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

Case No: \_\_\_\_ of 2023

IN THE MATTER OF:

Application for approval of Supplementary Capital Investment Plan for the FY 2023-24 for mitigation of low voltage issues in the

Licensed Area of TP Central Odisha Distribution Ltd

And

IN THE MATTER OF:

TP Central Odisha Distribution Ltd., Corporate Office, Power House, Unit 8, Bhubaneswar- 751 012 represented by its Chief –Regulatory

& Government Affairs.

.... Petitioner

IN THE MATTER OF:

M/s GRIDCO, OPTCL, SLDC, Department of Energy, Govt. of Odisha and

All Concerned Stakeholders.

.... Respondents

#### **Affidavit**

I, Puneet Munjal, aged about 59 son of late Jagdish Lal Munjal residing at Bhubaneswar hereby solemnly affirm and say as follows:

1.

I am the Chief-Regulatory & Government Affairs of TP Central Odisha Distribution Ltd., the Petitioner in the above matter and I am duly authorized to swear this affidavit on its behalf.

The statements made in the submission herein shown to me are based on information provided to me and I believe them to be true.

Bhubaneswar.

Dated: 02.08.2023

Chief-Regulatory & Government Affairs

ADVOCATE, BBSR

Jagyneatvar Acharva Regd No.:7791/2009 Dist-Khure i BBSR, Cdisha M-9861008174

Jagynes war Arnarys, VI Notary, Gov. Of Maia Odisha, SBSR, Dist Khursa

Repd.No.-7791/2009 Moby-9861006174



File No TPCODL/Regulatory /2023/ 184/4971 2<sup>nd</sup> August , 2023

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

**Subject:** Application for approval of Supplementary Capital Investment Plan for the FY 2023-24 for mitigation of low voltage issues in the Licensed Area of TP Central Odisha Distribution Ltd

Dear Sir,

We are through this letter submitting a petition for approval of the Supplementary Capital Investment Plan for FY 2023-24 for mitigation of low voltage issues in the Licensed Arear of TP Central Odisha Distribution Ltd.

We trust the Hon'ble Commission shall find our above submission in order.

We shall be glad to provide any other information as may be required in the matter.

Yours faithfully

(Puneet Munjal

Chief -Regulatory & Government Affairs

# BEFORE THE ODISHA ELECTRICITY REGULATORY COMMISSION, BIDYUT NIYAMAK BHAWAN.

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& Government Affairs.

.... Petitioner

IN THE MATTER OF: M/s GRIDCO, OPTCL, SLDC ,Department of Energy, Govt. of Odisha

and All Concerned Stake Holders.

.... Respondents

#### 1. Background for Submission of the Petition

In compliance with the directives stipulated in the Vesting Order dated 26.05.2020 as well as the applicable Odisha Electricity Regulatory Commission (Terms and Conditions for Determination of Wheeling Tariff and Retail Supply Tariff) Regulations ,TPCODL had submitted a Capital Investment Plan of Rs. 300 Cr. for FY 2023-24, against which the Hon'ble Commission has accorded approval of Rs. 283.72 Cr vide order dated 21.06.2023 in the matter of Case 98/2022.

It is submitted that based on the Load Flow Study carried out in FY 2022-23 on Asset Base upto Aug'2022 considering peak load of Summer'22 (1764 MW), 148 no's of 33/11 kV PSS with low voltage issues have been identified. Mitigation plan for addressing low voltage issues at these identified PSS are in place under various schemes as depicted in Table below.

Table-1: Mitigation Plan for PSS with Low Voltage issues under various schemes

SI. No	Mitigatation proposals under different scheme	Completed (No of PSS)	Work in Progress (No of PSS)	Proposed (No of PSS)	Total (No of PSS)
		Α	В	С	D = A+B+C
1	Network NOP Change	6			6
2	Capex Plan FY-22 as approved by the Hon'ble OERC	6			6
3	Capex Plan FY-23 as approved by the Hon'ble OERC	1	17		18
4	Capex Plan FY-24 as approved by the Hon'ble OERC		15		15
5	CMPDP		30		30
6	Deposit Schemes	1	9		10
7	Govt Schemes (DDUGJY,ODSSP PH-II)	2			2
8	By Operating HT Tap of PTRs	26			26
9	ODSSP PH-III	11			1
10	SCRIPS	2			2
11	Supplementary Capex FY 2023- 24 as proposed in this filing			32	32
12	Grand Total	45	71	32	148

As can be observed, mitigation plan for 116 number of PSS has already been put in place under various schemes ( Work Completed at 45 PSS and Work in Progress at 71 PSS) out of the identified 148 number of PSS leaving 32 number of PSS for which the present proposal is being submitted.

These 32 number of 33/11 kV PSS have experienced severe low voltage issue during Summer '22 and Summer'23. TPCODL has analysed the network in view of the increased load growth in Summer'23 and found that construction of 20 numbers of 33kV Lines and 2 numbers of 33 /11 kV PSS with associated lines are required to address low voltage issues in these 32 number of 33/11 kV PSS. The list of these 32 PSS with existing voltage profile and expected voltage profile after the implementation of the proposed mitigation plan is provided at Annexure-A of the Detailed Project Report (DPR).

These proposed schemes will help in improving the voltage profile at 33 kV level which will further help in addressing the low voltage issues at down the line network and will ensure Quality Power supply to the end users.

The Construction of these proposed 20 numbers of 33kV Lines is expected to be completed in 6-8 months and commissioning of the proposed 2 numbers of PSS will take 10-12 months post receipt of approval from the Hon'ble Commission.

Considering the above commissioning timelines, the construction of these proposed scheme needs to be commenced at the earliest to address the low voltage issues in coming Summer.

In view of the above, we are through this submission seeking supplementary capex of Rs. 177.62 Cr to address the low voltage issues at these 32 number of PSS.

# 2. Summary of the Proposed Mitigation Plan for which Approval is requested under Supplementary Capex FY 2023-24

The detailed project report (DPR) for the mitigation of low voltage issues at the balance 32 number of PSS is provided as **Appendix** to this submission. The Summary of the Capex Scheme is as provided below.

Table -2: Summary of the Proposed Capex Scheme

SI. No.	Name of Circle	Proposal	Total Cost (in Rs. Cr.)
A. New 3	3/11kV Primar	y Substations (PSS) along with associated Lines (2 No's)	
1	BBSR-1	Construction of 33/11kV Nageswar Tangi PSS (2X8MVA) along with 33KV & 11KV associated lines	24.13
2	CUTTACK	Construction of 33/11kV Biswanakanhi PSS (2X5MVA) along with 33KV & 11KV associated lines	25.29
A. Sub To	tal		49.42
3.Propose	ed 20 No's of 3	33kV Lines (231.02 CKTKM) to mitigate low voltage issue a	t 33/11KV PSS
1	BBSR-I	33kV Line From Satsankha GSS To Mangalpur PSS	4.9
2	BBSR-I	33KV line From Pratapsasan GSS To Trahiachyuta Nagar PSS	4.38
3	BBSR-II	33KV line From Daspalla GSS To Proposed 4-Pole (Daspalla PSS)	
4	BBSR-II	33KV line From Daspalla GSS To Existing 4-Pole (Banigochha PSS)	14.16
5	BBSR-11	33KV line From Daspalla GSS To Proposed 4-Pole (Gania PSS)	
6	BBSR-II	33KV line From Satsankha GSS To Patnayak Chowk (Delang PSS)	5.2
7	BBSR-II	33KV line From Argul GSS To Taraboi point DP (Tirimalla PSS)	7.35
8	BBSR-II	33KV line From Satsankha GSS To Satsankha PSS(Kumareswar PSS)	7.18
9	CUTTACK	33KV line From Bahugram/Atado GSS To Bahugram-2 PSS	5.6
10	CUTTACK	33KV line From Balichandrapur GSS To Balichandrapur PSS	7.65
11	DHENKANAL	33KV line From Gondia GSS To Proposed 4-Pole (College PSS)	2.65
12	DHENKANAL	33KV line From Gondia To Proposed 4-Pole (Joranda PSS)	2.03
13	DHENKANAL	33KV line From Goda GSS To Proposed 4-Pole (Bhuban PSS)	1.35
14	DHENKANAL	33KV line From Chainpal GSS To Parjang PSS	11.15
15	DHENKANAL	33KV line From Kamakhyanagar GSS To Parjang PSS	12.68
16	PARADEEP	33KV line From Rajnagar GSS To Badhi/Babar PSS	11.62
17	PARADEEP	33KV line From Tirtol GSS To Kanakpur PSS	3.93
18	CUTTACK	33KV line From Bahugram/Atado GSS To Nischintakoili	7.04
19	BBSR-I	33KV line From Bangurigaon PSS To Kakatpur PSS	8.47
20		33KV line From Khajuriakata GSS To Phulapada PSS	12.9
. Sub Tot	tal		128.2
= A+B		Total	177.62

#### **Prayers**

TPCODL prays that the Hon'ble Commission may kindly be pleased to:

- 1. Approve the Supplementary Capital Investment Plan for FY 2023-24, detailed project report (DPR) for which is provided as **Appendix** to this submission.
- 2. Allow Employee Cost and Interest during Construction based on actuals to be capitalised over and above the above Capex (Hard Cost).
- Allow financing for this Proposed Supplementary Capex in line with the provisions of Odisha Electricity Regulatory Commission (Terms and Conditions for Determination of Wheeling Tariff and Retail Supply Tariff) Regulations, 2022.
- 4. Permit Carry forward of the unspent Capital Expenditure to subsequent years.
- 5. Permit making additional submission required in this matter.
- 6. Grant any other relief as deemed fit and proper in the facts and circumstances of the case.
- 7. Any other direction as the Hon'ble Commission may think appropriate

## **APPENDIX**

Supplementary Capex Plan: FY 2023-24

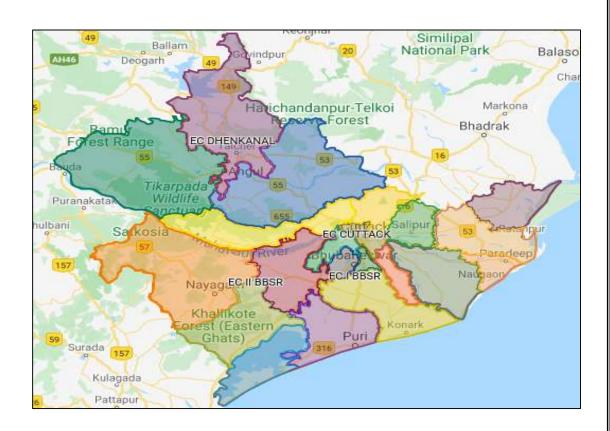


# DETAILED PROJECT REPORT (DPR) FOR

**Supplementary CAPEX FY: 2023-24** 

## **Submitted By**

### **TP Central Odisha Distribution Ltd**



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#### 1. Introduction

TP Central Odisha Distribution Limited (TPCODL) is a joint venture of Tata Power (51%) and Odisha Government (49%) on the Public-Private Partnership (PPP) model. TPCODL was granted the license to distribute electricity in the central part of Odisha, which was earlier served by erstwhile CESU, after being selected through a competitive bidding process. TPCODL's utility business is being governed by the provisions of license issued by Hon'ble OERC for Distribution and Retail Supply of Electricity in Central 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 (including AT&C loss reduction etc.).

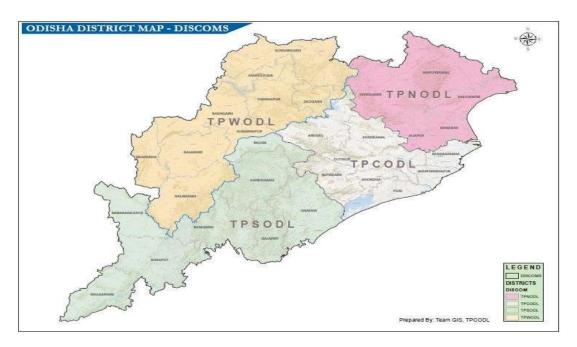
The core business activities of TPCODL is summarized as follows,

- 1. Operation and Maintenance of distribution network
- 2. Expansion of distribution network
- 3. Electricity supply and after sales services
- 4. Connection of new consumers to the distribution network
- 5. Meter reading, billing, and revenue collection
- 6. Customer complaint resolution
- 7. Restoration of power after interruptions
- 8. General customer care including provision of information on services
- 9. Customer sensitization on energy efficiency, energy losses and safety

In FY 2022-23, against the total input energy of 9903 MU, billed energy was 7658 MU .The broad break up the sales (7658 MU) includes: Domestic Consumers (42 %), Commercial (21%), Industrial Consumers (23%) and 14 % Others (i.e. Irrigation, Public Water works, Public Lighting ,Railways etc.). With an objective of providing quality power , TPCODL has come up with a proposal under CAPEX scheme for mitigating the issues of low voltage.

#### 2. TPCODL Network Overview & its Challenges

TPCODL license area is spread over a geography of 29354 sq. km and serve the registered consumer base of 3.1 million. TPCODL procures power from GRIDCO which is a state owned company, engaged in the business of purchase of electricity in bulk from various generators located inside Odisha and the state share of power from Central generators for supply in all power distribution utilities, including TPCODL. It receives electrical power at a sub transmission voltage of 33 kV from Odisha Power Transmission Company Limited's (OPTCL) 220/132/33 kV Grid Substations and then distributes the power at 33 kV / 11kV / 440V / 230V depending on the demand of the consumers. For effective operations; license area is divided in 5 circles which is further sub divided in 20 Divisions and 65 Sub-divisions which manages the commercial and O&M activities in order to serve its consumer.



At present, there are 233 numbers of 33 kV feeders with a combined circuit length of approximately 4082 Ckt. KMs supplying power to 369 numbers of 33/11kV Primary Substations. The 33kV supply is stepped down to 11kV level through 816 numbers of 33/11kV power transformers with an installed capacity of 4863 MVA at these primary substations. Further, nearly 1411numbers of 11 kV feeders emanates from the 33/11 kV primary substations having cumulative length of approximately 39,350 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. 77549 numbers of distribution transformers are installed in all five circles with an installed capacity of 5702 MVA. The length of the LT network is approximately 50,050 Ckt. KMs. These LT feeders supply power to three-phase and single-phase consumers.

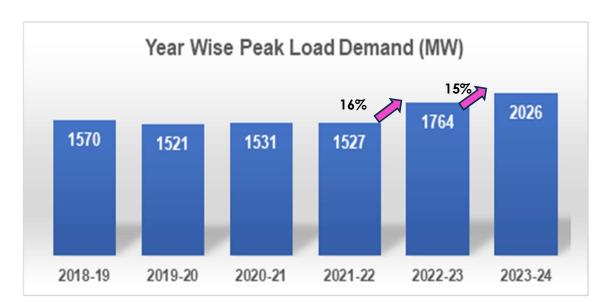
TPCODL receives electrical power at 33kV level from 58 nos. of Grid Substations (GSS). TPCODL distributes the power at 33kV / 11kV / 440V / 230V depending on the demand of the consumers. The existing OPTCL Grid Substation in TPCODL are as provided below. List of Grid Substations (GSS) of OPTCL in TPCODL.

TPCODL peak demand trend for last five years is given in below table.

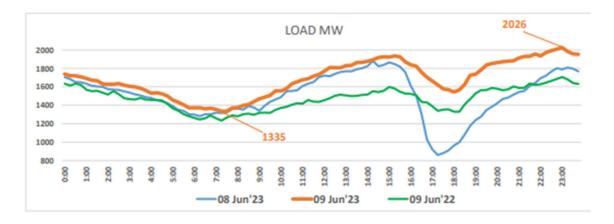
Table 2-1: TPCODL Peak Demand Trend

DESCRIPTION	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Date of occurrence of annual system peak	June 18	April -19	June - 20	June -21	June - 22	June 23
System peak load in MW	1487	1579	1531	1527	1764	2026

From the Table it clearly indicates TPCODL peak demand is almost constant for last 3 years, however there is sharp increase in the peak demand from last 2 years. The peak demand occurred at midnight time during summer due to increase the load demand from domestic consumer.







From the above Table it clearly indicates that TPCODL peak always in the Night Time & in the Month of May & June when the temperature is in TPCODL area is Hot & humidity.

TPCODL did the load flow study in FY22-23 considering the asset base up to Aug-22 with peak load of summer 22 (1764MW). Load flow study is often used to investigate other parameters such as overloading feeders & Transformers, Low voltage pockets, system power factors, losses, short circuit analysis and equipment loading. The end objective of the load-flow study is not always to arrive at hard, numerical performance parameters. Often the objective is to gain insight into how the system performs over a range of operating conditions. The outcomes of Network load flow study is given below.

- > Technical loss Assessment
- > Assessment of feeder & Transformer over loading
- ➤ N-1 Assessment
- ➤ Voltage Profile Assessment

Most of the network deficiencies like overloading, low volatge are being addressed through ongoing capex & Govt. schemes whereas some of the PSS low voltage issues are not being addressed through ongoing scheme for which the supplementary capex 23-24 is proposed.

#### 3. Details of the low Voltage observed at 33/11kV PSS based on load flow study

As per CEA guidelines, Voltage variation limit for 33kV should be within the limit of +6% and -9%. Below are the list category-wise Primary substations where 33kV incoming Side Voltage is Crossing the permissible limit of "-9%".

**Table 3-1: PSS with Low Voltage issues** 

Circle	Total No. of PSS	No. of PSS having low voltage issue
BBSR-I	72	21
BBSR-II	83	45
Cuttack	72	36
DKL	66	28
PDP	62	18
Total	355*	148

<sup>\*</sup>Note - 355No's 33/11KV PSS were in service till Aug-22.

Table 3-2: Circle wise low voltage PSS details with voltage drop on 33kV incoming side

Circle	% of voltage Drop on 33KV incoming side						
	9 ≥ 12	12 ≥ 15	15 ≥ 18	18 ≥ 21	21 ≥ 24	> 24	Grand Total
BBSR-I	6	5	4	1	3	2	21
BBSR-II	10	12	6	11	4	2	45
CUTTACK	13	9	7	3	4		36
DHENKANAL	12	6	7	3			28
PARADEEP	12	2	2	2			18
Total No. of PSS	53	34	26	20	11	4	148

The reason for this voltage drop

- 1) Due to lengthy 33KV feeders with improper conductor size being used in most of the feeder. 58% feeders' circuit length is more than 10Ckt km.
- 2) Overloading of feeder, lengthy feeders.
- 3) Load centers & PSS are away from the GSS.
- 4) Limited no. of GSS in the TPCODL licensed Area.

Out of these 148 nos. of PSS with low voltage issue, mitigataion plan for some of the PSS are in place under various schems as depicted at Table 4-1 in below paragraph.

#### 4. 33/11kV PSS Low Voltage Mitigation proposal details under different scheme

**Table 4-1: Low Voltage Mitigation Plan** 

SI. No	Mitigatation proposals under different scheme	Completed (No of PSS)	Work in Progress (No of PSS)	Proposed (No of PSS)	Total (No of PSS)
		Α	В	С	D = A+B+C
1	Network NOP Change	6			6
2	Capex Plan FY-22 as approved by the Hon'ble OERC	6			6
3	Capex Plan FY-23 as approved by the Hon'ble OERC	1	17		18
4	Capex Plan FY-24 as approved by the Hon'ble OERC		15		15
5	CMPDP		30		30
6	Deposit Schemes	1	9		10
7	Govt Schemes (DDUGJY,ODSSP PH-II)	2			2
8	By Operating HT Tap of PTRs	26			26
9	ODSSP PH-III	1			1
10	SCRIPS	2			2
11	Supplementary Capex FY 2023- 24 as proposed in this filing			32	32
12	Grand Total	45	71	32	148

As can be observed, mitigation plan for 116 number of PSS has already been put in place under various schemes ( Work Completed at 45 PSS and Work in Progress at 71 PSS) out of the identified 148 number of PSS leaving 32 number of PSS for which the present proposal is being submitted.

## 5. Proposed Plan for Mitigating low voltage issue at 33/11kV PSS & other needy 11kV Network under Supplementary Capex 23-24

It is observed that many areas in TPCODL jurisdiction are facing low voltage issues due lengthy 33kV network along with overloading. In order to address the issues, proposals have been identified which will improve the voltage profile and mitigate low voltage issues along with overloading issues.

These 32 number of 33/11 kV PSS have experienced severe low voltage issue during Summer '22 and Summer'23. TPCODL has analysed the network in view of the increased load growth in Summer'23 and found that construction of 20 numbers of 33kV Lines and 2 numbers of 33/11 kV PSS are required to address low voltage issues in these 32 number of 33/11 kV PSS. The list of these 32 PSS with existing voltage profile and expected voltage profile after the implementation of the proposed mitigation plan is provided as Annexure-A to this submission.

These proposed schemes will help in improving the voltage profile at 33 kV level which will further help in addressing the low voltage issues at down the line network and will ensure Quality Power supply to the end users.

The Construction of these proposed 20 numbers of 33kV Lines is expected to be completed in 6-8 months and commissioning of the proposed 2 numbers of PSS will take 10-12 months post receipt of approval from the Hon'ble Commission.

Considering the above commissioning timelines, the construction of these proposed scheme needs to be commenced at the earliest to address the low voltage issues in coming Summer.

In view of the above, we are through this submission seeking supplementary capex of Rs. 177.62 Cr to address the low voltage issues at these 32 number of PSS.

#### **Summary of the DPR (Detailed Project Report)**

The DPR consists of following major heads.

- 1. New 33/11kV Primary Substations (PSS) to address low voltage issue in 11KV network.
- 2. New 33kV Lines from nearby GSS to mitigate low voltage issue at 33/11KV PSS.

The details of Projects mentioned in below table:

Table 5-1: Major Heads of proposed DPR

SI. No.	Proposal	иом	Quantity	(Amount in Rs. Cr.)		
Α	Proposed 33/11kV substations along with associated lines	No's	2	49.42		
В	Proposed 33kV Lines ( 20 No's)	CKT.KM	231.02	128.20		
	Total cost in Rs. Cr					

Table 5-2: Proposed 33/11 kV PSS and 33 kV Lines

SI. No.	Name of Circle	Proposal	Total Cost (in Rs. Cr.)	Annexure No.		
	A. Proposed 33/11kV PSS to mitigate low voltage issue in 11kV net					
1	BBSR-1	Construction of 33/11kV Nageswar Tangi PSS (2X8MVA) along with 33KV & 11KV associated lines	24.13	Annexure-1		
2	CUTTACK	Construction of 33/11kV Biswanakanhi PSS (2X5MVA) along with 33KV & 11KV associated lines	25.29	Annexure-2		
A.To	tal Cost of 2 Nev	w PSS with associated Lines (in Rs. Cr.)	49.42			
В.	.Proposed 33kV	Lines to mitigate low voltage issue at 33	/11KV PSS			
1	BBSR-I	33kV Line From Satsankha GSS To Mangalpur PSS	4.90	Annexure-3		
2	BBSR-I	33KV line From Pratapsasan GSS To Trahiachyuta Nagar PSS	4.38	Annexure-4		
3	BBSR-II	33KV line From Daspalla GSS To Proposed 4-Pole (Daspalla PSS)				
4	BBSR-II	33KV line From Daspalla GSS To Existing 4-Pole (Banigochha PSS)	14.16	Annexure-5		
5	BBSR-II	33KV line From Daspalla GSS To Proposed 4-Pole (Gania PSS)				
6	BBSR-II	33KV line From Satsankha GSS To Patnayak Chowk (Delang PSS)	5.20	Annexure-6		
7	BBSR-II	33KV line From Argul GSS To Taraboi point DP (Tirimalla PSS)	7.35	Annexure-7		
8	BBSR-II	33KV line From Satsankha GSS To Satsankha PSS(Kumareswar PSS)	7.18	Annexure-8		
9	CUTTACK	33KV line From Bahugram/Atado GSS To Bahugram-2 PSS	5.60	Annexure-9		

### Supplementary Capex Plan: FY 2023-24

10	CUTTACK	33KV line From Balichandrapur GSS To Balichandrapur PSS	7.65	Annexure-
11	DHENKANAL	33KV line From Gondia GSS To Proposed 4-Pole (College PSS)	2.65	Annexure-
12	DHENKANAL	33KV line From Gondia To Proposed 4- Pole (Joranda PSS)	2.03	11
13	DHENKANAL	33KV line From Goda GSS To Proposed 4-Pole (Bhuban PSS)	1.35	Annexure- 12
14	DHENKANAL	33KV line From Chainpal GSS To Parjang PSS	11.15	Annexure- 13
15	DHENKANAL	33KV line From Kamakhyanagar GSS To Parjang PSS	12.68	Annexure- 14
16	PARADEEP	33KV line From Rajnagar GSS To Badhi/Babar PSS	11.62	Annexure- 15
17	PARADEEP	33KV line From Tirtol GSS To Kanakpur PSS	3.93	Annexure- 16
18	CUTTACK	33KV line From Bahugram/Atado GSS To Nischintakoili	7.04	Annexure- 17
19	BBSR-I	33KV line From Bangurigaon PSS To Kakatpur PSS	8.47	Annexure- 18
20	DHENKANAL 33KV line From Khajuriakata GSS To Phulapada PSS		12.90	Annexure- 19
	B. Total cost (	128.20		
C= A+	-B Total cost of P	177.62		

#### 6. Part-A: New 33/11kV substations in Low Voltage areas

Table 6-1: New 33/11 kV Substation in Low Voltage Area

SI. No.	Proposal		
1	33/11kV Nageswar Tangi PSS (2X8MVA) with associated lines	24.13	
2	33/11kV Biswanakanhi PSS (2X5MVA) with associated lines	25.29	
	Total cost in crore	49.42	

## 6.1 <u>Proposed 33/11kV Nageswar Tangi PSS (2X8MVA) to address low voltage issue in Old Town Area</u>

#### **Proposal:**

Construction of 33/11kV Primary Substation with 2X8MVA power transformer with construction of 33kV incoming line from proposed 132/33kV Badagada Grid and 33/11kV Mulapadia PSS at Nageswar Tangi along with construction of 4nos. 11kV feeders and conductor augmentation of existing 11kV Badagada Lingaraj, Gautam Nagar, Mauima and Rajarani feeders.

#### **Objective:**

To ensure reliable power supply to the consumers for mitigating low voltage issues as well as to meet the increasing load demand due to prospective loads. The main thrust is laid on improvement of voltage profile, to minimize interruption of power supply to the consumers, availability of alternate power supply and socio-economic development of the inhabitants.

#### **Existing Scenario (summer'22):**

Presently the area namely Nageswar Tangi area is getting power supply from existing 33/11kV Badagada substation through 11kV Mausima, Badagada Lingaraj, Gautam Nagar and Rajarani feeders.

11kV Badagada Lingaraj feeder of 33/11kV Badagada PSS having length 7.5 Ckm (trunk and spur lines) carries 5MVA at its peak load. This feeder caters power supply to areas mainly BJB Nagar, Kedargouri Nagar, Garage Chhak, Old town area, Lingaraj area, etc feeding 3259no. of consumers.

11kV Gautam Nagar feeder of 33/11kV Badagada PSS having length 3.9 Ckm (trunk and spur lines) carries 4.15MVA at its peak load. This feeder caters power supply to areas mainly Gautam nagar area feeding 1500no. of consumers.

#### Supplementary Capex Plan: FY 2023-24

11kV Mausima feeder of 33/11kV Badagada PSS having length 3.24 Ckm (trunk and spur lines) carries 3MVA at its peak load. This feeder caters power supply to areas mainly BJB Nagar, Vivekananda Marg, Ratha road area, etc feeding 3191no. of consumers.

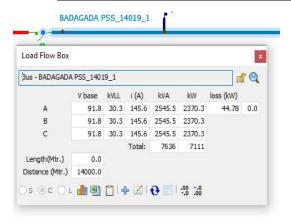
11kV Rajarani feeder of 33/11kV Badagada PSS having length 6.3 Ckm (trunk and spur lines) carries 4.3MVA at its peak load. This feeder caters power supply to areas mainly BJB Nagar, Louise road, etc feeding 3266no. of consumers.

The consumers in these areas are facing low voltage problem and frequent breakdowns due to lower size conductor and overloading.

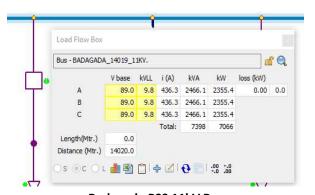
Name of Grid	Name of 33kV Feeder	r Capacity (MVA) Load of 33kV % Feeder (MVA) Loadi		% Loading	Name of 33/11kV PSS	33kV PSS Bus Voltage (kV)	11kV Bus Voltage at PSS (kV)
Ransinghpur	Badagada	26.6	20.5	77%	Badagada	30.3	9.8

PSS Name	11kV Feeder Name	Fdr Capacity (MVA)	Size of conductor	11kV Feeder Load (MVA)	% Loading	11kV Feeder Length (in kM)	Existing 11kV Feeder Tail End Voltage (kV)
	Badagada Lingaraj	5.2	100, 55sqmm	5	97%	7.5	9.03
Badagada	Gautam Nagar	5.2	100, 55sqmm	4.15	80%	3.9	9.24
	Mausima	4.5	80,55sqmm	3	66%	3.24	9.27
	Rajarani	5.2	100, 55sqmm	4.3	83%	6.3	9.11

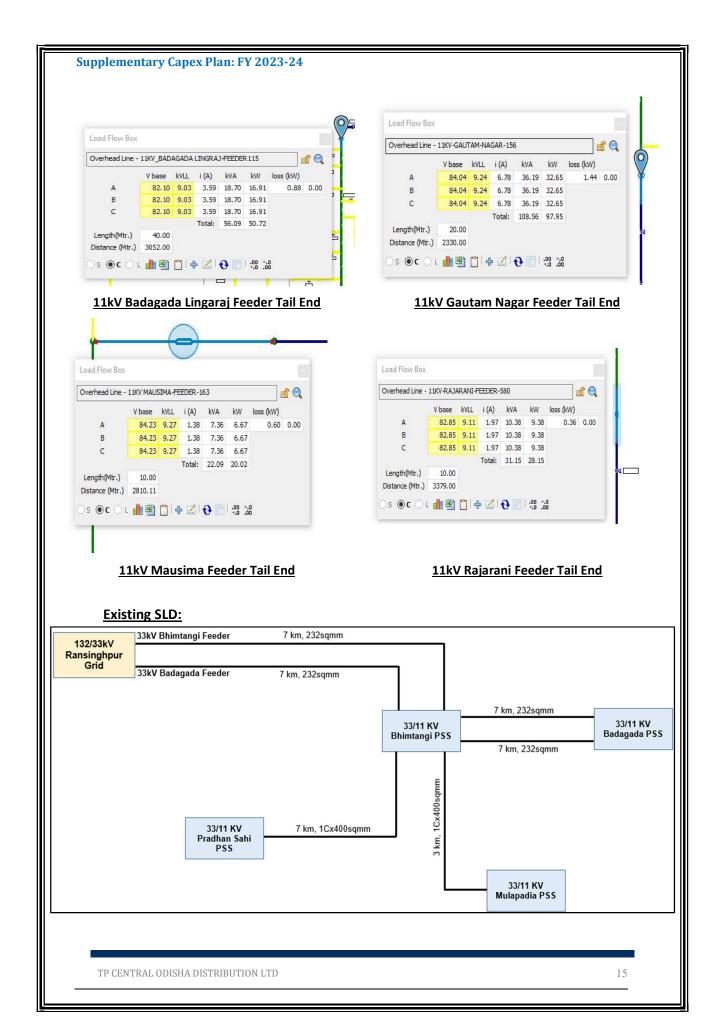
#### **Snapshot from Cyme Software (Existing Scenario)**



**Badagada PSS** 



Badagada PSS 11kV Bus



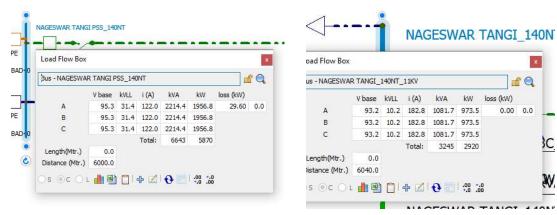
#### Proposed Scenario with commissioning of 33/11kV Nageswar Tangi PSS (Summer'24):

The proposed 33/11kV Nageswar Tangi PSS is proposed to be connected from proposed Badagada Grid at 3Ckm (33kV Nageswar Tangi feeder) and from 33/11kV Mulapadia PSS at 3Ckm along with construction of 4nos. 11kV feeders with 3Cx400sqmm cable of total 6Ckm and conductor augmentation of existing 11kV Badagada Lingaraj, Gautam Nagar, Mausima and Rajarani feeders from 34/55/80 sqmm to 100sqmm of length 10Ckm. The voltage profile will be improved in the area as shown below.

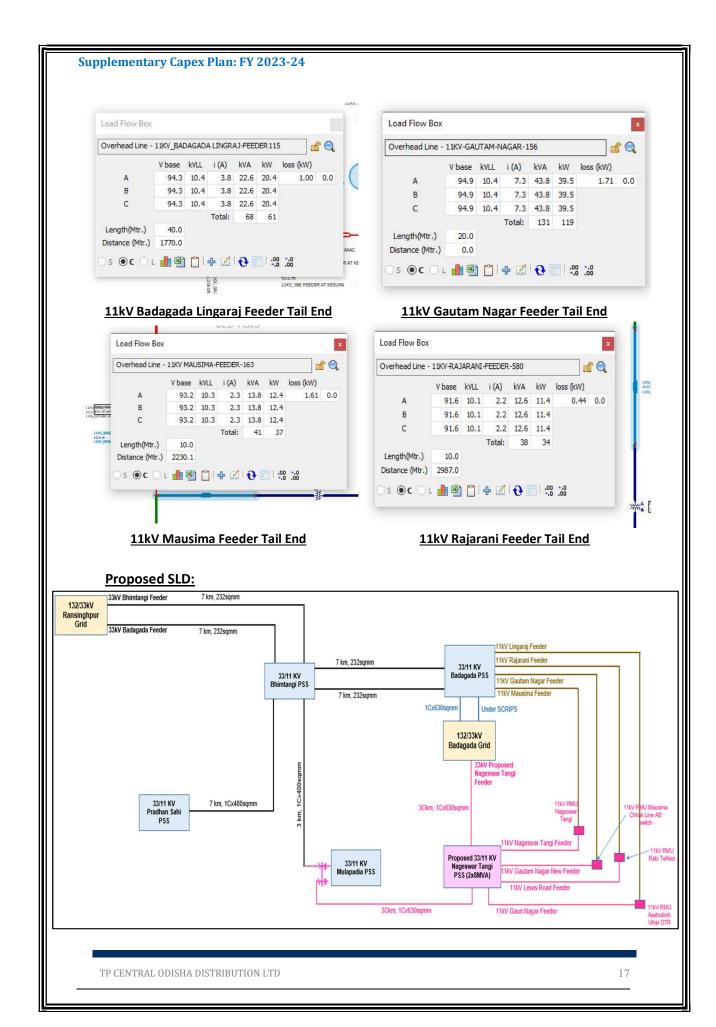
Name of Grid	Name of 33kV Feeder	Load of 33kV Feeder (MVA)	Name of 33/11kV PSS	33kV PSS Bus Voltage (kV)	11kV Bus Voltage at PSS (kV)
	Badagada	16		32.6	10.7
Badagada	Proposed NageswarTangi	9	Proposed NageswarTangi	31.4	10.2

PSS Name	11kV Feeder Name	11kV Feeder Length (in kM)	11kV Feeder Load (MVA)	11kV Feeder Tail End Voltage (kV)
	Badagada Lingaraj	4	2.2	10.4
Padagada	Gautam Nagar	2	3	10.3
Badagada	Mausima	1.2	2.5	10.4
	Rajarani	3	1.6	10.4
	Gauri Nagar Feeder	3.9	3.5	10.4
Proposed	New Gautam Nagar Feeder	3	1.6	10.4
Biswanahakani	Nageswar Tangi feeder	2.5	3	10.3
	Lewis Road Feeder	3	1.6	10.1

#### **Snapshot from Cyme Software (Proposed Scenario)**



Nageswar Tangi PSS 11kV Bus



#### **Detailed Scope of Work:**

- i. Construction of 33/11kV Primary Substation with 2X8 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. Construction of 33/11kV Primary Substation with 2X8MVA power transformer, including complete Control Room Building and all equipments for Supply, Erection, Commissioning, Testing, Civil Works with supply of all materials, Labour, T&P etc. As per technical specification and scope of work.
- ii. Construction of 6Ckm 33kV, 3runs 1CX630sqmm line from Badagada Grid to Proposed 33/11kV Nageswar Tangi PSS and interlinking line from Mulapadia PSS.
- iii. Construction of 11kV O/H line of 6CkM using 100 sq.mm, AAAC for 4 nos. of proposed 11kV associated feeders.
- iv. Installation of 1no. 33kV 4W RMU at 33/11kV Mulapadia PSS.
- v. Augmentation of existing 11kV line from 34/55/80 sqmm to 100sqmm AAAC of length 10Ckm.

#### **Abstract of Estimate**

Name of the Division :-	BHUBANESWAR ELECTRICAL DIVISION
Name of the Sub- Division : -	TEMPLE
Name of the Section : -	OT-2
Name of the Work :-	Construction of 2X8 MVA, 33/11 KV PSS at Nageswar Tangi along with 33 KV line (U/G) from Badagada Grid and Mulapadia PSS to proposed Nageswar Tangi PSS and 11kV associated outgoing feeders.
Scope of work:-	Construction of 33/11kV Primary Substation with 2X8 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. Construction of 6Ckm 33kV, 3runs 1CX630sqmm line from Badagada Grid to Proposed 33/11kV Nageswar Tangi PSS and interlinking line from Mulapadia PSS. Construction of 11kV line using 3Cx400sqmm cable of total length 6 Ckm and 1no. 33kV RMU at Mulapadia PSS for interlinking and sectionalisation. Augmentation of existing 11kV feeder from 34/55/80 sqmm to 100sqmm AAAC. Length = 6 km.
Names of Schemes: -	TPCODL CAPEX

#### Supplementary Capex Plan: FY 2023-24

	ABSTRACT OF ESTIMATE							
SI. No.	Part	Description	Amount					
1	A	Construction of 33/11kV Primary Substation with 2X8 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.	₹ 9,85,12,225.31					
2	В	Construction of 6Ckm 33kV, 3runs 1CX630sqmm line from Badagada Grid to Proposed 33/11kV Nageswar Tangi PSS and interlinking line from Mulapadia PSS.	₹ 8,68,24,123.27					
3	С	Construction of 11kV line using 3Cx400sqmm cable of total length 6 Ckm and 1no. 33kV RMU at Mulapadia PSS for interlinking and sectionalisation.	₹ 4,85,88,057.45					
4	D	Augmentation of existing 11kV feeder from 34/55/80 sqmm to 100sqmm AAAC. Length = 6 km.	₹ 73,79,146.94					
		Total Amount	₹ 24,13,03,552.98					
		Total Amount (In Rs. Cr)	24.13					

Total estimated cost is Rs.24.13 Crore.

Cost Estimate: ₹ 24.13 Cr. (For detailed BoQ refer Annexure-1).

#### **Benefits:**

- Improvement of voltage profile at the area around Nageswar Tangi.
- Minimization of interruption.
- Reliability of power supply.
- Strengthening of exiting distribution network.
- Providing second 33kV source connectivity to Mulapadia PSS.

#### 6.2 Proposed 33/11kV Biswanahakani PSS (2X5MVA)

#### **Proposal:**

Construction of 33/11kV Primary Substation with 2X5MVA power transformer with construction of 33kV incoming line from 132/33kV Mania Grid and 33kV Industrial feeder (Mania Grid) at Biswanahakani along with construction of 3nos. 11kV feeders and conductor augmentation of existing 11kV Haripur feeder.

#### **Objective:**

To ensure reliable power supply to the consumers for mitigating low voltage issues as well as to meet the increasing load demand due to prospective loads. The main thrust is laid on improvement of voltage profile, to minimize interruption of power supply to the consumers, availability of alternate power supply and socio-economic development of the inhabitants.

#### **Existing Scenario (Summer'22):**

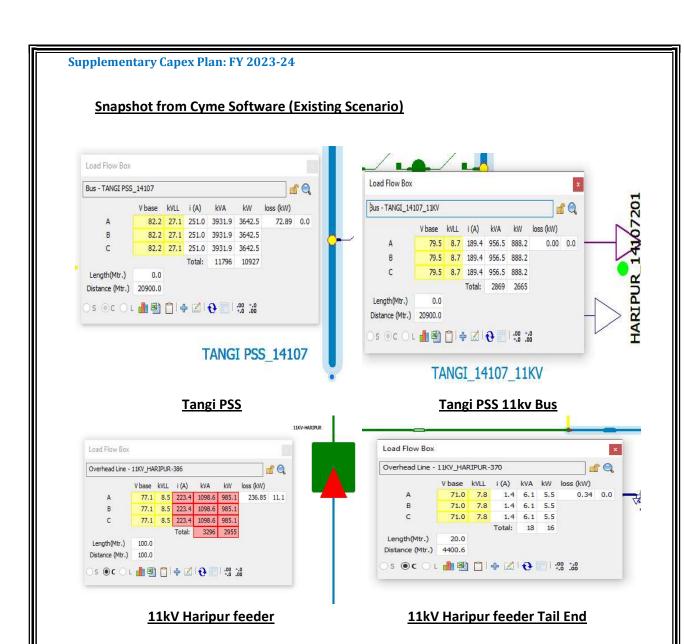
Presently the area namely Biswanahakani area is getting power supply from existing 33/11kV Tangi substation through Haripur 11kV feeder.

11kV Haripur feeder of 33/11kV Tangi PSS having length 121 Ckm (trunk and spur lines) carries 4MVA at its peak load. This feeder caters power supply to areas mainly Haripur area, Biswanahakani area, Saffa area, etc feeding 6550 nos. of consumers.

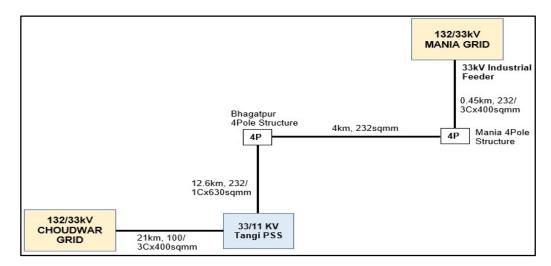
The consumers in these areas are facing low voltage problem and frequent breakdowns due to lengthy line, overloading of feeders and lower size conductor.

Name of Grid	Name of 33kV Feeder	Fdr Capacity (MVA)	Load of 33kV Feeder (MVA)	% Loading	Name of 33/11kV PSS	33kV PSS Bus Voltage (kV)	11kV Bus Voltage at PSS (kV)
Choudwar	Tangi	15.5	15.5	100%	Tangi	27.1	8.7

PSS Name	11kV Feeder Name	Fdr Capacity (MVA)	Size of conductor	11kV Feeder Load (MVA)	% Loading	11kV Feeder Length (in kM)	Existing 11kV Feeder Tail End Voltage (kV)
Tangi	Haripur	3.5	34, 55sqmm	4	113%	121	7.8



#### **Existing SLD:**

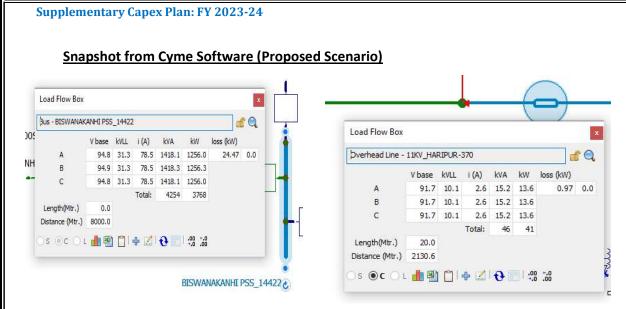


#### <u>Proposed Scenario with Biswanhakani PSS (Summer'24):</u>

The proposed 33/11kV Biswanahakani PSS is proposed to be connected from Mania Grid at 10Ckm OH conductor and 2Ckm UG cable (33kV Biswanahakani feeder) and interconnection with 33kV Industrial feeder (Mania Grid) with 33kV RMU provision near 33kV consumer (Som Distelleries) of length 4Ckm UG cable along with construction of 3nos. 11kV feeders with 3Cx400sqmm cable of total 3Ckm and conductor augmentation of existing 11kV Haripur feeder from 34/55/80 sqmm to 100sqmm of length 10Ckm. The voltage profile will be improved in the area as shown below.

Name of Grid	Name of 33kV Feeder	Load of 33kV Feeder (MVA)	Name of 33/11kV PSS	33kV PSS Bus Voltage (kV)	11kV Bus Voltage at PSS (kV)
Mania	Tangi 6		Tangi	30.5	10
Mania	Biswanahakani 5.5		Proposed Biswanahakani	31.3	10.5

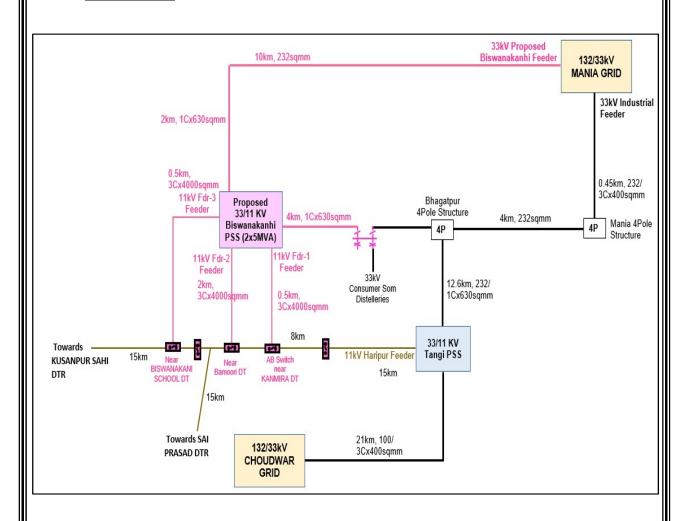
PSS Name	11kV Feeder Name	11kV Feeder Length (in kM)	11kV Feeder Load (MVA)	11kV Feeder Tail End Voltage (kV)
Tangi	Haripur	30	1	10.1
	Fdr-1	25	1.5	10.1
Proposed Biswanahakani	Fdr-2	34	1.9	10.2
2.5 Wallariakarii	Fdr-3	35	2.1	10.1



#### Biswanakanhi PSS

11kV Haripur Feeder Tail End

#### **Proposed SLD:**



#### **Detailed Scope of Work:**

- i. 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. Construction of 33/11kV Primary Substation with 2X5MVA power transformer, including complete Control Room Building and all equipments for Supply, Erection, Commissioning, Testing, Civil Works with supply of all materials, Labour, T&P etc. As per technical specification and scope of work.
- ii. Construction of 2Ckm 33kV, 1CX630sqmm line and 33kV O/H Line of 10Ckm with 232sqmm OH conductor from Mania Grid to Proposed Biswanahakani PSS.
- iii. 4Ckm 33kV, 1CX630sqmm line from 33kV consumer -Som Distelleries to Proposed Biswanahakani PSS.
- iv. Construction of 11kV UG line wth 3Cx400sqmm cable of total 3Ckm for 3 nos. of proposed 11kV associated feeders.
- v. Augmentation of existing 11kV line from 34/55/80 sqmm to 100sqmm AAAC of length 10Ckm.

