	0.51	15.8	7.16%	0.05%
	Rayagada	Rayagada-GED	Suludi	Pr	Upgradation	220.51	20.09	0.5	0.3	0.5	15.67	7.11%	
92	Gajpati	Rayagada-PKED	Brijkote	Ex	Upgradation	384.02	119.06	0.5	0.3	2.98	47.64	12.41%	1.73%
	Gajpati	Rayagada-PKED	Brijkote	Pr	Upgradation	409.66	103.88	0.5	0.3	2.6	43.75	10.68%	
93	Gajpati	Rayagada-PKED	Sambalpur	Ex	Upgradation	213.46	47.93	0.5	0.3	1.2	21.94	10.28%	0.13%
	Gajpati	Rayagada-PKED	Sambalpur	Pr	Upgradation	212.79	46.6	0.5	0.3	1.16	21.59	10.15%	
94	Rayagada	Rayagada-RED	Muniguda-Town	Ex	Upgradation	1157.05	76.36	0.5	0.3	1.91	32.29	2.79%	0.49%
	Rayagada	Rayagada-RED	Muniguda-Town	Pr	Upgradation	1146.92	56.16	0.5	0.3	1.4	26.38	2.30%	
95	Rayagada	Rayagada-RED	DP Camp	Ex	Upgradation	170.33	6.41	0.5	0.3	0.16	4.63	2.72%	0.02%
	Rayagada	Rayagada-RED	DP Camp	Pr	Upgradation	170.26	6.26	0.5	0.3	0.16	4.6	2.70%	
96	Ganjam	Aska-GSED	Jakara Dumula	Ex	Load bifurcation	525.91	31.67	0.5	0.3	0.79	21.2	4.03%	0.06%
	Ganjam	Aska-GSED	Jakara Dumula	Pr	Load bifurcation	525.2	30.25	0.5	0.3	0.76	20.85	3.97%	
97	Ganjam	Berhampur-GNED	Kanehipur-Naryani	Ex	Load shifting	1982.57	350.73	0.5	0.3	8.77	123.68	6.24%	0.40%
	Ganjam	Berhampur-GNED	Kanehipur-Naryani	Pr	Load shifting	1982.79	323.42	0.5	0.3	8.09	115.8	5.84%	

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98	Ganjam	Berhampur-GNED	Mill	Ex	Load bifurcation	1005.33	143.7	0.5	0.3	3.59	56.16	5.59%	1.47%
	Ganjam	Berhampur-GNED	Mill	Pr	Load bifurcation	978.29	89.68	0.5	0.3	2.24	40.25	4.11%	
99	Ganjam	Berhampur-GNED	KP Gada	Ex	Load bifurcation	1005.66	129.36	0.5	0.3	3.23	49.68	4.94%	1.11%
	Ganjam	Berhampur-GNED	KP Gada	Pr	Load bifurcation	985.47	89.08	0.5	0.3	2.23	37.76	3.83%	
100	Ganjam	Berhampur-PSED	Solaghara	Ex	Load bifurcation	464.56	33.41	0.5	0.3	0.84	17.39	3.74%	0.04%
	Ganjam	Berhampur-PSED	Solaghara	Pr	Load bifurcation	464.02	32.35	0.5	0.3	0.81	17.2	3.71%	
101	Ganjam	Bhanjanagar-BNED	Gangapur- K.B Pur	Ex	Load shifting	979.55	65.56	0.5	0.3	1.64	31.73	3.24%	0.00%
	Ganjam	Bhanjanagar-BNED	Gangapur- K.B Pur	Pr	Load shifting	979.59	65.64	0.5	0.3	1.64	31.75	3.24%	
102	Ganjam	Bhanjanagar-BNED	Gamundi-Bhanjanagar Town	Ex	Load shifting	2587.45	120.67	0.5	0.3	3.02	53.81	2.08%	0.03%
	Ganjam	Bhanjanagar-BNED	Gamundi-Bhanjanagar Town	Pr	Load shifting	2586.02	117.81	0.5	0.3	2.95	52.93	2.05%	
103	Ganjam	Bhanjanagar-BNED	Belaguntha Town - Ambapua	Ex	Load shifting	1050.28	51.62	0.5	0.3	1.29	27.78	2.65%	0.11%