#### **Abstract of Estimate**

Name of the Division :-	CED
Name of the Sub- Division : -	CHOUDWAR
Name of the Section : -	TANGI
Name of the Work :-	Construction of 2X5 MVA, 33/11kV PSS at Biswanakanhi along with 33 KV line (O/H & U/G) from Mania Grid and connectivity from 33kV Industrial feeder (Mania Grid) to proposed Biswanakanhi PSS and 11kV associated outgoing feeders.
Scope of work:-	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. Construction of 2Ckm 33kV, 1CX630sqmm line from Mania Grid to Proposed Biswanahakani PSS and 4Ckm 33kV, 1CX630sqmm line from 33kV consumer -Som Distelleries. Construction of 33kV O/H Line of 10Ckm with 232sqmm OH conductor from Mania Grid to Proposed Biswanahakani PSS. Construction of 11kV U/G Line with 3CX400sqmm Cable- 3Ckm. Augmentation of existing 11kV line from 34/55/80 sqmm to 100sqmm AAAC. of length 10Ckm.
Names of Schemes:	TPCODL CAPEX

#### Supplementary Capex Plan: FY 2023-24

	ABSTRACT OF ESTIMATE								
SI. No.	Part	Description	Amount (In Cr.)						
1	А	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.	₹ 9,49,63,176.06						
2	В	Construction of 2Ckm 33kV, 1CX630sqmm line from Mania Grid to Proposed Biswanahakani PSS and 4Ckm 33kV, 1CX630sqmm line from 33kV consumer -Som Distelleries.	₹ 8,68,24,123.27						
3	С	Construction of 33kV O/H Line of 10Ckm with 232sqmm OH conductor from Mania Grid to Proposed Biswanahakani PSS.	₹ 3,66,31,422.30						
4	D	Construction of 11kV U/G Line with 3CX400sqmm Cable-3Ckm.	₹ 2,26,08,437.19						
5	Е	Augmentation of existing 11kV line from 34/55/80 sqmm to 100sqmm AAAC. of length 10Ckm.	₹ 1,18,48,194.29						
		Total Amount	₹ 25,28,75,353.11						
		Total Amount (In Rs.Cr)	25.29						

Total estimated cost is Rs. 25.29/- Crore.

Cost Estimate: ₹ 25.29cr. (For detailed BoQ refer Annexure-2).

#### **Benefits:**

- Improvement of voltage profile at the area around Biswanahakani.
- Mitigation of overloading of feeders.
- Minimization of interruption.
- Reliability of power supply.
- Strengthening of exiting distribution network.

#### 7. PART-B: Construction of 33kV New Lines

In TPCODL, 33kV network is the back bone of power supply system and spread across vast area of TPCODL 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. In such lengthy 33kV feeder low voltage issues have been faced at the far end of the feeder and at PSS level in some cases.

Hence 33kV new lines are proposed to reduce the length of the existing feeder, by which voltage profile will be improved, overloading of 33kV feeders will be mitigated and N-1 reliability can be achieved. In this proposal 20 nos. 33kV new line will be constructed for low voltage mitigation, overloading mitigation and N-1 reliability proposals.

Table 7-1: List of proposed 33kV New Lines to mitigate low voltage issue at 33/11kV PSS:

SI. No.	Name of Circle	From (GSS/ PSS)	То	Cost. (in Rs.cr.)			
1	BBSR-I	Satsankha GSS	tsankha GSS Mangalpur PSS				
2	BBSR-I	Pratapsasan GSS Trahiachyuta Nagar PSS		4.38			
3	BBSR-II	Daspalla GSS	Proposed 4-Pole (Daspalla PSS)				
4	BBSR-II	Daspalla GSS Existing 4-Pole (Banigochha PS		14.16			
5	BBSR-II	Daspalla GSS	Proposed 4-Pole (Gania PSS)				
6	BBSR-II	Satsankha GSS	Patnayak Chowk (Delang)	5.20			
7	BBSR-II	Argul GSS Taraboi point DP (Tiramalla PSS)		7.35			
8	BBSR-II	Satsankha GSS	Satsankha GSS Satsankha/ Kumareswar PSS				
9	CUTTACK	Bahugram/Atado GSS Bahugram-2 PSS		5.60			
10	CUTTACK	Balichandrapur GSS	Balichandrapur PSS	7.65			
11	DHENKANAL	Gondia GSS	Proposed 4-Pole (College PSS)	2.65			
12	DHENKANAL	Gondia GSS	Proposed 4-Pole (Joranda PSS)	2.65			
13	DHENKANAL	Goda GSS	Proposed 4-Pole (Bhuban PSS)	1.35			
14	DHENKANAL	Chainpal GSS	Parjang PSS	11.15			
15	DHENKANAL	Kamakhyanagar GSS	Parjang PSS	12.68			
16	PARADEEP	Rajnagar GSS	Badhi/Babar PSS	11.62			
17	PARADEEP	Tirtol GSS	Kanakpur PSS	3.93			
18	CUTTACK	Bahugram/Atado GSS	Nischintakoili PSS	7.04			
19	BBSR-I	Bangurigaon PSS	S Kakatpur PSS				
20	DHENKANAL	Khajuriakata GSS	Phulapada PSS	12.90			
TOTAL							

# 7.1 <u>Mitigation of Low Voltage and Overloading issues at 33/11kV Substations fed from 33kV Pipili Feeder (Nimapada Grid):</u>

#### Proposal:

Proposal for laying of 1CX630sqmm UG cable of length 3.5Ckm from 132/33kV Satasankha Grid to proposed 1no. 4Pole structure at 33kV Pipili feeder near Mangalpur PSS.

Proposal for construction of 232sqmm OH conductor feeder of length 7Ckm and laying of 1CX630sqmm UG cable of length 1Ckm from 132/33kV Pratapsasan Grid to 33/11kV Trahiachyutanagar PSS and construction of 1no. 33kV outdoor bay at Trahiachyutanagar PSS.

#### **Objective:**

To provide reliable power supply to the consumers, improve low voltage issues of areas fed from 33/11kV Mangalpur PSS, Pipili PSS, Garadpur PSS and Trahiachyutanagar PSS. Overloading mitigation of 33kV Pipili feeder emanating from Nimapada Grid along with ensuring reliability of power supply by providing N-1 contingency connectivity from 33kV feeders proposed from Satasankha Grid and Pratapsasan Grid during peak loading condition.

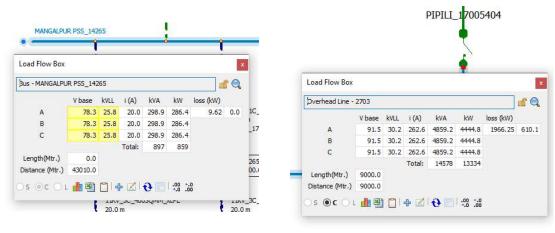
#### **Existing Scenario (Summer'22):**

- At present, 33/11kV Garadpur, Trahiachyutanagar, Pipili and Mangalpur PSS are fed from 33kV Pipili feeder emanating from Nimapada Grid, having 100sqmm OH conductor.
- The voltage experienced at 33/11kV Garadpur, Trahiachyutanagar, Pipili and Mangalpur PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The 33kV Pipili feeder feeds power supply to 33/11kV Garadpur, Trahiachyutanagar, Pipili and Mangalpur PSS with a total length of 56.1Ckm. The 33kV Pipili feeder is overloaded up to 97%.
- The low voltage and overloading situation will increase with load growth (10%) for each year.

Name Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Nimapa	da Pipili	15.54	15.00	97%	Overload	18.15	24.16	155%

Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
		Garadpur	29
Nimanada	Pipili	Pipili	25.8
Nimapada		Traiachyutnagar	27.3
		Mangalpur	25.8

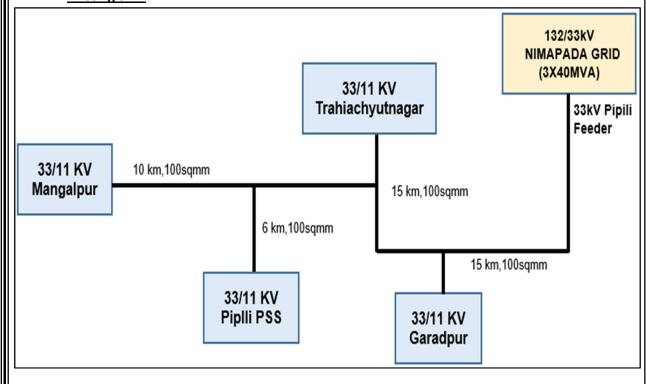
### **Snapshot from Cyme Software (Existing Scenario)**



## **Mangalpur PSS**

33kV Pipili feeder

## **Existing SLD:**

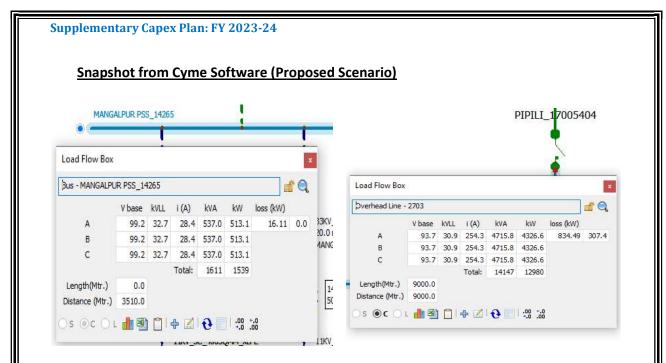


#### **Proposed Scenario (Summer'24):**

- Laying of 1CX630sqmm UG cable of length 3.5Ckm from 132/33kV Satasankha Grid to proposed 1no. 4Pole structure at 33kV Pipili feeder near Mangalpur PSS.
- Construction of 232sqmm OH conductor of length 7Ckm and laying of 1CX630sqmm UG cable of length 1Ckm from 132/33kV Pratapsasan Grid to 33/11kV Trahiachyutanagar PSS.
- Construction of 1no. 33kV outdoor bay at Trahiachyutanagar PSS.
- After linking new feeders from Satasankha GSS and Pratapsasan GSS, the 33kV proposed Trahiachyutanagar feeder will deliver power supply to Trahiachyutanagar PSS, the 33kV proposed Mangalpur feeder will deliver power supply to Mangalpur PSS and the existing 33kV Pipili feeder will deliver power supply to Garadpur PSS and Pipili PSS during normal operating condition.
- This proposal will mitigate the overloading issue of 33kV Pipili feeder emanating Nimapada Grid and improve voltage profile at 33/11kV Garadpur, Trahiachyutanagar, Pipili and Mangalpur PSS.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Over loading Status
Nimapada	Pipili	26.51	13.00	49%	ОК	17.30	65%	ОК
Pratapsasan	Proposed Trahiachyutanagar	26.51	2.60	10%	ОК	3.46	13%	ОК
Satasankha	Proposed Mangalpur	26.51	2.70	10%	ОК	3.59	14%	ОК

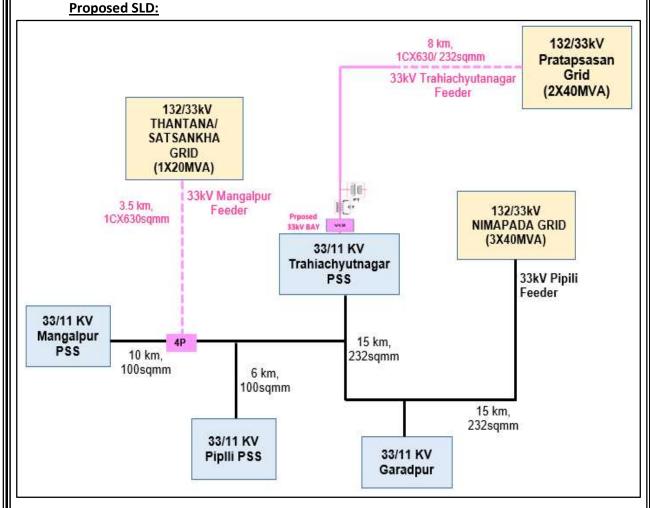
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
Nimanada	Pipili	Garadpur	30.1
Nimapada	Pipili	Pipili	30.05
Pratapsasan	Proposed Trahiachyutanagar	Trahiachyutanagar	31.6
Satasankha	Proposed Mangalpur	Mangalpur	32.7



## **Mangalpur PSS**

#### 1615

### 33kV Pipili feeder



## **Detailed Scope of Work:**

## 33kV Proposed Mangalpur Feeder (Satasankha Grid):

Laying of 1CX630sqmm UG cable of length 3.5Ckm & construction of 1no. 4Pole structure.

### **Abstract of Estimate**

Name of the D	Name of the Division :- PURI ELECTRICAL DIVISION, PURI					
Name of the Su	ub-Division : -	Sakhigopal				
Name of the Se	ection : -	Satasankha, Puri				
Name of the W	Name of the Work :- 33kV New Line from Satasankha Grid (33kV Proposed Mangalpur Feeder)					
Scope of work:	Laying of 33kV underground cable with 3R, 1CX630sqmm Cable-3.5Ckm. Construction of 33kV 4 Pole with Isolator-1 No.					
Names of Schemes: - TPCODL CAPEX						
		ABSTRACT OF ESTIMATE				
SI. No.	Part	Description	Amount			
1	А	Laying of 33kV underground cable with 3R, 1CX630sqmm Cable- 3.5Ckm.	₹ 4,80,61,167.38			
2	В	Construction of 33kV 4 Pole with Isolator- 1 No.	₹ 9,78,548.67			

Total estimated cost is Rs.4.9 Crore.

Cost Estimate: ₹ 4.90cr. (For detailed BoQ refer Annexure-3).

**Total Amount** 

**Total Amount (In Rs. Cr)** 

₹ 4,90,39,716.04

4.90

#### 33kV Proposed Trahiachyutanagar Feeder (Pratapsasan Grid):

Construction of 232sqmm OH conductor of length 7Ckm and laying of 1CX630sqmm UG cable of length 1Ckm from 132/33kV Pratapsasan Grid to 33/11kV Trahiachyutanagar PSS along with construction of 1no. 33kV outdoor bay at Trahiachyutanagar PSS.

### **Abstract of Estimate**

Name	Name of the Division :- NED, Nimapada					
Name	of the Sub-Division : -	Pipili				
Name	of the Section : -	Pipili No1				
Name	of the Work :-	33kV New Line from Pratapsasan Grid (33kV Prop Trahiachyutanagar Feeder)	oosed			
Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm  AAAC Conductor, considering span length of 40mtr  7Ckm.Construction of 33kV U/G Line with 3R, 1CX630sqmm Cab  1Ckm. Construction for 1 no. of 33kV Outdoor Bay at Trahiachyu  Nagar PSS.						
Name	es of Schemes: -	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE				
SI. No.	Part	Description	Amount			
1	А	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC Conductor, considering span length of 40mtr 7Ckm.	₹ 2,61,36,726.20			
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm.	₹ 1,40,53,343.76			
3	С	Construction for 1 no. of 33kV Outdoor Bay at Trahiachyuta Nagar PSS. ₹ 36,39,03				
		Total Amount	₹ 4,38,29,103.13			
		Total Amount (In Rs. Cr)	₹ 4.38			
Total	estimated cost is Rs.4.38	Crore.	1			

Cost Estimate: ₹ 4.38cr. (For detailed BoQ refer Annexure-4).

### **Benefits:**

- ❖ Mitigation of overloading issue of 33kV Pipili feeder.
- ❖ Improving low voltage issues at 33/11kV Garadpur, Trahiachyutanagar, Pipili and Mangalpur PSS.
- Ensuring reliable power supply to the consumers by providing N-1 contingency connectivity to 33kV Pipili feeder.

## 7.2 <u>Mitigation of Low Voltage issues at 33/11kV Substations fed from 33kV Daspalla</u> Feeder (Nayagarh Grid):

#### **Proposal:**

Proposal for construction of 241sqmm OH covered conductor feeder of length 0.35Ckm from proposed 220/33kV Daspalla Grid to proposed 1no. 4Pole structure at 33kV Daspalla feeder, construction of 241sqmm OH covered conductor feeder of length 0.37Ckm from proposed 220/33kV Daspalla Grid to existing 4Pole structure at 33kV Daspalla feeder, construction of 241sqmm OH covered conductor line of length 32Ckm and laying of 1CX630sqmm UG cable of length 1Ckm from 220/33kV Daspalla Grid to proposed 4Pole structure 33kV line between Nuagaon PSS and Gania PSS.

#### **Objective:**

To provide reliable power supply to the consumers, improve low voltage issues of areas fed from 33/11kV Daspalla PSS, Banigochha PSS, Gania PSS, Chamundia PSS, Kirialanji PSS, Mahipur PSS and Nuagaon PSS during peak loading condition. Ensuring reliability of power supply by providing N-1 contingency connectivity from 33kV feeders proposed from Daspalla Grid during peak loading condition.

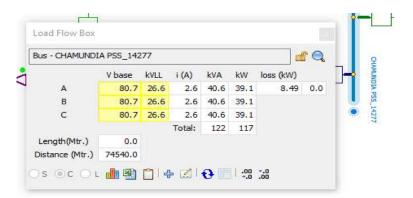
### **Existing Scenario (Summer'22):**

- At present, 33/11kV Daspalla PSS, Banigochha PSS, Gania PSS, Chamundia PSS, Kirialanji PSS, Mahipur PSS and Nuagaon PSS are fed from 33kV Daspalla feeder emanating from Rajpatna (Nayagarh) Grid, having mixed type OH conductor and UG cable.
- The voltage experienced at 33/11kV Daspalla PSS, Banigochha PSS, Gania PSS, Chamundia PSS, Kirialanji PSS, Mahipur PSS and Nuagaon PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The low voltage situation will increase with load growth (10%) for each year.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Nayagarh	Daspalla	26.51	12.60	48%	Ok	15.25	20.29	77%

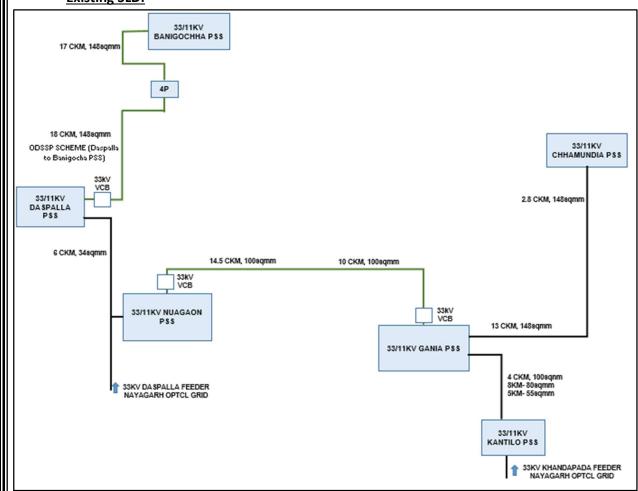
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
		Kirialanji	29.6
		Mahipur	29
Novemb	Daspalla	Nuagaon	27.4
Nayagarh		Daspalla	24.3
		Gania	26.6
		Chamundia	26.6

### **Snapshot from Cyme Software (Existing Scenario)**



#### **Chamundia PSS**

## **Existing SLD:**



#### Proposed Scenario (Summer'24):

- Construction of 241sqmm OH covered conductor of length 0.35Ckm from 220/33kV Daspalla Grid to proposed 1no. 4Pole structure at 33kV Daspalla feeder.
- Construction of 241sqmm OH covered conductor of length 0.37Ckm from 220/33kV Daspalla Grid to existing 4Pole structure at 33kV Daspalla feeder.
- Construction of 241sqmm OH covered conductor of length 32Ckm and laying of 1CX630sqmm UG cable of length 1Ckm from 220/33kV Daspalla Grid to proposed 4Pole structure 33kV line between Nuagaon PSS and Gania PSS.
- After linking new feeders from proposed Daspalla GSS, the new feeder namely 33kV Proposed Daspalla feeder will deliver power supply to Daspalla PSS, 33kV Proposed Banigochha feeder will deliver power supply to Banigochha PSS and 33kV Proposed Gania feeder will deliver power supply to Gania and Chamundia PSS and existing 33kV Daspalla feeder will deliver power supply to Kirialiaji PSS, Mahipur PSS and Nuagaon PSS during normal operating condition.
- This proposal will improve the voltage at 33/11kV Daspalla PSS, Banigochha PSS, Gania PSS, Chamundia PSS, Kirialanji PSS, Mahipur PSS and Nuagaon PSS.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Overl oading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Over loading Status
Nayagarh	Daspalla	26.51	3.90	15%	ОК	5.19	20%	ОК
	Proposed Daspalla	26.51	6.50	25%	OK	8.65	33%	OK
Daspalla	Proposed Gania	26.51	3.00	11%	ОК	3.99	15%	ОК
	Proposed Banigocha	26.51	3.00	11%	OK	3.99	15%	OK

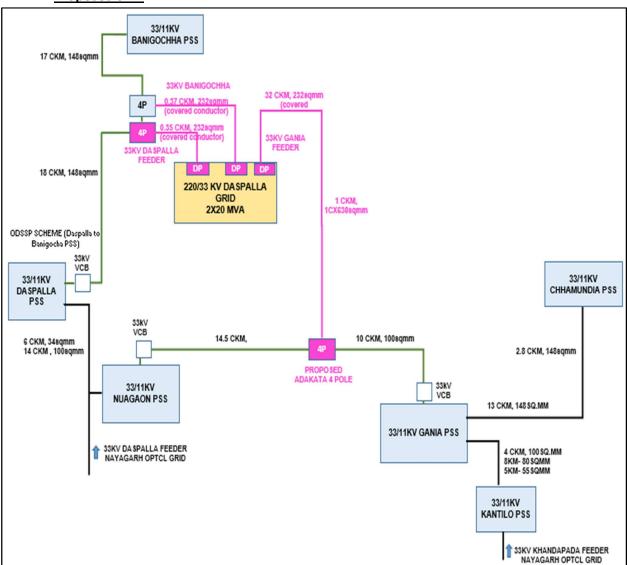
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
		Kirialanji	30.7
Nayagarh	Daspalla	Mahipur	30.6
		Nuagaon	30.3
	Proposed Daspalla	Daspalla	30.9
	Dronocod Cania	Gania	31.1
Daspalla	Proposed Gania	Chamundia	31.1
	Proposed Banigocha	Banigocha	31.4

#### **Snapshot from Cyme Software (Proposed Scenario)**



**Chamundia PSS** 

#### **Proposed SLD:**



#### **Detailed Scope of Work:**

Construction of 241sqmm OH covered conductor feeder of length 0.35Ckm from proposed 220/33kV Daspalla Grid to proposed 1no. 4Pole structure at 33kV Daspalla feeder, construction of 241sqmm OH covered conductor feeder of length 0.37Ckm from proposed 220/33kV Daspalla Grid to existing 4Pole structure at 33kV Daspalla feeder, construction of 241sqmm OH covered conductor line of length 32Ckm and laying of 1CX630sqmm UG cable of length 1Ckm from 220/33kV Daspalla Grid to proposed 4Pole structure 33kV line between Nuagaon PSS and Gania PSS.

## **Abstract of Estimate**

Name of to	Name of the Division :- NAYAGARH ELECTRICAL DIVISION, NAYAGARH					
Name of to	me of the Sub- vision : -  Daspalla					
Name of t Section : -		Daspalla, Nayagarh				
Name of t	the Work	33kV New Lines from Daspalla Grid (33kV Proposed Daspall Gania Feeders)	la, Banigochha &			
Scope of	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covere conductor- 0.35Ckm. Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 0.37Ckm. Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 32Ckm Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm. Construction of 33kV 4 Pole structure with Isolator- 2nos.					
Names of	Schemes:	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE				
Sl. No.	Part	Description	Gross Total			
1	Α	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 0.35Ckm.	₹ 12,97,797.24			
2	В	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 0.37Ckm.	₹ 13,33,614.81			
3	С	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 32Ckm.	₹ 12,23,63,262.25			
4 D		Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm.	₹ 1,44,82,689.32			
5 E Constructi		Construction of 33kV 4 Pole structure with Isolator- 2nos.	₹ 20,90,891.18			
	Total Estimated Cost					
		Total Estimated Cost (in Rs. Cr)	14.16			
Total acti	mated cost	is Rs.14.16 Crore.	1			

Cost Estimate: ₹ 14.16 Cr. (For detailed BoQ refer Annexure-5).

## **Benefits:**

- ❖ Improving low voltage issues at 33/11kV Daspalla PSS, Banigochha PSS, Gania PSS, Chamundia PSS, Kirialanji PSS, Mahipur PSS and Nuagaon PSS.
- ❖ Ensuring reliable power supply to the consumers by providing N-1 contingency connectivity to 33kV Daspalla feeder.

# 7.3 <u>Mitigation of Low Voltage and Overloading issues at 33/11kV Substations fed from 33kV Delang Feeder (Khordha Grid):</u>

#### Proposal:

Proposal for construction of 232sqmm OH conductor feeder of length 8Ckm and laying of 1CX630sqmm UG cable of length 1.5Ckm from 132/33kV Satasankha Grid to Pattanayaka Chowk and construction of 1no. 4Pole structure at Pattanayaka Chowk.

Proposal for construction of 232sqmm OH conductor feeder of length 13Ckm and laying of 1CX630sqmm UG cable of length 3.5Ckm from 132/33kV Argul Grid to proposed 4Pole structure at existing 33kV Delang feeder (Khordha GSS to Tirimalla PSS line).

#### **Objective:**

To provide reliable power supply to the consumers, improve low voltage issues of areas fed from 33/11kV Tirimalla PSS, Delang PSS, Kalyanpur PSS and Kanas PSS during peak loading condition. Overloading mitigation of 33kV Delang feeder emanating from Khordha Grid along with ensuring reliability of power supply by providing N-1 contingency connectivity from 33kV feeders proposed from Satasankha Grid and Argul Grid during peak loading condition.

#### **Existing Scenario (Summer'22):**

- At present, 33/11kV Delang PSS, Tirimalla PSS, Kalyanpur PSS and Kanas PSS are fed from 33kV Delang feeder emanating from Khordha Grid, having 100sqmm OH conductor.
- The voltage experienced at 33/11kV Tirimalla PSS, Delang PSS, Kalyanpur PSS and Kanas PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The 33kV Delang feeder feeds 33/11kV Tirimalla PSS, Delang PSS, Kalyanpur PSS and Kanas PSS with a total length of 46.5Ckm. The 33kV Delang feeder is overloaded up to 97%.
- The low voltage and overloading situation will increase with load growth (10%) for each year.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Overloading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Khordha	Delang	15.54	15.00	97%	Overload	18.15	24.16	155%

Name of Grid	Name of 33kV Feeder	Name of 33kV Feeder Name of 33/11kV PSS	
	Delang	Tirimalla	28.5
Khardha		Delang	26.7
Khordha		Kalyanpur	26
		Kanas	25.5

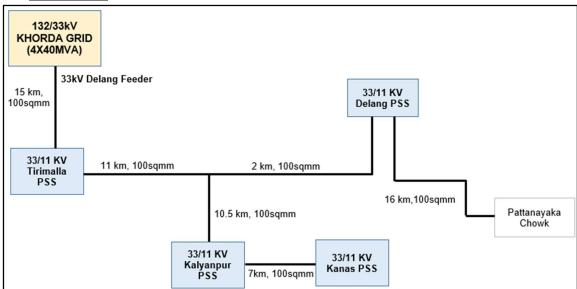
#### Supplementary Capex Plan: FY 2023-24 Snapshot from Cyme Software (Existing Scenario) DELANG\_17007405 Load Flow Box Load Flow Box Dverhead Line - 849 # Q Bus - KANAS PSS\_14074 f Q V base kVLL i (A) kVA loss (kW) V base kVLL i (A) kVA kW loss (kW) 91.6 30.2 275.5 5053.5 4569.6 1776.13 522.0 77.3 25.5 91.9 1353.6 1267.1 23.87 0.0 91.6 30.2 275.5 5053.5 4569.6 В 91.9 1353.6 1267.1 77.3 25.5 91.6 30.2 275.5 5053.5 4569.6 77.3 25.5 91.9 1353.6 1267.1 Total: 15161 13709 Length(Mtr.) 7000.0 Total: 3801 4061 Distance (Mtr.) 7010.0 Length(Mtr.) 0.0 Distance (Mtr.) 43510.0 )s ⊚c ○ L 🚹 🕙 📋 💠 🔣 😥 📄 🐫

**Kanas PSS** 

**33kV Delang Feeder** 

#### **Existing SLD:**

)s 🛈 C 🔾 L 🚹 🕙 📋 💠 🔀 😥 🔡 👯



#### Proposed Scenario (Summer'24):

- Construction of 232sqmm OH conductor feeder of length 8Ckm and laying of 1CX630sqmm UG cable of length 1.5Ckm from 132/33kV Satasankha Grid to Pattanayaka Chowk.
- Construction of 1no. 4Pole structure at Pattanayaka Chowk.
- Construction of 232sqmm OH conductor feeder of length 13Ckm and laying of 1CX630sqmm UG cable of length 3.5Ckm from 132/33kV Argul Grid to proposed 4Pole structure at existing 33kV Delang feeder (Khordha GSS to Tirimalla PSS line).
- Construction of 1no. 4Pole structure at existing 33kV Delang feeder (Khordha GSS to Tirimalla PSS line).
- After linking new feeders from Satasankha GSS and Argul GSS, the proposed Satasankha-2 feeder will deliver power supply to Delang PSS, the proposed Delang New

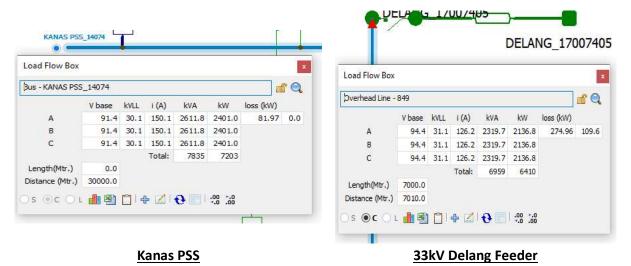
feeder will deliver power supply to Kalyanpur PSS, the proposed Kanas feeder (proposal under CMPDP scheme) will deliver power supply to Kanas PSS and existing 33kV Delang feeder will deliver power supply to Tirimalla PSS during normal operating condition.

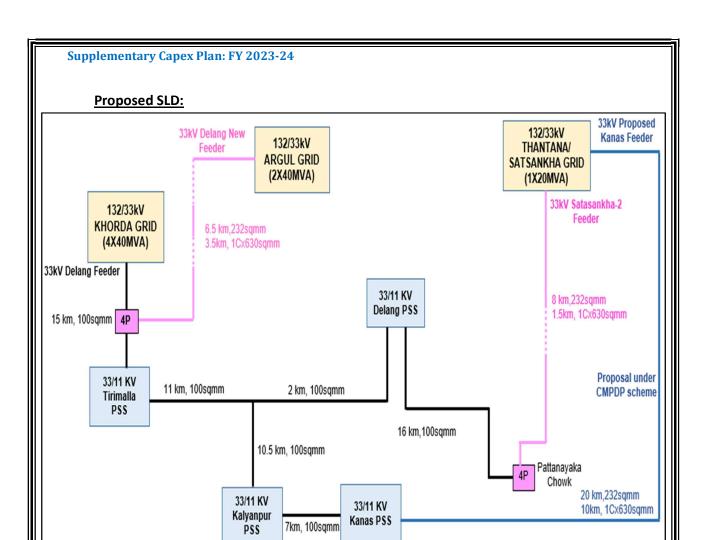
• This proposal will mitigate the overloading issue of 33kV Delang feeder and improve voltage at 33/11kV Tirimalla PSS, Delang PSS, Kalyanpur PSS and Kanas PSS.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Over loading Status
Khurdha	Delang	15.54	5.00	32%	ОК	6.66	43%	ОК
Satsankha	Proposed Satsankha-2	15.54	4.50	29%	ОК	5.99	39%	OK
Argul	Proposed Delang New	15.54	4.00	26%	ОК	5.32	34%	OK
Satsankha	Proposed Kanas (CMPDP)	26.51	6.40	24%	ОК	8.52	32%	ОК

Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
Khurdha	Delang	Tirimalla	30.4
Satsankha	Proposed Satsankha- 2	Delang	30.9
Argul	Proposed Delang New	Kalyanpur	30.7
Satsankha	Proposed Kanas (CMPDP)	Kanas	30.1

#### **Snapshot from Cyme Software (Proposed Scenario)**





## **Detailed Scope of Work:**

## 33kV Proposed Satasankha-2 Feeder (Satasankha Grid):

Construction of 232sqmm OH conductor feeder of length 8Ckm and laying of 1CX630sqmm UG cable of length 1.5Ckm from 132/33kV Satasankha Grid to Pattanayaka Chowk and construction of 1no. 4Pole structure at Pattanayaka Chowk.

## **Abstract of Estimate**

Name o	of the Division :-	PURI ELECTRICAL DIVISION, PURI					
Name o	of the Sub-Division : -	Sakhigopal					
Name o	of the Section : -	Satasankha, Puri					
Name o	of the Work :-	33kV New Line from Satasankha Grid (33kV Prop Feeder)	m Satasankha Grid (33kV Proposed Satasankha-2				
Scope o	of work:-	Construction of 33kV O/H Line using 13mtr H-Po AAAC conductor- 8Ckm. Construction of 33kV U/ 1CX630sqmm cable- 1.5Ckm. Construction of 33 with Isolator- 1 No.	'G Line with 3R,				
Names	of Schemes: -	TPCODL CAPEX					
		ABSTRACT OF ESTIMATE					
SI. No.	Part	Description	Amount				
1	А	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 8Ckm.	₹ 2,97,35,347.05				
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm cable- 1.5Ckm.	₹ 2,12,80,956.31				
3	С	Construction of 33kV 4 Pole structure with Isolator- 1 No.	₹ 9,78,548.67				
		Total Amount	₹ 5,19,94,852.03				
	Total Amount (In Rs. Cr) 5.20						
Total e	stimated cost is Rs.5.20	Crore.	1				

Cost Estimate: ₹ 5.20 Cr. (For detailed BoQ refer Annexure-6).

#### 33kV Proposed Delang New Feeder (Argul Grid):

Construction of 232sqmm OH conductor feeder of length 13Ckm and laying of 1CX630sqmm UG cable of length 3.5Ckm from 132/33kV Argul Grid to proposed 4Pole structure at existing 33kV Delang feeder (Khordha GSS to Tirimalla PSS line).

### **Abstract of Estimate**

Name	e of the Division :-	KHORDHA ELECTRICAL DIVISION, KHORDHA				
Name	e of the Sub-Division : -	KHORDHA ,KHD, Khordha				
Name	e of the Section : -	Khordha III, Khordha				
Name	e of the Work :-	33kV New Line from Argul Grid (33kV Proposed I Feeder)	Delang New			
Scope	e of work:-	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC Conductor- 6.5Ckm. Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 3.5Ckm. Construction of 33kV 4 Pole structure with Isolator- 1 No.				
Name	es of Schemes: -	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE				
SI. No.	Part	Description	Amount			
1	А	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC Conductor- 6.5Ckm.	₹ 2,43,62,298.52			
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 3.5Ckm.	₹ 4,81,18,624.20			
3	С	Construction of 33kV 4 Pole structure with Isolator- 1 No.	₹ 9,78,548.67			
		Total Amount	₹ 7,34,59,471.39			
		Total Amount (In Rs. Cr)	7.35			
Total	estimated cost is Rs.7.35	Crore.				

Cost Estimate: ₹ 7.35 Cr. (For detailed BoQ refer Annexure-7).

### **Benefits:**

- ❖ Mitigation of overloading issue of 33kV Delang feeder.
- ❖ Improving low voltage issues at 33/11kV Tirimalla PSS, Delang PSS, Kalyanpur PSS and Kanas PSS.
- ❖ Ensuring reliable power supply to the consumers by providing N-1 contingency connectivity to 33kV Delang feeder.

## 7.4 <u>Mitigation of Low Voltage and Overloading issues at 33/11kV Substations fed from 33kV Sakhigopal Feeder (Puri Grid):</u>

#### **Proposal:**

Proposal for construction of 232sqmm OH conductor feeder of length 6Ckm and laying of 1CX630sqmm UG cable of length 3.5Ckm from 132/33kV Satasankha Grid to 33/11kV Satasankha PSS and construction of 2nos. 4Pole structure.

#### **Objective:**

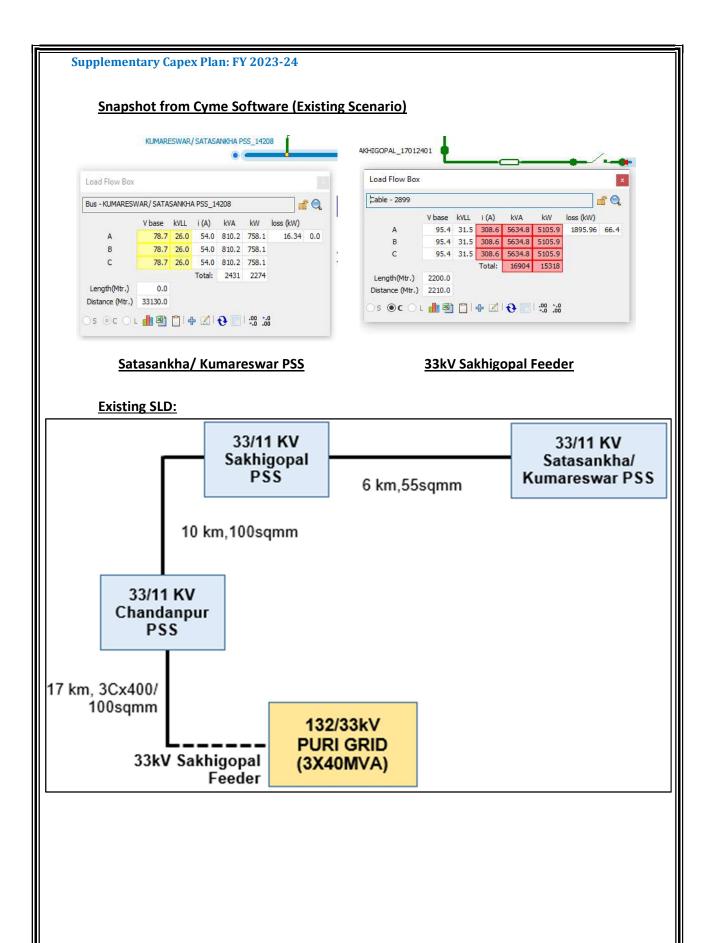
To provide reliable power supply to the consumers improve low voltage issues of areas fed from 33/11kV Chandanpur PSS, Satasankha PSS and Sakhigopal PSS during peak loading condition. Overloading mitigation of 33kV Sakhigopal feeder emanating from Puri Grid along with ensuring reliability of power supply by providing N-1 contingency connectivity from 33kV feeder proposed from Satasankha Grid during peak loading condition.

#### **Existing Scenario (Summer'22):**

- At present, 33/11kV Chandanpur PSS, Satasankha PSS and Sakhigopal PSS are fed from 33kV Sakhigopal feeder emanating from Puri Grid, having 100sqmm OH conductor.
- The voltage experienced at 33/11kV Satasankha PSS and Sakhiopal PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The 33kV Sakhigopal feeder feeds power supply to 33/11kV Garadpur, Trahiachyutanagar, Pipili and Mangalpur PSS with a total length of 33.2Ckm. The 33kV Sakhigopal feeder is overloaded up to 113%.
- The low voltage and overloading situation will increase with load growth (10%) for each year.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Puri	Sakhigopal	15.54	17.50	113%	Overload	21.18	28.18	181%

Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
		Chandanpur	28.1
Puri	Sakhigopal	Sakhigopal	26.4
		Satasankha/ Kumareswar	26.0



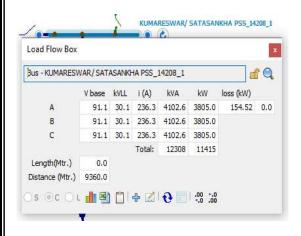
#### Proposed Scenario (Summer'24):

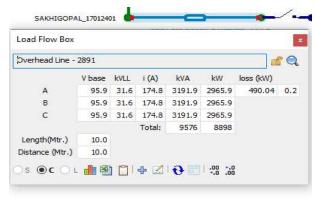
- Construction of 232sqmm OH conductor feeder of length 6Ckm and laying of 1CX630sqmm UG cable of length 3.5Ckm from 132/33kV Satasankha Grid to 33/11kV Satasankha PSS.
- Construction of 2nos. 4Pole structure for the proposed 33kV Satasankha-1 feeder.
- After linking new feeder from Satasankha GSS the proposed Satasankha-1 feeder will deliver power supply to 33/11kV Satasankha PSS and Sakhigopal PSS and existing 33kV Sakhigopal feeder will deliver power supply to 33/11kV Chandanpur PSS during normal operating condition.
- This proposal will mitigate the overloading issue of 33kV Sakhigopal feeder emanating Puri Grid and improve the voltage profile at 33/11kV Chandanpur PSS, Satasankha PSS and Sakhigopal PSS.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Overloading Status
Puri	Sakhigopal	15.54	10.00	64%	ОК	13.31	86%	OK
Satasankha	Proposed Satasankha-1	26.51	12.00	45%	ОК	15.97	60%	ОК

Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
Puri	Sakhigopal	Chandanpur	30.04
		Sakhigopal	30.03
Satasankha	Proposed Satasankha-1	Satasankha/ Kumareswar	30.1

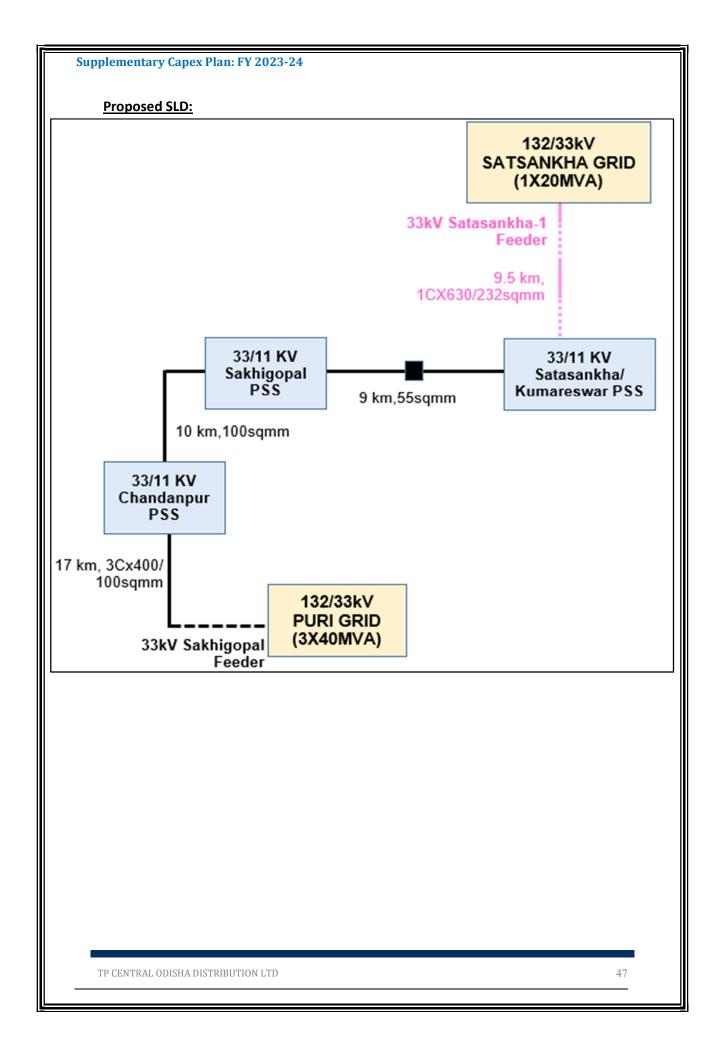
## **Snapshot from Cyme Software (Proposed Scenario)**





Satasankha/ Kumareswar PSS

33kV Sakhigopal Feeder



#### **Detailed Scope of Work:**

Construction for construction of 232sqmm OH conductor feeder of length 6Ckm and laying of 1CX630sqmm UG cable of length 3.5Ckm from 132/33kV Satasankha Grid to 33/11kV Satasankha PSS and construction of 2nos. 4Pole structure.

## **Abstract of Estimate**

Name	e of the Division :-	PURI ELECTRICAL DIVISION, PURI				
Name	e of the Sub-Division : -	Sakhigopal, Puri				
Name	e of the Section : -	Satasankha, Puri				
Name	e of the Work :-	33kV New Line from Satasankha Grid (33kV Properties)	osed Satasankha-1			
Scope	e of work:-	Construction of 33kV O/H Line using 13mtr H-Pol AAAC conductor- 6Ckm. Construction of 33kV U/1CX630sqmm Cable- 3.5Ckm.Construction of 33k with Isolator- 2 Nos.	/G Line with 3R,			
Name	es of Schemes: -	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE				
SI. No.	Part	Description	Amount			
1	А	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 6Ckm.	₹ 2,19,30,088.90			
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 3.5Ckm.	₹ 4,80,60,417.38			
3	С	Construction of 33kV 4 Pole structure with Isolator- 2 Nos.	₹ 17,88,268.61			
		Total Amount ₹ 7,17,78,77				
		Total Amount (In Rs. Cr)	7.18			

Cost Estimate: ₹ 7.18 Cr. (For detailed BoQ refer Annexure-8).