	Ganjam	Bhanjanagar-BNED	Belaguntha Town - Ambapua	Pr	Load shifting	1048.18	47.41	0.5	0.3	1.19	26.54	2.53%	
104	Ganjam	Bhanjanagar-BNED	Nuagaon - Jilundi	Ex	Load shifting	1395.61	181.8	0.5	0.3	4.55	89.31	6.40%	2.19%
	Ganjam	Bhanjanagar-BNED	Nuagaon - Jilundi	Pr	Load shifting	1366.77	124.08	0.5	0.3	3.1	57.52	4.21%	
105	Boudh	Bhanjanagar-BOED	Town-2	Ex	Load bifurcation	1353.82	116.86	0.5	0.3	2.92	49.8	3.68%	0.91%
	Boudh	Bhanjanagar-BOED	Town-2	Pr	Load bifurcation	1332	73.2	0.5	0.3	1.83	36.83	2.77%	
106	Boudh	Bhanjanagar-BOED	Udaypur - Manikpur	Ex	Load shifting	296.65	53.94	0.5	0.3	1.35	30.27	10.20%	0.32%

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	Boudh	Bhanjanagar-BOED	Udaypur - Manikpur	Pr	Load shifting	293.93	48.5	0.5	0.3	1.21	29.07	9.89%	
107	Kandhmal	Bhanjanagar-PED	Mandakia	Ex	Load bifurcation	628.85	98.93	0.5	0.3	2.47	42.86	6.82%	3.43%
	Kandhmal	Bhanjanagar-PED	Mandakia	Pr	Load bifurcation	628.3	61.63	0.5	0.3	1.54	21.29	3.39%	
108	Kandhmal	Bhanjanagar-PED	Linepada-Adabadi	Ex	Load shifting	686.91	124.72	0.5	0.3	3.12	51.26	7.46%	0.05%
	Kandhmal	Bhanjanagar-PED	Linepada-Adabadi	Pr	Load shifting	686.25	123.39	0.5	0.3	3.08	50.9	7.42%	
109	Kandhmal	Bhanjanagar-PED	Bataguda-Simanbadi	Ex	Load shifting	642.07	93.8	0.5	0.3	2.34	61.84	9.63%	0.92%
	Kandhmal	Bhanjanagar-PED	Bataguda-Simanbadi	Pr	Load shifting	713.93	95.35	0.5	0.3	2.38	62.23	8.72%	
110	Kandhmal	Bhanjanagar-PED	Dasingbadi-Rukanbadi	Ex	Load shifting	804.86	74.19	0.5	0.3	1.85	53.23	6.61%	0.02%
	Kandhmal	Bhanjanagar-PED	Dasingbadi-Rukanbadi	Pr	Load shifting	804.02	72.49	0.5	0.3	1.81	52.99	6.59%	
111	Ganjam	City-BED-1	NH-Ankuli-Goodshed	Ex	Load bifurcation	2254.55	334.39	0.5	0.3	8.36	108.47	4.81%	0.39%
	Ganjam	City-BED-1	NH-Ankuli-Goodshed	Pr	Load bifurcation	1890.04	261.73	0.5	0.3	6.54	83.52	4.42%	
112	Ganjam	City-BED-2	Old Berhampur	Ex	Load bifurcation	2366.1	123.85	0.5	0.3	3.1	51.49	2.18%	0.00%
	Ganjam	City-BED-2	Old Berhampur	Pr	Load bifurcation	2313.27	118.41	0.5	0.3	2.96	50.23	2.17%	
113	Ganjam	City-BED-3	Luchapada	Ex	Load bifurcation	2157.91	611.84	0.5	0.3	15.3	192.27	8.91%	3.36%
	Ganjam	City-BED-3	Luchapada	Pr	Load bifurcation	2726.75	476.95	0.5	0.3	11.92	151.41	5.55%	
114	Koraput	Jeypore-JED	Umri	Ex	Load bifurcation	850.58	79.32	0.5	0.3	1.98	36.09	4.24%	1.31%