#### **Benefits:**

- ❖ Mitigation of overloading issue of 33kV Sakhigopal feeder.
- ❖ Improving low voltage issues at 33/11kV Chandanpur, Satasankha and Sakhigopal PSS.
- ❖ Ensuring reliable power supply to the consumers by providing N-1 contingency connectivity to 33kV Sakhigopal feeder.

Total estimated cost is Rs.7.18 Crore.

## 7.5 <u>Mitigation of Low Voltage issues at 33/11kV Substations fed from 33kV Bahugram-2</u> <u>Feeder (Choudwar Grid):</u>

#### **Proposal:**

Proposal for construction of 33kV D/C OH feeders (33kV Bahugram-1 & Bahugram-2 feeder) with 232sqmm OH conductor of length 7Ckm and laying of 1CX630sqmm UG cable of length 0.5Ckm along wih 1no. 33kV 4W RMU from 220/33kV Bahugram Grid to 33/11kV Bahugram PSS and interconnection with 33kV Bahugram-2 feeder (Balia Grid) along with installation of 1no. 33kV 4W RMU. Construction of 9nos. 4Pole structures along proposed 33kV Bahugram-1 New and Bahugram-2 New feeders and 2nos. 33kV outdoor bay at 33/11kV Bahugram-2 PSS.

#### **Objective:**

To provide reliable power supply to the consumers improve low voltage issues of areas fed from Bahugram-2 PSS and Bahugram-1 PSS during peak loading condition.

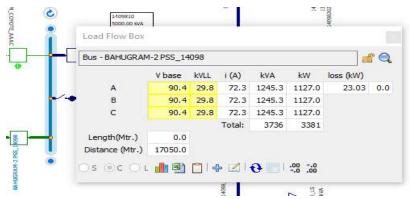
#### **Existing Scenario (Summer'22):**

- At present, 33/11kV Bahugram-1 and Bahugram-2 PSS are fed from 33kV Bahugram-2 feeder emanating from Choudwar Grid, having 100sqmm OH conductor.
- The voltage experienced at Bahugram-1 PSS and Bahugram-2 PSS is below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The low voltage situation will increase with load growth (10%) for each year.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Choudwar	Bahugram	15.54	8.30	53%	Ok	10.04	13.37	86%

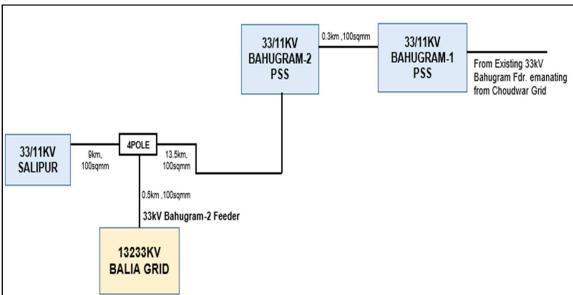
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
Choudwar	Dahugram	Bahugram-I	29.9
Ciloudwar	Bahugram	Bahugram-II	29.8

#### **Snapshot from Cyme Software (Existing Scenario)**



Bahugram-2 PSS

## **Existing SLD:**



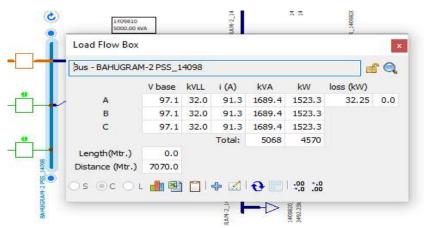
#### **Proposed Scenario (Summer'24):**

- Construction of 33kV D/C 232sqmm OH conductor 2nos. 33kV feeders of length 7Ckm and laying of 1CX630sqmm UG cable of length 0.5Ckm along wih 1no. 33kV 4W RMU from 220/33kV Bahugram Grid to 33/11kV Bahugram PSS and interconnection with 33kV Bahugram-2 feeder along with installation of 1no. 33kV 4W RMU.
- Construction of 9nos. 4Pole structures along proposed 33kV Bahugram-1 New and Bahugram-2 New feeders.
- Construction of 2nos. 33kV outdoor bay at 33/11kV Bahugram-2 PSS.
- After linking new feeders from Bahugram GSS the new feeders will deliver power supply to Bahugram-1 PSS and Bahugram-2 PSS during normal operating condition.
- This proposal will improve Bahugram-1 PSS and Bahugram-2 PSS voltage.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Overloading Status
	Proposed Bahugram-I	26.51	5.2	20%	ОК	6.92	26%	ОК
Bahugram	Proposed Bahugram-II	26.51	5.8	22%	ОК	7.72	29%	ОК

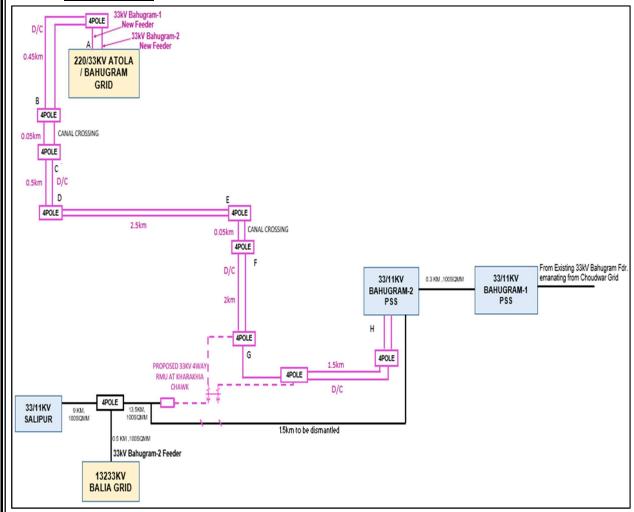
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
Dahuaram	Proposed Bahugram-I	Bahugram-I	31.9
Bahugram	Proposed Bahugram-II	Bahugram-II	32

## **Snapshot from Cyme Software (Proposed Scenario)**



**Bahugram-2 PSS** 

#### **Proposed SLD:**



### **Detailed Scope of Work:**

Construction of 33kV D/C Feeders with 232sqmm OH conductor feeder of length 7Ckm and laying of 1CX630sqmm UG cable of length 0.5Ckm along wih 1no. 33kV 4W RMU from 220/33kV Bahugram Grid to 33/11kV Bahugram PSS and interconnection with 33kV Bahugram-2 feeder along with installation of 1no. 33kV 4W RMU. Construction of 9nos. 4Pole structures along proposed 33kV Bahugram-1 New and Bahugram-2 New feeders and 2nos. 33kV outdoor bay at 33/11kV Bahugram-2 PSS.

## **Abstract of Estimate**

Name of the Division :- SED						
Name	Name of the Sub-Division : - Salepur					
Name	of the Section : -	Bahugram				
Name	of the Work :-	33kV New Lines from Bahugram Grid (33kV Prop and Bahugram-2 Feeders)	osed Bahugram-1			
Scope	of work:-	Construction of 33kV Double Ckt. O/H Line using 13mtr H-Pole & 232sqmm AAAC Conductor- 7Ckm.Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 0.5Ckm along wih 1no. 33kV 4W RMU. Construction of 33kV 4 Pole structure with Isolator- 9nos. Construction for 2 nos. of 33kV Outdoor Bay at Bahugram-2 PSS.				
Name	s of Schemes: -	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE				
SI. No.	Part	Description	Amount			
1	А	Construction of 33kV Double Ckt. O/H Line using 13mtr H-Pole & 232sqmm AAAC Conductor- 7Ckm.	₹ 3,35,63,373.53			
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 0.5Ckm along wih 1no. 33kV 4W RMU.	₹ 1,09,14,996.89			
3	С	Construction of 33kV 4 Pole structure with Isolator- 9nos.	₹ 45,86,219.94			
4	D	Construction for 2 nos. of 33kV Outdoor Bay at Bahugram-2 PSS. ₹ 69,51,8				
5		Total Amount	₹ 5,60,16,474.76			

Total estimated cost is Rs.5.60 Crore.

Cost Estimate: ₹ 5.60 Cr. (For detailed BoQ refer Annexure-9).

## **Benefits:**

❖ Ensuring reliable power supply to the consumers and improving low voltage issues at 33/11kV Bahugram-1 and Bahugram-2 PSS.

## 7.6 <u>Mitigation of Low Voltage and Overloading issues at 33/11kV Substations fed from 33kV Mahanga Feeder (Balia Grid):</u>

#### Proposal:

Proposal for construction of 232sqmm D/C OH conductor feeder of length 2Ckm, construction of 232sqmm OH conductor feeder of length 10Ckm and laying of 1CX630sqmm UG cable of length 1Ckm along with 2nos. 33kV 4W RMU from 132/33kV Bahugram Grid to 33/11kV Balichandrapur PSS and connectivity with 33kV Kundal feeder emanating from Chandikhol Grid.

#### **Objective:**

To provide reliable power supply to the consumers, improve low voltage issues of areas fed from Balichandrapur PSS, Mahanga PSS, Erkana PSS, Kothapada PSS and Raisugunda PSS. Overloading mitigation of 33kV Mahanga feeder emanating from Balia Grid along with ensuring reliability of power supply by providing N-1 contingency connectivity from 33kV feeders proposed from Balichandrapur Grid during peak loading condition.

#### **Existing Scenario (Summer'22):**

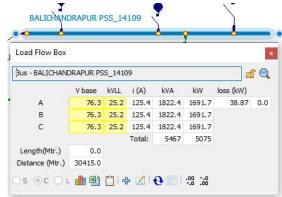
- At present, 33/11kV Balichandrapur PSS, Mahanga PSS, Erkana PSS, Kothapada PSS and Raisugunda PSS are fed from 33kV Mahanga feeder emanating from Balia Grid, having 100sqmm OH conductor.
- The voltage experienced at 33/11kV Balichandrapur PSS Mahanga PSS Erkana PSS, Kothapada PSS and Raisugunda PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The 33kV Mahanga feeds 33/11kV Balichandrapur PSS, Mahanga PSS, Erkana PSS, Kothapada PSS and Raisugunda PSS with a total length of 47.5Ckm. The 33kV Mahanga feeder is overloaded up to 135%.
- The low voltage and overloading situation will increase with load growth (10%) for each year.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Balia	Mahanga	15.54	21.00	135%	Overload	25.41	33.82	218%

Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
		Raisugunda	28.6
	Mahanga	Mahanga	26.3
Balia		Kothapada	26.1
		Erakana	25.9
		Balichandrapur	25.2

### **Snapshot from Cyme Software (Existing Scenario)**

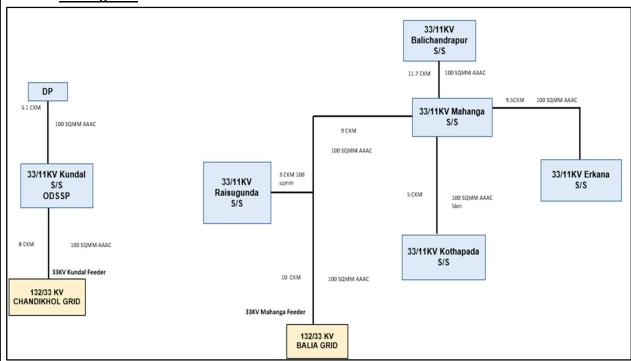




**33kV Mahanga Feeder** 

33/11kV Balichandrapur PSS

### **Existing SLD:**

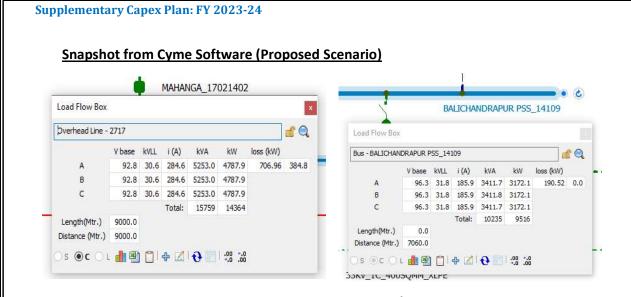


#### **Proposed Scenario (Summer'24):**

- Construction of 232sqmm D/C OH conductor feeder of length 2Ckm, construction of 232sqmm S/C OH conductor feeder of length 10Ckm and laying of 1CX630sqmm UG cable of length 1Ckm along with 2nos. 33kV 4W RMU from 132/33kV Bahugram Grid to 33/11kV Balichandrapur PSS and connectivity with 33kV Kundal feeder emanating from Chandikhol Grid.
- After linking new feeder from Balichandrapur GSS the proposed Balichandrapur-1 feeder will deliver power supply to Kothapada PSS during normal operating condition, the proposed Balichandrapur-2 feeder will deliver power supply to Balichandrapur PSS during normal operating condition and existing 33kV Mahanga feeder will deliver power supply to Raisunguda, Mahanga and Erkana PSS.
- This proposal will mitigate the 33kV Mahanga feeder overloading issue and improve voltage at 33/11kV Balichandrapur PSS, Mahanga PSS, Erkana PSS, Kothapada PSS and Raisugunda PSS.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Over loading Status
Balia	Mahanga	26.51	12.00	45%	ОК	15.97	60%	ОК
Bali	Proposed Bali chandrapur-1	26.51	10.00	38%	ОК	13.31	50%	ОК
chandrapur	Proposed Bali chandrapur-2	26.51	4.00	15%	ОК	5.32	20%	ОК

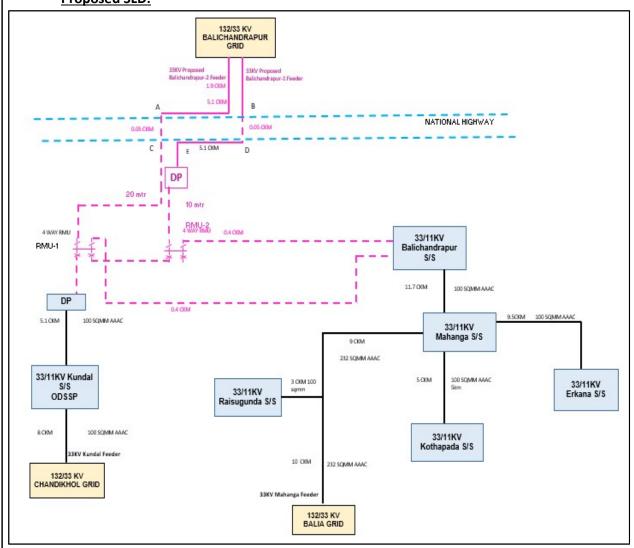
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
		Raisugunda	30.7
Balia	Mahanga	Mahanga	30.3
		Erakana	30.04
Daliahandranus	Proposed Balichandrapur-1	Kothapada	30.03
Balichandrapur	Proposed Balichandrapur-2	Balichandrapur	31.8



### 33kV Mahanga Feeder

33/11kV Balichandrapur PSS

## **Proposed SLD:**



#### **Detailed Scope of Work:**

Construction of 232sqmm D/C OH conductor feeder of length 2Ckm, construction of 232sqmm S/C OH conductor feeder of length 10Ckm and laying of 1CX630sqmm UG cable of length 1Ckm along with 2nos. 33kV 4W RMU from 132/33kV Bahugram Grid to 33/11kV Balichandrapur PSS and connectivity with 33kV Kundal feeder emanating from Chandikhol Grid.

## **Abstract of Estimate**

Name of th	e Division :-	CED				
	Name of the Sub-Division : - Badachana					
Name of th	e Section : -	Balichandrapur				
Name of th	e Work :-	33kV New Line from Balichandrapur Grid (33kV Propose 1 and Balichandrapur-2 Feeders)	ed Balchandrapur-			
Construction of 33kV Double Ckt. O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 2 Ckm. Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 10 Ckm.Construction of 33 U/G Line with 3R, 1CX630sqmm Cable- 1 Ckm along with 2nos. 33kV 4V RMU.Construction for 2nos. of 33kV Outdoor Bay at Balichandrapur PSS						
Names of S	Names of Schemes: - TPCODL CAPEX					
		ABSTRACT OF ESTIMATE				
SI. No.	Part	Description	Amount			
1	Α	Construction of 33kV Double Ckt. O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 2 Ckm.	₹ 95,90,606.72			
2	В	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 10 Ckm.	₹ 3,71,86,161.18			
3	С	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1 Ckm along with 2nos. 33kV 4W RMU.	₹ 2,27,35,918.32			
4	D	D Construction for 2nos. of 33kV Outdoor Bay at Balichandrapur PSS. ₹ 69,51,884				
		Total Amount	₹ 7,64,64,570.62			
		Total Amount (In Rs. Cr)	7.65			
Total estim	ated cost is F	Rs.7.65 Crore.				

Cost Estimate: ₹ 7.65 Cr. (For detailed BoQ refer Annexure-10).

### **Benefits:**

- ❖ Mitigation of overloading issue of 33kV Mahanga feeder.
- ❖ Improving low voltage issues at 33/11kV Balichandrapur PSS, Mahanga PSS, Erkana PSS, Kothapada PSS and Raisugunda PSS.
- ❖ Ensuring reliable power supply to the consumers by providing N-1 contingency connectivity to 33kV Mahanga feeder.

## 7.7 <u>Mitigation of Low Voltage and Overloading issues at 33/11kV Substations fed from</u> 33kV Dhenkanal, Gondia & Banasingh Feeder (Gundichapada Grid):

#### **Proposal:**

Proposal for construction of 33kV OH line 241sqmm OH covered conductor feeder of length 2.5Ckm from 132/33kV Gondia Grid to proposed 4Pole structure at 33kV line from College PSS to Gondia PSS and construction of 33kV OH line 241sqmm OH covered conductor feeder of length 4Ckm from 132/33kV Gondia Grid to proposed 4Pole structure at 33kV line from Joranda PSS to Gondia PSS.

#### **Objective:**

To provide reliable power supply to the consumers, improve low voltage issues of areas fed from 33/11kV College PSS, Bhapur PSS, Gondia PSS, Sadangi PSS, Nihalprasad PSS, Banasingh PSS and Joranda PSS. Overloading mitigation of 33kV Dhenkanal feeder emanating from Gundichapada Grid during peak loading condition.

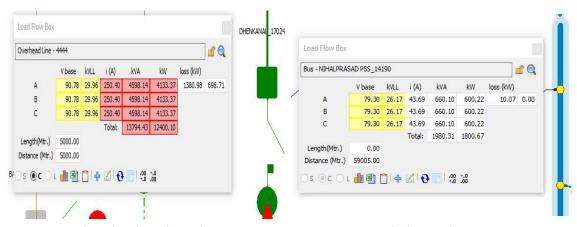
#### **Existing Scenario (Summer'22):**

- At present, 33/11kV College PSS is fed from 33kV Dhenkanal feeder emanating from Gundichapada Grid, having 80/100sqmm OH conductor. 33/11kV Joranda PSS and Banasingh PSS are fed from 33kV Banasingh feeder emanating from Gundichapada Grid, having 100sqmm OH conductor. 33/11kV Bhapur PSS, Sadangi PSS, Gondia PSS and Nihalprasad PSS are fed from 33kV Gondia feeder emanating from Gundichapada Grid, having 100sqmm OH conductor.
- The voltage experienced at 33/11kV College PSS, Bhapur PSS, Gondia PSS, Sadangi PSS, Nihalprasad PSS, Banasingh PSS and Joranda PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The 33kV Dhenkanal feeder feeds power supply to 33/11kV College PSS. The 33kV Dhenkanal feeder is overloaded up to 102%.
- The low voltage situation will increase with load growth (10%) for each year.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
	Dhenkanal	13.5	13.8	102%	ОК	16.7	22.2	164%
Gundicha pada	Gondia	15.5	11.0	71%	ОК	13.3	17.7	114%
	Banasingh	15.5	4.5	29%	ОК	5.4	7.2	47%

Name of Grid	ne of Grid Name of 33kV Name of 33/11kV PSS			
	Dhenkanal	College	28.2	
		Bhapur	29.7	
	Candia	Gondia	26.9	
Gundichapada	Gondia	Sadangi	26.6	
		Nihalprasad	26.2	
	Donosinsk	Banasingh	30	
	Banasingh	Joranda	29.48	

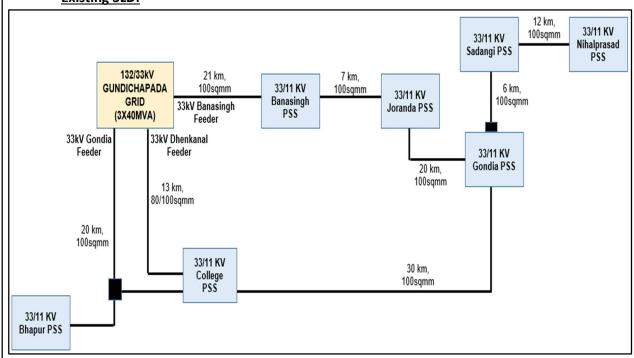
## **Snapshot from Cyme Software (Existing Scenario)**



### **33kV Dhenkanal Feeder**

### **Nihalprasad PSS**

#### **Existing SLD:**



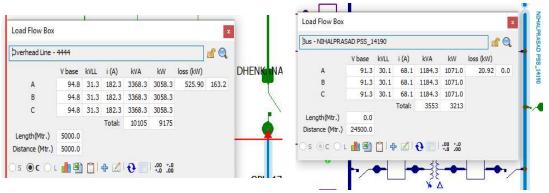
#### **Proposed Scenario:**

- Construction of 33kV OH line 241sqmm OH covered conductor feeder of length 2.5Ckm from 132/33kV Gondia Grid to proposed 4Pole structure at 33kV line from College PSS to Gondia PSS
- Construction of 33kV OH line 241sqmm OH covered conductor feeder of length 4Ckm from 132/33kV Gondia Grid to proposed 4Pole structure at 33kV line from Joranda PSS to Gondia PSS.
- After linking new feeders from Gondia GSS, the proposed College feeder from Gondia Grid and existing 33kV College feeder from Gundichapada Grid will deliver power supply to College during normal operating condition.
- The proposed Joranda feeder will deliver power supply to 33/11kV Joranda PSS during normal operating condition.
- The proposed Gondia (under deposit work) will deliver power supply to 33/11kV Gondia PSS, Sadangi PSS and Nihalprasad PSS during normal operating condition.
- The exising 33kV Gondia feeder will deliver power supply to 33/11kV Bhapur PSS during normal operating condition.
- The existing 33kV Banasingh feeder will deliver power supply to 33/11kV Banasingh PSS.
- This proposal will improve the voltage profile of 33/11kV College PSS, Bhapur PSS, Gondia PSS, Sadangi PSS, Nihalprasad PSS, Banasingh PSS and Joranda PSS.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Over loading Status
Gundicha pada	College	20.00	11.00	55%	ОК	14.64	73%	ОК
Gondia	Proposed College	15.54	5.00	32%	ОК	6.66	43%	ОК
Cundishanada	Gondia	15.54	5.40	35%	ОК	7.19	46%	OK
Gundichapada	Banasingh	15.54	1.50	10%	ОК	2.00	13%	OK
Gondia	Proposed Gondia (Deposit Scheme)	20.00	10.00	50%	ОК	13.31	67%	ОК
	Proposed Joranda	26.51	4.00	15%	ОК	5.32	20%	ОК

Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
Gundichapada	College	Callaga	30.1
Gondia	Poposed College	College	30.1
Cundishanada	Gondia	Bhapur	30.4
Gundichapada	Banasingh	Banasingh	31.6
	Proposed Gondia	Gondia	31.2
Gondia	(WIP Under Deposit	Sadangi	30.8
Goridia	Scheme)	Nihalprasad	30.1
	Proposed Joranda	Joranda	31

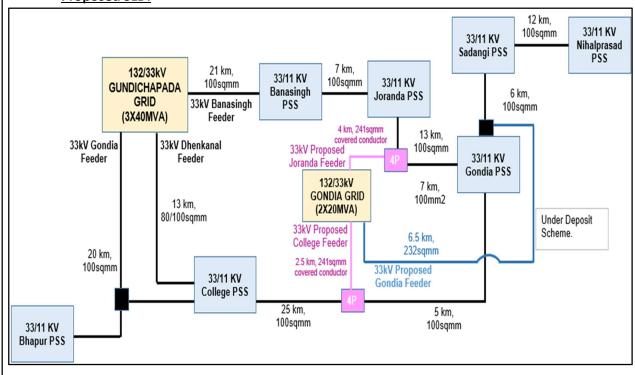
## **Snapshot from Cyme Software (Proposed Scenario)**



33kV Dhenkanal Feeder

**Nihalprasad PSS** 

#### **Proposed SLD:**



#### **Detailed Scope of Work:**

Construction of 33kV OH line 241sqmm OH covered conductor feeder of length 2.5Ckm from 132/33kV Gondia Grid to proposed 4Pole structure at 33kV line from College PSS to Gondia PSS and construction of 33kV OH line 241sqmm OH covered conductor feeder of length 4Ckm from 132/33kV Gondia Grid to proposed 4Pole structure at 33kV line from Joranda PSS to Gondia PSS.

## **Abstract of Estimate**

Name of Division:		DHENKANAL ELECTRIC DIVISION (DED)	
Name of Division:		Gondia	
Name of :	the Section	Gondia	
Name of	the Work :-	33kV New Lines from Gondia Grid (33kV Proposed Joran Feeder)	nda and College
Scope of	work:-	Construction of 33kV O/H Line using 13mtr WPB Pole & covered conductor- 2.5Ckm. Construction of 33kV O/H I WPB Pole & 241sqmm AAAC covered conductor- 4Ckm. 33kV 4 Pole structure with Isolator- 2nos.	ine using 13mtr
Names of	f Schemes: -	TPCODL CAPEX	
		ABSTRACT OF ESTIMATE	
SI. No.	Part	Description	Amount
1	Α	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 2.5Ckm.	₹ 94,97,340.19
2	В	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 4Ckm.	₹ 1,48,49,691.06
4	Construction of 33kV 4 Pole structure with Isolator-		₹ 21,25,926.06
		Total Amount	₹ 2,64,72,957.30
		Total Amount (In Rs. Cr)	2.65

Cost Estimate: ₹ 2.65 Cr. (For detailed BoQ refer Annexure-11).

## **Benefits:**

- ❖ Mitigation of overloading issue of 33kV Dhenkanal feeder.
- Ensuring reliable power supply to the consumers by improving low voltage issues at 33/11kV College PSS, Bhapur PSS, Gondia PSS, Sadangi PSS, Nihalprasad PSS, Banasingh PSS and Joranda PSS.

## 7.8 <u>Mitigation of Low Voltage issues at 33/11kV Substations fed from 33kV Goda Feeder (Goda Grid):</u>

#### **Proposal:**

Proposal for construction of 33kV OH line 241sqmm OH covered conductor feeder of length 3.2Ckm from 132/33kV Goda Grid to proposed 4Pole structure at 33kV line from Dahanbil PSS tapping point to Bhuban PSS.

#### **Objective:**

To provide reliable power supply to the consumers, improve low voltage issues of areas fed from 33/11kV Bhuban PSS and Mahulpal PSS during peak loading condition.

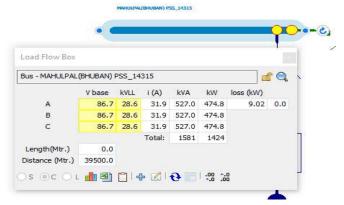
#### **Existing Scenario (Summer'22):**

- At present, 33/11kV Bhuban PSS, Goda PSS, Dahanbil PSS and Mahulpal PSS are fed from 33kV Goda feeder emanating from Goda Grid, having mixed type conductor 55/100sqmm OH conductor.
- The voltage experienced at 33/11kV Bhuban PSSand Mahulpal PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The low voltage situation will increase with load growth (10%) for each year.

Na o Gr	f	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Go	da	Goda	15.54	9.00	58%	ОК	10.89	14.49	93%

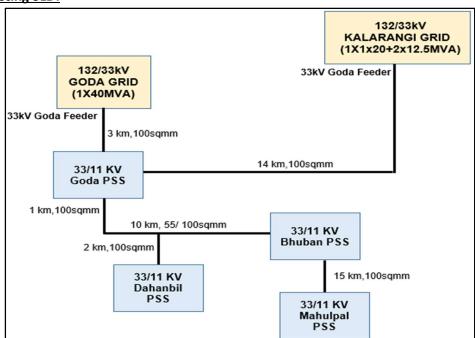
Name of Grid	Name of 33kV Feeder	Feeder Name of 33/11kV PSS	
		Goda	31
Codo	Codo	Dahanbil	30.5
Goda	Goda	Bhuban	29
		Mahulpal	28.6

#### **Snapshot from Cyme Software (Existing Scenario)**



**Mahulpal PSS** 

#### **Existing SLD:**



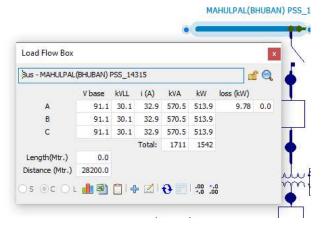
#### Proposed Scenario (Summer'24):

- Construction of 33kV OH line 241sqmm OH covered conductor feeder of length 3.2Ckm from 132/33kV Goda Grid to proposed 4Pole structure at 33kV line from Dahanbil PSS tapping point to Bhuban PSS.
- After linking new feeder from Goda GSS, the proposed Bhuban feeder will deliver power supply to 33/11kV Bhuban PSS and Mahulpal and existing 33kV Goda feeder will deliver power supply o 33/11kV Goda PSS and Dahanbil PSS during normal operating condition.
- This proposal will improve the voltage profile of 33/11kV Bhuban PSS and Mahulpal PSS.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Over loading Status
Goda	Goda	15.54	3.00	19%	ОК	3.99	26%	ОК
	Proposed Bhuban	26.51	8.00	30%	ОК	10.65	40%	ОК

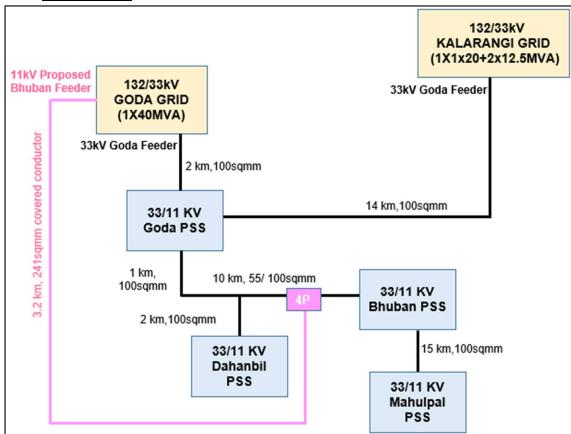
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
	Goda	Goda	32.4
Codo	Goda	Dahanbil	32.4
Goda	Duama and Dhadhan	Bhuban	30.2
	Proposed Bhuban	Mahulpal	30.05

#### **Snapshot from Cyme Software (Proposed Scenario)**



**Mahulpal PSS** 

#### **Proposed SLD:**



#### **Detailed Scope of Work:**

Construction of 33kV OH line 241sqmm OH covered conductor feeder of length 3.2Ckm from 132/33kV Goda Grid to proposed 4Pole structure at 33kV line from Dahanbil PSS tapping point to Bhuban PSS.

#### **Abstract of Estimate**

Name of t Division :-		DHENKANAL ELECTRIC DIVISION (DED)				
Name of t		KAMAKHAYANAGAR				
Name of t	he Section	Bhuban				
Name of t	he Work :-	33kV New Line from Goda Grid (33kV Proposed Bhuban F	eeder)			
Scope of v	vork:-	Construction of 33kV O/H line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 3.2Ckm. Construction of 33kV 4 Pole structure with Isolator- 1 No.				
Names of	Schemes: -	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE				
SI. No.	Part	Description	Amount			
1	А	Construction of 33kV O/H line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 3.2Ckm.	₹ 1,20,52,317.77			
2 B		Construction of 33kV 4 Pole structure with Isolator- 1 No.	₹ 14,50,611.17			
		Total Amount	₹ 1,35,02,928.94			
		Total Amount (In Rs. Cr)	1.35			

Cost Estimate: ₹ 1.35 Cr. (For detailed BoQ refer Annexure-12).

#### **Benefits:**

❖ Ensuring reliable power supply to the consumers by improving low voltage issues at 33/11kV Bhuban PSS and Mahulpal PSS.

### 7.9 <u>Mitigation of Low Voltage issues at 33/11kV Substations fed from 33kV Parjang</u> Feeder (Chainpal Grid):

#### **Proposal:**

Proposal for construction of 33kV OH line 241sqmm OH covered conductor feeder of length 21Ckm along with 1Cx630sqmm UG cable of length 1Ckm from 132/33kV Chainpal Grid to 33/11kV Parjang PSS. Construction of 1no. 4Pole structure, 2nos. PC+6 towers (for river crossing) and 1no. 33kV outdoor bay at Parjang PSS.

Proposal for construction of 33kV OH line 241sqmm OH covered conductor feeder of length 25Ckm along with 1Cx630sqmm UG cable of length 1Ckm from 132/33kV Kamakhyanagar Grid to 33/11kV Parjang PSS. Construction of 1no. 4Pole structure, 2nos. PC+6 towers (for river crossing) and 1no. 33kV outdoor bay at Parjang PSS.

#### Objective:

To provide reliable power supply to the consumers, improve low voltage issues of areas fed from 33/11kV Sarang PSS, New Banarpal PSS, Mahavir Road PSS, New Sarang PSS, Parjang PSS and Saanda PSS. Ensuring reliability of power supply by providing N-1 contingency connectivity from 33kV feeders proposed from Chainpal Grid and Kamakhyanagar Grid during peak loading condition.

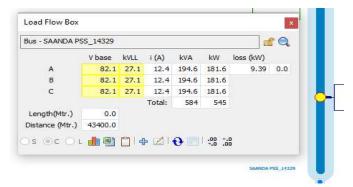
#### **Existing Scenario:**

- At present, 33/11kV Sarang PSS, New Banarpal PSS, Mahavir Road PSS, New Sarang PSS, Parjang PSS and Saanda PSS are fed from 33kV Parjang feeder emanating from Chainpal Grid, having conductor 100/148sqmm OH conductor.
- The voltage experienced at 33/11kV Sarang PSS, New Banarpal PSS, Mahavir Road PSS, New Sarang PSS, Parjang PSS and Saanda PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The low voltage situation will increase with load growth (10%) for each year.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Chainpal	Parjang	20.00	15.00	75%	ОК	18.15	24.16	121%

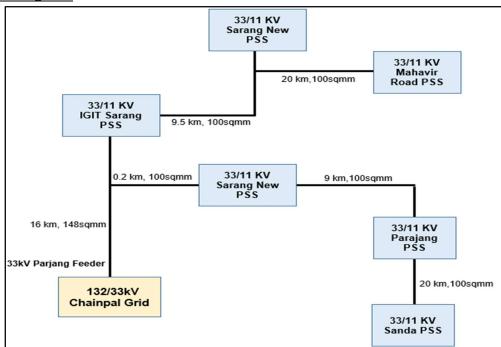
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
		Sarang	28.5
		New Banarpal	28
Chainpal	Dariang	Mahavir Road	27.7
Cilalityal	Parjang	New Sarang	28.5
		Parjang	27.3
		Saanda	27.1

#### **Snapshot from Cyme Software (Existing Scenario)**



Saanda PSS

#### **Existing SLD:**



#### **Proposed Scenario:**

- Construction of 33kV OH line 241sqmm OH covered conductor feeder of length 21Ckm along with 1Cx630sqmm UG cable of length 1Ckm from 132/33kV Chainpal Grid to 33/11kV Parjang PSS.Construction of 1no. 4Pole structure, 2nos. PC+6 towers (for river crossing) and 1no. 33kV outdoor bay at Parjang PSS.
- Construction of 33kV OH line 241sqmm OH covered conductor feeder of length 25Ckm along with 1Cx630sqmm UG cable of length 1Ckm from 132/33kV Kamakhyanagar Grid to 33/11kV Parjang PSS.Construction of 1no. 4Pole structure, 2nos. PC+6 towers (for river crossing) and 1no. 33kV outdoor bay at Parjang PSS.
- After linking new feeders from Chainpal GSS and Kamakhyanagar Grid, the proposed Saanda feeder will deliver power supply to 33/11kV Sanda PSS, the proposed Parjang

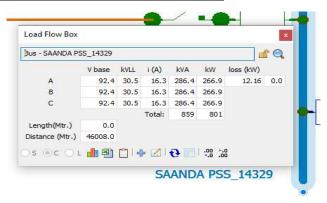
feeder will deliver power supply to 33/11kV Panjang PSS and existing 33kV Parjang feeder will deliver power supply to 33/11kV Sarang PSS, New Banarpal PSS, Mahavir Road PSS and N Sarang PSS during normal operating condition.

 This proposal will improve the voltage profile of 33/11kV Sarang PSS, New Banarpal PSS, Mahavir Road PSS, New Sarang PSS, Parjang PSS and Saanda PSS.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Over loading Status
Chainpal	Parjang	20.00	6.00	30%	ОК	7.99	40%	ОК
	Poposed Parjang	26.51	8.00	30%	ОК	10.65	40%	ОК
Kamakhayanagar	Proposed Saanda	26.51	4.00	15%	ОК	5.32	20%	ОК

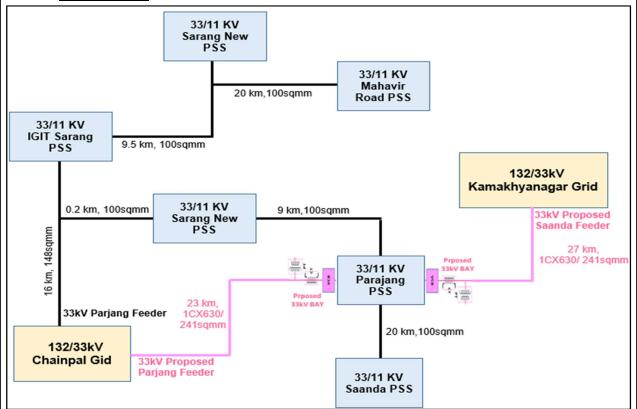
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
		Sarang	30.3
	Doving	New Banarpal	30.1
Chainpal	Parjang	Mahavir Road	30.03
		New Sarang	30.3
	Poposed Parjang	Parjang	30.08
Kamakhayanagar	Proposed Saanda	Saanda	30.5

#### **Snapshot from Cyme Software (Proposed Scenario)**



Saanda PSS

#### **Proposed SLD:**



#### **Detailed Scope of Work:**

#### 33kV Proposed Parjang Feeder (Chainpal Grid):

Construction of 33kV OH line 241sqmm OH covered conductor feeder of length 21Ckm along with 1Cx630sqmm UG cable of length 1Ckm from 132/33kV Chainpal Grid to 33/11kV Parjang PSS. Construction of 1no. 4Pole structure, 2nos. PC+6 towers (for river crossing) and 1no. 33kV outdoor bay at Parjang PSS.

#### **Abstract of Estimate**

Name of the Division :-	TALCHER ELECTRIC DIVISION (TED)
Name of the Sub- Division : -	Parjang
Name of the Section :	Parjang-1
Name of the Work :-	33kV New Line from Chainpal Grid (33kV Proposed Parjang Feeder)
Scope of work:-	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC OH covered conductor- 21Ckm. Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm. Construction of 33kV 4 Pole structure with Isolator- 1no. Construction of 2 nos. 'PC+6' EHT Tower for river crossing (300mtr. span).Construction for 1 no. of 33kV Outdoor Bay at Parjang PSS.
Names of Schemes: -	TPCODL CAPEX

ABSTRACT OF ESTIMATE				
Sl. No.	Amount			
1	А	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC OH covered conductor-21Ckm.	₹ 8,10,89,787.45	
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm.	₹ 1,40,53,343.76	
3	С	Construction of 33kV 4 Pole structure with Isolator- 1no.	₹ 9,78,548.67	
4	С	Construction of 2 nos. 'PC+6' EHT Tower for river crossing (300mtr. span).	₹ 1,17,58,371.00	
5	D	Construction for 1 no. of 33kV Outdoor Bay at Parjang PSS.	₹ 36,39,033.16	
		Total Amount	₹ 11,15,19,084.04	
		Total Amount (In Rs. Cr)	11.15	

Cost Estimate: ₹ 11.15 Cr. (For detailed BoQ refer Annexure-13).

#### 33kV Proposed Saanda Feeder (Kamakhyanagar Grid):

Construction of 33kV OH line 241sqmm OH covered conductor feeder of length 25Ckm along with 1Cx630sqmm UG cable of length 1Ckm from 132/33kV Kamakhyanagar Grid to 33/11kV Parjang PSS. Construction of 1no. 4Pole structure, 2nos. PC+6 towers (for river crossing) and 1no. 33kV outdoor bay at Parjang PSS.

#### **Abstract of Estimate**

Name of the Division :-	TALCHER ELECTRIC DIVISION (TED)
Name of the Sub- Division : -	Parjang
Name of the Section :	Parjang-1
Name of the Work :-	33kV New Line from Kamakhyanagar Grid (33kV Proposed Saanda Feeder)
Scope of work:-	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 25Ckm. Construction of 33kV U/G Line with 3R, 1CX630sqmm cable- 1CkmConstruction of 33kV 4 Pole struture with Isolator- 1no.
Names of Schemes: -	TPCODL CAPEX

		ABSTRACT OF ESTIMATE	
Sl. No.	Part	Description	Amount
1	А	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 25Ckm.	₹ 9,64,03,619.02
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm cable- 1Ckm	₹ 1,40,53,343.76
3	С	Construction of 33kV 4 Pole struture with Isolator- 1no.	₹ 9,78,548.67
4	D	Construction of 2 nos. 'PC+6' EHT Tower for river crossing (300mtr. span).	₹ 1,17,58,371.00
5	E	Construction for 1 no. of 33kV Outdoor Bay at Parajang PSS.	₹ 36,39,033.16
		Total Amount	₹ 12,68,32,915.61
		Total Amount (In Rs. Cr)	12.68
Total est	timated cost is	s Rs.12.68 Crore.	

Cost Estimate: ₹ 12.68 Cr. (For detailed BoQ refer Annexure-14).

#### **Benefits:**

- ❖ Improving low voltage issues at 33/11kV Sarang PSS, New Banarpal PSS, Mahavir Road PSS, New Sarang PSS, Parjang PSS and Saanda PSS.
- ❖ Ensuring reliable power supply to the consumers by providing N-1 contingency connectivity to 33kV Parjang feeder.

## 7.10 <u>Mitigation of Low Voltage and Overloading issues at 33/11kV Substations fed from 33kV Mahakalpada Feeder (Marsaghai Grid):</u>

#### **Proposal:**

Proposal for construction of 33kV OH line 232sqmm conductor feeder of length 20Ckm along with 1Cx630sqmm UG cable of length 1Ckm from 132/33kV Rajnagar Grid to 33/11kV Badhi PSS. Construction of 1no. 4Pole structure, 4nos. PC+6 towers (for 2nos. river crossing) and 1no. 33kV outdoor bay at Badhi PSS.

#### **Objective:**

To provide reliable power supply to the consumers, improve low voltage issues of areas fed from Mahakalpada PSS and Badhi PSS during peak loading condition.

#### **Existing Scenario (Summer'22):**

- At present, 33/11kV Marsaghai PSS, Mahakalpada PSS, Thauri PSS and Badhi PSS are fed from 33kV Mahakalpada feeder emanating from Marsaghai Grid, having mixed type conductor 55/80/100sqmm OH conductor.
- The voltage experienced at 33/11kV Mahakalpada PSS and Badhi PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The low voltage situation will increase with load growth (10%) for each year.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Marsaghai	Mahakalpada	15.54	11.00	71%	ОК	13.31	17.72	114%

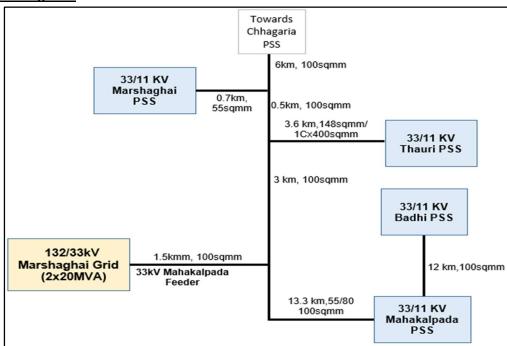
SI. No.	Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
			Thauri	31.5
1	Mayaaahai	Mahakalpada	Marsaghai	31.5
1	Marsaghai	Mahakalpada	Mahakalpada	29.5
			Badhi	29.1

#### **Snapshot from Cyme Software (Existing Scenario)**



#### **Badhi PSS**

#### **Existing SLD:**



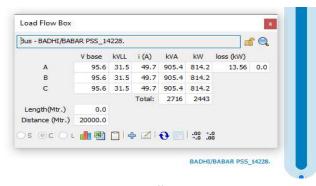
#### Proposed Scenario (Summer'24):

- Construction of of 33kV OH line 232sqmm conductor feeder of length 20Ckm along with 1Cx630sqmm UG cable of length 1Ckm from 132/33kV Rajnagar Grid to 33/11kV Badhi PSS.
- Construction of 1no. 4Pole structure, 4nos. PC+6 towers (for 2nos. river crossing) and 1no. 33kV outdoor bay at Badhi PSS
- After linking new feeder from Rajnagar GSS, the proposed Badhi feeder will deliver power supply to Badhi PSS and exising 33kV Mahakalpada feeder will deliver power supply to 33/11kV Marsaghai PSS, hauri PSS and Mahakalpada PSS during normal operating condition.
- This proposal will improve the voltage profile of 33/11kV Badhi and Mahakalpada PSS.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Over loading Status
Marsaghai	Mahakalpada	15.54	10.00	64%	ОК	13.31	86%	ОК
Rajnagar	Proposed Badhi	26.51	2.70	10%	ОК	3.59	14%	ОК

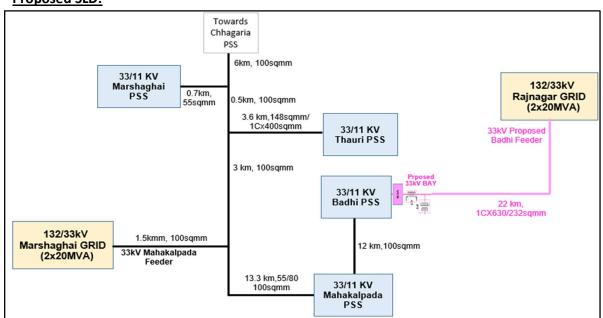
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
		Thauri	31.9
Marsaghai	Mahakalpada	Marsaghai	31.7
		Mahakalpada	30.8
Rajnagar	Proposed Badhi	Badhi	31.5

#### **Snapshot from Cyme Software (Proposed Scenario)**



**Badhi PSS** 

#### **Proposed SLD:**



#### **Detailed Scope of Work:**

Construction of 33kV OH line 232sqmm conductor feeder of length 20Ckm along with 1Cx630sqmm UG cable of length 1Ckm from 132/33kV Rajnagar Grid to 33/11kV Badhi PSS. Construction of 1no. 4Pole structure, 4nos. PC+6 towers (for 2nos. river crossing) and 1no. 33kV outdoor bay at Badhi PSS.

#### **Abstract of Estimate**

Name	e of the Division :-	KED-II				
Name	e of the Sub-Division : -	Mahakalpada				
Name	e of the Section : -	Babar				
Name	e of the Work :-	33kV New Line from Rajnagar Grid (33kV Proposed	Badhi Feeder)			
Scope	e of work:-	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 20Ckm. Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm. Construction of 33kV 4 Pole structure with Isolator- 1 No. Construction of 4 nos. 'PC+6' EHT Tower for river crossing (300mtr. span). Construction for 1 no. of 33kV Outdoor Bay at Badhi PSS.				
Name	es of Schemes: -	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE				
SI.	Dt					
No.	Part	Description	Amount			
<b>No.</b>	A	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 20Ckm.	Amount ₹ 7,39,74,732.65			
		Construction of 33kV O/H Line using 13mtr H-				
1	A	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 20Ckm. Construction of 33kV U/G Line with 3R,	₹7,39,74,732.65			
1 2	A B	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 20Ckm.  Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm.  Construction of 33kV 4 Pole structure with	₹ 7,39,74,732.65 ₹ 1,40,53,343.76			
1 2 3	A B	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 20Ckm.  Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm.  Construction of 33kV 4 Pole structure with Isolator- 1 No.  Construction of 4 nos. 'PC+6' EHT Tower for river	₹ 7,39,74,732.65 ₹ 1,40,53,343.76 ₹ 9,78,548.67			
1 2 3 4	A B C	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 20Ckm.  Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm.  Construction of 33kV 4 Pole structure with Isolator- 1 No.  Construction of 4 nos. 'PC+6' EHT Tower for river crossing (300mtr. span).  Construction for 1 no. of 33kV Outdoor Bay at	₹7,39,74,732.65 ₹1,40,53,343.76 ₹9,78,548.67 ₹2,35,16,743.00			
1 2 3 4	A B C	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 20Ckm.  Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm.  Construction of 33kV 4 Pole structure with Isolator- 1 No.  Construction of 4 nos. 'PC+6' EHT Tower for river crossing (300mtr. span).  Construction for 1 no. of 33kV Outdoor Bay at Badhi PSS.	₹7,39,74,732.65 ₹1,40,53,343.76 ₹9,78,548.67 ₹2,35,16,743.00 ₹36,39,033.16			

Cost Estimate: ₹ 11.62 Cr. (For detailed BoQ refer Annexure-15).

#### **Benefits:**

- ❖ Ensuring reliable power supply to the consumers and improving low voltage issues at 33/11kV Badhi and Mahakalpada PSS.
- ❖ Mitigating the radial connectivity to 33/11KV Badhi & Mahakalapada PSS.

## 7.11 <u>Mitigation of Low Voltage issues at 33/11kV Substations fed from 33kV Tirtol Feeder (Jagatsinghpur Grid):</u>

#### **Proposal:**

Proposal for construction of 33kV OH line 232sqmm conductor feeder of length 10Ckm from 132/33kV Tirtol Grid to 33/11kV Kanakpur PSS. Construction of 1no. 33kV outdoor bay at Kanakpur PSS.

#### **Objective:**

To provide reliable power supply to the consumers, improve low voltage issues of areas fed from 33/11kV Chikinia PSS, Nuapada PSS and Kanakpur PSS.

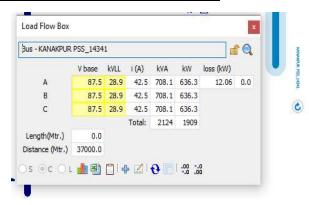
#### **Existing Scenario (Summer'22):**

- At present, 33/11kV Chikinia PSS, Nuapada PSS and Kanakpur PSS are fed from 33kV Tirtol feeder emanating from Jagatsinghpur Grid, having mixed type conductor 55/80/100/148sqmm OH conductor.
- The voltage experienced at 33/11kV Chikinia PSS, Nuapada PSS and Kanakpur PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The low voltage situation will increase with load growth (10%) for each year.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Jagatsinghpur	Tirtol	15.54	11.00	71%	ОК	13.31	17.72	114%

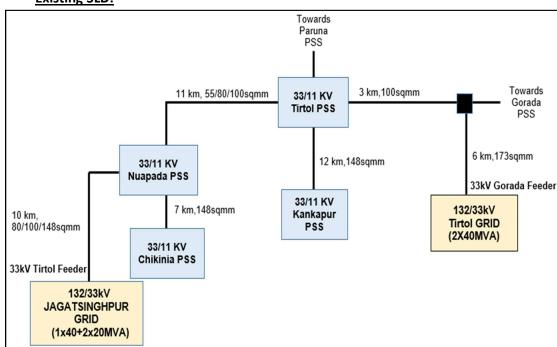
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
		Chikinia	29.6
Jagatsinghpur	Tirtol	Nuapada	29.8
		Kanakpur	28.9

#### **Snapshot from Cyme Software (Existing Scenario)**



**Kanakpur PSS** 

#### **Existing SLD:**



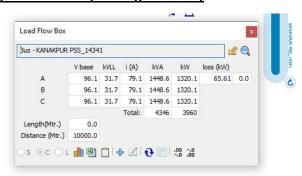
#### Proposed Scenario (Summer'24):

- Construction of of 33kV OH line 232sqmm conductor feeder of length 10Ckm from 132/33kV Tirtol Grid to 33/11kV Kanakpur PSS.
- Construction of 1no. 33kV outdoor bay at 33/11kV Kanakpur PSS
- After linking new feeder from Tirtol GSS, the proposed Kanakpur feeder will deliver power supply to 33/11kV Kanakpur PSS and existing 33kV Tirtol feeder will deliver power supply to 33/11kV Chikinia PSS and Nuapada PSS during normal operating condition.
- This proposal will improve the voltage profile at 33/11kV Chikinia PSS, Nuapada PSS and Kanakpur PSS.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Over loading Status
Jagatsinghpur	Tirtol	15.54	8.00	51%	ОК	10.65	69%	ок
Tirtol	Proposed Kanakpur	26.51	5.00	19%	OK	6.66	25%	ОК

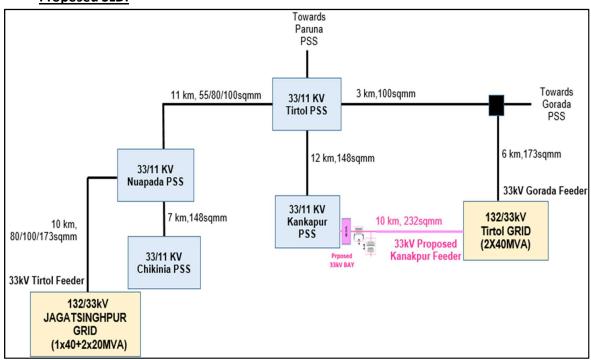
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
lagatsinghnur	Tirtal	Chikinia	30.3
Jagatsinghpur	Tirtol	Nuapada	30.5
Tirtol	Proposed Kanakpur	Kanakpur	31.7

#### **Snapshot from Cyme Software (Existing Scenario)**



#### **Kanakpur PSS**

#### **Proposed SLD:**



#### **Detailed Scope of Work:**

Construction of 33kV OH line 232sqmm conductor feeder of length 10Ckm. Construction of 1no. 33kV outdoor bay at 33/11kV Kanakpur PSS.

#### **Abstract of Estimate**

	e of the sion :-	Paradeep	
	e of the Sub- sion : -	Tirtol	
	e of the ion : -	Tirtol	
Nam Worl	e of the k :-	33kV New Line from Tirtol Grid (33kV Proposed Kanakpur	Feeder)
Scop	e of work:-	Construction of 33kV O/H Line using 13mtr H-Pole & 232s conductor- 10Ckm. Construction of 01 no 33kV outdoor li Kanakpur PSS	•
	es of mes: -	TPCODL CAPEX	
		ABSTRACT OF ESTIMATE	
SI. No.	Part	Description	Amount
1	Α	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 10Ckm.	₹ 3,56,13,221.93
2	В	Construction of 01 no 33kV outdoor line bay at 33/11kV Kanakpur PSS	₹ 36,39,033.16
		Total Amount	₹ 3,92,52,255.09

Cost Estimate: ₹ 3.93 Cr. (For detailed BoQ refer Annexure-16).

#### **Benefits:**

Total estimated cost is Rs.3.93 Crore.

❖ Ensuring reliable power supply to the consumers and improving low voltage issues at 33/11kV Chikinia PSS, Nuapada PSS and Kanakpur PSS.

Total Amount (In Rs. Cr)

❖ Mitigating the 33KV radial connectivity to 33/11KV Kanakpur PSS.

3.93

### 7.12 <u>Mitigation of Low Voltage and Overloading issues at 33/11kV Substations fed from</u> 33kV Salipur Feeder (Balia Grid):

#### Proposal:

Proposal for construction of 33kV OH line 232sqmm conductor feeder of length 11Ckm along with 1Cx630sqmm UG cable of length 1Ckm from Bahugram Grid to 33/11kV Nischintakoili PSS. Construction of 2nos. PC+6 towers (for canal crossing) and 1no. 33kV outdoor bay at 33/11kV Nischintakoili PSS.

#### **Objective:**

To provide reliable power supply to the consumers, mitigate overloading of 33kV Salipur feeder emanating from Balia Grid and improve low voltage issues of areas fed from 33/11kV Salipur, Nischintakoili, Paldhupadia and Salipur PSS during peak loading condition.

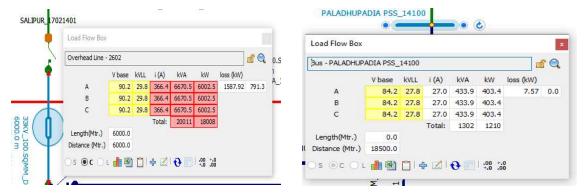
#### **Existing Scenario (Summer'22):**

- At present, 33/11kV Salipur, Nischintakoili, Paldhupadia and Salipur PSS is fed from 33kV Salipur feeder emanating from Balia Grid, having 100sqmm OH conductor.
- The 33kV Salipur feeds 33/11kV Salipur, Nischintakoili, Paldhupadia and Orikanta PSS with a total length of 33Ckm. The 33kV Salipur feeder is overloaded up to 129%.
- The voltage experienced at 33/11kV Salipur, Nischintakoili, Paldhupadia and Orikanta PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The overloading and low voltage situation will increase with load growth (10%) for each year.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Balia	Salipur	15.54	20.00	129%	Overload	24.20	32.21	207%

Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
	Salipur	Salipur	29.7
Dalia		Nischintkoili	27.8
Balia		Orikanta	27.1
		Paldhupadia	27.8

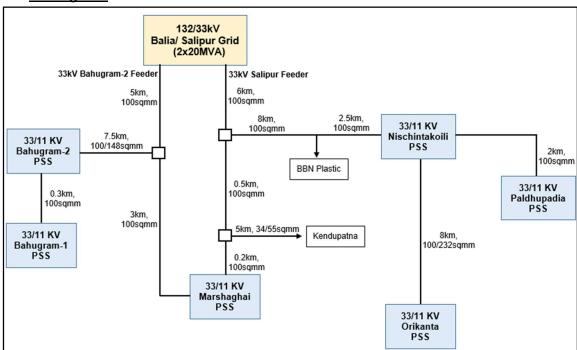
#### **Snapshot from Cyme Software (Existing Scenario)**



33kV Salipur Feeder

33/11kV Paldhupadia PSS

#### **Existing SLD:**



#### Proposed Scenario (Summer'24):

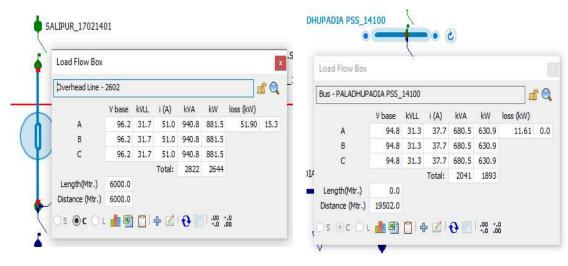
- Construction of 33kV OH line 232sqmm conductor feeder of length 11Ckm along with 1Cx630sqmm UG cable of length 1Ckm from Bahugram Grid to 33/11kV Nischintakoili PSS.
- Construction of 2nos. PC+6 towers (for canal crossing) and 1no. 33kV outdoor bay at Nischintakoili PSS.
- After linking new feeder from Bahugram GSS the proposed 33kV Nischintakoili feeder will deliver power supply to 33/11kV Nischintakoili PSS and 33/11kV Orikanta PSS during normal operating condition.

- The existing 33kV Bahugram-2 feeder will deliver power supply to 33/11kV Salipur PSS during normal operating condition.
- The existing 33kV Salipur feeder will deliver power supply to 33/11kV Paldhupadia PSS during normal operating condition.
- This proposal will mitigate the overloading of 33kV Salipur feeder and improve the voltage at 33/11kV Salipur, Nischintakoili, Paldhupadia and Orikanta PSS.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Over loading Status
Balia	Bahugram- 2	15.54	9.7	62%	ОК	12.91	83%	ОК
Bahugram	Proposed Nischintkoili	26.51	13	49%	ОК	17.30	65%	ОК
Balia	Salipur	15.54	2.8	18%	OK	3.73	24%	OK

Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
Balia	Bahugram-2	Salipur	30.9
Dahwarana	Drawagad Nicabintlaili	Nischintakoili	31.2
Bahugram	Proposed Nischintkoili	Orikanta	30.5
Balia	Salipur	Paldhupadia	31.3

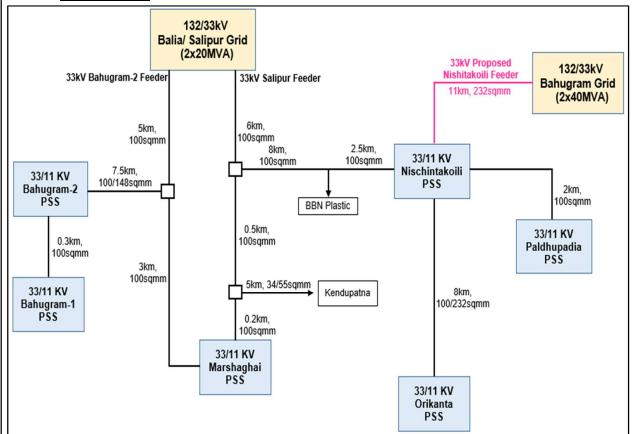
#### **Snapshot from Cyme Software (Proposed Scenario)**



33kV Salipur Feeder

33/11kV Paldhupadia PSS

#### **Proposed SLD:**



#### **Detailed Scope of Work:**

Construction of 33kV OH line 232sqmm conductor feeder of length 11Ckm along with 1Cx630sqmm UG cable of length 1Ckm from Bahugram Grid to 33/11kV Nischintakoili PSS. Construction of 2nos. PC+6 towers (for canal crossing) and 1no. 33kV outdoor bay at Nischintakoili PSS.

#### **Abstract of Estimate**

Name of the Division :-	SED
Name of the Sub-Division : -	NISCHINTKOILI
Name of the Section : -	ORIKANTA
Name of the Work :-	33kV New Line from Bahugram Grid (33kV Proposed Nischintakoili Feeder)
Scope of work:-	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor 11Ckm. Construction for 1 no. of 33kV Outdoor Bay at Nischintkoili PSS. Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm. Construction of 2 nos. 'PC+6' EHT Tower for river crossing (300mtr. span)
Names of Schemes: -	TPCODL CAPEX

	ABSTRACT OF ESTIMATE						
SI. No.	Part	Description	Amount (In Cr.)				
1	А	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor 11Ckm.	₹ 4,09,23,600.97				
2	В	Construction for 1 no. of 33kV Outdoor Bay at Nischintkoili PSS.	₹ 36,39,033.16				
5	С	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm.	₹ 1,40,53,343.76				
6	D	Construction of 2 nos. 'PC+6' EHT Tower for river crossing (300mtr. span)	₹ 1,17,58,371.00				
		Total Amount	₹ 7,03,74,348.90				
		Total Amount (In Rs. Cr)	7.04				

Total estimated cost is Rs.7.04 Crore.

Cost Estimate: ₹ 7.04 Cr. (For detailed BoQ refer Annexure-17).

#### **Benefits:**

- Mitigation of overloading issue of 33kV Salipur feeder.
- Ensuring reliable power supply to the consumers by improving low voltage issues at 33/11kV Salipur, Nischintakoili, Paldhupadia and Orikanta PSS.

### 7.13 <u>Mitigation of Low Voltage and Overloading issues at 33/11kV Substations fed from</u> 33kV Kakatpur Feeder (Nimapada Grid):

#### **Proposal:**

Proposal for construction of 33kV OH line 232sqmm conductor feeder of length 10Ckm along with 1Cx630sqmm UG cable of length 2Ckm from Bangurigaon PSS to Kakatpur PSS. Construction of 2nos. PC+6 towers (for river crossing), 1no. 33kV 4W RMU at 33/11kV Kakatpur PSS and 1no. 33kV outdoor bay at 33/11kV Bangurigaon PSS.

#### **Objective:**

To provide reliable power supply to the consumers, improve low voltage issues of areas fed from 33/11kV Charichaka PSS, Jogeswarpur PSS, Kakatpur PSS, Astaranga PSS and Patalda PSS. Overloading mitigation of 33kV Kakatpur feeder emanating from Nimapada Grid along with ensuring reliability of power supply by providing N-1 contingency connectivity from 33kV Bangurigaon feeder during peak loading condition.

#### **Existing Scenario (Summer'22):**

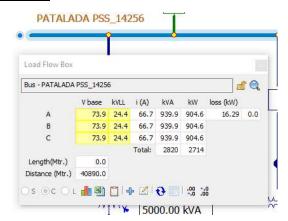
- At present, 33/11kV Charichaka PSS, Jogeswarpur PSS, Kakatpur PSS, Astaranga PSS and Patalda PSS are fed from 33kV Kakatpur feeder emanating from Nimapada Grid, having 100sqmm OH conductor.
- The 33kV Kakatpur feeds 33/11kV Charichaka PSS, Jogeswarpur PSS, Kakatpur PSS, Astaranga PSS and Patalda PSS with a total length of 42.2Ckm. The 33kV Kakatpur feeder is overloaded up to 105%.
- The voltage experienced at 33/11kV Charichaka PSS, Jogeswarpur PSS, Kakatpur PSS, Astaranga PSS and Patalda PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The overloading and low voltage situation will increase with load growth (10%) for each year.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Nimapada	Kakatpur	20.00	21.00	105%	Overload	25.41	33.82	169%

Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
Nimapada		Charichaka	29
	Kakatpur	Jogeswarpur	27
		Kakatpur	25.6
		Astarang	24.6
		Patalda	24.4

#### **Snapshot from Cyme Software (Existing Scenario)**

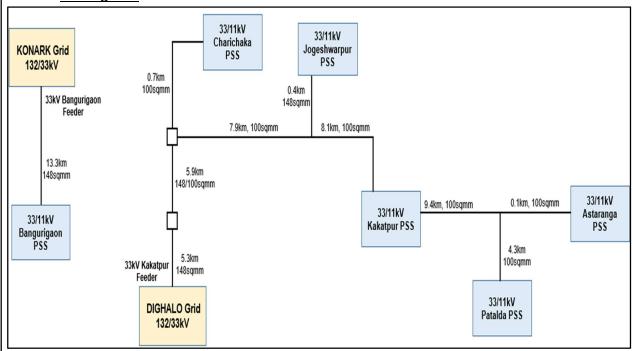




#### **33kV Kakatpur Feeder**

33/11kV Patalda PSS

#### **Existing SLD:**



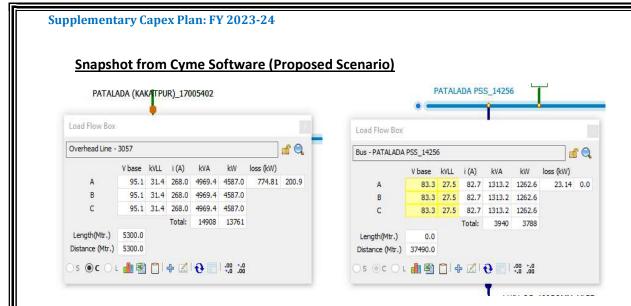
#### **Proposed Scenario (Summer'24):**

- Construction of 33kV OH line 232sqmm conductor feeder of length 10Ckm along with 1Cx630sqmm UG cable of length 2Ckm from 33/11kV Bangurigaon PSS to 33/11kV Kakatpur PSS.
- Construction of 2nos. PC+6 towers (for canal crossing), 1no. 33kV 4W RMU at 33/11kV Kakatpur PSS and 1no. 33kV outdoor bay at 33/11kV Bangurigaon PSS.
- After the 33kV line linking, 33kV Bangurigaon feeder from Konark GSS will deliver power supply to 33/11kV Astaranga PSS, Patalda PSS and Bangurigaon PSS and 33kV Kakatpur feeder will deliver power supply to 33/11kV Charichaka PSS, Jogeswarpur PSS and Kakatpur PSS during normal operating condition.
- This proposal will mitigate the overloading of 33kV Kakatpur feeder, improve the voltage at 33/11kV Salipur, Nischintakoili, Paldhupadia and Orikanta PSS. The 33kV Kakatpur feeder will be provided with N-1 contingency connectivity from 33kV Bangurigaon feeder.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Over loading Status
Nimapada	Kakatpur	26.51	16.00	60%	ОК	21.30	80%	ОК
Konark	Bangurigaon	15.54	10.00	64%	ОК	13.31	86%	ОК

Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
		Charichaka	30.5
Nimapada	Kakatpur	Jogeswarpur	29.6
		Kakatpur	29.2
		Astarang	27.7
Konark	Bangurigaon	Patalda	27.5
		Bangurigaon	30.03

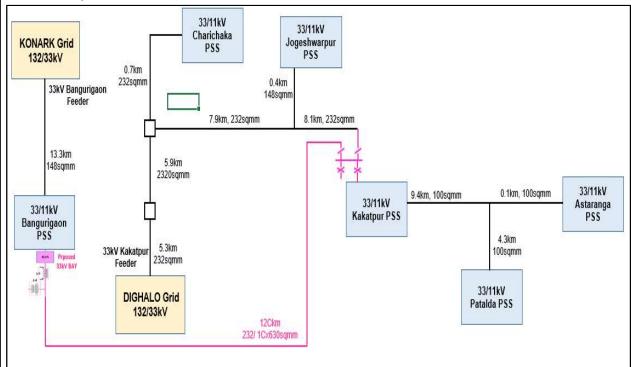
Note: The voltage at 33/11kV Charichaka PSS, Jogeswarpur PSS and Kakatpur PSS will be improved and further maintained by PTR tap at 11kV side. However for 33/11kV Astarang PSS and Patalada PSS, voltage can be improved but cannot be maintained within the permissible limit. TPCODL has already raised the issue of low voltage at PSS with OPTCL and asked for a new GSS at New Betanda with new 33kV interlinking feeders, same has been considered and approved by OPTCL and in process for further initiation. After charging the proposed GSS, low voltage issue will be mitigated and reliability of power supply will be further improved.



#### 33kV Kakatpur Feeder

33/11kV Patalda PSS

#### **Proposed SLD:**



#### **Detailed Scope of Work:**

Construction of of 33kV OH line 232sqmm conductor feeder of length 10Ckm along with 1Cx630sqmm UG cable of length 2Ckm from Bangurigaon PSS to Kakatpur PSS. Construction of 2nos. PC+6 towers (for river crossing), 1no. 33kV 4W RMU at 33/11kV Kakatpur PSS and 1no. 33kV outdoor bay at 33/11kV Bangurigaon PSS.

#### **Abstract of Estimate**

Name Divisi	e of the ion :-	NIMAPADA ELECTRIC DIVISION					
	e of the Sub- ion : -	KAKATPUR					
Name Section	e of the on : -	Gada Amarprasad					
Name Work	e of the	33kV line from Bangurigaon PSS to Kakatpur PSS.					
Scope	e of work:-	Construction for 1no. of 33kV Outdoor Bay at Bangurigaon PSS. Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 10Ckm. Construction of 2 nos. 'PC+6' EHT Tower for river crossing (300mtr. span). Laying of 33kV U/G cable with 3R, 1CX630sqmm Cable- 2Ckm and 1 no. 33kV 4W RMU at Kakatpur PSS for 33kV incomer line.					
Name Schei	es of mes: -	TPCODL CAPEX					
	ABSTRACT OF ESTIMATE						
SI. No.	Part	Description	Amount				
1	А	Construction for 1no. of 33kV Outdoor Bay at Bangurigaon PSS.	₹ 36,39,033.16				
2	В	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 10Ckm.	₹ 3,72,83,334.44				
3	С	Construction of 2 nos. 'PC+6' EHT Tower for river crossing (300mtr. span).	₹ 1,17,58,371.00				
4	D	Laying of 33kV U/G cable with 3R, 1CX630sqmm Cable- 2Ckm and 1 no. 33kV 4W RMU at Kakatpur PSS for 33kV incomer line.	₹ 3,20,35,117.72				
		TOT SSKY ITTESTITES ITTE.					
		Total Amount	₹ 8,47,15,856.33				

Cost Estimate: ₹ 8.47 Cr. (For detailed BoQ refer Annexure-18).

#### **Benefits:**

- ❖ Mitigation of overloading issue of 33kV Kakatpur feeder.
- ❖ Improving low voltage issues at 33/11kV Charichaka PSS, Jogeswarpur PSS, Kakatpur PSS, Astaranga PSS and Patalda PSS.
- ❖ Ensuring reliable power supply to the consumers by providing N-1 contingency connectivity to 33kV Kakatpur feeder.

## 7.14 <u>Mitigation of Low Voltage and Overloading issues at 33/11kV Substations fed from 33kV Angul-2 Feeder (Angul Grid):</u>

#### **Proposal:**

Proposal for construction of 33kV OH line 241sqmm covered conductor feeder of length 16Ckm and 1Cx630sqmm UG cable of length 4Ckm from Khajuriakata GSS to Phulpada PSS along with 1no. 33kV 4W RMU at 33/11kV Pada PSS. Construction of 2nos. 33kV outdoor bay each at 33/11kV Pada PSS and 33/11kV Phulpada PSS.

#### **Objective:**

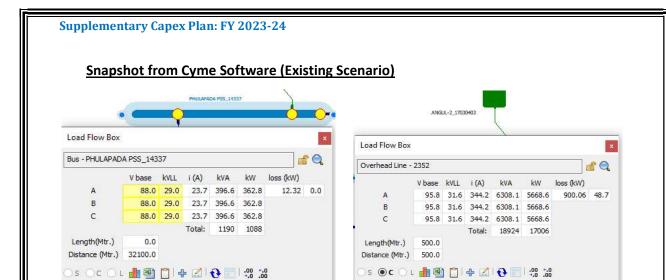
To provide reliable power supply to the consumers, improve low voltage issues of areas fed from 33/11kV Badakera PSS, Bantala PSS and Phulpada PSS. Overloading mitigation of 33kV Angul-2 feeder emanating from Angul Grid along with ensuring reliability of power supply by providing N-1 contingency connectivity from 33kV feeder proposed from Khajuriakata Grid during peak loading condition.

#### **Existing Scenario (Summer'22):**

- At present, 33/11kV Industrial PSS, Badakera PSS, Bantala PSS and Phulpada PSS are fed from 33kV Angul-2 feeder emanating from Angul Grid, having 100/148/232sqmm OH conductor.
- The 33kV Angul-2 feeder feeds 33/11kV Industrial PSS, Badakera PSS, Bantala PSS and Phulpada PSS with a total length of 67Ckm. The 33kV Angul-2 feeder is loaded up to 95%.
- The voltage experienced at 33/11kV Badakera PSS, Bantala PSS and Phulpada PSS are below the permissible limit of -9% of 33kV i.e; 30.03kV.
- The overloading and low voltage situation will increase with load growth (10%) for each year.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Peak Loading Summer'22 (MVA)	% Loading	Feeder Over loading Status (AS IS)	Projected load FY' 24-25 (MVA)	Projected load FY' 27-28 (MVA)	% Loading
Angul	Angul-2	20.00	19.00	95%	Overload	22.99	30.60	153%

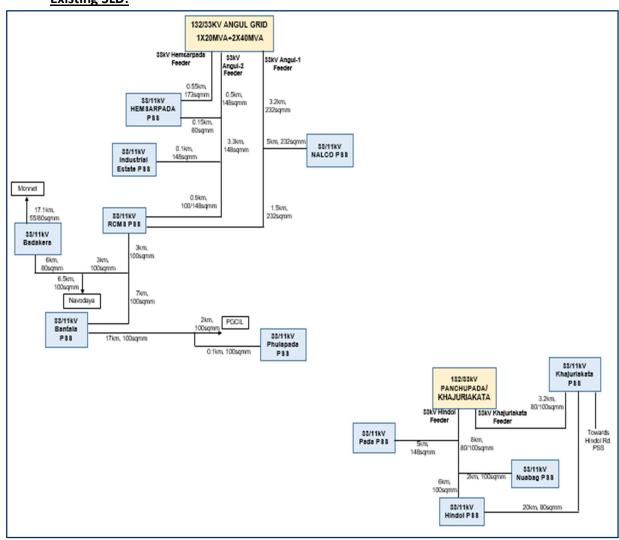
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
Angul		Industrial	30.8
	A 1 - 2	Badakera	29.2
	Angul-2	Bantala	29.4
		Phulpada	29



33/11kV Phulpada PSS

33kV Angul-2 Feeder

#### **Existing SLD:**

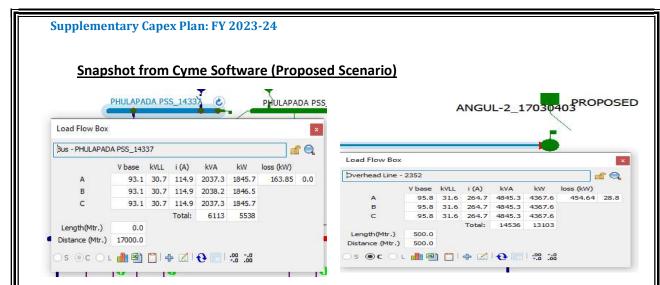


#### **Proposed Scenario (Summer'24):**

- Construction of of 33kV OH line 241sqmm covered conductor feeder of length 16Ckm and 1Cx630sqmm UG cable of length 4Ckm from Khajuriakata GSS to Phulpada PSS along with 1no. 33kV 4W RMU at 33/11kV Pada PSS.
- Construction of 2nos. 33kV outdoor bay each at 33/11kV Pada PSS and 33/11kV Phulpada PSS.
- After linking new feeder from Khajuriakata GSS the proposed 33kV Pada feeder will deliver power supply to 33/11kV Phulpada PSS and 33/11kV Pada PSS and existing 33kV Angul-2 feeder will deliver power supply to 33/11kV Industrial PSS, Badakera PSS and Bantala PSS during normal operating condition.
- This proposal will mitigate the overloading of 33kV Angul-2 feeder and improve the voltage at 33/11kV Badekera PSS, Bantala PSS and Phulpada PSS.

Name of Grid	Name of 33kV Feeder	Feeder Capacity (MVA)	Projected load FY' 24-25 (MVA)	% Loading	Feeder Over loading Status	Projected load FY' 27-28 (MVA)	% Loading	Feeder Over loading Status
Angul	Angul-2	20.00	14.50	73%	ОК	19.30	96%	ОК
Khajuriakata	Proposed Pada	26.51	7.00	26%	ОК	9.32	35%	ОК

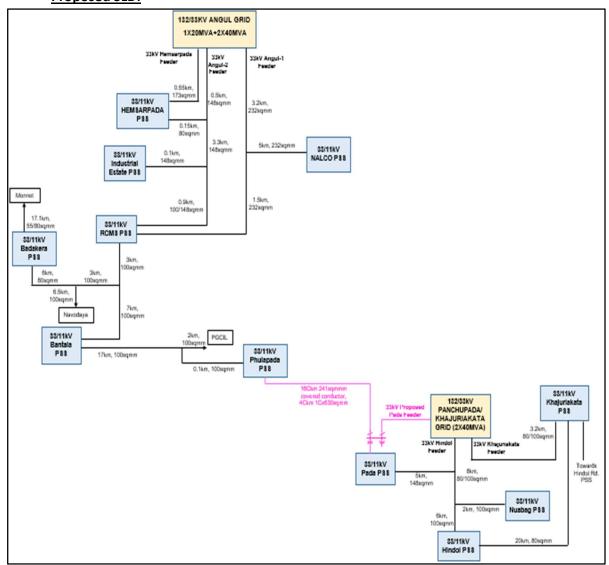
Name of Grid	Name of 33kV Feeder	Name of 33/11kV PSS	Voltage (in kV)
		Industrial	31
Angul	Angul-2	Badakera	30.04
		Bantala	30.03
Khajurjakata	Droposed Dada	Phulpada	30.7
Khajuriakata	Proposed Pada	Pada	31.4



33/11kV Phulpada PSS

33kV Angul-2 Feeder

#### **Proposed SLD:**



#### **Detailed Scope of Work:**

Construction of 33kV OH line 241sqmm covered conductor feeder of length 16Ckm and 1Cx630sqmm UG cable of length 4Ckm from Khajuriakata GSS to Phulpada PSS along with 1no. 33kV 4W RMU at 33/11kV Pada PSS. Construction of 2nos. 33kV outdoor bay each at 33/11kV Pada PSS and 33/11kV Phulpada PSS.

#### **Abstract of Estimate**

Name of th						
Name of the Sub- Division : -		ANGUL				
Name of the Section : -		BANTALA				
Name of the Work :-		33kV Line from Khajuriakata GSS to Phulpada PSS.				
Scope of work:-		Construction for 1 no. of 33kV Outdoor Bay at Pada PSS. Construction for 1 no. of 33kV Outdoor Bay at Phulapada PSS. Construction of 33kV O/H Line using 13mtr WPB Pole & 241qmm AAAC covered conductor-16Ckm. Laying of 33kV U/G Line with 3R, 1CX630sqmm Cable- 4Ckm along with 1no. 33kV 4W RMU at Pada PSS.				
Names of Schemes: -		TPCODL CAPEX				
ABSTRACT OF ESTIMATE						
SI. No.	Part	Description	Amount (In Cr.)			
1	Α	Construction for 1 no. of 33kV Outdoor Bay at Pada PSS.	₹ 36,39,033.16			
2	В	Construction for 1 no. of 33kV Outdoor Bay at Phulapada PSS. ₹ 36,3				
3	С	Construction of 33kV O/H Line using 13mtr WPB Pole & 241qmm AAAC covered conductor- 16Ckm.	₹ 6,18,05,273.46			
4 D		Laying of 33kV U/G Line with 3R, 1CX630sqmm Cable- 4Ckm along with 1no. 33kV 4W RMU at Pada PSS.	₹ 5,99,56,848.08			
		Total Amount	₹ 12,90,40,187.86			
		Total Amount (In Rs. Cr)	12.90			

Cost Estimate: ₹ 12.90 Cr. (For detailed BoQ refer Annexure-19).

#### **Benefits:**

- ❖ Mitigation of overloading & low voltage issue of 33kV Angul-2 feeder.
- ❖ Ensuring reliable power supply to the consumers by improving low voltage issues at 33/11kV Badakera PSS, Bantala PSS and Phulpada PSS.

#### 8. Commissiong Schedule

The Construction of these proposed 20 numbers of 33kV Lines is expected to be completed in 6-8 months and commissioning of the proposed 2 numbers of PSS will take 10-12 months post receipt of approval from the Hon'ble Commission and accordingly the phasing of expenditure will effect.

SI. No.	Proposal	иом	Quantity	(Amount in Rs. Cr.)	Commissioning Timeline
1	Proposed 33/11kV substations along with associated lines	No's	2	49.42	10-12 months post receipt of Approval
2	Proposd 33kV Lines	СКТ.КМ	231.02	128.20	6 -8 months post receipt of Approval
	Total cost in Rs. Cr				

# **ANNEXURES**

Annexure- A (List of 32 PSS with existing Volatge Profile and expected Volatge Profile after Implementation of Mitigation Plan

SI. No.	Name of Circle	Div	District	33kV New Line	From (GSS/ PSS)	То	PSS Benefited	No of PSS Benefited	Existing Voltage Profile (kV)	Expected Voltage after implementation of Mitigation Plan (kV)
1	BBSR-I	NED	Puri	33kV Line From Satsankha GSS To Mangalpur PSS	Satsankha GSS	Mangalpur PSS	1. Mangalpur	1	25.8	32.7
2	BBSR-I	NED	Puri	33kV Line From Pratapsasan GSS To Trahiachyuta Nagar PSS	Pratapsasan GSS	Trahiachyuta Nagar PSS	1. Trahiachyuta Nagar	1	27.3	31.6
3	BBSR-II	NYED	Nayagarha	33kV Line From Daspalla GSS To Proposed 4-Pole (Daspalla PSS)	Daspalla GSS	Proposed 4-Pole (Daspalla PSS)	1. Nuagaon	1	27.4	30.3
4	BBSR-II	NYED	Nayagarha	33kV Line From Daspalla GSS To Existing 4-Pole (Banigochha PSS)	Daspalla GSS	Existing 4-Pole (Banigochha PSS)	1. Daspalla	1	24.3	30.9
5	BBSR-II	NYED	Nayagarha	33kV Line From Daspalla GSS To Proposed 4-Pole(Gania PSS)	Daspalla GSS	Proposed 4-Pole (Gania PSS)	1. Gania 2. Chamundia 3. Kantilo	3	1. 26.6 2. 26.5 3. 26.5	1. 31.1 2. 31.1 3. 31.0
6	BBSR-II	PED	Khurda	33kV Line From Satsankha GSS To Patnayak Chowk (Delang)	Satsankha GSS	Patnayak Chowk (Delang)	1. Delang	1	26.7	30.9
7	BBSR-II	KHD	Khurda	33kV Line From Argul GSS To Taraboi point DP (Tirimalla PSS)	Argul GSS	Taraboi point DP (Tirimalla PSS)	1. Tirimalla	1	28.5	30.4
8	BBSR-II	PED	Puri	33kV Line From Satsankha GSS To Satsankha PSS (Kumareswar)	Satsankha GSS	Satsankha PSS(Kumareswar)	Satsankha     Sakhigopla     Chandanpur	3	1. 26.0 2. 26.4 3. 28.1	1. 30.10 2. 30.03 3. 30.04
9	CUTTACK	SED	Cuttack	33kV Line From Bahugram/Atado GSS To Bahugram-2 PSS	Bahugram/Atado GSS	Bahugram-2 PSS	1. Bahugram-1	1	29.8	32
10	CUTTACK	SED	Cuttack	33kV Line From Balichandrapur GSS To Balichandrapur PSS	Balichandrapur GSS	Balichandrapur PSS	Balichandrapur     Mahanga     Erkana     Kothapada	4	1. 25.2 2. 26.3 3. 25.9 4. 26.1	1. 31.80 2. 30.30 3. 30.04 4. 30.03
11	DHENKANAL	DED	Dhenkanal	33kV Line From Gondia GSS To Proposed 4-Pole (College PSS)	Gondia GSS	Proposed 4-Pole	1. College	1	28.2	30.1
12	DHENKANAL	DED	Dhenkanal	33kV Line From Gondia To Proposed 4- Pole (Joranda PSS)	Gondia GSS	Proposed 4-Pole	1. Joranda	1	29.48	31
13	DHENKANAL	DED	Dhenkanal	33kV Line From Goda GSS To Proposed 4-Pole (Bhuban PSS)	Goda GSS	Proposed 4-Pole	1. Bhuban	1	29	30.2
14	DHENKANAL	TED	Angul	33kV Line From Chainpal GSS To Parjang PSS	Chainpal GSS	Parjang PSS	New Banarpal     Mahavir Road     Parjang	4	1. 28.0 2. 27.7 3. 27.3	1. 30.10 2. 30.03 3. 30.08
15	DHENKANAL	TED	Angul	33kV Line From Kamakhyanagar GSS To Parjang PSS	Kamakhyanagar GSS	Parjang PSS	4. Sanda		4. 27.1	4. 30.50
16	PARADEEP	KED-II	Kendrapada	33kV Line From Rajnagar GSS To Badhi/Babar PSS	Rajnagar GSS	Badhi/Babar PSS	1. Badhi/Babar	1	29.1	31.7
17	PARADEEP	JED	Jagatsinghpur	33kV Line From Tirtol GSS To Kanakpur PSS	Tirtol GSS	Kanakpur PSS	1. Kanakpur	1	28.9	31.7

Annexure- A (List of 32 PSS with existing Volatge Profile and expected Volatge Profile after Implementation of Mitigation Plan

SI. No.	Name of Circle	Div	District	33kV New Line	From (GSS/ PSS)	То	PSS Benefited	No of PSS Benefited	Existing Voltage Profile (kV)	Expected Voltage after implementation of Mitigation Plan (kV)
18	CUTTACK	SED	Cuttack	33kV Line From Bahugram/Atado GSS To Nischintakoili PSS	Bahugram/Atado GSS	Nischintakoili PSS	Nischintkoili     Orikanta     Paldhupadia	3	1. 27.8 2. 27.1 3. 27.8	1. 31.2 2. 30.5 3. 31.3
19	BBSR-I	NED	Puri	33kV Line From Bangurigaon PSS To Kakatpur PSS	Bangurigaon PSS	Kakatpur PSS	Jogeswarpur     Kakatpur	2	1. 27.0 2. 25.6	1. 29.6 2. 29.2
20	DHENKANAL	ANED	Angul	33kV Line From Khajuriakata GSS To Phulapada PSS	Khajuriakata GSS	Phulapada PSS	1. Phulpada	1	29	30.7
				TOTAL				32		

		Annexure-1			
		TP CENTRAL ODISHA DISTRIBUTION LIMITED			
Name of	the Division :-	BHUBANESWAR ELECTRICAL DIVISION			
Name of	the Sub-Division : -	TEMPLE			
Name of the Section : - OT-2					
Name of	the Work :-	Construction of 2X8 MVA, 33/11 KV PSS at Nageswar Tangi along with 33 I Badagada Grid and Mulapadia PSS to proposed Nageswar Tangi PSS and 1 outgoing feeders.	, ,		
Scope o	f work:-	Construction of 33/11kV Primary Substation with 2X8 MVA Trf., including construction of 33/11kV Primary Substation with 2X8 MVA Trf., including construction and All Equipment Supply, Erection, Commissioning, Testing supply of all materials, Labour, T&P etc. As per technical specification and so Construction of 6Ckm 33kV, 3runs 1CX630sqmm line from Badagada Grid to Nageswar Tangi PSS and interlinking line from Mulapadia PSS. Construction 3Cx400sqmm cable of total length 6 Ckm and 1no. 33kV RMU at Mulapadia and sectionalisation. Augmentation of existing 11kV feeder from 34/55/80 sq AAAC. Length = 6 km.	, Civil Works with cope of work. o Proposed 33/11kV n of 11kV line using PSS for interlinking		
Names o	of Schemes: -	TPCODL CAPEX			
		ABSTRACT OF ESTIMATE			
SI. No.	Part	Description	Amount		
1	А	Construction of 33/11kV Primary Substation with 2X8 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.	₹ 9,85,12,225.31		
2	В	Construction of 6Ckm 33kV, 3runs 1CX630sqmm line from Badagada Grid to Proposed 33/11kV Nageswar Tangi PSS and interlinking line from Mulapadia PSS.	₹ 8,68,24,123.27		
3 C		Construction of 11kV line using 3Cx400sqmm cable of total length 6 Ckm and 1no. 33kV RMU at Mulapadia PSS for interlinking and sectionalisation.	₹ 4,85,88,057.45		
4	D	Augmentation of existing 11kV feeder from 34/55/80 sqmm to 100sqmm AAAC. Length = 6 km.	₹ 73,79,146.94		
		Total Amount	₹ 24,13,03,552.98		
		Total Amount (In Cr)	₹ 24.13		

Construction of 33/11 KV Primary Substation with 2X8 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