	Koraput	Jeypore-JED	Umri	Pr	Load bifurcation	830.89	39.93	0.5	0.3	1	24.35	2.93%	

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115	Koraput	Jeypore-KED	Koraput-1-Koraput-2	Ex	Load shifting	2549.09	165.4	0.5	0.3	4.14	71.1	2.79%	0.39%
	Koraput	Jeypore-KED	Koraput-1-Koraput-2	Pr	Load shifting	2531.16	146.22	0.5	0.3	3.66	60.83	2.40%	
116	Koraput	Jeypore-KED	Koraput-1	Ex	Load bifurcation	1550.55	105.25	0.5	0.3	2.63	45.61	2.94%	0.43%
	Koraput	Jeypore-KED	Koraput-1	Pr	Load bifurcation	1793.87	105.28	0.5	0.3	2.63	45.02	2.51%	
117	Koraput	Jeypore-KED	Subai	Ex	Load bifurcation	550.03	44.58	0.5	0.3	1.11	18.42	3.35%	0.19%
	Koraput	Jeypore-KED	Subai	Pr	Load bifurcation	548.21	40.94	0.5	0.3	1.02	17.34	3.16%	
118	Malkangiri	Jeypore-MED	Ayappa-Kamwada	Ex	Load shifting	741.92	78	0.5	0.3	1.95	33.05	4.45%	0.06%
	Malkangiri	Jeypore-MED	Ayappa-Kamwada	Pr	Load shifting	741.04	76.25	0.5	0.3	1.91	32.53	4.39%	
119	Malkangiri	Jeypore-MED	Kompeta	Ex	Load bifurcation	854.88	191.6	0.5	0.3	4.79	71.01	8.31%	0.42%
	Malkangiri	Jeypore-MED	Kompeta	Pr	Load bifurcation	847.91	177.66	0.5	0.3	4.44	66.9	7.89%	
120	Nabrangpur	Jeypore-NED	Nabrangpur Town-2	Ex	Load bifurcation	1274.11	124.34	0.5	0.3	3.11	53.02	4.16%	0.81%
	Nabrangpur	Jeypore-NED	Nabrangpur Town-2	Pr	Load bifurcation	1255.14	86.41	0.5	0.3	2.16	42.06	3.35%	
121	Nabrangpur	Jeypore-NED	B.Maliguda-Saruguda	Ex	Load shifting	822.77	128.86	0.5	0.3	3.22	60.62	7.37%	0.34%
	Nabrangpur	Jeypore-NED	B.Maliguda-Saruguda	Pr	Load shifting	816.34	116	0.5	0.3	2.9	57.36	7.03%	
122	Nabrangpur	Jeypore-NED	Town-Jatabal	Ex	Load shifting	805.62	89.25	0.5	0.3	2.23	39.16	4.86%	0.03%
	Nabrangpur	Jeypore-NED	Town-Jatabal	Pr	Load shifting	805.14	88.29	0.5	0.3	2.21	38.86	4.83%	
123	Nabrangpur	Jeypore-NED	DNK-Bharandi	Ex	Load shifting	798.71	57.51	0.5	0.3	1.44	38.6	4.83%	0.02%

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	Nabrangpur	Jeypore-NED	DNK-Bharandi	Pr	Load shifting	798.47	57.03	0.5	0.3	1.43	38.45	4.82%	
124	Rayagada	Rayagada-GED	Court	Ex	Load bifurcation	1607.62	84.17	0.5	0.3	2.1	39.42	2.45%	0.01%
	Rayagada	Rayagada-GED	Court	Pr	Load bifurcation	1607.21	83.35	0.5	0.3	2.08	39.17	2.44%	
125	Gajpati	Rayagada-PKED	Antaraba-Baghmari	Ex	Load shifting	537.63	178.37	0.5	0.3	4.46	71.98	13.39%	0.62%
	Gajpati	Rayagada-PKED	Antaraba-Baghmari	Pr	Load shifting	537.72	165.57	0.5	0.3	4.14	68.67	12.77%	