SI. No.	DESCRIPTION OF ITEMS	UNITS	Total Quantity	Basic Unit price ( In Rs.)	Total
	SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)		•		
	33kV Equipment (Indoor Type)			1000.00	
1	36kV Indoor AIS Equipment and accessories for 33/11kV AIS 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 (2 no.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	91,75,000.00	91,75,000.00
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.	9	13,455.00	1,21,095.00
3	12kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester with out surge counter( For Transformers - Outdoor type	Nos.	6	4,615.00	27,690.00
	11kV Equipment (Indoor Type)				
4	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-12500A(Copper) & CT (600-1200/5-5-5A) of 2 Nos. for Transformer Protection, Air Insulated switchgear Panel consisting of Breaker-630A Busbar-1250A (Copper) CT (300-600/5-5A) of 6 Nos. for Feeder protection, 1 No.of 11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (600-1200/5-5A), 2 Nos. 11kV, 2 Core, Single Phase, IVT (11\n/3 kV / 110\n/3-110\n/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.  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	1	68,00,000.00	68,00,000.00
	SCADA				10.77.005.01
8	SITC for SCADA FOR Primary Substation  Transformer and Accessories	Set	1	10,77,965.01	10,77,965.01
9	8 MVA, 33/11kV Power Transformer DYn11 (Outdoor Installation) with Accessories including NIDS System	No.	2	1,18,90,900.00	2,37,81,800.00
10 11	100 KVA 33/0.433kV Energy efficient Station Transformer with HV & LV BOX SITC OF TMU	No No	2	4,24,320.00 3,00,000.00	4,24,320.00 6,00,000.00
12	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	1	17,87,101.00	17,87,101.00
13	Supply of Standard FRTU 4Way with FRTU networking Equipment consisting of Fibre Optic switch (Mono mode along wilh associate LIU unit for connection of FO Cable, for 3 Way & 4 way RMU.  Substation Earthing System GI	No.s	1	3,71,530.24	3,71,530.24
12	Earthing Conductor 75X10 mm (5.89 Kg/Mtr.) GI Flat for laying (spacing maximum <b>2m both ways</b> )	Kg	5301.00	97.50	5,16,847.50
13	Earthing Conductor: 50X6 mm (2.4Kg./Mtr.) GI Flat for Raiser from the burial earth mat to equipment, structure etc.)	Kg	720.00	97.50	70,200.00
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  33, 11 and Station Trf Structure	No	40.00	1,365.00	54,600.00
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	76.00	17,437.44
17	GI Nuts & Bolts etc. for column and beam & Equipment Structures	Kg	500.00	101.40	50,700.00
18 19	Supply & Erection of GI Pipe of dia. 150mm, Class-B High Density Polyethylene (HDPE) pipe 160 mm diameter.	Mtr. KM	200.00 0.01	1,463.40 7,75,400.00	2,92,680.00 7,754.00
20	LTDB for 100KVA, 33/0.433kV Station Transformer	Nos	1.00	31,744.70	31,744.70
21	Supply and installation of 8way LDB with accessories  33 and 11 kv Power and Control, XLPE cables	Nos.	2.00	11,648.00	23,296.00
22	1C X 400 sqmm, 33 KV, XLPE, Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works. (SC rating of cable in kA-37.7kA and SC rating of Armour in kA-20kA)	KM	1.20	10,17,900.00	12,21,480.00
22.1	33 KV 1C X 400 sq.mm. Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.	Set.	16.00	6,802.90	1,08,846.40
22.2	33 KV 1C X 400 sq.mm. Heat Shrink <b>Out Door cable termination kit</b> complete with all accessories and tagging etc. as per	Set.	16.00	8,929.70	1,42,875.20
22.3	technical specifications and scope of the works.  Supply of 33kV, 3Core, 95sqmm Aluminium, XLPE insulation UG Cable with spare (SC rating of cable in kA- 9kA and SC rating of Armour in kA- 9kA) For Station Trf	Mtr.	100.00	1,331.20	1,33,120.00
22.4	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 3Core, 95sqmm, HT UG Cable kits For Station Trf	Set	2.00	25,199.20	50,398.40
22.5	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 3Core, 95sqmm, HT UG Cable kits For Station Trf	Set	2.00	15,545.40	31,090.80
23	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.	KM	1.50	19,50,000.00	29,25,000.00
24	11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.	Set.	20.00	12,456.60	2,49,132.00
25	11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.	Set.	16.00	18,075.20	2,89,203.20
<b>26</b> 26.1	Control Cables (Copper Armoured) 4 Core x 2.5 mm <sup>2</sup>	Km	0.70	1,17,800.00	82,460.00
26.2	7 Core x 2.5 mm	Km	0.70	1,84,240.00	1,28,968.00
26.3	10 Core x 2.5 mm <sup>2</sup>	Km	0.50	4,29,000.00	2,14,500.00
26.4 26.5	12 Core x 2.5 mm <sup>2</sup> 1 Core x 16 mm <sup>2</sup> Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB	Km Km	0.50 0.30	3,95,000.00	1,97,500.00 50,044.75
26.5 <b>27</b>	1.1 kV XLPE Power Cables	NIII	0.30	1,66,815.82	50,044.75
27.1	3 1/2 Core x 120 mm2 (for Station Transformer output )	Km	0.15	4,77,085.48	71,562.82
27.2	3 1/2 Core x 95 mm2 (for Oil Filtration Machine Connection )	Km	0.10	3,81,281.47	38,128.15
27.3	3 1/2 Core x 25 mm2 (for Switchyard Lighting)	Km	0.30	1,32,740.13	39,822.04
27.4	4 Core 16 mm2 (for Switchyard Lighting ) 2 Core 16 mm2 (for Switchyard Lighting )	Km Km	0.30	1,54,222.40 1,34,337.02	46,266.72 40,301.11
	Battery & Battery Charger				
28	48 V, 150 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery with 150AH)	Set	1.00	74,945.00	74,945.00
29	48V, Float cum Boost Battery Charger (15 A float charging, 20 A boost charging)	No	1.00	1,87,356.00	1,87,356.00

Construction of 33/11 KV Primary Substation with 2X8 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

with sup	ply of all materials, Labour, T&P etc. As per technical specification and scope of work  Sub-station Lighting And Fire Fighting System		ı		
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, 18 Watt LED tube 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). (Minimum requirement will be - GI Tubular pole -10No's., 2x18watt-27No's., 1x18watt-18No's, 120Wx 4 sets and 100Wx6),	Lot	1.00	4,00,000.00	4,00,000.00
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 (25Amp MCCB & 25Amp switch), Remote etc. for completing the A.C scheme of control room. Each AC will have its own control through respective switch, as per technical specification and scope of work.	No	4.00	53,750.00	2,15,000.00
32	1400 mm sweep 250Volt A/C Celling Fan	No	5.00	3,125.00	15,625.00
33	300 mm sweep 70W A/C Exhaust Fan ( for Battery room and Toilet )  Fire Detection Alarm System	No	4.00	2,500.00	10,000.00
33.1	Main Fire ALARM Control Panel (Ul /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, decentralized, 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., as per technical specification and scope of work.	EA	1	3,09,921.34	309921.337
33.2	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), as per technical specification and scope of work.	EA	6	7,944.91	47,669.47
33.3	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), as per technical specification and scope of work.	EA	2	7,944.91	15,889.82
33.4	Response Indicator (Twin LED transparent type), as per technical specification and scope of work.	EA	2	81.73	163.45
33.5	Addressable manual Call Point (must have inbuilt short circuit isolator,) (UL /FM /ULC/Vds Approved), as per technical specification and scope of work.	EA	1	8,699.15	8,699.15
33.6	specification and scope of work.  Electronic Hooter/Multi tone sounder (must have inbuilt short circuit isolator,) (UL /FM /ULC/Vds Approved) Indoor type, as per technical specification and scope of work.	EA	1	7,652.85	7,652.85
33.7	2 Core X 1.5 sq.mm copper conductor, armored, RED colour FRLS PVC sheathed signal Cable, as per technical specification and scope of work.	М	150	143.67	21,550.01
33.8	4C X 2.5sqmm copper armoured FRLS cable with accessories (Gland, lug, saddle, etc.), as per technical specification and scope of work.	М	15	251.20	3,768.03
33.9	Steel wire reinforced flexible conduct pipe (16MM) with all accessories, as per technical specification and scope of work.	М	15	163.45	2,451.80
33.1	Surge Arrester for fire Alarm system, as per technical specification and scope of work.	EA	1	5,814.42	5,814.42
33.11 34	Lightning Rod in Top of PSS Building, as per technical specification and scope of work.  Fire Fighting System (portable and wheel mounted sets for control room)	EA	1	5,129.42	5,129.42
34.1	Foam type- 9 Ltrs	No	2.00	3,978.80	7,957.59
34.2	CO <sub>2</sub> - 4.5 Kgs	No	2.00	9,678.15	19,356.30
34.3 34.4	Dry powder 4.5 Kg Fire Bucket with GI Stand with GI Canopy arrangement (4nos. in one Stand=1 Set)	No Set	2.00 1.00	3,494.89 4,516.47	6,989.78 4,516.47
	AC & DC System for Auxiliary supply			.,	, ,
<b>35</b> 35.1	AC System ACDB (as per specification)	Lot	1	1,20,375.00	1,20,375.00
35.2	Main Lighting Distribution Board (as per specification)	Lot	1	45,000.00	45,000.00
35.3 35.4	Indoor Lighting Distribution Board as per specification Receptable Panel near Power Transformer	Lot No	1	42,500.00 32,000.00	42,500.00 32,000.00
36	DC System				1,65,000.00
36.1 <b>37</b>	48 V DC Distribution Board as per specification .  Water Cooler with water purifier system as per Technical Specification	No No	1	82,500.00 14,459.81	14,459.81
37.1	Wall mounted water purifier system	No	1	51,997.00	51,997.00
38 39	Maintenance Testing Equipment as per Technical Specification Tools and Plants (T&P's) Requirement as per Technical Specification	Lot Lot	1	4,97,500.00 62,500.00	4,97,500.00 62,500.00
40	Office Furniture as per Technical Specification	Lot	1	2,50,000.00	2,50,000.00
<b>41</b> 41.1	Supply of Materials for Installation of Power Transformer on Plinth (as per Drawing) 90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr / Transformer each (Unit Wt=0.240 MT)	Nos	2	21,246.48	42,492.96
	Supply including Fabrication works (Cutting, welding& Supply in position etc) (300x300x10) mm GI plate each (Unit				
41.2	Wt=0.007065MT)	No.s	24	1,990.00	47,760.00
41.3 41.4	(65x65x5) mm GI angle of 5.4 mts length.4.9 kg/mtr. / Transformer each (Unit Wt=0.026 MT)  Supply of GI Chequered plate 1000X300X5.6mm thick for Cable Trench in side Control Room	Nos Nos	6 2	2,778.30 100.00	16,669.80 200.00
42	GI Spikes with cone and GI (2 nos).	Kg	640.00	1,537.50	9,84,000.00
	Sub-Total for SUPPLY OF EQUIPMENT & MATERIALS (in Rs.)  Total Cost in Cr.				5,50,87,240.94 5.51
•	ERECTION, TESTING & COMMISSIONING WORKS OF FOLLOWING EQUIPM (As per Technical Specification)	MENT_			0.01
	33kV Equipment (Indoor Type)		<u> </u>		
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 Incoming & outgoing breaker.	Set	1.00	94,500.00	94,500.00
	Erection, Commissioning, Testing of 11kV Equipment (Indoor Type) 30kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester (for 33kV Incoming Line, HT side of 2nos. Power	ļ.,.			0.0== 0.0
3	Transformers and 33/0.433kV Station Transformer) - Outdoor Type with Surge Counter  12kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester with out surge counter(For Transformers & Out Going	Nos.	9.00	675.00 337.50	6,075.00 2,025.00
4	Feeders) - Outdoor type  11kv 1250A VCB 13 panel board Switchgear ( 2 incoming, 8 Outgoing, 1 Bus coupler, 2 Bus PT	No	2.00	9,85,595.00	19,71,190.00
-	Erection, Commissioning, Testing of SCADA	INU	2.00	9,00,080.00	13,71,190.00
8	SCADA FOR Primary Substation	Set	1.00	0.00	0.00
9	Erection, Commissioning, Testing of Transformer and RMU  8 MVA, 33/11kV Power Transformer DYn11 (Outdoor Installation) with Accessories	No.	2.00	1,61,700.00	0.00 3,23,400.00
			1.00		
10 11	100 KVA 33/0.433kV Energy efficient Station Transformer along with HT & LT cable connection Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	No No	1.00	6,750.00 8,000.00	6,750.00 8,000.00

Construction of 33/11 KV Primary Substation with 2X8 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 16,000.00 Services of FRTU Panel, Communication and Other Supplied System NO 1.00 16,000.00 2.00 27,000.00 54,000.00 Erection, Testing & Commissioning of Transformer Monitoring Unit, as per technical specification and scope of work. NO 13 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 5301.00 13.50 71,563.50 Earthing Conductor: 50X6 mm (2.4Kg./Mtr.) GI Flat for Raiser from the burial earth mat to equipment, structure etc.) 720.00 9,720.00 13 Kg 13.50 Earthing Device & Associated Accessories (Heavy duty GI Perforated Pipe of ID=40mm & OD=50mm with 3000mm long for 40.00 2,025.00 81 000 00 treated Earth Pit) as per Drawing

Erection of System GI 33, 11 and Station Trf Structure Nο (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 7,182.00 15 Kg 532.00 13.50 plate to be suitably grouted to the floor for the rigidity.

(100 x 50 x5) mm Gl Channel (9.56kg / Mtr) (2Mtr - 06 nos for one Power Transformer) for supporting of 33kV & 11kV power Kg 229.44 13.50 3.097.44 Cable (Unit Wt=0.01912 MT) 6.750.00 GI Nuts & Bolts etc. for column and beam & Equipment Structures Kg 500.00 13.50 18 GI Pipe of dia. 150mm, Class-B for Cable rising, as per technical specification and scope of work. 200.00 67.50 13.500.00 Κg 1.161.38 1,16,137.80 19 High Density Polyethylene (HDPE) pipe 160 mm diameter. KM 0.01 LTDB for 100KVA, 33/0.433kV Sta ransformer along with all cable connection & fixing Nos 1.00 2,025.00 Laying of 11kV 33 and 11 kv Power and Control cables 1C X 400 samm. 33 KV. XLPE. Power cable Armored, aluminium conductor, stranded, including their termination materials KM 2,02,500.00 2,43,000.00 1.20 like glands, lugs, tagging etc. as required as per technical specifications and scope of the works. 33 KV 1C X 400 sq.mm. Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per 22.1 Set. 16.00 3.375.00 54,000.00 technical specifications and scope of the works. 33 KV 1C X 400 sq.mm. Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per 16.00 3.375.00 54.000.00 technical specifications and scope of the works. Laying, Commissioning & Testing of 33kV, 3Core, 1Run, 95sqmm, XLPE insulation (extruted type) UG cable with spare by Mtr 100.00 94.50 9.450.00 open trench method. 22.5 Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 3Core, 95sqmm, HT UG cable kits Set 2.00 Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 3Core, 95sqmm, HT UG 2.00 22.6 1.900.80 3.801.60 3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination KM 1.50 2,02,500.00 3.03.750.00 materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works. 11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per Set 20.00 3,375.00 67.500.00 technical specifications and scope of the works. 11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per 16.00 54.000.00 Set 3,375.00 technical specifications and scope of the works. Control Cables (Copper Armoured) Km 0.70 15,000.00 10,500.00 4 Core x 2.5 mm 25.2 7 Core x 2.5 mm<sup>2</sup> Km 0.70 17,000.00 11,900.00 25.3 Km 0.50 19,000.00 9,500.00 10 Core x 2.5 mm 10.000.00 12 Core x 2.5 mm<sup>2</sup> Km 0.50 20,000.00 1 Core x 16 mm2 Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB Km 0.30 10,000.00 3,000.00 Laying of 1.1 kV XLPE Power Cables Km 0.15 67,500.00 10,125.00 26.1 3 1/2 Core x 120 mm2 (for Station Transformer output ) 6,750.00 0.10 67,500.00 26.2 3 1/2 Core x 95 mm2 (for Oil Filtration Machine Connection ) Km 3 1/2 Core x 25 mm2 ( for Switchyard Lighting ) 10.125.00 26.3 Km 0.30 33.750.00 10.125.00 26.4 4 Core 16 mm2 (for Switchyard Lighting ) Km 0.30 33.750.00 26.5 2 Core 16 mm2 (for Switchyard Lighting) Km 0.30 20 250 00 6.075.00 Erection, Commissioning , Wiring & Testing of Battery & Battery Charger 48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery with 150AH) Set 1.00 3.375.00 3.375.00 4.050.00 48V, Float cum Boost Battery Charger (15 A float charging, 25 A boost charging) 1.00 No 4,050.00 Erection, Commissioning , Wiring & Testing of Sub-station Lighting And Fire Fighting System 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 29 Lot 1.00 1,01,250.00 1,01,250.00 .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). 1.5 Ton capacity Split Air Conditioning units with Remote control facility: Including supply of split Air conditioner 5 Star rated, No 4.00 3.645.00 14,580.00 voltage stabiliser, control boxes etc. for completing the A.C scheme. (As per specification) for control room. 3.375.00 1400 mm sweep 250Volt A/C Celling Fan No 5.00 675.00 300 mm sweep 70W A/C Exhaust Fan ( for Battery room and Toilet ) 2,700.00 32 No 4.00 675.00 Erection, Testing & Commissioning of Fire Detection Alarm System, as per technical specification and scope of work. Main Fire ALARM Control Panel (Ul/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, 22.646.87 32.1 No's 1.00 22.646.87 decentralized, 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., as per technical specification and scope of work. 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), as per technical specification No's 6.00 377.45 2,264.69 and scope of work. Intelligent Addressable multi sensor Detector- (Smoke + Fixed Tempt. + Rate of rise tempt.) For trench (UL /FM /ULC/Vds 2.00 377.45 Approved) inclusive base and other installation accessories. (must have inbuilt short circuit isolator), as per technical specification No's 754.90 and scope of work. 32.4 Response Indicator (Twin LED transparent type), as per technical specification and scope of work. No's 2 00 377 45 754 90 Addressable manual Call Point (must have inbuilt short circuit isolator,) (UL /FM /ULC/Vds Approved), as per technical 377.45 377.45 32.5 No's. 1.00 specification and scope of work Electronic Hooter/Multi tone sounder (must have inbuilt short circuit isolator,) (UL /FM /ULC/Vds Approved) Indoor type, as 377.45 32.6 No's. 1.00 377.45 per technical specification and scope of work. 2 Core X 1.5 sq.mm copper conductor, armored, RED colour FRLS PVC sheathed signal Cable, as per technical specification 150.00 8.710.34 32.7 Mtr 58.07 and scope of work. 4C X 2.5sqmm copper armoured FRLS cable with accessories (Gland, lug, saddle, etc.), as per technical specification and scope 32.8 Mtr. 15.00 81.30 1,219.45 of work. 15.00 609.72 32.9 Steel wire reinforced flexible conduct pipe (16MM) with all accessories, as per technical specification and scope of work Mtr. 40.65 No's. 1.00 2,555.03 2,555.03 Surge Arrester for fire Alarm system, as per technical specification and scope of work 32.11 Lightning Rod in Top of PSS Building, as per technical specification and scope of work No's 1.00 2,206.62 2,206.62 33 Erection, Commissioning of Fire Fighting System (portable and wheel mounted sets for control room) 348.41 No 2.00 174.21 Foam type- 9 Ltrs

Construction of 33/11 KV Primary Substation with 2X8 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 CO<sub>2</sub> - 4.5 Kgs 174.21 348.41 Nο 2.00 33.3 Dry powder 4.5 Kg
33.4 Fire Bucket with Stand (4nos. in each Stand) Nο 2 00 174 21 348 41 1.00 Set 348.41 348.41 Erection, Commissioning, Wiring & Testing of AC & DC System 34 AC System 2,700.00 1.00 Lot 2,700.00 ACDB (as per specification) Main Lighting Distribution Board (as per specification) 1.00 2,700.00 2,700.00 34.3 Indoor Lighting Distribution Board as per specification Lot 1.00 2.700.00 2,700.00 Receptable Panel near Power Transformer No 1.00 2,700.00 2,700.00 35 DC System No 2,700.00 5,400.00 35.1 48 V DC Distribution Board as per specification 2.00 Erection, Commissioning of Water Cooler with water Purifier System No 2,700.00 36 1.00 2,700.00 No 2,025.00 36.1 Water Cooler with stainless steel stand 1.00 2,025.00 Commissioning & Testing of Maintenance Testing Equipment 1.00 1,35,000.00 1.35.000.00 Lot 6,750.00 38 Commissioning Tools and Plants (T&P's) Requirement Lot 1.00 6,750.00 Commissioning Office Furniture Lot 1.00 13,500.00 13,500.00 39 Laying of Materials for Installation of Power Transformer on Plinth (as per Drawing) 90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr / Transformer each (Unit Wt=0.240 MT) Nos 2.00 3,484.13 6,968.27 40 (500x500x10) mm GI plate 6 nos / Transformer each (Unit Wt=0.013 MT) Nos 6.00 2,903.45 17,420.67 42 (65x65x5) mm GI angle of 5.4 mts length.4.9 kg/mtr. / Transformer each (Unit Wt=0.026 MT) Nos 2 00 1.742.07 3.484.13 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 Mtı 71.85 16.989.77 12.20.714.95 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. Chequered plate 1000X300X5.6mm thick for Cable Trench in side Control Room 12 Mtr 7 409 59 Chequered plate 1000X300X5.6mm thick for Cable Helican Sub-Total for ERECTION, TESTING & COMMISSIONING WORKS (In Rs.)

Total Cost in Cr. KG 638.00 11.61 51,64,716.19 0.52 Civil Works with supply of all materials like Cement, MS tor rod, Brick, Coarse & Fine Agregrates & Labour, T&P etc. Contour survey , plotting the contour on graph sheet and marking the finished ground level Sqr Mtr 2,000.00 81.00 1,62,000.00 Cutting for Levelling and disposal of excess earth either in low laying area in sub-station or outside.
Filling of S/S area with borrowed earth (rolling & compacting of filled up soil before taking measurement). 28,957.50 Cum 143.00 202.50 2.320.00 348.41 8.08.319.09 Cum OUT DOOR DRAIN to DISCHARGE SWITCHYARD/ WATER FROM WASH BASIN AND CONTROL ROOM ROOF (10 mts Excavation in all type soil (1.35x10x0.7) Cum 9.45 174.21 1,646.25 PCC (1:3:6 ) (1.35x10x0.1) PCC ( 1:2:4 ) (0.3x10x0.05) Cum 1.35 0.15 5,226.20 6,039.17 7 055 37 4.3 Cum 905.87 Brick Masonary with cement mortar ( 1:5 ) (0.25x10x0.925+1/2x0.15x0.93x10)+(0.25x10x0.925) Cum 5.32 6,387.58 33,979.26 4.4 Plastering with Cement mortar(1:6) ( 2x0.25x10+2x0.925x10+1x0.925x10+1x1.0x10 )

Switch Yard and COMPOUND WALL For PILE Foundation for SBC Upto 10, for Open Cast for SBC more than 10 ( Sq. mtr. 42.75 325.19 13.901.69 5 FOR 50x40 MTR AREA), as per technical specification and scope of work Construction of 2.5Mtr height (Above NGL) 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 & Run. Mtr 180.00 13,704.26 24,66,766.87 footings, including Cement Plastering, Cement wash, Wall Painting two coats with weather coat. Provision of the boundary wall Fencing with GI Grill of 700 mm height (20Kg / Mtr) fixing at the top of the wall. It includes supply of all the materials of the fencing 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 2.44.000.00 with cost of all materials. Steel Rods, labours, T&P etc. & all other machinaries required for Compound Wall work 5.2 Run. Mtr. 61.00 4.000.00 etc.complete in all respect as per latest specification & direction of the Engineer in charge at a spacing of 3.3m c/c Power Transformer with Switch Yard GI Chain Linking Fencing with 2 Mtr Height. 4,050.00 2,43,000.00 5.3 Run. Mtr. 60.00 6 Power Transformer Foundation / One (8 MVA) Excavation in all type soil per Tfr.(3X3X1.1 mtr) 6.1 Cum 19.80 174.21 3,449.29 7.055.37 6.2 PCC (1:3:6 ) per Tfr.(3X3X0.075 mtr) Cum 1.35 5.226.20 1,24,620.50 6.3 RCC (1:1.5:3) per Tfr. As per drawing Cum 10.52 11,846.06 Cum 26.131.01 RRHG stone grouting with sand per Tfr 9.00 Prefabricated RCC foundation of 33kV RMU Nos. 23.145.30 23.145.30 Construction of 100kVA 33/0.4 kV station Trf. Plinth 7.1 Excavation in all type soil (2.5X2.5X0.750 mtr) Cum 4 69 174.21 816.59 PCC (1:3:6 ) (2.5X2.5X0.075 mtr) Cum Cum 0.47 5,226.20 11,846.06 2,449.78 2,665.36 RCC (1:1.5:3) (1.5X1.5X0.1 mtr) Cum 7 4 Brick Masonary work (2.5x2.5x.925+2x(.5 x1.5x2.25) (1:5) 61.19 6.387.58 3.90.839.99 7.5 Cement Plastering (1:6) (1.5x2.25x4)+(1.5x1.5) 20mm thick Sq Mtr 15.75 325.19 5,121.68 Construction of oil sump pit for Transformer (1.6 X 1.6 X 2.3) 8 40 1.463.34 8 1 Excavation of Earth(2.0x2.0x2.1) Cum 174 21 8.2 2,090.48 PCC (1:3:6) 2X2X0.1 0.40 5,226.20 Cum RCC(1:1.5:3) 1.6X1.6X0.1 for Top Slab Cum 11,846.06 3.032.59 Brick Masonary work(2x2.1+2x1.6)x0.25x2.3 (1:5) Cement Plastering (1:6) 2.3 (4x2.1+4x1.6)+1.6x1.6 Cum 4.26 6.387.58 27.179.15 11,901.80 8.5 36.60 325.19 Sq.mtr Drainage for Oil sump pit with 250 dia hume pipe 24.00 4,645.51 1,11,492.29 8.6 ROAD (6 Mtrs wide) Length of the road 20 mtrs Excavation in all type soil 0.5mx1mx5m Cum 60.00 174.21 10,452.40 9.1 Boulder Packing 0.5mx1mx5m 60.00 1.742.07 1.04.524.02 Cum 2,903.45 26,131.01 Water base course -I 0.075mx1mx5m Cum 9.00 Water base course -II 0.075mx1mx5m Cum 26,131.01 9.5 PCC (1:2:4) 0.1mx1mx5m Cum 12.00 6.039.17 72,469,99 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 Cum 7.20 6,387.58 45.990.57 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. (125x70x5) mm RS GI joist 5Mtr (STATION) 1,393.65 10.1 Excavation with back filling L 1m x W 1 x D 2 Cum 8.00 174.21 10.2 PCC (1:3:6) 0.40 5,226.20 2,090.48 Cum RCC (1:1.5:3) 1.42.152.67 Cum 12.00 11,846.06 11 Baffle Wall

Annexure-1 Construction of 33/11 KV Primary Substation with 2X8 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 274.38 Excavation with back filling 4.2mx0.75mx0.5m Cum 174.21 PCC 1:3:6 4.2mx0.75mx0.1m 5,226.20 1,646.25 Cum 0.32 RCC 1:1.5:3 0.75x3.8x0.2+0.5x3.4x0.2+2.5x3x0.15 Cum 5.80 11 846 06 68 647 89 50,171.53 PCC (1:4:8 ) With cement For S/S area(75 mm) per Sq. mts.( (8x16x0.075) 9.60 5,226.20 Cum Metal Spreading 100 mm. per Sq. mts. Area of spreading. Cum 12.80 43,110.35 3,368.00 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 Switchgear Cum Control Room For Pile foundation in FLOOD AREA (with SBC upto 10) 14 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 2,60,000.00 4.000.00 Nos 65.00 latest specification & direction of the Engineer in charge. 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, 150.00 174.21 26.131.01 Cum 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 Supplying and filling in foundation and plinth with good river sand well watered and rammed in layers not exceeding 23 14.3 cm in each layer including all leads and lifts, cost of all materials, labour, cess, sundries, T&P required for the work etc. Cum 189.00 929.10 1.75.600.35 Complete in all respect as per latest specification & direction of the Engineer in charge. 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 guality 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, Cum 35.52 5.226.20 1.85.634.66 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. 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 33.36 6,387.58 2,13,089.64 14.5.2 Ground Floor Cum 100 44 6 387 58 6 41 568 43 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 32.76 10,452.40 3,42,420.69 14.6.2 R.C.C. wall Cum 3.36 10.452.40 35,120.07 9.72 14.6.3 Plinth Beam Cum 10,452.40 1,01,597.35 14.6.4 Column & Beam- Ground Floor 14.6.5 Lintel-Ground Floor Cum 33.60 10,452.40 3.51.200.71 41,391.51 Cum 3.96 10,452.40 14.6.6 65mm thick R.C.C.Chajja- Ground Floor Sqm 23.28 22,981.35 14.6.7 Roof slab - Ground Floor Cum 29.16 13.936.54 4.06.389.39 Cum 3.48 13,936.54 48,499.15 14.6.8 Staircase- Ground Floor 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. 16,09,437.63 MT 16.90 95,233.00 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 1,14,432.90 Sqm 142.80 801.35 respect as per the latest specification and direction of the Engineer-in-charge 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 12.180.53 14.9 15.20 801.35 Sqm 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. 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 14.10 Sam 19.50 847.81 16,532.22 approved quality including cost of all materials, takes labour T&P etc. required for the work etc complete in all respect as pe the latest specification and direction of the Engineer-in-charge. 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 16,863.21 Sam 24.20 696.83 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. Supplying, fitting and fixing 5"x2½" size Dressed seasoned Sal wood chaukaths including cost, conveyance royality taxes of 14 12 all materials. labour, all other machinaries, T & P articles required for the work complete in all respect as per the direction of Cum 0.25 92,910.24 23 227 56 the Engineer-in-Charge.

10.70

20.80

Sqm

Sam

2,903.45

5.806.89

31.066.86

1,20,783.31

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

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

work complete in all respect as per the direction of the Engineer-in-Charge.

respect as per the direction of the Engineer-in-Charge. DOUBLE SHUTTER SLIDING WINDOW

14.13

Construction of 33/11 KV Primary Substation with 2X8 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 royiding 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-Mtı 10.20 812.96 8,292.24 Charge. Providing and fixing of FRP door shutter including cost conveyance royality taxes of all materials, labour, all other 14.16 machinaries, T & P articles required for the work complete in all respect as per the latest specification and direction of the 3.80 2,903.45 11,033.09 Engineer-in-Charge 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 2.22,768,56 14.17.1 Ground Floor Sqm 685.05 325.19 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 1.75.987.32 Sqm 541.19 325.19 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 14.19 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. 484.90 1,57,682.61 Sqm 325.19 Providing and finishing the wall surface with two coat of cement wash including scaffolding, all labour, cost, conveyance, 14.20 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 1.522.68 104.52 1,59,156.63 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, 84.916.48 664.70 127.75 Kg 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. 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, 14.22 1,44,925.22 conveyance, royalities of all materials, cost of all labour, T&P articles required for the work etc. complete in all respect Kg 1.134.43 127.75 confirming to relevant I.S specification and direction of the Engineer-in Charge. 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. 1,17,045.30 876.36 133.56 14.23.1 Ground Floor Sam Painting two coats with weather coat on exterior walls surface of approved guality 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 1,23,875.60 646.44 191.63 Sam Painting two Coats with approved colour synthetic enamel paint on wood / iron work in all floors at all height including 14.25 22.138.19 scafolding cost conveyance royality of all materials labour, T&P articles required for the work etc. complete in all respect as Sqm 105.90 209.05 per the latest specification and direction of the Engineer-in-charge 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 14.26 Cum 25.32 5.226.20 1.32.327.41 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. 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 Mtr 7.50 4.064.82 30.486.17 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 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 14.28 Nos 30.00 174 21 5.226.20 including painting the exposed portion of loop as per standard design complete as directed by the Engineer-in-charge 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 14 29 chipping the surface in septic tank including watering and curing, rounding of corners etc. complete with cost, conveyance Sam 9 75 325 19 3 170 56 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 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 162.76 278.73 45,366.21 14.30 Sqm scaffolding required for the work etc. complete in all respect as desired by the Engineer in charge. 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 267.54 243.89 65,250.16 Sqm 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. Providing Fitting, fixing of Aluminium Door with OEL or equivalent anodized AL. door section as vertical member, as top, as 82,457.84 bottom and middle member and 8mm plain glass fixed to door to be completed including all cost of labour T&P hire charges 14.20 5.806.89 Sa. mtr. of drilling machine , labour charges etc.complete. 14.33 Supply & Fixing of alluminium Ventilator with 8 mm thick glass as per approved drawing Sq. mtr. 0.92 5,806.89 5,342.34 Finishing surface of wall with Acrylic wall Putty(water Based) of approved make and finished smooth and even surface to 94,791.67 Sq. mtr. 742.00 127.75 receive painting including cost of scaffolding staging charges with cost of all materials, taxes, labour, T&P etc. complete. 14.35 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, 14.35.1 Cum 10.60 348.41 3.693.18 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. 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 Cum 0.95 929.10 882.65 all respect as per latest specification & direction of the Engineer in charge.

Construction of 33/11 KV Primary Substation with 2X8 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 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 14.35.3 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 0.78 5.226.20 4.076.44 Cum 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. 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 14.35.4 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 54.018.01 Cum 4.56 11.846.06 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. P.H. Fitting (Internal & External) to Switch-Gear -Cum -Control Room 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 Mtr 2.090.48 15.00 139.37 15.1.2 20 mm dia 20.00 174.21 3,484.13 15.1.3 25 mm dia 2,961.51 Mtr 197.43 15.1.4 40 mm dia Mtr 20.00 232.28 4.645.51 15.1.5 50 mm dia 6,039.17 Mtr 301.96 20.00 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 580.69 2.00 290.34 Nos Nos 15.2.2 50 mm dia Ball valve 952.33 2.00 476.16 15.2.3 25 mm dia F.W. valve 15.2.4 50 mm dia F.W. valve 2.00 Nos 174.21 348.41 696.83 Nos 348.41 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 For 15mm to 50mm CPVC pipe to pass in 125mm to 250mm thick wal Nos 10.00 145.17 1,451.72 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 10.00 2,090.48 15.4 Mtr 209.05 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 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 varn 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 15.5.1 Bibcock Nos 5.00 464.55 2.322.76 15.5.2 Long Body Bibcock 987.17 493.59 Nos 2.00 15.5.3 Pillar cock Nos 2.00 1,045.24 15.5.4 Angular stop cock Nos 4.00 406.48 1,625.93 15.5.5 Soap Holder 2.00 81.30 162.59 Nos 15.5.6 Towel ring Nos 2.00 139.37 278.73 15.5.7 Toilet paper holder 418.10 Nos 2.00 209.05 15.5.8 Glass self 22' Nos 2.00 348.41 696.83 15.5.9 Towel rail 24 Nos 2.00 261.31 522.62 371.64 15.5.10 Shower arm 190mm long light 2.00 185.82 Nos 15.5.11 CP Grating Nos 104.52 2.00 52.26 15.5.12 Concealed stop cock Nos 4.00 580.69 2,322.76 15.5.13 Connecting Pipe 2.00 69.68 Nos 15.5.14 Basin with pedestal 3,019.58 6,039.17 Nos 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 15.5.15 4,935.86 1.00 4.935.86 Nos overflow pipe with specials & mosquito proof coupling complete, painting on brackets and making good the walls and floors wherever required Providing and fixing vitreous China water closet Indian type of Orissa 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 Nos 1.00 4,180.96 4,180.96 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. Providing and fixing vitreous China water urinal of Cerra/Parry ware with fittings and brackets, flush bend of CP brass, and 4.180.96 2.00 2,090.48 making good the walls and floors wherever required upply 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 2.00 1,509.79 3.019.58 conveyance, taxes of all materials complete as per specification and direction of Engineer-in-charge(Make-Modi 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. 15.7.1 | 100mm dia ( ISI Marked ) Mtr 10.00 313.57 3,135.72 15.7.2 | 150mm dia ( ISI Marked) Mtr 25.00 441.32 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. 15.8.1 | 100mm dia "P" Trap Nos 2 00 360.03 720.05 400.68 15.8.2 100mm dia Bend Plain Nos 3.00 133.56 15.8.3 | 100mm Door Bend Nos 522.62 15.8.4 100 mm dia Single Junction with Door Nos 3.00 406.48 1.219.45 15.8.5 100 mm dia double Junction with Door 522.62 1,567.86 3.00 Nos 15.8.6 | 100mm dia Terminal Guard Nos 580.69 15.8.7 100mm dia. Floor trap Nos 3.00 232.28 696.83 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 15.9.1 | 100mm Pipe Nos 10.00 1,881.43 18,814.32 15.10 Fixing of UPVC vent pipes Including labour & T&P all complete as directed by the Engineer-in-charge. 15.10.1 100mm Pipe 4.00 1,254.29 Mtr 313.57 15.10.2 | 100mm Vent Cowl No 2.00 406.48

Construction of 33/11 KV Primary Substation with 2X8 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 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. No 1.00 6,968.27 6,968.27 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. 15.12.1 2000 Ltr Capacity No 1.00 20.904.80 20.904.80 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 No 1.00 46,455.12 46,455.12 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 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 plaste (1:4) inside and outside, 100mm thick gravel backing in the rear of well staining, 125mm thick RCC cover slab fitted with with 15.14 No 1.00 47.616.50 47.616.50 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. 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 1.00 2,12,996.73 2.12.996.73 16 LS 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 Excavation in all type of soil( 0.8 Cum / Mtr)
PCC (1:4:8) 200 mm thick. With cement ( 0.2 Cum / Mtr) Cum Cum 105.60 174.21 18,396.23 26.40 5,226.20 1,37,971.71 PCC (1:2:4) 50 mm thick With cement ( 0.02 Cum / Mtr) Cum 9 566 04 18.4 RRHG Cement Masonary (1:5) With cement ( 0.86 Cum / Mtr) Cum 63.64 2,903.45 1,84,775.24 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 6,79,590.79 Mtr. 40.00 16,989.77 per site requirement and as per detail drawing & design and specification including cost, conveyance, taxes etc. all complete as directed by Engineer-in-charge. 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 3,27,103.42 Mtr. 35.00 9,345.81 per site requirement and as per detail drawing & design and specification including cost, conveyance, taxes etc. all complete as directed by Engineer-in-charge. 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 Mtr. 25.00 8.099.80 2.02.494.96 per site requirement and as per detail drawing & design and specification including cost, conveyance, taxes etc. all complete as directed by Engineer-in-charge. Fixing of stay set with 0.5Cum cement concrete foundation PCC 1:3:6 size ( 900mmx600mmx900mm) using 40mm BHG 39,022.30 metal with all labor and material, including excavation and required backfilling, as per technical specification and scope of 16.00 2.438.89 No's. Making of earth chamber with 50mm thick RCC Slab (with 8mm rod) cover for earth pit of size 450mmX450mm X600 mm 56.00 1.742.07 97.555.75 No's. depth as per direction of Engg in Charge 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, 27 1 Cum 14 90 174 21 2 595 68 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. Supplying and filling in foundation and plinth with good river sand well watered and rammed in layers not exceeding 23 cm in 27.2 each layer including all leads and lifts, cost of all materials, labour,cess, sundries, T&P required for the work etc.complete in Cum 1 80 929 10 1 672 38 all respect as per latest specification & direction of the Engineer in charge 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 Cum 1.80 5.226.20 9.407.16 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. 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 27.4 Cum 8.30 12.775.16 1.06.033.81 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. 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 respec Mtı 7.50 4,645.51 34.841.34 as per latest specification & direction of the Engineer in charge. 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. 15.388.26 5.30 2,903.45 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). 97.50 73.602.33 Cum 754.90 Conveying from the stacks supplying, spreading morrum & sand mixture to proper camber and consolidation with 66.779.24 Cum 230.00 290.34 H.R.R.including watering as per specification and direction of Engineer-in-Charge

Annexure-1 Construction of 33/11 KV Primary Substation with 2X8 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 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 75.00 1,858.20 1,39,365.36 & direction of the Engineer in charge. 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 Cum 780.00 348.41 2,71,762.45 intervals before start of work and after completion of the filling works. Sub-Total for CIVIL WORKS with supply of all materials like Cement, MS tor rod, Brick, Coarse & Fine Agregrates & 1.47.52.551.72 Labour,T&P etc. (In Rs.) Total Cost in Cr. 1.48 All Prices in Cr. Total Cost for SUPPLY OF EQUIPMENT & MATERIALS (In Cr.) A1 5.51 Stock , Storage & Insurance @ 3 % of A Sub - Total (A+B) 5.67 D Contingency @ 3 % of C 0.17 Е Tools &Plants Charges @ 2% of C (NOT CONSIDERED, As Separate Erection considered for All Supply Material ) Transportation @ 7.5% of C 0.43 Sub - Total ( C+D+E+F )
Total Cost for ERECTION, TESTING & COMMISSIONING WORKS (In Cr.) G 6.27 H1 0.52 Total Cost for CIVIL WORKS with supply of all materials like Cement, MS for rod, Brick, Coarse & Fine Agregrates & Labour, T&P etc. (In Cr.) 1.48 Total Cost for Erection & Civil works (H1+H2) Н3 1.99 Total Cost (G+H) 8.26 Total Estimated Capital Cost i.e. J+K М GST @ 18% of L CESS @ 1% of L 1.49 0.08 Inspection Charges (As per Gov. Notification)
GST On Inspection Fees (18% of O1) 01 0.009 02 0.002 Total Inspection fees (O1+O2) 0.010

9.85

Total Estimate to be deposit in Cr @ L+M+N+O (In Cr.)

# BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

# Supply Portion

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories				
а	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	5000		
b	Length of 33kV 1C, 630sqmm cable (HDD)	Mtr.	1000		
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	18000	1,495.47	2,69,18,460.00
1.2	Supply of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set	54	11,900.00	6,42,600.00
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	6	6,350.00	38,100.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	9	6,100.00	54,900.00
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	14952.00	357.60	53,46,835.20
2	Supply of 33kV RMU	1			
	No. of 33kV 3Way RMU (LLV+M)				
a	- ` ` '	nos.			
<u> </u>	No. of 33kV 4Way RMU (LLVV+M)	nos.			
С	No. of 33kV 3Way RMU (LLV)	nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.	1		
е	No. of 33kV 3Way RMU (LLL)	nos.			
f	No. of 33kV 4Way RMU (LLLL)	nos.			
2.1	Supply of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M) (CT Ratio to be mentioned)	Nos.	0	22,93,723.00	-
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M) (CT Ratio to be mentioned)	Nos.	0	31,74,874.00	-
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	1	23,35,264.00	23,35,264.00
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	-
2.6	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	19,59,421.00	-
3	Earthing				
3.1	Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for equipment, structure etc.)	kg	13.20	97.50	1,287.00
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	2	1,365.00	2,730.00
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	1		
4.1	Pre-Wired FRTU Panel with FRTU	No.	1	1,21,744.00	1,21,744.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	1	1,00,000.00	1,00,000.00
4.3	Networking Accessories	No.	1	72.00	72.00

	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along with	33kV RMU					
4.4	CMR with Mounting Base for Digital Inputs	Nos.	32	650.00	20,800.00				
4.5	Interposing Relay for Digital Output	Nos.	16	467.94	7,487.04				
4.6	Battery Charger	Nos.	1	15,385.00	15,385.00				
4.7	Battery	Nos.	1	8,333.00	8,333.00				
4.8	4G Modem cum Router	Nos.	1	18,500.00	18,500.00				
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	40	204.87	8,194.80				
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	40	305.58	12,223.20				
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	40	275.23	11,009.20				
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	20	165.25	3,305.00				
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	10	150.00	1,500.00				
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	20.0	148.43	2,968.60				
4.15	Armored CAT6 SFTP Cable	Mtr.	20	45.87	917.40				
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	20	89.45	1,789.00				
4.17	Multi Function Meter	Nos.	2	18,651.00	37,302.00				
	Sub Total (Supply Portion) (in	Rs.)			3,57,11,706.44				
	Erection Portion	n	Erection Portion						
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)				
SI. No.	Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare	Unit	Quantity						
	Erection, Commissioning & Testing of 33kV new line by	Unit Mtr.	Quantity 15000						
1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil			(in Rs.)	(in Rs.)				
1.1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable	Mtr.	15000	(in Rs.) 94.50	(in Rs.)				
<b>1</b> 1.1 1.2	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type	Mtr.	15000	94.50 2,400.00	(in Rs.) 14,17,500.00 1,29,600.00				
1.1 1.2 1.3	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type	Mtr. Set	15000 54 6	94.50 2,400.00 2,081.70	(in Rs.)  14,17,500.00  1,29,600.00  12,490.20				
1.1 1.2 1.3	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE	Mtr. Set Set	15000 54 6 9	94.50 2,400.00 2,081.70 2,081.70	(in Rs.)  14,17,500.00  1,29,600.00  12,490.20  18,735.30				
1.1 1.2 1.3 1.4	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open	Mtr. Set Set Mtr.	15000 54 6 9	94.50 2,400.00 2,081.70 2,300.00	(in Rs.)  14,17,500.00  1,29,600.00  12,490.20  18,735.30  69,00,000.00				
1.1 1.2 1.3 1.4 1.5	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open trench.  Erection, Commissioning, Wiring and Testing of 33kV RMU  Erection of RMU 33KV 3WAY 630A WITH METERING UNIT	Mtr. Set Set Mtr.	15000 54 6 9	94.50 2,400.00 2,081.70 2,300.00	(in Rs.)  14,17,500.00  1,29,600.00  12,490.20  18,735.30  69,00,000.00				
1.1 1.2 1.3 1.4 1.5	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open trench.  Erection, Commissioning, Wiring and Testing of 33kV RMU	Mtr. Set Set Mtr. Mtr.	15000 54 6 9 3000 14952.00	94.50 2,400.00 2,081.70 2,300.00 300.00	(in Rs.)  14,17,500.00  1,29,600.00  12,490.20  18,735.30  69,00,000.00				

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	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along with	33kV RMU		
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-	
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	1	8,000.00	8,000.00	
2.5	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	8,000.00	-	
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	8,000.00	-	
<b>3</b>	FRTU and OFC for RMU SCADA Automation Services of FRTU Panel, Communication and Other Supplied System	EA	1.0	16,000.00	16,000.00	
	Sub Total (Erection Portion) (in	Rs.)			1,29,87,925.50	
Civil Po	ortion					
	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)	
1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench					
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	4984			
1.1.a	Earth work excavation of <b>soil</b>	Cum	4186.56	700.00	29,30,592.00	
1.1.b	Earth work excavation of <b>hard rock</b>	Cum	1794.24	1,720.00	30,86,092.80	
1.2	Back filling with excavated soil outside and above the trench	Cum	5980.8	202.00	12,08,121.60	
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	2492	2,643.67	65,88,027.21	
2	Civil works for Prefabricated RCC foundation with supply of all materials					
2.1	Prefabricated RCC foundation of 33kV RMU Supply of GI Fencing with Gate around each <b>RMU</b>	Nos.	1 20	23,145.30 3,600.00	23,145.30 72,000.00	
4	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.	Set	2	3,700.00	7,400.00	
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	48	1,463.40	70,243.20	
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	200	1,012.00	2,02,400.00	
	Sub Total (Civil Portion) (in R	s.)			1,41,88,022.11	
					3,57,11,706.44	
В	Stock, Storage & Insurance @ 3 % of A				10,71,351.19	
<b>C</b>	Sub Total (A+B)  Contingency @ 3 % of C				<b>3,67,83,057.63</b> 11,03,491.73	
E	Tools & Plants Charges @ 2% of C (considered for earthing iten	ne)			26.51	
F	Transportation @ 7.5% of C	13)			27,58,729.32	
G	Erection Charges @ 10% of earthing items				132.56	
_ u	Lieonon Charges W 10 /0 Or earning hells				132.50	

	BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU						
Н	Total (C+D+E+F+G)	4,06,45,437.76					
I	Sub Total (Erection Portion + Civil Portion)	2,71,75,947.61					
J	Total Cost (H+I)	6,78,21,385.37					
L	Total Estimated Capital Cost i.e. (J+K)	6,78,21,385.37					
М	GST @ 18% of L	1,22,07,849.37					
M1	CESS @ 1% of L	67,82,138.54					
N	Grand Total (L+M)	8,68,11,373.27					
0	Inspection Fee of UG Line (HT) - Rs. 3000/ km.	3,000.00					
Р	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km	7,500.00					
Q	Inspection Fee of RMU - Rs. 1500/ RMU	1,500.00					
R	Inspection Fee of Drawing Checking and Approval	750.00					
s	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)	8,68,24,123.27					

	BoQ and Estimate for 11kV 3C, 400sqmm UG Cal	ole alon	g with 11k\	/ RMU	
Supply SI.	y Portion	l		Rate	Amount
No.	Description of items	Unit	Quantity	(in Rs.)	(in Rs.)
1	Supply of materials for 11kV, 3Core, 400sqmm, XLPE insulation armoured UG cable with accessories				
а	Length of 11kV 3C, 400sqmm cable (open trench)	Mtr.	5000		
b	Length of 11kV 3C, 400sqmm cable (HDD)	Mtr.	1000		
1.1	Supply of 11kV, 3Core, 400sqmm, XLPE insulation armoured UG cable (SC rating of cable in kA- 37.7kA and SC rating of Armour in kA- 15kA)	Mtr.	6000.00	1,950.00	1,17,00,000.00
1.2	Supply of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, Aluminium UG cable for 3Core (Set)	Set	18	32,912.10	5,92,417.80
1.3	Supply of Indoor termination kits Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, HT UG cable for 3Core (Set)	Set	24	12,456.60	2,98,958.40
1.4	Supply of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, HT UG cable for 3Core (Set)	Set	16	18,075.20	2,89,203.20
1.5	Supply of <b>HDPE</b> PE 80-PN8 pipe of <b>160mm</b> diameter (for 400sqmm HT cable laying)	Mtr.	4872.00	775.40	37,77,748.80
2	Supply of 11kV RMU				
a	No. of 11kV 3Way RMU (LLV)	nos.			
b	No. of 11kV 4Way RMU (LLVV)	nos.	8		
С	No. of 11kV 3Way RMU (LLV+M)	nos.			
d	No. of 11kV 4Way RMU (LLVV+M)	nos.			
2.1	Supply of 11kV RMU 3 Way, 2 Iso & 1 Brk 630A (LLV)	Nos.	0	4,99,340.00	-
2.2	Supply of 11kV RMU 4 Way, 2 Iso & 2 Brk 630A (LLVV)  Supply of RMU 3W 11kV 630A with metering unit (LLV+M)(CT Ratio to	Nos.	8	6,97,696.00	55,81,568.00
2.3	be mentioned)	Nos.	0	5,99,901.00	-
2.4	Supply of RMU 4W 11kV 630A with metering unit (LLVV+M)(CT Ratio to be mentioned)	Nos.	0	8,25,045.00	-
3	Earthing				
3.1	Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for equipment, structure etc.)	kg	105.60	97.50	10,296.00
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	16	1,365.00	21,840.00
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	8		
4.1	Pre-Wired FRTU Panel with FRTU	No.	8	1,21,744.00	9,73,952.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	8	1,00,000.00	8,00,000.00
4.3	Networking Accessories	No.	8	72.00	576.00
4.4	CMR with Mounting Base for Digital Inputs	Nos.	256	650.00	1,66,400.00
4.5	Interposing Relay for Digital Output	Nos.	128	467.94	59,896.32
4.6	Battery Charger	Nos.	8	15,385.00	1,23,080.00
4.7	Battery	Nos.	8	8,333.00	66,664.00
4.8	4G Modem cum Router	Nos.	8	18,500.00	1,48,000.00
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	320	204.87	65,558.40
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	320	305.58	97,785.60

4.11 4.12 4.13	BoQ and Estimate for 11kV 3C, 400sqmm UG Cab Twisted Pair Shielded & Over all shielded Instrumentation Cable 5 P X 1.0 mm2, Armored for Analog Input 4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	g with 11k\ 320	/ RMU 275.23	88,073.60
4.12	5 P X 1.0 mm2, Armored for Analog Input	Mtr.	320	275.23	88 073 60
	4 C X 2.5 mm2 Copper cable for extension of CT & PT				00,070.00
4.13		Mtr.	160	165.25	26,440.00
1	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	80	150.00	12,000.00
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	160.0	148.43	23,748.80
4.15	Armored CAT6 SFTP Cable	Mtr.	160	45.87	7,339.20
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	160	89.45	14,312.00
4.17	Multi Function Meter	Nos.	16	18,651.00	2,98,416.00
	Sub Total (Supply Portion) (in Rs.)				2,52,44,274.12
Erection	on Portion				
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Laying, Commissioning, Testing of 11kV, 3core, 400sqmm, aluminium, XLPE insulation armoured (extruded type) UG cable by open trench method and HDD method			·	
1.1	Laying, Commissioning, Testing of 11kV, 3core, 400sqmm, aluminium, XLPE insulation armoured (extruded type) UG cable by <b>open trench method</b> .	Mtr.	5000.00	94.50	4,72,500.00
1.2	Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	Set	18	2,400.00	43,200.00
1.3	Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	Set	24	1,900.80	45,619.20
1.4	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	Set	16	1,900.80	30,412.80
1.5	Installation, Laying, Commissioning & Testing of 11kV, 3Core, 2Runs, 400sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (160mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr.	1000	2,800.00	28,00,000.00
1.6	Laying of <b>160mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open trench.	Mtr.	4872.00	300.00	14,61,600.00
2	Erection, Commissioning, Wiring and Testing of 11kV RMU				
2.1	Erection of 11kV RMU 3 Way, 2 Iso & 1 Brk 630A (LLV)	Nos.	0	9,639.00	-
2.2	Erection of 11kV RMU 4 Way, 2 Iso & 2 Brk 630A (LLVV)	Nos.	8	9,639.00	77,112.00
2.3	Erection of RMU 3W 11kV 630A with metering unit (LLV+M)	Nos.	0	15,000.00	-
2.4	Erection of RMU 4W 11kV 630A with metering unit (LLVV+M)	Nos.	0	15,000.00	-
3	FRTU and OFC for RMU SCADA Automation				
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	8.0	16,000.00	1,28,000.00
	Sub Total (Erection Portion) (in Rs.)				50,58,444.00
Civil P	ortion				<u> </u>
SI.	Description of items	Unit	Quantity	Rate	Amount
No. 1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench			(in Rs.)	(in Rs.)

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	BoQ and Estimate for 11kV 3C, 400sqmm UG Cable along with 11kV RMU						
1.1	Earth work excavation of soil (1mtr. width X 1mtr. depth) Route Length	Mtr	2436				
1.1.a	Earth work excavation of <b>soil</b>	Cum	1705.2	700.00	11,93,640.00		
1.1.b	Earth work excavation of <b>hard rock</b>	Cum	730.8	1,720.00	12,56,976.00		
1.2	Back filling with excavated soil outside and above the trench	Cum	2436	202.00	4,92,072.00		
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	1218	2,643.67	32,19,990.83		
2	Civil works for Prefabricated RCC foundation with supply of all materials						
2.1	Prefabricated RCC foundation of 11kV RMU	Nos.	8	23,145.30	1,85,162.40		
3	Supply of GI Fencing with Gate around each RMU	sqmtr	160	3,600.00	5,76,000.00		
4	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.	Set	16	3,700.00	59,200.00		
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	128	1,463.40	1,87,315.20		
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	200	1,012.00	2,02,400.00		
	Sub Total (Civil Portion) (in Rs.)	1			73,72,756.43		
A	Sub Total (Supply Portion)				2,52,44,274.12		
В	Stock, Storage & Insurance @ 3 % of A				7,57,328.22		
С	Sub Total (A+B)				2,60,01,602.34		
D	Contingency @ 3 % of C				7,80,048.07		
Е	Tools & Plants Charges @ 2% of C (considered for earthing items)				212.10		
F	Transportation @ 7.5% of C				19,50,120.18		
G	Erection Charges @ 10% of earthing items				1,060.49		
Н	Total (C+D+E+F+G)				2,87,33,043.18		
I	Sub Total (Erection Portion + Civil Portion)				1,24,31,200.43		
J	Total Cost (H+I)				<b>4,11,64,243.60</b> <b>4,11,64,243.60</b>		
L	L Total Estimated Capital Cost i.e. (J+K)						
М	M GST @ 18% of L						
N Grand Total (L+M)					4,85,73,807.45		
O Inspection Fee of UG Line (HT) - Rs. 375 upto 1 KM.					375.00		
Р	P Inspection Fee of UG Line (HT) - Rs. 225/ Additional Km						
Q	Inspection Fee of RMU - Rs. 1500/ RMU				12,000.00		
R	Inspection Fee of Drawing Checking and Approval				750.00		
s	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)				4,85,88,057.45		

	Annexure-1					
	11kV Line Length with 40 Mtr. Span using 100 SQ.MMAAA Condo	ıctor				
	No. of DP required Without AB switch			2		
-	(Ref. Drawing No TPCODL-MVD-0012)  MATERIALS OF DP Without AB Switch					
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)	No	29,661.00	4	1,18,644.00	
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 2.3 mtr., 2 no's channel required =( 2x9.56x2.3)	KG	76.00	87.952	6,684.35	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	7.9296	773.14	
4	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.66 Mtr., 4 no's channel required =(7.14x1.66x4)	KG	76.00	94.8192	7,206.26	
5	50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 2.671 mtr., 4 nos angle required = (4.5x2.671x4)	KG	76.00	96.156	7,307.86	
6	Danger Plate, 2 no's.	No.	104.00	4	416.00	
7	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	1.2036	117.35	
8 9	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.551 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair Set	162.50 1,365.00	4	650.00 5,460.00	
_	H.T. Stay set (Complete ) H.T. Stay Insulator Type-C	No.	65.00	4	260.00	
11	7/10 SWG Stay Wire 15kg /stay	K.g.	97.50	60	5,850.00	
12	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	2	2,730.00	
13	50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 5x2.36	KG	97.50	23.6	2,301.00	
14	GI barbed wire anticlimbing device 3 Kg. Per support, 2 no's qty. required =(2x3kg)	Kg	104.00	12	1,248.00	
15	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50	4.8144	469.40	
16	11 KV pin insulator polymer	No.	260.00	6	1,560.00	
17 18	H W fitting(B&S) 70KN, 3Bolt Disc insulator (B&S) 70 KN polymer	No.	455.00 1,495.00	12 12	5,460.00 17,940.00	
19	PG Clamp for 100 sq.mm AAA conductor	NO.	754.00	12	9,048.00	
20	GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without AB Switch)	K.g.	101.40	24.522	2,486.53	
21	Black Paint	Ltr	286.00	2	572.00	
22	Yellow Colour Paint for Background	Ltr	216.00	of materials	864.00	
A B	St	ock. Stor	age & Insuranc		<b>1,98,047.89</b> 5,941.44	
C				Total (A+B)	2,03,989.33	
D				y @ 3% of C	6,119.68	
E F			Tools & Plant Transportation	ts @ 2% of C	3,771.82 15,299.20	
G	Erection Charge				6,110.17	
Н		I-Pole/HT	stay set/GI Pi	pe/PSC pole)	6,638.75	
H	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ F Erection Charges @ 20% of C	I-Pole/HT	stay set/GI Pi ole- Not to be u	pe/PSC pole) used for 33kv	6,638.75	
Н		I-Pole/HT	stay set/GI Pi ole- Not to be u	pe/PSC pole)		
H	Erection Charges @ 20% (	I-Pole/HT	stay set/GI Pi ole- Not to be u	pe/PSC pole) used for 33kv	6,638.75	
H J Sl.	Erection Charges @ 20% of Civil & Services  Description of Materials  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	I-Pole/HT of PSC p	รtay set/Gl Pi ole- Not to be เ Sเ	pe/PSC pole) used for 33kv um of (C to I)	6,638.75 - 2,41,928.94 Total Amount	
H J SI. No.	Erection Charges @ 20% of Civil & Services  Description of Materials  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	Pole/HT of PSC p	stay set/GI Pi ole- Not to be t Su Unit Rate	pe/PSC pole) used for 33kv im of (C to I)  Total Quantity	6,638.75 - 2,41,928.94  Total  Amount  9,000.00	
H J SI. No.	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.	Unit	stay set/GI Pipole- Not to be u Su  Unit Rate  2,250.00	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4	6,638.75 - 2,41,928.94 Total	
H 	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr	I-Pole/HT of PSC p  Unit  No.	Stay set/GI Pipole- Not to be to Su Unit Rate	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4	6,638.75 - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00	
H I J SI. No. 1 2	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Unit  No.  Cu.mtr  Cu.mtr	Stay set/GI Pip ole- Not to be to St.  Unit Rate  2,250.00  6,500.00  3,700.00	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4  1.80  0.45  2	6,638.75 - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00	
H	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Unit  No.  Cu.mtr  Cu.mtr	Stay set/GI Pip ole- Not to be used. St.  Unit Rate  2,250.00  6,500.00  3,700.00  Total Civi	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4  1.80  0.45  2  ii & Services Total (J+K)	6,638.75 - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  31,025.00  2,72,953.94	
H	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Unit  No.  Cu.mtr  Cu.mtr	Stay set/GI Pip ole- Not to be to St.  Unit Rate  2,250.00  6,500.00  3,700.00  Total Civi	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4  1.80  0.45  2  ii & Services Total (J+K) Total (L+M)	6,638.75 - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  31,025.00  2,72,953.94  2,72,953.94	
H	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Unit  No.  Cu.mtr  Cu.mtr	Stay set/GI Pip   ole- Not to be to	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4  1.80  0.45  2  ii & Services Total (J+K)	6,638.75 - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  31,025.00  2,72,953.94  2,72,953.94  49,131.71	
H	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Pole/HT of PSC p  Unit  No.  Cu.mtr  Cu.mtr  No.	Stay set/GI Pip   Ole- Not to be	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4  1.80  0.45  2  il & Services Total (J+K) Total (J+K) Total (J+M) @ 18% of (N) @ 1% of (N)	6,638.75 - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  31,025.00  2,72,953.94  49,131.71  2,729.54	
H	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450) = 0.1125 Cu mtr  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.  Gross Total Material +Services (No. of DP required With AB Switch	Pole/HT of PSC p  Unit  No.  Cu.mtr  Cu.mtr  No.	Stay set/GI Pip   Ole- Not to be	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4  1.80  0.45  2  il & Services Total (J+K) Total (J+K) Total (J+M) @ 18% of (N) @ 1% of (N)	6,638.75 - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  31,025.00  2,72,953.94  49,131.71  2,729.54	
H	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450) = 0.1125 Cu mtr  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.  Gross Total Material +Services (Naterial Services)	Pole/HT of PSC p  Unit  No.  Cu.mtr  Cu.mtr  No.	Stay set/GI Pip   Ole- Not to be	De/PSC pole) Used for 33kv Im of (C to I)  Total Quantity  4  1.80  0.45  2  It & Services Total (J+K) Total (J+K) Total (L+M) @ 18% of (N) @ 1% of (N) It AB Switch	6,638.75 - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  31,025.00  2,72,953.94  49,131.71  2,729.54	
H     J     SI.   No.   1     2   3     4	Erection Charges @ 20% of Civil & Services  Description of Materials  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 excevation including excevation, supply of 0.5Cum cement concrete foundation 1:2:4 size ( 500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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 .  Gross Total Material +Services (No. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)	Pole/HT of PSC p  Unit  No.  Cu.mtr  Cu.mtr  No.	Stay set/GI Pipole-Not to be in St.  Unit Rate  2,250.00  6,500.00  3,700.00  Total Civital GST (Total CESS for DP Without to be in St.)	De/PSC pole) Used for 33kv Im of (C to I)  Total Quantity  4  1.80  0.45  2  It & Services Total (J+K) Total (J+K) Total (L+M) @ 18% of (N) @ 1% of (N) It AB Switch	6,638.75 - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  31,025.00  2,72,953.94  49,131.71  2,729.54	
H	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Mo. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  MATERIALS OF DP With AB Switch  MATERIALS OF DP With AB Switch	Pole/HT of PSC p  Unit  No.  Cu.mtr  Cu.mtr  No.	Stay set/GI Pipole- Not to be to Summer Age	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4  1.80  0.45  2  ii & Services Total (J+K) Total (L+M) @ 18% of (N) @ 1% of (N) ut AB Switch  4  Total Quantity	6,638.75  - 2,41,928.94  Total  Amount  9,000.00  11,700.00  2,925.00  7,400.00  2,72,953.94  49,131.71  2,729.54  3,24,815.19  Total  Amount	
H     J     SI.   No.   1     SI.   No.   1	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450) = 0.1125 Cu mtr  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.  Gross Total Material +Services (No. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)	Pole/HT of PSC p  Unit  No.  Cu.mtr  Cu.mtr  No.  +0+01)	Stay set/GI Pip   Ole- Not to be to St.	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4  1.80  0.45  2  il & Services Total (J+K) Total (J+K) (I-M) @ 18% of (N) @ 1% of (N) at AB Switch  4  Total Quantity  8	6,638.75  2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  31,025.00  2,72,953.94  49,131.71  2,729.54  3,24,815.19  Total Amount  2,37,288.00	
H	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Gross Total Material +Services (No. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required = (2x9.56x3)	Pole/HT of PSC p  Unit  No.  Cu.mtr Cu.mtr No.  +0+01)	Stay set/GI Pij ole- Not to be t St  Unit Rate  2,250.00  6,500.00  6,500.00  Total Civi  Sub Total GST ( Total CESS for DP Without  Unit Rate  29,661.00  76.00	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4  1.80  0.45  2  il & Services Total (J+K) Total (L+M) @ 18% of (N) @ 18% of (N) dt AB Switch  4  Total Quantity  8  229.44	6,638.75  - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  2,72,953.94  49,131.71  2,729.54  3,24,815.19  Total Amount  2,37,288.00  17,437.44	
H     J     SI.   No.   1     SI.   No.   1	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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 .  Gross Total Material +Services (Nef. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch (Ref. Drawing No Stay No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)  MATERIALS OF DP With AB Switch (Ref. Drawing No. 2000)	Pole/HT of PSC p  Unit  No.  Cu.mtr  Cu.mtr  No.  +0+01)	Stay set/GI Pip   Ole- Not to be to St.	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4  1.80  0.45  2  il & Services Total (J+K) Total (J+K) (I-M) @ 18% of (N) @ 1% of (N) at AB Switch  4  Total Quantity  8	6,638.75  2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  31,025.00  2,72,953.94  49,131.71  2,729.54  3,24,815.19  Total Amount  2,37,288.00	
H	Erection Charges @ 20% of Civil & Services  Description of Materials  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 & boths 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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Gross Total Material +Services (N. No. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required = (2x9.56x3)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)  AB switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr, each channel length 3 Mtr., 2 no's channel required = (7.14x3x2)	Pole/HT of PSC p  Unit  No.  Cu.mtr Cu.mtr No.  +0+01)	Stay set/GI Pij ole- Not to be t St  Unit Rate  2,250.00  6,500.00  6,500.00  Total Civi  Sub Total GST ( Total CESS for DP Without  Unit Rate  29,661.00  76.00	pe/PSC pole) used for 33kv um of (C to I)  Total Quantity  4  1.80  0.45  2  il & Services Total (J+K) Total (L+M) @ 18% of (N) @ 18% of (N) dt AB Switch  4  Total Quantity  8  229.44	6,638.75  - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  2,72,953.94  2,72,953.94  49,131.71  2,729.54  3,24,815.19  Total Amount  2,37,288.00  17,437.44  1,546.27	
H	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450) = 0.1125 Cu mtr  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.  Gross Total Material +Services (N  No. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  (Ref. Drawing No TPCODL-MVD-0001)  Secription of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required = (2x9.56x3)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)  AB switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr, each channel length 3 Mtr., 2 no's channel required = (7.14x3x2)  AB Switch Side Support Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.35 mtr., 2 no's channel required = (9.56x2x0.35)	Pole/HT of PSC p  Unit  No.  Cu.mtr Cu.mtr No.  +0+01)  Unit No KG	Stay set/GI Pip   ole- Not to be	De/PSC pole) Used for 33kv Im of (C to I)  Total Quantity  4  1.80  0.45  2  It & Services Total (J+K) Total (L+M) ② 18% of (N) ③ 18% of (N) 4  Total (N) It AB Switch  4  Total Quantity 8  229.44  15.8592	6,638.75  - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  2,72,953.94  49,131.71  2,729.54  3,24,815.19  Total Amount  2,37,288.00  17,437.44  1,546.27  13,023.36	
H   J   SI. No.   1	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmx500mmx1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450) = 0.1125 Cu mtr  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.  Gross Total Material +Services (N. No. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required = ( 2x9.56x3)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = ( 6x2.36x0.280)  AB switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr., each channel length 0.35 mtr., 2 no's channel required = ( 7.14x3x2)  AB Switch Side Support Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.8 mtr., 2 no's channel required = ( 9.56x2x0.35)  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)	Pole/HT of PSC p  Unit  No.  Cu.mtr  Cu.mtr  No.  +0+01)  Unit  KG  KG	Stay set/GI Pij ole- Not to be is St.  Unit Rate  2,250.00  6,500.00  6,500.00  Total Civi  Sub Total GST (Total CESS for DP Without Parts)  Unit Rate  29,661.00  76.00  97.50  76.00	De/PSC pole) Used for 33kv Im of (C to I)  Total Quantity  4  1.80  0.45  2  It & Services Total (J+K) Total (J+K) (I-M)	6,638.75  - 2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  2,72,953.94  49,131.71  2,729.54  3,24,815.19  Total Amount  2,37,288.00  17,437,44  1,546.27  13,023.36  2,034.37	
H     J     SI.   No.   1     2     3     4	Erection Charges @ 20% of Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmx500mmx1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450) = 0.1125 Cu mtr  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.  Gross Total Material +Services (Notate of the Control	Pole/HT f PSC p  Unit  No.  Cu.mtr Cu.mtr No.  +0+01)  Unit KG KG KG KG	Stay set/GI Pij ole- Not to be i Su Unit Rate  2,250.00  6,500.00  6,500.00  70tal Civi Sub Total GST (Total GST) Total CESS for DP Without Page 29,661.00  76.00  97.50  76.00	De/PSC pole) Used for 33kv Im of (C to I)  Total Quantity  4  1.80  0.45  2  Total (J+K) Total (L+M) ② 18% of (N) ③ 18% of (N) 4  Total (J+K) 1.50 of (N) 4  Total (J+K) 2 1.80 2 2 1.80 2 2 1.80 2 2 1.80 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	6,638.75  2,41,928.94  Total Amount  9,000.00  11,700.00  2,925.00  7,400.00  2,72,953.94  49,131.71  2,729.54  3,24,815.19  Total Amount  2,37,288.00  17,437.44	

10   Dec. Clamp for elarger Plans (200 mm, 8th, 0.580/plb. Flast of 0.510m length 2 nd = (2.0.580.510)   Kig   97.50   2.4072   2.20.71		Annexure-1				
10   Dec. Clamp for elarger Plans (200 mm, 8th, 0.580/plb. Flast of 0.510m length 2 nd = (2.0.580.510)   Kig   97.50   2.4072   2.20.71		11kV Line Length with 40 Mtr. Span using 100 SQ.MMAAA Cond	uctor			
1	9	Danger Plate, 2 no's.	No.	104.00	8	832.00
12   11   Stay set (Complete)   Set   1,950.00   8   1,950.00   8   5,000   1   17   Stay product Pyse-C   1907   1   1   1   1   1   1   1   1   1	10	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	2.4072	234.70
13   11   15   15   15   15   15   15						1,300.00
14   710 SWC 2889 WW 19 150 Alex 1997   120   117,000						.,
Beach Campio Control Fig. 25 of the For investigating 2-50 of the For investigating 2-50 of the For investigating character process of the Foreign Control of						11,700.00
Total Control of Con	15		No.	1,365.00	8	10,920.00
10   Old burband ware antiefending device 3 (Rg. Per support) 2 of 5 (t) vergrent (20% (Mg.))   Sept. Capture (12% (Mg.))   Sept. Capture (1	16		KG	97.50	193.52	18,868.20
Sections   Section   Sec	17		Kg	104.00	24	2,496.00
State   Company   State   Co	18			97 50		
20 AB Switch (110V. 2005.) page-50114    5 April 11 11 V/D in including purposes   No. 2005.00   1 April 11 11 V/D in including purposes   No. 2005.00   2 April 10,000   2 April 11 11 V/D in including purposes   No. 2005.00   2 April 10,000						
21   11   17   Ph shallator poymer						
33   Bio Institutor (R6S) 7 PKP (polymer   No.   1,469.50   24   16,969.00	_					3,120.00
12   PC Clamp for 100 as mm AAA conductor	22	H W fitting(B&S) 70KN, 3Bolt				10,920.00
Section   Start   St						
28   Slack Paint   Lit   28:00   4   1,14.0   8   1,72.0						5,564.02
A   Stock, Storage & Insurance 50 of A   7,113.2	_		Ltr			1,144.00
Stock, Storage & Insurance Le 9% of A.   77,116.2		Yellow Colour Paint for Background	Ltr			
Continue   Sub Total (Ark B)   6,878.72.8		Si	ock Stor			
E   Total & Pinste   29% of C   110241	С		., 2:01	Sub	Total (A+B)	5,87,627.36
F   G						17,628.82
S						
H		Erection				12,220.33
Sum of (Ct o)   7,03,28.5.8   Solid Services   7,03,	Н					30,679.99
Stage   Contraction   Contraction   Country   Country		Erection Charges @ 20%	of PSC p			7 00 050 00
St.   Description of Materials	⊢∸	Civil & Services		31	Im or (C to I)	7,03,252.69
Fixing of complete 11KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3)	SI.		11:4	Unit Data	Total	Total
Stay Insulator 4) Stay Wire. 9;Stay clamps with Nuts & bots BA will do the exevation including exevation. supply of 0.5Cum cement concrete foundation 1:24 size. (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPCODL Drawing & Standard.	No.	Description of Materials	Unit	Unit Rate	Quantity	Amount
Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr	1	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	No.	2,250.00	8	18,000.00
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 SMrt GI Pipe 40mm/50mm including welding of GI flat around pipe.   Total Civil & Services   76,850.0	2	Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr	Cu.mtr	6,500.00	3.60	23,400.00
A cavavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe .   Total Civil & Services   76,350.0	3	, ,	Cu.mtr	6,500.00	0.90	5,850.00
Total (J+K)	4	excavation , soil treatment with bentonide powder , calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat	No.	3,700.00	8	29,600.00
No. of Cut Point with 180 Degree Angle   No. of Cut Point with 180 Degree Angle   Ref. Drawing No. TPCODL-MVD-0004    No. of Cut Point with 180 Degree Angle   Ref. Drawing No. TPCODL-MVD-0004    Amount   No. of Cut Point with 180 Degree Angle   Ref. Drawing No. TPCODL-MVD-0004    Amount   No. of Cut Point with 180 Degree Angle   Ref. Drawing No. TPCODL-MVD-0004    Amount   No. of Cut Point with 180 Degree Angle   Ref. Drawing No. TPCODL-MVD-0004    Amount   No. of Cut Point with 180 Degree Angle   Ref. Drawing No. TPCODL-MVD-0004    Amount   No. of Cut Point with 180 Degree Angle   Ref. Drawing No. TPCODL-MVD-0004    Amount   No. of Cut Point With 180 Degree Angle   No. of Cut Point Vita No.				Total Civi		76,850.00
Total GST @ 18% of (N)				Sub		
P   Gross Total Material +Services (N+O+O1) for DP With AB Switch   9,28,322.2i						1,40,418.48
No. of Cut Point with 180 Degree Angle (Ref. Drawing No TPCODL-MVD-0004)   A		O Trelling St. O. S.	. (1) . (2)			7,801.03
A	╚	Gross Total Material +Service	S (N+O+0	) for DP Wit	n ab Switch	9,28,322.20
MATERIALS FOR 11 KV Cut Point with 180 Degree Angle   St.   No.   Description of Materials   Unit   Unit Rate   Quantity   Amount   Unit Rate   Quantity   Amount   Unit Rate   Quantity   Amount   Unit Rate   Quantity   Amount   Unit Rate   Quantity   Canal   Unit   Unit Rate   Quantity   Amount   Unit Rate   Quantity   Unit Rate   Quantity   Amount   Unit Rate   Quantity   Unit Rate   Quantity   Unit Rate   Unit Rate   Quantity   Unit Rate   Un		No. of Cut Point with 180 Degree Angle			1	
St. No.   Description of Materials   Unit   Unit Rate   Quantity   Amount		,			4	
No.   Description of Materials   Unit   Unit Nate   Quantity   Amount	<u> </u>	MATERIALS FOR 11 KV Cut Point with 180 Degree Angle			Tatal	Tatal
The triangle of the triangle of the triangle of the triangle of		Description of Materials	Unit	Unit Rate	l	
2 2x9.56x1.2)  3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)			No	29,661.00		1,18,644.00
289.56x1.2    3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)   KG   97.50   21.1456   2,061.71   4   5traight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required = (2x9.56x0.306)   KG   76.00   23.40288   1,778.61   2.205.56x0.306)   KG   97.50   2.340288   1,778.61   2.205.56x0.306)   No.   104.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4   416.00   4	2		KG	76.00	91.776	6,974.98
4       Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required = (2x9.56x0.306)       KG       76.00       23.40288       1,778.65         5       Danger Plate, 1 no's.       No.       104.00       4       416.00         6       Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)       KG       97.50       1.2036       117.33         7       GI barbed wire anticlimbing device 3 Kg. Per support       Kg       104.00       12       1,248.00         8       Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)       KG       97.50       4.8144       469.40         9       11 KV pin insulator polymer       No.       260.00       12       3,120.00         10       H W fitting(B&S) 70KN, 3Bolt       No.       455.00       24       10,920.00         11       Disc insulator (B&S) 70 KN polymer       No.       1,495.00       24       35,880.00         12       Earthing of Support (Coil Type)       EA       215.80       4       863.2         13       No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing       K.g.       97.50       1.048       102.1         14       PG Clamp for 100 sq.mm AAA conductor<	3		KG	97 50	21.1456	2,061.70
E		Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required				
6       Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)       KG       97.50       1.2036       117.33         7       GI barbed wire anticlimbing device 3 Kg. Per support       Kg       104.00       12       1,248.00         8       Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)       KG       97.50       4.8144       469.40         9       11 KV pin insulator polymer       No.       260.00       12       3,120.00         10       H W fitting(B&S) 70KN, 3Bolt       No.       455.00       24       10,920.00         11       Disc insulator (B&S) 70 KN polymer       No.       1,495.00       24       35,880.00         12       Earthing of Support ( Coil Type )       EA       215.80       4       863.20         13       No-8 Gl wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing       K.g.       97.50       1.048       102.11         14       PG Clamp for 100 sq.mm AAA conductor       NO.       754.00       24       18,096.00         15       GI Nut, Bolt & Washer of different sizes (3.55 Kg each Cut Pole)       K.g.       101.40       14.2       1,439.80         16       Black Paint       Ltr       216.00 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
GI barbed wire anticlimbing device 3 Kg. Per support       Kg       104.00       12       1,248.00         8       Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)       KG       97.50       4.8144       469.4t         9       11 KV pin insulator polymer       No.       260.00       12       3,120.0t         10       H W fitting(B&S) 70KN, 3Bolt       No.       455.00       24       10,920.0t         11       Disc insulator (B&S) 70 KN polymer       No.       1,495.00       24       35,880.0t         12       Earthing of Support (Coil Type)       EA       215.80       4       863.2t         13       No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing       K.g.       97.50       1.048       102.1t         14       PG Clamp for 100 sq.mm AAA conductor       NO.       754.00       24       18,096.0t         15       GI Nut, Bolt & Washer of different sizes (3.55 Kg each Cut Pole)       K.g.       101.40       14.2       1,439.8t         16       Black Paint       Ltr       286.00       2       572.0t         17       Yellow Colour Paint for Background       Ltr       216.00       8       1,728.0t         A <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
8       Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)       KG       97.50       4.8144       469.40         9       11 KV pin insulator polymer       No.       260.00       12       3,120.00         10       H W fitting(B&S) 70KN, 3Bolt       No.       455.00       24       10,920.01         11       Disc insulator (B&S) 70 KN polymer       No.       1,495.00       24       35,880.01         12       Earthing of Support ( Coil Type )       EA       215.80       4       863.21         13       No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing       K.g.       97.50       1.048       102.11         14       PG Clamp for 100 sq.mm AAA conductor       NO.       754.00       24       18,096.00         15       GI Nut , Bolt & Washer of different sizes (3.55 Kg each Cut Pole)       K.g.       101.40       14.2       1,439.00         16       Black Paint       Ltr       286.00       2       572.00         17       Yellow Colour Paint for Background       Ltr       216.00       8       1,728.00         A       Stock, Storage & Insurance i.e. 3% of A       6,132.90         C       Sub Total (A+B)       2,10,564.0	6	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	1.2036	117.35
9   11 KV pin insulator polymer   No.   260.00   12   3,120.01     10   H W fitting(B&S) 70KN, 3Bolt   No.   455.00   24   10,920.01     11   Disc insulator (B&S) 70 KN polymer   No.   1,495.00   24   35,880.01     12   Earthing of Support (Coil Type )   EA   215.80   4   863.21     13   No-8 Gl wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing   K.g.   97.50   1.048   102.11     14   PG Clamp for 100 sq.mm AAA conductor   NO.   754.00   24   18,096.01     15   Gl Nut , Bolt & Washer of different sizes (3.55 Kg each Cut Pole)   K.g.   101.40   14.2   1,439.81     16   Black Paint   Ltr   286.00   2   572.00     17   Yellow Colour Paint for Background   Ltr   216.00   8   1,728.01     A   Stock, Storage & Insurance i.e 3% of A   6,132.92     C   Sub Total (A+B)   2,10,564.92     D   Contigency @ 3% of C   6,316.93     C   Contigency @ 3% of C	7	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	12	1,248.00
10   H W fitting(B&S) 70KN, 3Bolt   No.   455.00   24   10,920.00     11   Disc insulator (B&S) 70 KN polymer   No.   1,495.00   24   35,880.00     12   Earthing of Support (Coil Type)   EA   215.80   4   863.20     13   No-8 Gl wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing   K.g.   97.50   1.048   102.11     14   PG Clamp for 100 sq.mm AAA conductor   NO.   754.00   24   18,096.00     15   Gl Nut , Bolt & Washer of different sizes (3.55 Kg each Cut Pole)   K.g.   101.40   14.2   1,439.80     16   Black Paint   Ltr   286.00   2   572.00     17   Yellow Colour Paint for Background   Ltr   216.00   8   1,728.00     A   Total Cost of materials   2,04,431.3     B   Stock, Storage & Insurance i.e 3% of A   6,1329.00     C   Sub Total (A+B)   2,10,564.00     C   C   Contigency @ 3% of C   6,316.90     C   C   Contigency @ 3% of C   6,316.90     C   C   Contigency @ 3% of C   6,316.90     C   C   C   C   C   C   C   C   C	8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	4.8144	469.40
10   H W fitting(B&S) 70KN, 3Bolt   No.   455.00   24   10,920.00     11   Disc insulator (B&S) 70 KN polymer   No.   1,495.00   24   35,880.00     12   Earthing of Support (Coil Type)   EA   215.80   4   863.20     13   No-8 Gl wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing   K.g.   97.50   1.048   102.11     14   PG Clamp for 100 sq.mm AAA conductor   NO.   754.00   24   18,096.00     15   Gl Nut , Bolt & Washer of different sizes (3.55 Kg each Cut Pole)   K.g.   101.40   14.2   1,439.80     16   Black Paint   Ltr   286.00   2   572.00     17   Yellow Colour Paint for Background   Ltr   216.00   8   1,728.00     A   Total Cost of materials   2,04,431.3     B   Stock, Storage & Insurance i.e 3% of A   6,1329.00     C   Sub Total (A+B)   2,10,564.00     C   C   Contigency @ 3% of C   6,316.90     C   C   Contigency @ 3% of C   6,316.90     C   C   Contigency @ 3% of C   6,316.90     C   C   C   C   C   C   C   C   C	9	11 KV pin insulator polymer	No.	260.00	12	3,120.00
12   Earthing of Support (Coil Type)   EA   215.80   4   863.21     13   No-8 Gl wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing   K.g. 97.50   1.048   102.11     14   PG Clamp for 100 sq.mm AAA conductor   NO. 754.00   24   18,096.00     15   Gl Nut , Bolt & Washer of different sizes (3.55 Kg each Cut Pole)   K.g. 101.40   14.2   1,439.81     16   Black Paint   Ltr 286.00   2   572.00     17   Yellow Colour Paint for Background   Ltr 216.00   8   1,728.00     A   Total Cost of materials   2,04,431.3     B   Stock, Storage & Insurance i.e 3% of A   6,132.90     C   Sub Total (A+B)   2,10,564.00     C   Contigency @ 3% of C   6,316.90     C   C   C   C   C   C   C   C     C   C	10	H W fitting(B&S) 70KN, 3Bolt	No.	455.00	24	10,920.00
13   No-8 Gl wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing   K.g.   97.50   1.048   102.16   14   PG Clamp for 100 sq.mm AAA conductor   NO.   754.00   24   18,096.00   15   Gl Nut , Bolt & Washer of different sizes (3.55 Kg each Cut Pole)   K.g.   101.40   14.2   1,439.80   16   Black Paint   Ltr   286.00   2   572.00   17   Yellow Colour Paint for Background   Ltr   216.00   8   1,728.00   17,280.00   17,280.00   17,280.00   17,280.00   18,290.00   18,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.00   19,290.0						35,880.00
14     PG Clamp for 100 sq.mm AAA conductor     NO.     754.00     24     18,096.00       15     GI Nut , Bolt & Washer of different sizes (3.55 Kg each Cut Pole)     K.g.     101.40     14.2     1,439.8       16     Black Paint     Ltr     286.00     2     572.0       17     Yellow Colour Paint for Background     Ltr     216.00     8     1,728.00       A     Total Cost of materials     2,04,431.3       B     Stock, Storage & Insurance i.e 3% of A     6,132.9       C     Sub Total (A+B)     2,10,564.2       D     Contigency @ 3% of C     6,316.9						102.18
16         Black Paint         Ltr         286.00         2         572.00           17         Yellow Colour Paint for Background         Ltr         216.00         8         1,728.00           A         Total Cost of materials         2,04,431.3           B         Stock, Storage & Insurance i.e 3% of A         6,132.9           C         Sub Total (A+B)         2,10,564.2           D         Contigency @ 3% of C         6,316.93	14	PG Clamp for 100 sq.mm AAA conductor	NO.	754.00	24	18,096.00
17         Yellow Colour Paint for Background         Ltr         216.00         8         1,728.00           A         Total Cost of materials         2,04,431.3           B         Stock, Storage & Insurance i.e 3% of A         6,132.9           C         Sub Total (A+B)         2,10,564.20           D         Contigency @ 3% of C         6,316.90						1,439.88
A         Total Cost of materials         2,04,431.3           B         Stock, Storage & Insurance i.e 3% of A         6,132.9           C         Sub Total (A+B)         2,10,564.2           D         Contigency @ 3% of C         6,316.9						1,728.00
C         Sub Total (A+B)         2,10,564.2           D         Contigency @ 3% of C         6,316.9	Α	•		Total Cost	of materials	2,04,431.31
D Contigency @ 3% of C 6,316.9		S	ock, Stor			6,132.94
						4,211.28

	Annexure-1				
	11kV Line Length with 40 Mtr. Span using 100 SQ.MMAAA Cond	uctor			
F			Transportation		15,792.32
G H	Erection Charges @ 10% of C (except Trf/Breaker		s @ 5% on Trf/ -Pole/HT stay s		6,110.17 8,836.09
	Erection Charges @ 20%		ole- Not to be	used for 33kv	
J	<u>Civil &amp; Services</u>		Sı	ım of (C to I)	2,51,831.03
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr	Cu.mtr	6.500.00	1.80	11,700.00
<u> </u>	Conditing faile 1.1.3.5 (300mm/3000mm/1600mm) = 0.43Cu.mu	Cu.iiiii	0,300.00	1.00	11,700.00
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.45	2,925.00
К			Total Civ	il & Services	14,625.00
L			01	Total (J+K)	2,66,456.03
N 0				Total (L+M) @ 18% of (N)	<b>2,66,456.03</b> 47,962.09
01				@ 1% of (N)	2,664.56
P_	Gross Total Material +Services (N+O+O1) for 11 K	V Cut Po	oint with 180 D	egree Angle	3,17,082.68
-	No. of Cut Point with 90 Degree Angle			_	
	(Ref. Drawing No TPCODL-MVD-0005)			8	
	MATERIALS FOR 11 KV Cut Point with 90 Degree Angle				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1 1	WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)	No	29,661.00	Quantity 8	2,37,288.00
2	Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 4 no's channel required =(	KG	76.00	367.104	27,899.90
<u> </u>	4x9.56x1.2)	11.0	, 0.00	007.104	۵۵,000, اے
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)	K.g.	97.50	84.5824	8,246.78
4	Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 4 no's channel required =(	KG	76.00	93.61152	7,114.48
5	4x9.56x0.306)  Danger Plate, 1 no's.	No.	104.00	8	832.00
	-				
6	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	2.4072	234.70
7	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	24	2,496.00
8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	9.6288	938.81
9	11 KV pin insulator polymer	No.	260.00	32	8,320.00
10	H W fitting(B&S) 70KN, 3Bolt Disc insulator (B&S) 70 KN polymer	No.	455.00 1,495.00	48 48	21,840.00 71,760.00
12	Earthing of Support ( Coil Type )	EA	215.80	8	1,726.40
13	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	2.096	204.36
	PG Clamp for 100 sq.mm AAA conductor H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.551 Mtr. Length, 2 no's qty. required ( 1 Pair)	NO. Pair	754.00 162.50	48 16	36,192.00 2,600.00
	H.T. Stay set (Complete )	Set	1,365.00	16	21,840.00
	H.T. Stay Insulator Type-C	No.	65.00	16	1,040.00
18 19	7/10 SWG Stay Wire 15kg /stay GI Nut , Bolt & Washer of different sizes (7.433 Kg each Cut Pole)	K.g. K.g.	97.50 101.40	240 59.464	23,400.00 6,029.65
20	Black Paint	Ltr	286.00	4	1,144.00
21	Yellow Colour Paint for Background	Ltr	216.00	16	3,456.00
B	9	ock Stor	Total Cost age & Insuranc	of materials	<b>4,84,603.08</b> 14,538.09
C		ook, Otol		Total (A+B)	4,99,141.18
D				cy @ 3% of C	14,974.24
E F			Tools & Plan Transportation		8,975.90 37,435.59
G	Erection		s @ 5% on Trf/		12,220.33
Н	Erection Charges @ 10% of C (except Trf/Breaker				20,438.81
J	Erection Charges @ 20%	or PSC p		ım of (C to I)	5,93,186.04
Ľ	<u>Civil &amp; Services</u>			(= 10 1)	
SI.	Description of Materials	Unit	Unit Rate	Total	Total
No.		-		Quantity	Amount
1	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 TPCODL Drawing & Standard.	No.	2,250.00	16	36,000.00
2	Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr	Cu.mtr	6,500.00	3.6	23,400.00
3	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.9	5,850.00
	Coupening Cause 1.1.0.0 Mini diministrati ( 000/1000/1100) 0.11120 Out this	Julina	,	il & Services	65,250.00
L			TOTAL CIV	Total (J+K)	6,58,436.04
N				Total (L+M)	6,58,436.04
0				@ 18% of (N) @ 1% of (N)	1,18,518.49 6,584.36
P	Gross Total Material +Services (N+O+O1) for 11	KV Cut P			7,83,538.89
	,			_	
	11 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No TPCODL-MVD-0003)			6	
	MATERIALS FOR 11 KV Pin Points With WPB				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)	No.	29,661.00	54	16,01,694.00

	Annexure-1				
	11kV Line Length with 40 Mtr. Span using 100 SQ.MMAAA Condi	uctor			
2	11 KV V cross Arm (10.2 K.g. each )	No.	1,053.00	54	56,862.00
3	Top bracket 100x50X6 mm Gl channel (2kg each)	No.	195.00	54	10,530.00
4	Danger Plate, 1 no's. for each pole	No.	104.00	54	5,616.00
5	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	16.25	1,584.24
6	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	162.00	16,848.00
7	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	64.99	6,336.95
	11 KV pin insulator polymer, 3 Nos. required for each support	No.	260.00	162	42,120.00
	Earthing of Support ( Coil Type )	No.	215.80	54	11,653.20
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	14.15	1,379.43
	GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	K.g.	101.40	78.30	7,939.62
	100 mm2 AAAC	Mtr.	71.50	18540.00	13,25,610.00
	Crimping type Midspan Compression Joint for 100 sq.mm AAA conductor	EA	175.25	18	3,154.50
	Black Paint	Ltr	286.00	54.0	15,444.00
	Yellow Colour Paint for Background	Ltr	216.00		23,328.00
<u> </u>		1 01		of materials	31,30,099.94
В	Si	ock, Stor	age & Insurano		93,903.00
<u>c</u>				Total (A+B)	32,24,002.94
D				cy @ 3% of C	96,720.09
E F				ts @ 2% of C	64,480.06
	Erection Charge		Transportation		2,41,800.22
G H	Erection Charges @ 10% of C (except Trf/Breaker				82,487.24 1,57,425.81
┡╤	Erection Charges @ 10% of C (except 11% breaker				1,57,425.61
╎	Election charges & 20% (	л госр		um of (C to I)	38,66,916.36
⊢∸	<u>Civil &amp; Services</u>		- 30	ani oi (c to i)	30,00,910.30
1	Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr	Cu.mtr	6,500.00	24.30	1,57,950.00
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	6.08	39,487.50
<u> </u>	,	Cu.iiiii	0,300.00	0.00	39,407.30
3	Dismantling of 09/11 Mtr. Joist/WPB Pole- 116X100mm (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	1,350.00	30.00	40,500.00
4	Dismantling of ACSR/AAAC 34/ 55/80 mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/ site store	Mtr.	6.30	18540.00	1,16,802.00
5	Dismantling of 11kV Pin and Disc Insulator including loading, transportation, unloading and staking at a proper place in safe position/ site store.	EA	8.10	90.00	729.00
К			Total Civ	il & Services	3,55,468.50
L		To	tal Material+S	ervices (I+K)	42,22,384.86
N				Total (L+M)	42,22,384.86
0				@ 18% of (N)	7,60,029.28
01				@ 1% of (N)	42,223.85
Р	Gross Total Material +Services (N+O+	01) for 1	1 KV Pin Poin	ts With WPB	50,24,637.99
	<u>Gross Total Summary</u>				
1	Gross Total Material +Services				3,24,815.19
2	Gross Total Material +Service				9,28,322.20
3	Gross Total Material +Services (N+O+O1) for 11				3,17,082.68
4	Gross Total Material +Services (N+O+O1) for 1				7,83,538.89
5	Gross Total Material +Services (N+O				50,24,637.99
Q			s Total Materi		73,78,396.94
R	Inspection Fee of Over				
S	Inspection Fee of Over He				
Т			wing Checking		750.00
U	Gross Total Material, Servic	es and Ir	spection Fee	s (Q+R+S+T)	73,79,146.94

		Annexure-2	
		TP CENTRAL ODISHA DISTRIBUTION LIMITED	
Name of	the Division :-	CED	
Name of	the Sub-Division : -	CHOUDWAR	
Name of	the Section : -	TANGI	
Name of	Construction of 2X5 MVA, 33/11kV PSS at Biswanakanhi along with 33 KV line Mania Grid and connectivity from 33kV Industrial feeder (Mania Grid) to propose PSS and 11kV associated outgoing feeders.		
Scope o	f work:-	Construction of 33/11 KV Primary Substation with 2X5 MVA Trf., including com Building and All Equipment Supply, Erection, Commissioning, Testing, Civil Wo all materials, Labour, T&P etc. As per technical specification and scope of worl 2Ckm 33kV, 1CX630sqmm line from Mania Grid to Proposed Biswanahakani F 33kV, 1CX630sqmm line from 33kV consumer -Som Distelleries. Construction 10Ckm with 232sqmm OH conductor from Mania Grid to Proposed Biswanaha Construction of 11kV U/G Line with 3CX400sqmm Cable- 3Ckm. Augmentation line from 34/55/80 sqmm to 100sqmm AAAC. of length 10Ckm.	orks with supply of k. Construction of PSS and 4Ckm of 33kV O/H Line of kani PSS.
Names o	of Schemes: -	TPCODL CAPEX	
		ABSTRACT OF ESTIMATE	
SI. No.	Part	Description	Amount (In Cr.)
1	А	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.	₹ 9,49,63,176.06
2	В	Construction of 2Ckm 33kV, 1CX630sqmm line from Mania Grid to Proposed Biswanahakani PSS and 4Ckm 33kV, 1CX630sqmm line from 33kV consumer -Som Distelleries.	₹ 8,68,24,123.27
3	С	Construction of 33kV O/H Line of 10Ckm with 232sqmm OH conductor from Mania Grid to Proposed Biswanahakani PSS.	₹ 3,66,31,422.30
4	D	Construction of 11kV U/G Line with 3CX400sqmm Cable- 3Ckm.	₹ 2,26,08,437.19
5	Е	Augmentation of existing 11kV line from 34/55/80 sqmm to 100sqmm AAAC. of length 10Ckm.	₹ 1,18,48,194.29
		Total Amount	₹ 25,28,75,353.11
		Total Amount (In Cr)	₹ 25.29

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

SI. No.	s with supply of all materials, Labour, T&P etc. As per technical specification and scope of work  DESCRIPTION OF ITEMS	UNITS	Total Quantity	Basic Unit price ( In Rs.)	Total
	SUPPLY OF FOLLOWING EQUIPMENT & MATERIALS (As per Technical Specification)				
	33kV Equipment (Indoor Type)				
1	36kV Indoor AIS Equipment and accessories for 33/11kV AIS 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 (2 no.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	91,75,000.00	91,75,000.00
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.	9	13,455.00	1,21,095.00
3	12kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester with out surge counter( For Transformers - Outdoor type	Nos.	6	4,615.00	27,690.00
	11kV Equipment (Indoor Type)				
4	11kV Indoor Air Insulated switchgear Panel consisting of Breaker-1250A, Busbar-12500A(Copper) & CT (600-1200/5-5-5A) of 2 Nos. for Transformer Protection, Air Insulated switchgear Panel consisting of Breaker-630A Busbar-1250A (Copper) CT (300-600/5-5A) of 6 Nos. for Feeder protection, 1 No.of 11kV Bus-Coupler Indoor AIS Panel consisting of Breaker-1250A, Bus-bar-1250A (Copper), Relay, CT (600-1200/5-5A), 2 Nos. 11kV, 2 Core, Single Phase, IVT (11/N3 kV / 110/N3-110/N3V), 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.  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	1	68,00,000.00	68,00,000.00
_	SCADA	0-4	1	40.77.005.04	40.77.005.04
8	SITC for SCADA FOR Primary Substation  Transformer and Accessories	Set	_ '	10,77,965.01	10,77,965.01
9	5 MVA, 33/11kV Power Transformer DYn11 (Outdoor Installation) with Accessories including NIDS System	No.	2	85,80,229.00	1,71,60,458.00
10 11	100 KVA 33/0.433kV Energy efficient Station Transformer with HV & LV BOX SITC OF TMU	No No	1 2	4,24,320.00 3,00,000.00	4,24,320.00 6,00,000.00
12	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	1	17,87,101.00	17,87,101.00
13	Supply of Standard FRTU 4Way with FRTU networking Equipment consisting of Fibre Optic switch (Mono mode along wilh associate LIU unit for connection of FO Cable. for 3 Way & 4 way RMU.  Substation Earthing System GI	No.s	1	3,71,530.24	3,71,530.24
12	Earthing Conductor 75X10 mm (5.89 Kg/Mtr.) GI Flat for laying (spacing maximum 2m both ways)	Kg	5301.00	97.50	5,16,847.50
13	Earthing Conductor: 50X6 mm (2.4Kg./Mtr.) GI Flat for Raiser from the burial earth mat to equipment, structure etc.)	Kg	720.00	97.50	70,200.00
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	40.00	1,365.00	54,600.00
15	33, 11 and Station Trf Structure  (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	Kg	229.44	76.00	17,437.44
17	Cable (Unit Wt=0.01912 MT) GI Nuts & Bolts etc. for column and beam & Equipment Structures	Kg	500.00	101.40	50,700.00
18	Supply & Erection of GI Pipe of dia. 150mm, Class-B	Mtr.	200.00	1,463.40	2,92,680.00
19	High Density Polyethylene (HDPE) pipe 160 mm diameter.	KM	0.01	7,75,400.00	7,754.00
20 21	LTDB for 100KVA, 33/0.433kV Station Transformer  Supply and installation of 8way LDB with accessories	Nos.	1.00 2.00	31,744.70 11,648.00	31,744.70 23,296.00
	33 and 11 kv Power and Control, XLPE cables	1100.	2.00	11,010.00	20,200.00
22	1C X 400 sqmm, 33 KV, XLPE, Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works. (SC rating of cable in kA-37.7kA and SC rating of Armour in kA-20kA)	KM	1.20	10,17,900.00	12,21,480.00
22.1	33 KV 1C X 400 sq.mm. Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per	Set.	16.00	6,802.90	1,08,846.40
22.2	technical specifications and scope of the works.  33 KV 1C X 400 sq.mm. Heat Shrink <b>Out Door cable termination kit</b> complete with all accessories and tagging etc. as per	Set.	16.00	8,929.70	1,42,875.20
	technical specifications and scope of the works.				
22.3	rating of Armour in kA- 9kA) For Station Trf	Mtr.	100.00	1,331.20	1,33,120.00
	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 3Core, 95sqmm, HT UG Cable kits For Station Trf	Set	2.00	25,199.20	50,398.40
22.4					
	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 3Core, 95sqmm, HT UG Cable kits For Station Trf	Set	2.00	15,545.40	31,090.80
	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.	Set KM	2.00	15,545.40 19,50,000.00	- ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
22.5	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.				31,090.80 29,25,000.00 2,49,132.00
22.5 23 24 25	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.	KM	1.50	19,50,000.00	29,25,000.00
22.5 23 24 25 26	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  Control Cables (Copper Armoured)	KM Set. Set.	1.50 20.00 16.00	19,50,000.00 12,456.60 18,075.20	29,25,000.00 2,49,132.00 2,89,203.20
22.5 23 24 25 26 26.1	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  Control Cables (Copper Armoured)  4 Core x 2.5 mm²	KM Set. Set. Km	1.50 20.00 16.00 0.70	19,50,000.00 12,456.60 18,075.20 1,17,800.00	29,25,000.00 2,49,132.00 2,89,203.20 82,460.00
22.5 23 24 25 26	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  12 Control Cables (Copper Armoured)  4 Core x 2.5 mm²	KM Set. Set.	1.50 20.00 16.00	19,50,000.00 12,456.60 18,075.20	29,25,000.00 2,49,132.00 2,89,203.20 82,460.00 1,28,968.00
22.5 24 25 26.1 26.2 26.3 26.4	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  12 Control Cables (Copper Armoured)  4 Core x 2.5 mm <sup>2</sup> 10 Core x 2.5 mm <sup>2</sup> 11 Core x 2.5 mm <sup>2</sup> 12 Core x 2.5 mm <sup>2</sup>	KM Set. Set. Km Km Km Km	1.50 20.00 16.00 0.70 0.70 0.50 0.50	19,50,000.00 12,456.60 18,075.20 1,17,800.00 1,84,240.00 4,29,000.00 3,95,000.00	29,25,000.00 2,49,132.00 2,89,203.20 82,460.00 1,28,968.00 2,14,500.00 1,97,500.00
22.5 23 24 25 26.1 26.2 26.3 26.4 26.5	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  12 Control Cables (Copper Armoured)  4 Core x 2.5 mm²  10 Core x 2.5 mm²  11 Core x 2.5 mm²  12 Core x 2.5 mm²  13 Core x 16 mm2 Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB	KM Set. Set. Km Km Km	1.50 20.00 16.00 0.70 0.70 0.50	19,50,000.00 12,456.60 18,075.20 1,17,800.00 1,84,240.00 4,29,000.00	29,25,000.00 2,49,132.00 2,89,203.20 82,460.00 1,28,968.00 2,14,500.00 1,97,500.00
22.5 24 25 26.1 26.2 26.3 26.4 26.5 27	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  12 Control Cables (Copper Armoured)  4 Core x 2.5 mm² 10 Core x 2.5 mm² 11 Core x 16 mm² Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB  11 KV XLPE Power Cables	KM Set. Set. Km Km Km Km	1.50 20.00 16.00 0.70 0.70 0.50 0.50 0.30	19,50,000.00 12,456.60 18,075.20 1,17,800.00 1,84,240.00 4,29,000.00 3,95,000.00 1,66,815.82	29,25,000.00 2,49,132.00 2,89,203.20 82,460.00 1,28,968.00 2,14,500.00 1,97,500.00 50,044.75
22.5 23 24 25 26.1 26.2 26.3 26.4 26.5 27	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  12 Control Cables (Copper Armoured)  4 Core x 2.5 mm²  10 Core x 2.5 mm²  11 Core x 2.5 mm²  12 Core x 2.5 mm²  13 Core x 16 mm2 Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB	KM Set. Set. Km Km Km Km	1.50 20.00 16.00 0.70 0.70 0.50 0.50	19,50,000.00 12,456.60 18,075.20 1,17,800.00 1,84,240.00 4,29,000.00 3,95,000.00	29,25,000.00 2,49,132.00 2,89,203.20 82,460.00 1,28,968.00 2,14,500.00 1,97,500.00 50,044.75
22.5 23 24 25 26.1 26.2 26.3 26.4 26.5 27	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  Control Cables (Copper Armoured)  4 Core x 2.5 mm²  7 Core x 2.5 mm²  10 Core x 2.5 mm²  1 Core x 2.5 mm²  1 Core x 16 mm2 Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB  1.1 KV XLPE Power Cables  3 1/2 Core x 120 mm2 (for Station Transformer output )  3 1/2 Core x 95 mm2 (for Oil Filtration Machine Connection )	KM Set. Set. Km Km Km Km Km	1.50 20.00 16.00 0.70 0.70 0.50 0.50 0.30	19,50,000.00 12,456.60 18,075.20 1,17,800.00 1,84,240.00 4,29,000.00 3,95,000.00 1,66,815.82 4,77,085.48	29,25,000.00 2,49,132.00 2,89,203.20 82,460.00 1,28,968.00 2,14,500.00 1,97,500.00 50,044.75
22.5 23 24 25 26.2 26.3 26.4 26.5 27 27.1 27.2	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  Control Cables (Copper Armoured)  4 Core x 2.5 mm²  10 Core x 2.5 mm²  10 Core x 2.5 mm²  11 Core x 16 mm2 Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB  11 KV XLPE Power Cables  3 1/2 Core x 120 mm2 (for Station Transformer output)  3 1/2 Core x 25 mm2 (for Switchyard Lighting)	Set. Set. Km Km Km Km Km Km	1.50 20.00 16.00 0.70 0.70 0.50 0.50 0.30 0.15 0.10	19,50,000.00 12,456.60 18,075.20 1,17,800.00 1,84,240.00 4,29,000.00 3,95,000.00 1,66,815.82 4,77,085.48 3,81,281.47	29,25,000.00 2,49,132.00 2,89,203.20 82,460.00 1,28,968.00 2,14,500.00 1,97,500.00 50,044.75 71,562.82 38,128.15
22.5 23 24 25 26.1 26.2 26.3 26.4 26.5 27.1 27.1 27.2 27.3	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  Control Cables (Copper Armoured)  4 Core x 2.5 mm²  7 Core x 2.5 mm²  10 Core x 2.5 mm²  11 Core x 2.5 mm²  12 Core x 2.5 mm²  12 Core x 16 mm2 Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB  1.1 kV XLPE Power Cables  3 1/2 Core x 120 mm2 (for Station Transformer output)  3 1/2 Core x 25 mm2 (for Oil Filtration Machine Connection)  3 1/2 Core x 25 mm2 (for Switchyard Lighting)  4 Core 16 mm2 (for Switchyard Lighting)  Battery & Battery Charger	Set. Set. Km Km Km Km Km Km Km Km	1.50 20.00 16.00 0.70 0.70 0.50 0.50 0.30 0.15 0.10 0.30 0.30	19,50,000.00 12,456.60 18,075.20 1,17,800.00 1,84,240.00 4,29,000.00 3,95,000.00 1,66,815.82 4,77,085.48 3,81,281.47 1,32,740.13 1,54,222.40 1,34,337.02	29,25,000.00 2,49,132.00 2,89,203.20 82,460.00 1,28,968.00 2,14,500.00 1,97,500.00 50,044.75 71,562.82 38,128.15 39,822.04 46,266.72 40,301.11
22.5 23 24 25 26.2 26.2 26.3 26.4 26.5 27 27.1 27.2 27.3 27.4	3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per technical specifications and scope of the works.  12 Core x 2.5 mm²  10 Core x 2.5 mm²  10 Core x 2.5 mm²  11 Core x 12 mm²  12 Core x 120 mm²  13 I/2 Core x 120 mm²  14 Core X 150 mm²  15 I/2 Core x 120 mm²  16 Core Station Transformer output  17 Core x 25 mm²  18 I/2 Core x 120 mm²  18 I/2 Core x 120 mm²  19 Core X 120 mm²  19 Core X 120 mm²  10 Core X 120 mm²  11 KV, XLPE Power Cables  12 Core x 120 mm²  13 I/2 Core x 120 mm²  14 Core X 120 mm²  15 I/2 Core X 120 mm²  16 Core X 120 mm²  17 Core X 120 mm²  17 Core X 120 mm²  18 I/2 Core X 120 mm²  19 Core X 120 mm²  19 Core X 120 mm²  10	Set. Set. Km Km Km Km Km Km Km	1.50 20.00 16.00 0.70 0.70 0.50 0.30 0.15 0.10 0.30 0.30	19,50,000.00 12,456.60 18,075.20 1,17,800.00 1,84,240.00 4,29,000.00 4,29,000.00 1,66,815.82 4,77,085.48 3,81,281.47 1,32,740.13 1,54,222.40	29,25,000.00 2,49,132.00 2,89,203.20 82,460.00 1,28,968.00 2,14,500.00 50,044.75 71,562.82 38,128.15 39,822.04 46,266.72

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 atc. As net technical specification and scope of work

	ruction of 33/11 KV Primary Substation with 2X5 MVA Trf., including complete Control Room Building and All Equipme s with supply of all materials, Labour, T&P etc. As per technical specification and scope of work	nt Supply	,,,		
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, 18 Watt LED tube 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). (Minimum requirement will be - GI Tubular pole -10No's., 2x18watt-27No's., 1x18watt-18No's, 120Wx 4 sets and 100Wx6),	Lot	1.00	4,00,000.00	4,00,000.00
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 (25Amp MCCB & 25Amp switch), Remote etc. for completing the A.C scheme of control room. Each AC will have its own control through respective switch, as per technical specification and scope of work.	No	4.00	53,750.00	2,15,000.00
32 33	1400 mm sweep 250Volt A/C Celling Fan 300 mm sweep 70W A/C Exhaust Fan ( for Battery room and Toilet )	No No	5.00 4.00	3,125.00 2,500.00	15,625.00 10,000.00
	Fire Detection Alarm System	INU	4.00	2,300.00	10,000.00
33.1	Main Fire ALARM Control Panel (Ul /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, decentralized, 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., as per technical specification and scope of work.	EA	1	3,09,921.34	309921.337
33.2	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), as per technical specification and scope of work.	EA	6	7,944.91	47,669.47
33.3	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), as per technical specification and scope of work.	EA	2	7,944.91	15,889.82
33.4	Response Indicator (Twin LED transparent type), as per technical specification and scope of work.	EA	2	81.73	163.45
33.5	Addressable manual Call Point (must have inbuilt short circuit isolator,) (UL /FM /ULC/Vds Approved), as per technical specification and scope of work.	EA	1	8,699.15	8,699.15
33.6	Electronic Hooter/Multi tone sounder (must have inbuilt short circuit isolator,) (UL /FM /ULC/Vds Approved) Indoor type, as per technical specification and scope of work.	EA	1	7,652.85	7,652.85
33.7	2 Core X 1.5 sq.mm copper conductor, armored, RED colour FRLS PVC sheathed signal Cable, as per technical specification and scope of work.	М	150	143.67	21,550.01
33.8	4C X 2.5sqmm copper armoured FRLS cable with accessories (Gland, lug, saddle, etc.), as per technical specification and scope of work.	М	15	251.20	3,768.03
33.9	Steel wire reinforced flexible conduct pipe (16MM) with all accessories, as per technical specification and scope of work.	М	15	163.45	2,451.80
33.1	Surge Arrester for fire Alarm system, as per technical specification and scope of work.	EA	1	5,814.42	5,814.42
33.1 34	Lightning Rod in Top of PSS Building, as per technical specification and scope of work.  Fire Fighting System (portable and wheel mounted sets for control room)	EA	1	5,129.42	5,129.42
	Foam type- 9 Ltrs	No	2.00	3,978.80	7,957.59
	CO <sub>2</sub> - 4.5 Kgs	No	2.00	9,678.15	19,356.30
	Dry powder 4.5 Kg  Fire Bucket with GI Stand with GI Canopy arrangement (4nos. in one Stand=1 Set)  AC & DC System for Auxiliary supply	No Set	2.00 1.00	3,494.89 4,516.47	6,989.78 4,516.47
	AC System	1.4		4 00 075 00	4.00.075.00
	ACDB (as per specification)  Main Lighting Distribution Board (as per specification)	Lot Lot	1	1,20,375.00 45,000.00	1,20,375.00 45,000.00
35.3	Indoor Lighting Distribution Board as per specification	Lot	1	42,500.00	42,500.00
	Receptable Panel near Power Transformer  DC System	No	1	32,000.00	32,000.00
	48 V DC Distribution Board as per specification .	No	2	82,500.00	1,65,000.00
37	Water Cooler with water purifier system as per Technical Specification	No	1	14,459.81 <b>51,997.00</b>	14,459.81 51,997.00
37.1 38	Wall mounted water purifier system  Maintenance Testing Equipment as per Technical Specification	No Lot	1	4,97,500.00	4,97,500.00
39	Tools and Plants (T&P's) Requirement as per Technical Specification	Lot	1	62,500.00	62,500.00
40 41	Office Furniture as per Technical Specification  Supply of Materials for Installation of Power Transformer on Plinth (as per Drawing)	Lot	1	2,50,000.00	2,50,000.00
41.1	90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr / Transformer each (Unit Wt=0.240 MT) Supply including Fabrication works ( Cutting, welding& Supply in position etc) (300x300x10) mm GI plate each (Unit	Nos	2	21,246.48	42,492.96
41.2	W=0.007065MT)  (65x65x5) mm GI angle of 5.4 mts length.4.9 kg/mtr. / Transformer each (Unit Wt=0.026 MT)	No.s Nos	24 6	1,990.00 2,778.30	47,760.00 16,669.80
41.4	Supply of GI Chequered plate 1000X300X5.6mm thick for Cable Trench in side Control Room	Nos	2	100.00	200.00
42 43	GI Spikes with cone and GI (2 nos).  33KV Line DP-2No's	Kg	640.00	1,537.50	9,84,000.00
43.1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	4.00	34,322.00	1,37,288.00
43.2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 2x9.56x4.3)	KG	164.43	76.00	12,496.83
	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	7.93	97.50	773.14
43.3	That the Joko him., 2.50 kg Mr., each 0.200 him. length, 0 hos required (0.2.50x0.200)			-	
	Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required =(1x7.14x4.3)	KG	61.40	76.00	4,666.70
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)  Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =( 2x7.14x4.3)	KG KG			4,666.70 9,333.41
43.4 43.5 43.6	Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required =( 1x7.14x4.3)  Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =( 2x7.14x4.3)  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 KG	61.40 122.81 245.62	76.00 76.00 76.00	9,333.41 18,666.82
43.4 43.5 43.6 43.7	Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required = (1x7.14x4.3)  Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required = (2x7.14x4.3)  Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's channel required = (4x7.14x4.3)  50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG KG	61.40 122.81 245.62 177.37	76.00 76.00	9,333.41
43.4 43.5 43.6 43.7 43.8	Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required = (1x7.14x4.3)  Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required = (2x7.14x4.3)  Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's channel required = (4x7.14x4.3)  50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)  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 KG KG	61.40 122.81 245.62 177.37 11.42	76.00 76.00 76.00 76.00 76.00	9,333.41 18,666.82 13,480.27 868.22
43.4 43.5 43.6 43.7 43.8 43.9	Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required = (1x7.14x4.3)  Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required = (2x7.14x4.3)  Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's channel required = (4x7.14x4.3)  50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)  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)  Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG KG KG KG	61.40 122.81 245.62 177.37 11.42 3.49	76.00 76.00 76.00 76.00 76.00 76.00	9,333.41 18,666.82 13,480.27 868.22 265.39
43.4 43.5 43.6 43.7 43.8 43.9	Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required = (1x7.14x4.3)  Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required = (2x7.14x4.3)  Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's channel required = (4x7.14x4.3)  50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)  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)  Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)  Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG KG KG KG KG	61.40 122.81 245.62 177.37 11.42 3.49 3.06	76.00 76.00 76.00 76.00 76.00 76.00	9,333.41 18,666.82 13,480.27 868.22 265.39 232.56
43.4 43.5 43.6 43.7 43.8 43.9 43.10	Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required = (1x7.14x4.3)  Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required = (2x7.14x4.3)  Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's channel required = (4x7.14x4.3)  50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)  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)  Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG KG KG KG	61.40 122.81 245.62 177.37 11.42 3.49	76.00 76.00 76.00 76.00 76.00 76.00	9,333.41 18,666.82 13,480.27 868.22 265.39

#### Annexure-2 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 43.14 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair) 162.50 650.00 Pair 4.00 43.15 H.T. Stay set (Complete ) Set 4.00 1,365.00 5,460.00 43.16 H.T. Stay Insulator Type-C (2 No's.) No. 8.00 65.00 520.00 43.17 7/8 SWG Stay Wire 15kg /stay 5,850.00 K.g. 60.00 97.50 43.18 Gi Pipe Earthing 40mm. 3 Mtr. Long No 4.00 1.365.00 5,460.00 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. 43.19 11,044.80 KG 113.28 97.50 For raising)= 24x2.3643.20 GI barbed wire anticlimbing device 3 Kg. Per support Kg 12.00 104.00 1.248.00 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 4.81 97.50 469.40 43.22 Lightning Arrester(30KV,10KA) (Station Class,class-2) EΑ 6.00 13.455.00 80,730.00 43.23 33 KV 1250 AMP Double break (Turn & twist center rotating) isolator with earth switch with Pl(Polymer) 1,31,157.00 2,62,314.00 Set 2.00 43.24 33KV pin insulator polymer No. 6.00 624.00 3.744.00 43.25 Non Metallic Ties 33KV (For covered conductor) No 6.00 331.00 1.986.00 43.26 241 sq.mm AAA conductor Mtr 6180.00 386.00 23,85,480.00 43.27 IPC for 241 sq.mm AAA conductor (For covered conductor) No 12.00 915.00 10.980.00 43.28 Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole) Set 8.00 332.00 2.656.00 43.29 H W fitting(B&S)90KN,4 Bolt No 12.00 650.00 7,800.00 43.30 Disc insulator (B&S) 90 KN polymer No 12.00 1,495.00 17,940.00 43.31 GI Nut, Bolt & Washer of different sizes (22.15 Kg each DP with Isolator) 44.30 101.40 4.492.02 K.g. 43.32 Black Paint Ltr 2.00 286.00 572.00 43.33 Yellow Colour Paint for Background Ltr 4.00 216.00 864.00 44 11KV Line DP-4No's 44.1 WPB 160x152 (11Mtr. Long, 30.44KG/Mtr.) 29.661.00 2,37,288.00 No Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required =( 2x9.56x3) KG 229.44 17,437.44 44.3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280) KG 15.86 97.50 1,546.27 Isolator switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr, each channel length 3 Mtr., 2 no's channel required = 13,023.36 KG 171.36 76.00 7.14x3x2) solator Świtch Side Support Channel 100X50X6mm,9.56 KG/Mtr., each channel length 0.35 mtr., 2 no's channel required =( KG 44 5 26.77 76.00 2.034.37 9.56x2x0.35) Channel Support for down Pipe 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel required =( KG 22.85 76.00 1,736.45 7.14x0.8x1) Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.66 Mtr., 4 no's channel required =( 44.7 KG 342.72 76.00 26.046.72 252.86 44.8 KG 19.217.66 50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.512 mtr., 4 nos angle required = (4.5x3.512x4) 76.00 44.9 Danger Plate, 2 no's, 104.00 832.00 No 8 44.10 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510) KG 2.41 234.70 44.1 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.551 Mtr. Length, 2 no's qty. required ( 1 Pair) Pair 162.50 1,300.00 8 44.1 H.T. Stay set (Complete ) Set 8 1,365.00 10,920.00 44.1 H.T. Stay Insulator Type-C No. 65.00 520.00 97.50 11,700.00 44.1 7/10 SWG Stay Wire 15kg /stay K.g. 120 44.2 Gi Pipe Earthing 40mm. 3 Mtr. Long 1,365.00 No 8 10,920.00 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 KG 193.52 97.50 18.868.20 mtr. For raising)= 20.5x2.36 44.2 GI barbed wire anticlimbing device 3 Kg. Per support, 2 no's qty. required =(2x3kg) Kg 24 104.00 2,496.00 44.2 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510) KG 9.63 97.50 938.81 55,380.00 Lightning Arrester(11KV,10KA) (Station Class,class-2) EΑ 12.00 4,615.00 44.20 11KV 400 AMP isolator without earth switch with PI(polymer) Set 47,529.00 1,90,116.00 44.2 11 KV pin insulator polymer No 12 260.00 3,120.00 44.2 H W fitting(B&S) 70KN, 3Bolt No. 24 455.00 10.920.00 24 44.2 Disc insulator (B&S) 70 KN polymer No 35,880.00 1,495.00 44.2 PG Clamp for suitable size of AAA conductor NO. 18,096.00 GI Nut , Bolt & Washer of different sizes (13.718 Kg each DP with AB Switch) 5,564.02 44.3 54 87 101 40 44.3 Black Paint Ltr 286.00 1,144.00 44.3 8 Yellow Colour Paint for Background Ltr 216.00 1,728.00 Sub-Total for SUPPLY OF EQUIPMENT & MATERIALS (In Rs.) 5,21,75,224.99 Total Cost in Cr. 5.22 ERECTION, TESTING & COMMISSIONING WORKS OF FOLLOWING EQUIPMENT (As per Technical Specification) 33kV Equipment (Indoor Type) Erection, Commissioning, Testing of 33kV Equipment for (INDOOR Sub-Station) 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 AlS 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 & Set 1.00 94.500.00 94,500.00 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. Erection, Commissioning, Testing of 11kV Equipment (Indoor Type) 30kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester (for 33kV Incoming Line, HT side of 2nos. Power Nos. 9.00 675.00 6.075.00 Transformers and 33/0.433kV Station Transformer) - Outdoor Type with Surge Counter 12kV, 10kA, Metal Oxide, Class-2 (Station Class), Surge Arrester with out surge counter(For Transformers & Out Going 337.50 2,025.00 11kv 1250A VCB 13 panel board Switchgear ( 2 incoming, 8 Outgoing, 1 Bus coupler, 2 Bus PT 2.00 9.85.595.00 19.71.190.00 No Erection, Commissioning, Testing of SCADA 8 SCADA FOR Primary Substation 1.00 0.00 Set 0.00 Erection, Commissioning, Testing of Transformer and RMU 0.00 5 MVA, 33/11kV Power Transformer DYn11 (Outdoor Installation) with Accessories Nο 2.00 1.61.700.00 3,23,400.00 10 100 KVA 33/0.433kV Energy efficient Station Transformer along with HT & LT cable connection Nο 1.00 6 750 00 6 750 00 11 Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV) 8,000.00 No 1.00 8,000.00 12 Services of FRTU Panel, Communication and Other Supplied System NO 1.00 16,000.00 16,000.00 Erection, Testing & Commissioning of Transformer Monitoring Unit, as per technical specification and scope of work. NO 2.00 27,000.00 54,000.00 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 5301.00 13.50 71.563.50 13 Earthing Conductor: 50X6 mm (2.4Kg./Mtr.) GI Flat for Raiser from the burial earth mat to equipment, structure etc.) 720.00 13.50 9,720.00 Kg Earthing Device & Associated Accessories (Heavy duty GI Perforated Pipe of ID=40mm & OD=50mm with 3000mm long for No 40.00 2,025.00 81,000.00 treated Earth Pit) as per Drawing

Erection of System GI 33, 11 and Station Trf Structure

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 25x70x5) mm RS GI joist 5Mtr (13.3kg / Mtr) (04 nos for one Power Transformer) for supporting of 33kV Cable & 11kV cab (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 Kg 532 00 13 50 7 182 00 be suitably grouted to the floor for the rigidity. 100 x 50 x5) mm GI Channel (9.56kg / Mtr) (2Mtr - 06 nos for one Power Transformer) for supporting of 33kV & 11kV power 16 Kg 229.44 13.50 3.097.44 able (Unit Wt=0.01912 MT) 500.00 6.750.00 GI Nuts & Bolts etc. for column and beam & Equipment Structures Kg 13.50 18 GI Pipe of dia. 150mm, Class-B for Cable rising, as per technical specification and scope of work. Kg 200.00 67.50 13,500.00 High Density Polyethylene (HDPE) pipe 160 mm diameter. KM 0.01 1.16.137.80 1.161.38 19 20 LTDB for 100KVA, 33/0.433kV Station Transformer along with all cable connection & fixing Nos 1.00 2,025.00 2,025.00 Laying of 11kV 33 and 11 kv Power and Control cables 1C X 400 sqmm, 33 KV, XLPE, Power cable Armored, aluminium conductor, stranded, including their termination materials KM 1.20 2,02,500.00 2,43,000.00 like glands, lugs, tagging etc. as required as per technical specifications and scope of the works 33 KV 1C X 400 sq.mm. Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per Set. 54,000.00 22.1 16.00 3.375.00 technical specifications and scope of the works. 33 KV 1C X 400 sq.mm. Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per Set. 16.00 3,375.00 54,000.00 technical specifications and scope of the works. aying, Commissioning & Testing of 33kV, 3Core, 1Run, 95sqmm, XLPE insulation (extruted type) UG cable with spare by 22.3 Mtr. 100.00 94.50 9.450.00 open trench method. 22.5 Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 3Core, 95sqmm, HT UG cable kits Set 2.00 1,900.80 3,801.60 Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 3Core, 95sqmm, HT UG cable kits Set 2.00 1.900.80 3.801.60 3C X 400 sqmm, 11 KV, XLPE, 3 phase Power cable Armored, aluminium conductor, stranded, including their termination KM 1.50 2,02,500.00 3,03,750.00 23 materials like glands, lugs, tagging etc. as required as per technical specifications and scope of the works 11 KV, 3C X 400 sqmm Heat Shrink In Door cable termination kit complete with all accessories and tagging etc. as per 24.1 Set 20.00 3 375 00 67 500 00 echnical specifications and scope of the works. 11 KV, 3C X 400 sqmm Heat Shrink Out Door cable termination kit complete with all accessories and tagging etc. as per Set. 16.00 3,375.00 54,000.00 technical specifications and scope of the works Control Cables (Copper Armoured) Km 0.70 15,000.00 10,500.00 4 Core x 2.5 mm 25.2 7 Core x 2.5 mm<sup>2</sup> Km 0.70 17,000.00 11,900.00 25.3 10 Core x 2.5 mm Km 0.50 19,000.00 9,500.00 25.4 12 Core x 2.5 mm Km 0.50 20,000.00 10,000.00 25.5 1 Core x 16 mm2 Aluminium cable from Battery to Battery Charger & Battery Charger to DCDB 0.30 10,000.00 3,000.00 Km 26 Laying of 1.1 kV XLPE Power Cables 26.1 3 1/2 Core x 120 mm2 (for Station Transformer output ) Km 0.15 67,500.00 10,125.00 26.2 3 1/2 Core x 95 mm2 (for Oil Filtration Machine Connection ) Km 0.10 67,500.00 6,750.00 26.3 3 1/2 Core x 25 mm2 ( for Switchyard Lighting ) Km 0.30 33.750.00 10.125.00 26.4 4 Core 16 mm2 (for Switchyard Lighting ) 0.30 33,750.00 10,125.00 Km 26.5 2 Core 16 mm2 (for Switchyard Lighting) Km 0.30 20.250.00 6,075.00 Erection, Commissioning , Wiring & Testing of Battery & Battery Charger 48 V, 100 AH, maintenance free VRLA Battery (Set. 4 Nos of 12V Battery with 150AH)
 48 V, Float cum Boost Battery Charger (15 A float charging, 25 A boost charging) Set 1.00 3.375.00 3.375.00 No 1.00 4.050.00 4,050.00 Erection, Commissioning , Wiring & Testing of Sub-station Lighting And Fire Fighting System 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.Contro 1.00 1,01,250.00 1,01,250.00 29 Lot 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). 1.5 Ton capacity Split Air Conditioning units with Remote control facility: Including supply of split Air conditioner 5 Star rated, 3.645.00 No 4.00 14.580.00 voltage stabiliser, control boxes etc. for completing the A.C scheme. (As per specification) for control room 1400 mm sweep 250Volt A/C Celling Fan No 5.00 675.00 3,375.00 300 mm sweep 70W A/C Exhaust Fan ( for Battery room and Toilet ) No 4.00 675.00 2,700.00 Erection, Testing & Commissioning of Fire Detection Alarm System, as per technical specification and scope of work. Main Fire ALARM Control Panel (Ul /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, 1.00 22.646.87 22.646.87 No's. decentralized, 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., as per technical specification and scope of work. Intelligent Addressable multi sensor Detector- (Smoke + Fixed Tempt. + Rate of rise tempt.) For ceiling (UL /FM /ULC/Vds 32.2 Approved) inclusive base and other installation accessories. (must have inbuilt short circuit isolator), as per technical No's 6.00 377 45 2 264 69 specification and scope of work. Intelligent Addressable multi sensor Detector- (Smoke + Fixed Tempt. + Rate of rise tempt.) For trench (UL /FM /ULC/Vds No's. 2.00 377.45 754.90 Approved) inclusive base and other installation accessories. (must have inbuilt short circuit isolator), as per technical specification and scope of work 754.90 32.4 Response Indicator (Twin LED transparent type), as per technical specification and scope of work No's. 2.00 377.45 Addressable manual Call Point (must have inbuilt short circuit isolator,) (UL /FM /ULC/Vds Approved), as per technical 377.45 377.45 No's 1.00 specification and scope of work. Electronic Hooter/Multi tone sounder (must have inbuilt short circuit isolator,) (UL /FM /ULC/Vds Approved) Indoor type, as 377.45 377.45 No's. 1.00 per technical specification and scope of work. 2 Core X 1.5 sq.mm copper conductor, armored, RED colour FRLS PVC sheathed signal Cable, as per technical specification 8.710.34 32.7 150.00 58.07 Mtr. and scope of work. 4C X 2.5sqmm copper armoured FRLS cable with accessories (Gland, lug, saddle, etc.), as per technical specification and scope 32.8 15.00 1,219.45 Mtr. 81.30 609.72 32.9 Steel wire reinforced flexible conduct pipe (16MM) with all accessories, as per technical specification and scope of work. Mtr. 15.00 40.65 32.1 Surge Arrester for fire Alarm system, as per technical specification and scope of work. No's. 1.00 2,555.03 2,555.03 1.00 2.206.62 2.206.62 32.1 Lightning Rod in Top of PSS Building, as per technical specification and scope of work. No's. Erection, Commissioning of Fire Fighting System (portable and wheel mounted sets for control room) 33 2.00 348.41 33.1 Foam type- 9 Ltrs Nο 174.21 33.2 CO<sub>2</sub> - 4.5 Kgs Nο 2.00 174.21 348.41 33.3 Dry powder 4.5 Kg No 2.00 174 21 348 41 33.4 Fire Bucket with Stand (4nos. in each Stand) Set 1.00 348.41 348.41 Erection, Commissioning, Wiring & Testing of AC & DC System 34 AC System 2.700.00 ACDB (as per specification) Lot 1.00 2.700.00 34.2 Main Lighting Distribution Board (as per specification) 2,700.00 Lot 1.00 2.700.00

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

	ruction of 33/11 KV Primary Substation with 2X5 MVA Trf., including complete Control Room Building and All Equipmer with supply of all materials, Labour, T&P etc. As per technical specification and scope of work	it Suppi	y, Erection,	Commissioning	resuing, Civil
	Indoor Lighting Distribution Board as per specification	Lot	1.00	2,700.00	2,700.00
	Receptable Panel near Power Transformer	No	1.00	2,700.00	2,700.00
	DC System		0.00	0.700.00	5 400 00
	48 V DC Distribution Board as per specification .  Erection, Commissioning of Water Cooler with water Purifier System	No No	2.00 1.00	2,700.00 2,700.00	5,400.00 2,700.00
	Water Cooler with stainless steel stand	No	1.00	2,025.00	2,025.00
37	Commissioning & Testing of Maintenance Testing Equipment	Lot	1.00	1,35,000.00	1,35,000.00
38	Commissioning Tools and Plants (T&P's) Requirement	Lot	1.00	6,750.00	6,750.00
39	Commissioning Office Furniture	Lot	1.00	13,500.00	13,500.00
40	Laying of Materials for Installation of Power Transformer on Plinth (as per Drawing)  90 lb Rail 5.4 mts (2.7x2) 44.62 kg per mtr / Transformer each (Unit Wt=0.240 MT)	Nos	2.00	3,484.13	6,968.27
41	(500x500x10) mm GI plate 6 nos / Transformer each (Unit Wt=0.013 MT)	Nos	6.00	2,903.45	17,420.67
42	(65x65x5) mm Gl angle of 5.4 mts length.4.9 kg/mtr. / Transformer each (Unit Wt=0.026 MT)	Nos	2.00	1,742.07	3,484.13
	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	71.85	16,989.77	12,20,714.95
	Chequered plate 1000X300X5.6mm thick for Cable Trench in side Control Room 12 Mtr	KG	638.00	11.61	7,409.59
	33KV Line DP-2No's Installation  Installation/Erection of 13 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 Central Orissa 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)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.	No	4.00	6,000.00	24,000.00
45.2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 2x9.56x4.3)	KG	164.43	27.00	4,439.66
45.3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	7.93	27.00	214.10
45.4	Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required =( 1x7.14x4.3)	KG	61.40	27.00	1,657.91
45.5	Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =( 2x7.14x4.3)	KG	122.81	27.00	3,315.82
45.6	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	245.62	27.00	6,631.63
45.7	50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	177.37	27.00	4,789.04
45.8	Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel	KG	11.42	27.00	308.45
45.0	required = (1x7.14x0.8)	140	0.40	07.00	04.00
45.9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	3.49	27.00	94.28
45.10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	3.06	27.00	82.62
45.11	Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel required =( 2x9.56x0.5)	KG	19.12	27.00	516.24
45.12	Danger Plate, 2 no's.	No.	4.00	52.00	208.00
45.13	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	27.00	32.50
45.14	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 TPCODL Drawing & Standard	EA	4.00	2,250.00	9,000.00
45.15	Supply & Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/RinI) with earth chamber as per TP Central Orissa 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.	4.00	4,500.00	18,000.00
45.16	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	0.002	49,434.00	82.39
45.20	GI barbed wire anticlimbing device 3 Kg. Per support	set	4.00	94.00	376.00
	Back Clamp for anticlimbing device $25X3$ mm. flat, $0.59Kg/Mtr$ . Flat of $0.510mtr$ length $8$ no's = $(8x0.59x0.510)$	KG	4.81	27.00	129.99
45.22	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	6.00	1,806.00	10,836.00
-	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator with earth switch with Pl(Polymer)	Set	2.00	13,860.00	27,720.00
	33KV pin insulator polymer	No.	6.00	27.00	162.00
	H W fitting(B&S)90KN,4 Bolt with Disc insulator	No.	12.00	45.00	540.00
	GI Nut, Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	44.30	26.40	1,169.52
	Black Paint Valloy Colour Paint for Realcoround	Ltr	2.00	277.00	554.00
	Yellow Colour Paint for Background  Erection of 11KV Line DP-4No's	Ltr	4.00	277.00	1,108.00
	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 Central Orissa 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	8	6,000.00	48,000.00
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	229.44	27.00	6,194.88
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	15.86	27.00	428.20
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) Installation & Fabrication of Isolator Switch Side Support Channel 100X50X6mm,9.56 KG/Mtr., each channel length 0.35 mtr.,	KG	171.36	27.00	4,626.72
46.5	2 no's channel required =( 9.56x2x0.35)	KG	26.77	27.00	722.74
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	22.85	27.00	616.90
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)  Installation & Fabrication of 50x50x5mm GI Bracing Angle 4.5Kg /mtr., each angle length 3.512 mtr. 4 nos angle required =	KG	342.72	27.00	9,253.44
46.8 46.9	Installation & Fabrication of 50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.512 mtr., 4 nos angle required = (4.5x3.512x4) Installation of Danger Plate, 2 no's.	KG No.	252.86 8	27.00 52.00	6,827.33 416.00
70.0	movement of beinger 1 little, & 110 o.	110.		52.00	₹10.00

	ruction of 33/11 KV Primary Substation with 2X5 MVA Trf., including complete Control Room Building and All Equipment with supply of all materials, Labour, T&P etc. As per technical specification and scope of work	nt Supply	, Erection,	Commissioning,	Testing, Civil
46.10	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	2.41	27.00	64.99
46.1	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 TPCODL Drawing & Standard	EA	8	2,250.00	18,000.00
16.2	Supply & Installation of Earthing pipe with 40mm dia 3 Mtr long Class-B GI Pipe(Jindal/Tata/Sail/RinI) with earth chamber as per TP Central Orissa 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.	8	4,500.00	36,000.00
46.2	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	0.00	49,434.00	164.78
46.2	Installtion of GI barbed wire anticlimbing device 3 Kg. Per support, 2 no's qty. required =(2x3kg)	SET	8	94.00	752.00
46.2	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	9.63	27.00	259.98
	Installation, Testing & comissioning of Lightning Arrester(11KV,10KA) (Station Class,class-2)	EA	12.00	1,386.00	16,632.00
	Installation of 11KV 400 AMP isolator without earth switch with Pl(polymer) Installtion of 11 KV pin insulator polymer	Set No.	4 12	9,634.00 18.00	38,536.00 216.00
46.2	Installation of 11KV Polymer Disc Insulator (45KN- 90KN) along with Hardware fitting for 11KV line.Nutbolts will be paid separately	No.	24	45.00	1,080.00
	Installation of All type of Connector PG Clamp Installation of GI Nut , Bolt & Washer of different sizes	NO. K.g.	24 54.87	31.00 26.40	744.00 1,448.62
46.3	Painting of Pole in Black & Yellow strip	Ltr	8	277.00	2,216.00
H	Sub-Total for ERECTION, TESTING & COMMISSIONING WORKS (In Rs.)  Total Cost in Cr.				54,73,884.91 0.55
-					
	Civil Works with supply of all materials like Cement, MS tor rod, Brick, Coarse & Fine Agregra	tes & La	bour,T&P et	tc.	
1	Contour survey , plotting the contour on graph sheet and marking the finished ground level	Sqr Mtr	2,000.00	81.00	1,62,000.00
2	Cutting for Levelling and disposal of excess earth either in low laying area in sub-station or outside.	Cum	143.00	202.50	28,957.50
	Filling of S/S area with borrowed earth (rolling & compacting of filled up soil before taking measurement).	Cum	2,320.00	348.41	8,08,319.09
	OUT DOOR DRAIN to DISCHARGE SWITCHYARD/ WATER FROM WASH BASIN AND CONTROL ROOM ROOF (10 mts	0	0.45	474.04	4.040.05
	Excavation in all type soil (1.35x10x0.7) PCC (1:3:6 ) (1.35x10x0.1)	Cum Cum	9.45 1.35	174.21 5,226.20	1,646.25 7,055.37
4.3	PCC ( 1:2:4 ) (0.3x10x0.05)	Cum	0.15	6,039.17	905.87
	Brick Masonary with cement mortar ( 1:5 ) (0.25x10x0.925+1/2x0.15x0.93x10)+(0.25x10x0.925)  Plastering with Cement mortar(1:6) ( 2x0.25x10+2x0.925x10+1x0.925x10+1x1.0x10 )	Cum Sq.	5.32 42.75	6,387.58 325.19	33,979.26 13,901.69
	Switch Yard and COMPOUND WALL For PILE Foundation for SBC Upto 10, for Open Cast for SBC more than 10 ( FOR 50x40 MTR AREA), as per technical specification and scope of work.	mtr	12.110	020.10	10,001.00
5.1	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 GI Grill of 700 mm height (20Kg / Mtr) fixing at the top of the wall. It includes supply of all the materials of the fencing.	Run. Mtr.	180.00	13,704.26	24,66,766.87
	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	Run. Mtr.	61.00	4,000.00	2,44,000.00
5.3	Power Transformer with Switch Yard GI Chain Linking Fencing with 2 Mtr Height.	Run. Mtr	60.00	4,050.00	2,43,000.00
	Power Transformer Foundation / One (5 MVA)  Excavation in all type soil per Tfr.(3X3X1.1 mtr)	Cum	19.80	174.21	3,449.29
6.2	PCC (1:3:6 ) per Tfr.(3X3X0.075 mtr)	Cum	1.35	5,226.20	7,055.37
	RCC (1:1.5:3 ) per Tfr. As per drawing RRHG stone grouting with sand per Tfr.	Cum Cum	10.52 9.00	11,846.06 2,903.45	1,24,620.50 26,131.01
6.5	Prefabricated RCC foundation of 33kV RMU	Nos.	1	23,145.30	23,145.30
	Construction of 100kVA 33/0.4 kV station Trf. Plinth  Excavation in all type soil (2.5X2.5X0.750 mtr)	Cum	4.69	174.21	816.59
7.2	PCC (1:3:6 ) (2.5X2.5X0.075 mtr)	Cum	0.47	5,226.20	2,449.78
	RCC ( 1:1.5:3 ) (1.5X1.5X0.1 mtr)  Brick Masonary work (2.5x2.5x.925+2x(.5 x1.5x2.25) (1:5)	Cum Cum	0.23 61.19	11,846.06 6,387.58	2,665.36 3,90,839.99
7.5	Cement Plastering (1:6) (1.5x2.25x4)+(1.5x1.5) 20mm thick	Sq Mtr	15.75	325.19	5,121.68
	Construction of oil sump pit for Transformer (1.6 X 1.6 X 2.3 )				
	Excavation of Earth(2.0x2.0x2.1) PCC (1:3:6) 2X2X0.1	Cum Cum	8.40 0.40	174.21 5,226.20	1,463.34 2,090.48
8.3	RCC(1:1.5:3) 1.6X1.6X0.1 for Top Slab	Cum	0.26	11,846.06	3,032.59
	Brick Masonary work(2x2.1+2x1.6)x0.25x2.3 (1:5)  Cement Plastering (1:6) 2.3 (4x2.1+4x1.6) + 1.6x1.6	Cum Sq.mtr	4.26 36.60	6,387.58 325.19	27,179.15 11,901.80
	Drainage for Oil sump pit with 250 dia hume pipe	Mtr	24.00	4,645.51	1,11,492.29
9	ROAD (6 Mtrs wide) Length of the road 20 mtrs				
	Excavation in all type soil 0.5mx1mx5m  Boulder Packing 0.5mx1mx5m	Cum Cum	60.00 60.00	174.21 1,742.07	10,452.40 1,04,524.02
9.3	Water base course -I 0.075mx1mx5m	Cum	9.00	2,903.45	26,131.01
	Water base course -II	Cum Cum	9.00 12.00	2,903.45 6,039.17	26,131.01 72,469.99
9.6	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	6,387.58	45,990.57
	(125x70x5) mm RS GI joist 5Mtr (STATION)  Excavation with back filling L 1m x W 1 x D 2	Cum	8.00	174.21	1,393.65
10.2	PCC (1:3:6)	Cum	0.40	5,226.20	2,090.48
10.3	RCC (1:1.5:3)	Cum	12.00	11,846.06	1,42,152.67

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

	with supply of all materials, Labour, T&P etc. As per technical specification and scope of work	it ouppi	y, Erconon,	Commissioning	, resumg, erri
	Baffle Wall	_	4.50	171.01	071.00
	Excavation with back filling 4.2mx0.75mx0.5m PCC 1:3:6 4.2mx0.75mx0.1m	Cum	1.58 0.32	174.21 5,226.20	274.38 1.646.25
	RCC 1:1.5:3 0.75x3.8x0.2+0.5x3.4x0.2+2.5x3x0.15	Cum	5.80	11,846.06	68,647.89
12	PCC (1:4:8) With cement For S/S area(75 mm) per Sq. mts.( (8x16x0.075)	Cum	9.60	5,226.20	50,171.53
13	Metal Spreading 100 mm. per Sq. mts. Area of spreading.	Cum	12.80	3,368.00	43,110.35
	Switchgear Cum Control Room (22x10Mts) (column & beam based) (as per specification & Inclusive of doors,				
١.	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)				
	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				
14.1	with cost of all materials, labours, T&P etc. & all other machinaries required for the work etc. Complete in all respect as per	Nos	65.00	4,000.00	2,60,000.00
⊢—	latest specification & direction of the Engineer in charge.				
	Earth work in excavation of foundation trenches in all kinds of soil including moorum, stony earth and earth mixed with				
14.2	boulders except sheet rock and boulders requiring blasting including dressing of sides and leveling the bed up to the required	Cum	150.00	174 01	26 121 01
14.2	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	Cum	150.00	174.21	26,131.01
l	machinaries required for the work etc. Complete in all respect as per latest specification & direction of the Engineer in charge.				
l	Supplying and filling in foundation and plinth with good river sand well watered and rammed in layers not exceeding 23	0	400.00	000.40	4 75 000 05
14.3	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	189.00	929.10	1,75,600.35
	Complete in all respect as per latest specification & direction of the Engineer in charge.				
	Providing and lying plain cement concrete of proportion (1:3:6) in foundation and plinths using approved quality cement,				
l	40 mm. size black hard crusher broken granite stone metal and screened, washed sharp sand for mortar of approved quality				
l	and from approved quarry, including hoisting, lowering, laying concrete, ramming, watering and curing etc. complete to	0	05.50	F 000 00	4.05.004.00
14.4	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	Cum	35.52	5,226.20	1,85,634.66
	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.				
$\vdash$	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				
14.5	to required height placing in position scaffolding, splays cutting, circular moulding, corbelling, chamfering and similar such type				
14.5	of work watering and curing etc. including cost, conveyance, royalty, cess, and taxes of all other materials machinaries			-	-
l	scaffolding all labour T&P articles required for the work etc. complete in all respect as per the latest specification confirming to				
1451	relevant IS Specification and direction of the Engineer-in-charge.	C	22.20	6,387.58	2.42.000.04
	In Foundation and Plinth Ground Floor	Cum	33.36 100.44	6,387.58	2,13,089.64 6,41,568.43
	RCC work M-20 grade as per approved designs and drawings having a minimum compressive strength (in work test) 200			0,000.000	0,11,000110
l	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				
l	20 mm. size black hard crusher broken granite stone chips, screened and washed sharp sand for mortar of approved quality				
l	from approved quarry, to be mixed in concrete mixture with approved quality cement including hoisting, lowering, laying and				
14.6	compacting concrete by using vibrators, watering and curing for 28 days, centering and shuttering and finishing the exposed		-	-	-
l	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				
l	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.				
	Pile cap & Grade beam	Cum	32.76	10,452.40	3,42,420.69
	R.C.C. wall Plinth Beam	Cum	3.36 9.72	10,452.40 10,452.40	35,120.07 1,01,597.35
	Column & Beam- Ground Floor	Cum	33.60	10,452.40	3,51,200.71
	Lintel-Ground Floor	Cum	3.96	10,452.40	41,391.51
14.6.6	65mm thick R.C.C.Chajja- Ground Floor	Sqm	23.28	987.17	22,981.35
	Roof slab - Ground Floor	Cum	29.16	13,936.54	4,06,389.39
14.6.8	Staircase- Ground Floor	Cum	3.48	13,936.54	48,499.15
l	Cutting, Straightening coiled or bent up M.S. rods or Tor steel welding or jointing if necessary, bending, binding, tying the grills				
l	as required for R.C.C. works, providing fan hooks where necessary and hoisting, lowering and placing in proper position				
14 7	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	16.90	95,233.00	16,09,437.63
	Supplying, fitting and fixing vitrified tile 60x60cm plain Ivory 8 to 10 mm thick in floors of approved make with application				
14.8	of polymer modified cement based water resistant adhesive bed of required thickness of 10mm and filling joints with epoxy	Sqm	142.80	801.35	1,14,432.90
	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.				
	Supplying, fitting and fixing vitrified tile 60x60cm plain Ivory 8 to 10 mm thick in dado of approved make with application				
140	of polymer modified cement based water resistant adhesive bed of required thickness of 10mm and filling joints with epoxy	S	15.00	004.05	10 100 50
14.9	grout of approved quality including cost of all materials, takes labour T&P etc. required for the work etc. complete in all	Sqm	15.20	801.35	12,180.53
<u> </u>	respect as per the latest specification and direction of the Engineer-in-charge.				
	Supplying, fitting and fixing Floor tile of size 40cmx40 cm / 30cmx30cm in floors on 25mm thick bed of cement mortar 1:1				
14.10	(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	Sqm	19.50	847.81	16,532.22
	the latest specification and direction of the Engineer-in-charge.				
	Providing fitting fixing Glazed /Ceramic tiles of size 20cmX30cm & 6.5 to 6.7mm thick of size up to 0.10sqm in wall				
14.11	dados skirting and on 12mm thick cement plaster (1:3) jointed with neat cement slurry mixed with pigments to match the	Sqm	24.20	696.83	16,863.21
'7.11	shade of the tiles including rubbing and polishing complete including cost of precast tiles etc. complete in all respect as per	Jylli	27.20	030.03	10,003.21
<u> </u>	the latest specification and direction of the Engineer-in-charge.				
14 1	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	Cum	0.25	92,910.24	23,227.56
L'''	the Engineer-in-Charge.	Juin	0.20	32,010.24	20,221.00
	Supplying, fitting and fixing 30mm/32mm flush door shutter (Non-Sal hard wood frame fixed with 4mm BWR ply on both sides				
14.13	of frame including cost conveyance royality taxes of all materials. labour, all other machinaries, T & P articles required for the	Sqm	10.70	2,903.45	31,066.86
<u> </u>	work complete in all respect as per the direction of the Engineer-in-Charge.				
	Providing and fixing of sliding windows of approved make to be febricated from roll formed sections made of pre-painted steel				
14.1	(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	Sqm	20.80	5,806.89	1,20,783.31
	conveyance royality taxes of all materials. labour, all other machinaries, T & P articles required for the work complete in all	- 4		2,000.00	.,=5,,, 00.01
	respect as per the direction of the Engineer-in-Charge. DOUBLE SHUTTER SLIDING WINDOW				

	ruction of 33/11 KV Primary Substation with 2X5 MVA Trf., including complete Control Room Building and All Equipmer with supply of all materials, Labour, T&P etc. As per technical specification and scope of work	nt Supply	y, Erection,	Commissioning	, Testing, Civil
	Providing and fixing of FRP door frame including cost conveyance royality taxes of all materials. labour, all other machinaries,				
14.15	T & P articles required for the work complete in all respect as per the latest specification and direction of the Engineer-in-Charge.	Mtr	10.20	812.96	8,292.24
14.2	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	3.80	2,903.45	11,033.09
	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				
14.17	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		-	-	-
14 17 1	by the Engineer in charge  Ground Floor	Sqm	685.05	325.19	2,22,768.56
14.17.	Providing 12mm. thick cement plaster with cement mortar of mix (1:6) with approved quality cement and screened and	Sqiii	005.05	323.19	2,22,700.30
14.18	washed sharp sand for mortar and finished smooth to the surface <b>over brick work</b> 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	541.19	325.19	1,75,987.32
	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				
14.19	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	484.90	325.19	1,57,682.61
14.20	Providing and finishing the wall surface with two coat of <b>cement wash</b> 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  Ground Floor	Sam	1,522.68	104.52	1,59,156.63
14.20.	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.	Sqm	1,022.08	104.32	1,58,150.03
14.21	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	664.70	127.75	84,916.48
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	1,134.43	127.75	1,44,925.22
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	876.36	133.56	1,17,045.30
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	646.44	191.63	1,23,875.60
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	105.90	209.05	22,138.19
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	25.32	5,226.20	1,32,327.41
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 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	7.50	4,064.82	30,486.17
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	30.00	174.21	5,226.20
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	9.75	325.19	3,170.56
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	162.76	278.73	45,366.21
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	267.54	243.89	65,250.16
14.32	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.	Sq. mtr.	14.20	5,806.89	82,457.84
14.33	Supply & Fixing of alluminium Ventilator with 8 mm thick glass as per approved drawing	Sq. mtr	0.92	5,806.89	5,342.34
14.34	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.	Sq. mtr.	742.00	127.75	94,791.67
	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	348.41	3,693.18

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 atc. As participal specification and scope of work

15.1.6   50 mm dia		ruction of 33/11 KV Primary Substation with 2X5 MVA Trf., including complete Control Room Building and All Equipme with supply of all materials, Labour, T&P etc. As per technical specification and scope of work	nt Supply	y, Erection,	Commissioning,	Testing, Civil
mm, see bases have consume recovering extensive since most and and increased, seached adhips send for invented regisproving existing your processing of the	14.35.2	each layer including all leads and lifts, cost of all materials, labour,cess, sundries, T&P required for the work etc.complete in	Cum	0.95	929.10	882.65
Separative 15 cm. culties at 28 days after mining and the conduction in accordance with 15.458 and 15.516 using 12 min. 20 min. 20 to 15 min. 20 min	14.35.	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	Cum	0.78	5,226.20	4,076.44
15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.10   15.1		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		11,846.06	
15.1   15 mm da		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		-	-	-
15.12   25 mm dis	45.4.4		N 44	45.00	120.27	2.000.40
15.1.3   25 mm das						
15.1.4   40 mm aid   15.1.5   50 mm						2,961.51
1-2   Supplying all materials, labour, TSP-8 (filling, fishing, the following different water supply fiftings of approved make with including supply of all mocessary printing materials does directed by the Engineerin-charge.	15.1.4	40 mm dia				4,645.51
10.5   Supply of all necessary joining materials etc. all complete as directed by the Engineer-in-charge.			Mtr	20.00	301.96	6,039.17
15.2   15.2 mm dia Balt valve	15.2			-	-	-
15.2.3   25 mm dia F.W. valve		25 mm dia Ball valve	Nos	2.00		580.69
15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2   15.2						
15.3 [For Stem to Stimm CPVC) pipe to pass in 125mm to 250mm think wall 15.3 [For Stem to Stimm CPVC) pipe to pass in 125mm to 250mm think wall 15.4 [Min for fixing pipes & fittings of sizes   Stem date to 25mm date in the grooves, testing the pipe line against learnage, and fitting wall for fixing pipes & fittings of sizes   Stem date to 25mm date in the grooves, testing the pipe line against learnage, and fitting wall for fixing pipes & fittings of sizes   Stem date to 25mm date in the grooves, testing the pipe line against learnage, and fitting wall was to pipe & fittings of sizes   Stem date to 25mm date in the grooves, testing the pipe line against learnage, and fitting wall was to pipe & fittings of sizes   Stem date to 25mm date in the grooves, testing the pipe line against learnage, and fitting wall was to pipe a size   Stem date to 25mm date in the grooves, testing the pipe line against learnage, and fitting wall was to pipe a size   Stem date						348.41
1.53   Supply of all required materials etc. complete as per the direction of the Engineer-in-charge   Nos.   1.00   145.17   1.45.172	15.2.4		Nos	2.00	348.41	696.83
15.3.1   For \$5mm to \$50mm CPVC pipe to pass in \$125mm to \$250mm thick walls vertically and horizontally to the required depth and will horizon pipes & fittings of sizes 15mm dis to \$25mm dis in the grooves, testing the pipe line against leakage, and filing the grooves will be marked to the first pipe \$4.00 miles and the pipe of the pipe	15.3			-	-	-
15.4   with for fixing pipes & fittings of sizes i fixing and sizes stimm da to 25mm da to 25mm da in the grooves, testing the pipe lose with center motinal (1.4) to bright per surface to original review including good or marks, curing and conveyance of malerials etc. complete as per direction of the Engineer-in-charge.    15.5   Illian marks   Il	15.3.1		Nos	10.00	145.17	1,451.72
15.5   100 lowing sizes and specification with leaky proof threaded joints lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and white zinc or any lightened with spun yarn and lightened with spun yarn a	15.4	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	Mtr	10.00	209.05	2,090.48
15.5.2   Pillar cock		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.		-		-
15.5.3   Pallur scote   Nos   2.00   522.62   1,045.24     15.5.4   Angular stop cock   Nos   4.00   4406.48   1,625.93     15.5.5   Agriculture   Nos   2.00   181.30   162.59     15.5.6   Tower Irright   Nos   2.00   209.05   418.10     15.5.7   Toleit paper holder   Nos   2.00   209.05   418.10     15.5.8   Glass et el 22"   Nos   2.00   209.05   418.10     15.5.9   Tower Irright   Nos   2.00   209.05   418.10     15.5.9   Tower Irright   Arright   Nos   2.00   209.05   418.10     15.5.9   Tower Irright   Arright   Nos   2.00   261.31   522.62     15.5.1   Tower Irright   Arright   Nos   2.00   261.31   522.62     15.5.1   Tower Irright   Arright   Nos   2.00   262.26   104.52     15.5.1   Conceated stop cock   Nos   4.00   560.69   2.322.76     15.5.1   Conceated stop cock   Nos   4.00   560.69   2.322.76     15.5.1   Tower Irright   Arright   Arright   Arright   Nos   2.00   60.68   139.37     15.5.1   Tower Irright   Arright						
15.5.5   Sape Holder						
15.55   Soap Holder						
15.5   Towel ring			+			
15.5   Glass self   22"   Nos   2.00   348.41   696.83						278.73
15.5   1						418.10
15.5.1 George arm 190mm long light						
15.5.1   Characteristics   15.5.1   Characteri			+			
15.5.12   Concealed stop cock						
15.5.13   Sasin with pedestal   Nos   2.00   69.68   139.37						
Providing and fixing vitreous China water closet (European with seat and lid), of Cerra Casacée 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.    Providing and fixing vitreous China water closet Indian type of Orissa pattern size (580mmx440mm) of approved quality with 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.    5.5.17   Providing and fixing vitreous China water urinal of Cerra/Parry ware with fittings and brackets, 40 mm flush good the walls and floors wherever required.    5.5.17   Providing and fixing vitreous China water urinal of Cerra/Parry ware with fittings and brackets, 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.    5.5.17   Providing and fixing vitreous China water urinal of Cerra/Parry ware with fittings and brackets, 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.    5.5.17   Providing and fixing vitreous China water urinal of Cerra/Parry ware with fittings and brackets, flush bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete gipe provided by the pattern of the						139.37
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.  Providing and fixing vitreous China water closet Indian type of Orissa pattern size (580mmx440mm) of approved quality with bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete, painting on brackets, 40 mm flush bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete, painting on brackets, 40 mm flush bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete, painting on brackets, 40 mm flush bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete, painting on brackets, 40 mm flush bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete, painting on brackets, 40 mm flush bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete, painting on brackets, 40 mm flush bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete, painting on brackets, 40 mm flush bend of CP brass, and making good the walls and floors wherever required.  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 convergence, taxes of all materials complete as per specification of Engineer-in-charge (Make-Modi Quard/Belgium)  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 refiling of pipe line trenches in 0.3048 mtrs layers with 300 mm deep sand around cushion duly watered and ranked of the proo	15.5.14		Nos	2.00	3,019.58	6,039.17
Providing and fixing vitreous China water closet Indian type of Orissa pattern size (580mmx440mm) of approved quality with bend of CP brass, 20 mm overflow pipe with specials & mosquito proof coupling complete, painting on 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.    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.    15.5.17   Supply of all materials, labour, T&P, fitting and fixing in all floors fixed type bevelled plate glass mirror of size 600mm x sharing good the walls and floors wherever required.    15.6.18   100mm dia (ISI Marked)   1.00   1.509.79   3.019.58	15.5.1	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	Nos	1.00	4,935.86	4,935.86
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.    Supply of all materials, labour, T&P, fitting and fixing in all floors fixed type bevelled plate glass mirror of size 600mm x   Supply of all materials, labour, T&P, fitting and fixing in all floors fixed type bevelled plate glass mirror of size 600mm x   Supply of all materials, labour, T&P, fitting and fixing in all floors fixed type bevelled plate glass mirror of size 600mm x   Supply of all materials, labour, T&P, fitting and fixing in all floors fixed type bevelled plate glass mirror of size 600mm x   Supply of all materials, labour, T&P, fitting and fixing in all floors fixed type bevelled plate glass mirror of size 600mm x   Supply of all materials, labour, T&P, fitting and fixing in all floors fixed type bevelled plate glass mirror of size 600mm x   Supply of all materials, labour, T&P, fitting and fixing in all floors fixed type bevelled plate glass mirror of size 600mm x   Supply of all materials, labour, T&P and laying UPVC SWR PIPES of Standard make with ISI Mark duly approved by the Engineer-in-charge including in 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.   15.7.1   100mm dia (ISI Marked)   Mtr   10.00   313.57   3.135.72   15.7.2   150mm dia (ISI Marked)   Mtr   25.00   441.32   11,033.09   15.8.8   100mm dia (ISI Marked)   Mtr   25.00   360.03   720.05   15.8.1   100mm dia "P" Trap   Nos   2.00   360.03   720.05   15.8.1   100mm dia "P" Trap   Nos   3.00   174.21   522.62   15.8.5   100mm dia Single Junction with Door   Nos   3.00   406.48   1.219.45   15.8.5   100mm dia Single Junction with Door   Nos   3.00   290.34   580.69   15.8.6   100mm dia Guard   Nos   2.00   290.34   580.69   15.8.6   100mm dia Terminal Guard   Nos   2.00   290.34   580.69   15.8.6   100mm dia Terminal G	15.5.10	Providing and fixing vitreous China water closet Indian type of Orissa pattern size (580mmx440mm) of approved quality with PVC Slimeline (Parryware make) 12.5 Itr 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	Nos	1.00	4,180.96	4,180.96
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)  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.  15.7.1 100mm dia (ISI Marked)  Supplying all materials, labour T&P for jointing of the UPVC SWR SEWER pipe fittings of standard make duly approved by the Esting as directed by Engineer-in-charge.  15.8.1 100mm dia "P" Trap  Nos 2.00 360.03 720.05 15.8.2 100mm dia Bend Plain  Nos 3.00 133.56 400.68 15.8.3 100mm Door Bend  Nos 3.00 174.21 522.62 15.8.5 100 mm dia single Junction with Door  Nos 3.00 406.48 1,219.45 15.8.5 100 mm dia double Junction with Door  Nos 2.00 290.34 580.69	15.5.1	Providing and fixing vitreous China water urinal of Cerra/Parry ware with fittings and brackets, flush bend of CP brass, and	Nos	2.00	2.090.48	4.180.96
conveyance, taxes of air materials complete as per specification and direction of Engineer-in-charge(Make-Modi Guard/Belgium)  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.  15.7.1 100mm dia (ISI Marked)  Supplying all materials, labour T&P for jointing of the UPVC SWR SEWER pipe fittings of standard make duly approved by the 15.8 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.  15.8.1 100mm dia "P" Trap  Nos 2.00 360.03 720.05 15.8.2 100mm dia Bend Plain  Nos 3.00 133.56 400.68 15.8.3 100mm Door Bend  Nos 3.00 174.21 522.62 15.8.4 100 mm dia Single Junction with Door  Nos 3.00 406.48 1,219.45 15.8.5 100 mm dia double Junction with Door  Nos 3.00 290.34 580.69		Making good the walls and licons wherever required.  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				
15.7.1   100mm dia (ISI Marked )   Mtr   10.00   313.57   3,135.72   15.7.2   150mm dia (ISI Marked )   Mtr   25.00   441.32   11,033.09   Supplying all materials, labour T&P for jointing of the UPVC SWR SEWER pipe fittings of standard make duly approved by the lesting as directed by Engineer-in-charge.   Nos   2.00   360.03   720.05   15.8.1   100mm dia PP Trap   Nos   3.00   133.56   400.68   15.8.3   100mm dia Bend Plain   Nos   3.00   133.56   400.68   15.8.3   100mm Door Bend   Nos   3.00   174.21   522.62   15.8.4   100 mm dia Single Junction with Door   Nos   3.00   406.48   1,219.45   15.8.5   100mm dia double Junction with Door   Nos   2.00   290.34   580.69   15.8.6   100mm dia Terminal Guard   Nos   2.00   290.34   580.69   15.8.6   100mm dia Terminal Guard   Nos   2.00   290.34   580.69   15.8.6   100mm dia Terminal Guard   Nos   2.00   290.34   580.69   15.8.6   100mm dia Terminal Guard   Nos   2.00   290.34   580.69   15.8.6   100mm dia Terminal Guard   Nos   2.00   290.34   580.69   15.8.6   100mm dia Terminal Guard   Nos   2.00   290.34   580.69   15.8.6   100mm dia Terminal Guard   Nos   2.00   290.34   580.69   15.8.6   100mm dia Terminal Guard   Nos   2.00   290.34   580.69   15.8.6   100mm dia Terminal Guard   Nos   2.00   290.34   15.8.6   100mm dia Terminal Guard   Nos   2.00   290.34   100mm dia Terminal Guard   N		Guard/Belgium)  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-		-	-	-
15.7.2   150mm dia (ISI Marked)   Mtr   25.00   441.32   11,033.09   Supplying all materials, labour T&P for jointing of the UPVC SWR SEWER pipe fittings of standard make duly approved by the testing as directed by Engineer-in-charge.   Nos   2.00   360.03   720.05   15.8.1   100mm dia "P" Trap   Nos   3.00   133.56   400.68   15.8.2   100mm dia Bend Plain   Nos   3.00   133.56   400.68   15.8.3   100mm Door Bend   Nos   3.00   174.21   522.62   15.8.4   100 mm dia Single Junction with Door   Nos   3.00   406.48   1,219.45   15.8.5   100 mm dia double Junction with Door   Nos   3.00   290.34   580.69   15.8.6   100 mm dia Terminal Guard   Nos   2.00   290.34   580.69	15.7.1		Mtr	10.00	313.57	3,135.72
testing as directed by Engineer-in-charge.         Nos         2.00         360.03         720.05           15.8.2 100mm dia ™ Trap         Nos         3.00         133.56         400.68           15.8.3 100mm Door Bend         Nos         3.00         174.21         522.62           15.8.4 100 mm dia Single Junction with Door         Nos         3.00         406.48         1,219.45           15.8.5 100 mm dia double Junction with Door         Nos         3.00         522.62         1,567.46           15.8.6 100mm dia Terminal Guard         Nos         2.00         290.34         580.69	15.7.2	150mm dia (ISI Marked) Supplying all materials, labour T&P for jointing of the UPVC SWR SEWER pipe fittings of standard make duly approved by the				11,033.09
15.8.2     100mm dia Bend Plain     Nos     3.00     133.56     400.68       15.8.3     100mm Door Bend     Nos     3.00     174.21     522.62       15.8.4     100 mm dia Single Junction with Door     Nos     3.00     406.48     1,219.45       15.8.5     100 mm dia double Junction with Door     Nos     3.00     522.62     1,567.86       15.8.6     100mm dia Terminal Guard     Nos     2.00     290.34     580.69		testing as directed by Engineer-in-charge.	Nic-	2.00	260.02	700.05
15.8.3 100mm Door Bend     Nos     3.00     174.21     522.62       15.8.4 100 mm dia Single Junction with Door     Nos     3.00     406.48     1,219.45       15.8.5 100 mm dia double Junction with Door     Nos     3.00     522.62     1,567.86       15.8.6 100mm dia Terminal Guard     Nos     2.00     290.34     580.69	1504					
15.8.4 100 mm dia Single Junction with Door     Nos     3.00     406.48     1,219.45       15.8.5 100 mm dia double Junction with Door     Nos     3.00     522.62     1,567.86       15.8.6 100mm dia Terminal Guard     Nos     2.00     290.34     580.69		Huumm da Bend Plain		. 0.00	. 50.00	.00.00
15.8.6 100mm dia Terminal Guard Nos 2.00 290.34 580.69	15.8.2		Nos	3.00	174.21	522.62
	15.8.2 15.8.3 15.8.4	100mm Door Bend 100 mm dia Single Junction with Door	Nos	3.00	406.48	1,219.45
	15.8.2 15.8.3 15.8.4 15.8.5	100mm Door Bend 100 mm dia Single Junction with Door 100 mm dia double Junction with Door	Nos Nos	3.00 3.00	406.48 522.62	1,219.45 1,567.86

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								
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.		-		-			
	100mm Pipe	Nos	10.00	1,881.43	18,814.32			
	Fixing of UPVC vent pipes Including labour & T&P all complete as directed by the Engineer-in-charge.  100mm Pipe	Mtr	4.00	313.57	1,254.29			
15.10.2	100mm Vent Cowl	No	2.00	406.48	812.96			
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.		-		-			
15.11.1	750mmx 750mm x450mm	No	1.00	6,968.27	6,968.27			
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.		-		-			
15.12.1	2000 Ltr Capacity	No	1.00	20,904.80	20,904.80			
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) over 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-incharge.	No	1.00	46,455.12	46,455.12			
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	1.00	47,616.50	47,616.50			
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	1.00	2,12,996.73	2,12,996.73			
18	RRHG retaing wall with 1:5 cement mortar Considering 0.6 mt height of retaining wall above the existing ground level		_	_				
18.1	per Meter as per Drawing TOTAL 74 Mtrs  Excavation in all type of soil( 0.8 Cum / Mtr)	Cum	105.60	174.21	18,396.23			
	PCC (1:4:8) 200 mm thick. With cement ( 0.2 Cum / Mtr)	Cum	26.40	5,226.20	1,37,971.71			
18.3 18.4	PCC (1:2:4) 50 mm thick With cement ( 0.02 Cum / Mtr)  RRHG Cement Masonary (1:5) With cement ( 0.86 Cum / Mtr)	Cum	1.58 63.64	6,039.17 2,903.45	9,566.04 1,84,775.24			
18	Laying of cable trench with supply of GI Cable Trench material & all Civil works	Cuiii	03.04	2,903.43	1,04,773.24			
18.1	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	16,989.77	6,79,590.79			
18.2	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	9,345.81	3,27,103.42			
18.3	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	8,099.80	2,02,494.96			
19	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	174.21	794.38			
20	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	5,226.20	11,497.64			
21	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	5,226.20	2,351.79			
22	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	7.52	174.21	1,310.03			
23	Concreting of poles in ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45 Cu.mtr, as per technical specification and scope of work.	Cum	3.60	5,226.20	18,814.32			
24	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	0.90	5,226.20	4,703.58			
25	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.	12.00	2,438.89	29,266.73			
26	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.	52.00	1,742.07	90,587.48			
27	Construction of 600mm dia Hume Pipe Single row culvert and approach road for Control room-cum- Swith gear room				-			
27.1	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	174.21	2,595.68			
27.2	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	929.10	1,672.38			

	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							
27.3	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	5,226.20	9,407.16			
27.4	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	12,775.16	1,06,033.81			
27.5	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	4,645.51	34,841.34			
27.6	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	2,903.45	15,388.26			
27.7	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).			754.90	73,602.33			
27.8	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.		230.00	290.34	66,779.24			
27.9	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.		75.00	1,858.20	1,39,365.36			
27.1	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.		780.00	348.41	2,71,762.45			
	ub-Total for CIVIL WORKS with supply of all materials like Cement, MS tor rod, Brick, Coarse & Fine Agregrates & abour,T&P etc. (In Rs.)				1,47,75,299.63			
	Total Cost in Cr.							
-				All Pri	es in Cr.			
A1	Total Cost for SUPPLY OF EQUIPMENT & MATERIALS (In Cr.)				5.22			
B C	Stock , Storage & Insurance @ 3 % of A Sub - Total ( A+B )				0.16 5.37			
D	Contingency @ 3 % of C				0.16			
E	Tools &Plants Charges @ 2% of C (NOT CONSIDERED, As Separate Erection considered for All Supply Material )				- 0.10			
F	Transportation @ 7.5% of C				0.40			
Ġ	Sub - Total ( C+D+E+F )				5.94			
H1	Total Cost for ERECTION, TESTING & COMMISSIONING WORKS (In Cr.)							
H2								
Н3								
J								
L								
М								
N								
0	Total Inspection fees (O1+O2)				0.010			
P	Total Estimate to be deposit in Cr @ L+M+N+O (In Cr.)				9.50			

# BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

# Supply Portion

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable)				
	with accessories				
a	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	5000		
b	Length of 33kV 1C, 630sqmm cable (HDD)	Mtr.	1000		
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	18000	1,495.47	2,69,18,460.00
1.2	Supply of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set	54	11,900.00	6,42,600.00
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	6	6,350.00	38,100.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	9	6,100.00	54,900.00
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	14952.00	357.60	53,46,835.20
2	Supply of 33kV RMU			-	
a	No. of 33kV 3Way RMU (LLV+M)	nos.			
ь	No. of 33kV 4Way RMU (LLVV+M)	nos.			
С	No. of 33kV 3Way RMU (LLV)	nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.	1		
е	No. of 33kV 3Way RMU (LLL)	nos.			
f	No. of 33kV 4Way RMU (LLLL)	nos.			
2.1	Supply of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M) (CT Ratio to be mentioned)	Nos.	0	22,93,723.00	-
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M) (CT Ratio to be mentioned)	Nos.	0	31,74,874.00	-
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	1	23,35,264.00	23,35,264.00
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	-
2.6	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	19,59,421.00	-
3	Earthing				
3.1	Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for equipment, structure etc.)	kg	13.20	97.50	1,287.00
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	2	1,365.00	2,730.00
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	1		
4.1	Pre-Wired FRTU Panel with FRTU	No.	1	1,21,744.00	1,21,744.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	1	1,00,000.00	1,00,000.00
4.3	Networking Accessories	No.	1	72.00	72.00

	Annexure-2				
	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along with	33kV RMU	
4.4	CMR with Mounting Base for Digital Inputs	Nos.	32	650.00	20,800.00
4.5	Interposing Relay for Digital Output	Nos.	16	467.94	7,487.04
4.6	Battery Charger	Nos.	1	15,385.00	15,385.00
4.7	Battery	Nos.	1	8,333.00	8,333.00
4.8	4G Modem cum Router	Nos.	1	18,500.00	18,500.00
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	40	204.87	8,194.80
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	40	305.58	12,223.20
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	40	275.23	11,009.20
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	20	165.25	3,305.00
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	10	150.00	1,500.00
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	20.0	148.43	2,968.60
4.15	Armored CAT6 SFTP Cable	Mtr.	20	45.87	917.40
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	20	89.45	1,789.00
4.17	Multi Function Meter	Nos.	2	18,651.00	37,302.00
	Sub Total (Supply Portion) (in	Rs.)			3,57,11,706.44
	Erection Portion	n			
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
SI. No. 1	Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare	Unit	Quantity		
	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.	Unit Mtr.	Quantity 15000		
1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil			(in Rs.)	(in Rs.)
1.1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable	Mtr.	15000	(in Rs.) 94.50	(in Rs.) 14,17,500.00
1.1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type	Mtr.	15000	94.50 2,400.00	(in Rs.)  14,17,500.00  1,29,600.00
1.1 1.2 1.3	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr. Set	15000 54 6	94.50 2,400.00 2,081.70	(in Rs.)  14,17,500.00  1,29,600.00  12,490.20
1.1 1.2 1.3	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE	Mtr. Set Set	15000 54 6 9	94.50 2,400.00 2,081.70 2,081.70	(in Rs.)  14,17,500.00  1,29,600.00  12,490.20  18,735.30
1.1 1.2 1.3 1.4	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open	Mtr. Set Set Mtr.	15000 54 6 9	94.50 2,400.00 2,081.70 2,300.00	(in Rs.)  14,17,500.00  1,29,600.00  12,490.20  18,735.30  69,00,000.00
1.1 1.2 1.3 1.4 1.5	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open trench.  Erection, Commissioning, Wiring and Testing of 33kV RMU  Erection of RMU 33KV 3WAY 630A WITH METERING UNIT	Mtr. Set Set Mtr.	15000 54 6 9	94.50 2,400.00 2,081.70 2,300.00	(in Rs.)  14,17,500.00  1,29,600.00  12,490.20  18,735.30  69,00,000.00
1 1.1 1.2 1.3 1.4 1.5 1.6 2	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open trench.  Erection, Commissioning, Wiring and Testing of 33kV RMU	Mtr. Set Set Mtr. Mtr.	15000 54 6 9 3000 14952.00	94.50 2,400.00 2,081.70 2,300.00 300.00	(in Rs.)  14,17,500.00  1,29,600.00  12,490.20  18,735.30  69,00,000.00

	Annexure-2				
	BoQ and Estimate for 33kV, 1C 630sqmm U/C	G Cable	along with	33kV RMU	
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	1	8,000.00	8,000.00
2.5	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	8,000.00	-
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	8,000.00	-
<b>3</b>	FRTU and OFC for RMU SCADA Automation Services of FRTU Panel, Communication and Other Supplied System	EA	1.0	16,000.00	16,000.00
	Sub Total (Erection Portion) (in	Rs.)	l L		1,29,87,925.50
Civil Po	oution				
	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench				,
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	4984		
1.1.a	Earth work excavation of <b>soil</b>	Cum	4186.56	700.00	29,30,592.00
1.1.b	Earth work excavation of hard rock	Cum	1794.24	1,720.00	30,86,092.80
1.2	Back filling with excavated soil outside and above the trench	Cum	5980.8	202.00	12,08,121.60
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	2492	2,643.67	65,88,027.21
2	Civil works for Prefabricated RCC foundation with supply of all materials				
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	1	23,145.30	23,145.30
3	Supply of GI Fencing with Gate around each <b>RMU</b>	sqmtr	20	3,600.00	72,000.00
4	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.	Set	2	3,700.00	7,400.00
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	48	1,463.40	70,243.20
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	200	1,012.00	2,02,400.00
	Sub Total (Civil Portion) (in R	s.)			1,41,88,022.11
Α	Sub Total (Supply Portion)				3,57,11,706.44
В	Stock, Storage & Insurance @ 3 % of A				10,71,351.19
С	Sub Total (A+B)				3,67,83,057.63
D	Contingency @ 3 % of C				11,03,491.73
E	Tools & Plants Charges @ 2% of C (considered for earthing iten	ns)			26.51
F	Transportation @ 7.5% of C				27,58,729.32
G	Erection Charges @ 10% of earthing items				132.56

	Annexure-2					
	BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU					
Н	Total (C+D+E+F+G)	4,06,45,437.76				
I	Sub Total (Erection Portion + Civil Portion)	2,71,75,947.61				
J	Total Cost (H+I)	6,78,21,385.37				
L	Total Estimated Capital Cost i.e. (J+K)	6,78,21,385.37				
М	GST @ 18% of L	1,22,07,849.37				
M1	CESS @ 1% of L	67,82,138.54				
N	Grand Total (L+M)	8,68,11,373.27				
0	Inspection Fee of UG Line (HT) - Rs. 3000/ km.	3,000.00				
Р	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km	7,500.00				
Q	Inspection Fee of RMU - Rs. 1500/ RMU	1,500.00				
R	Inspection Fee of Drawing Checking and Approval	750.00				
S	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)	8,68,24,123.27				

#### Annexure-2 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP No. of 33 KV DP required Without Isolator (Ref. Drawing No.- TPCODL-HVD-0004) MATERIALS FOR 33 KV DP Without Isolator SI. Total Total Description of Materials Unit Rate Amount No. Quantity WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) 34.322.00 36 12.35.592.00 No Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =( KG 76.00 1118.52 85,007.52 2x9 56x3 25) Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280) KG 97.50 71.3664 6 958 22 3 Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's channel KG 76.00 1259.496 95,721.70 50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = (4\*4.5\*3.432) KG 76.00 1111.968 84.509.57 5 Danger Plate, 2 no's. No 104.00 36 3,744.00 6 10.8324 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510) KG 97.50 1.056.16 7 8 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) Pair 162.50 36 5,850.00 9 H.T. Stay set (Complete ) Set 1.365.00 36 49.140.00 10 H.T. Stay Insulator Type-C (2 No's.) No. 65.00 72 4.680.00 11 7/8 SWG Stay Wire 15kg /stay K.g. 97.50 540 52,650.00 Gi Pipe Earthing 40mm. 3 Mtr. Long No 1,365.00 18 24,570.00 12 20,709.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 5x2.36 KG 97.50 212.4 13 14 GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 108 11,232.00 15 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510) KG 97.50 43.3296 4.224.64 624.00 33,696.00 16 33KV pin insulator polymer No 54 17 H W fitting(B&S) 90KN,4 Bolt 108 70,200.00 No. 650.00 18 Disc insulator (B&S) 90 KN polymer No 1.495.00 108 1.61.460.00 19 PG Clamp for 232 sq.mm AAA conductor NO 1,495.00 108 1,61,460.00 20 GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator) K.g. 101.40 220.698 22,378.78 21 Black Paint Ltr 286.00 18 5.148.00 22 Yellow Colour Paint for Background Ltr 216.00 7,776.00 36 Total Cost of materials 21,47,763.58 Α В Stock, Storage & Insurance i.e 3% of A 64,432.91 С Sub Total (A+B) 22,12,196.49 Contigency @ 3% of C 66,365.89 D Е Tools & Plants @ 2% of C 41,424.00 F Transportation @ 7.5% of C 1 65 914 74 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 63,632.99 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/Gl Pipe/PSC pole) 79 854 00 Н Erection Charges @ 20% of PSC pole- Not to be used for 33kv ı J Sum of (C to I) 26,29,388.11 Civil & Services SI. Total Total Unit Rate Description of Materials No. Quantity Amount Fixing of 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, including excvation, supply of 0.5Cum cement 2.250.00 81.000.00 36 No. concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) 2 Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mti 6,500.00 19.8 1,28,700.00 3 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mti 6,500.00 4.05 26.325.00 Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth 3.700.00 66,600,00 4 18 No. resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe **Total Civil & Services** 3,02,625.00 Κ Total (J+K) 29,32,013.11 L Sub Total (L+M) Ν 29.32.013.11 0 Total GST @ 18% of (N) 5,27,762.36 01 Total CESS @ 1% of (N) 29,320.13 Р Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 34,89,095.60 No. of 33 KV DP required With Isolator (Ref. Drawing No.- TPCODL-TCE-0001) MATERIALS FOR 33 KV DP With Isolator SI. Total Total Description of Materials Unit Unit Rate Quantity No. Amount WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) 34,322.00 1,37,288.00

	Annexure-2				
	33kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Points	and Cut	-Points & 13	Mtr WPB Po	le for DP
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 2x9.56x4.3)	KG	76.00	164.432	12,496.83
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280) Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel required	KG KG	97.50 76.00	7.9296 61.404	773.14 4,666.70
5	=(1x7.14x4.3) Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required	KG	76.00	122.808	9,333.41
6	=(2x7.14x4.3)  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	76.00	245.616	18,666.82
7	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	76.00	177.372	13,480.27
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	76.00	11.424	868.22
9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	76.00	3.492	265.39
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	76.00	3.06	232.56
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	76.00	19.12	1,453.12
12	Danger Plate, 2 no's.  Pools Clara for danger Plate 35V2 mm. flet 0 50Vs/Mtr. Flet of 0 540mtr length 2 note = (2x0 50x0 540)	No.	104.00	4 2026	416.00
13	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG Pair	97.50 162.50	1.2036	117.35
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) H.T. Stay set (Complete )	Set	1.365.00	4	650.00 5,460.00
16	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	8	520.00
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	60	5,850.00
18 19	Gi Pipe Earthing 40mm. 3 Mtr. Long 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	No. KG	1,365.00 97.50	113.28	5,460.00 11,044.80
20	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	12	1,248.00
21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50	4.8144	469.40
22	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	6	80,730.00
23	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with PI(Polymer)  33KV pin insulator polymer	Set No.	66,000.00 624.00	2 6	1,32,000.00 3,744.00
25	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	12	7,800.00
26	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	12	17,940.00
27	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	12	17,940.00
28	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	101.40	44.3	4,492.02
29 30	Black Paint Yellow Colour Paint for Background	Ltr Ltr	286.00 216.00	2	572.00 864.00
Α	Tollow Golden Family for Background	<u> </u>	Total Cost of		4,96,842.04
В	Stoc	k. Storac	je & Insurance		14,905.26
С		, ,		Γotal (A+B)	5,11,747.30
D				@ 3% of C	15,352.42
E		-	Tools & Plants		9,865.38
F			ansportation (		38,381.05
G	Erection Charges (			_	7,070.33
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F				35,186.25
···	Erection Charges @ 20% of		· ·		-
J				n of (C to I)	6,17,602.73
	<u>Civil &amp; Services</u>				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	4	9,000.00
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	2.2	14,300.00
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.45	2,925.00
4	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.	3,700.00	4	14,800.00
K			Total Civil	& Services	41,025.00
L				Total (J+K)	6,58,627.73
N				Total (L+M)	6,58,627.73
0			Total GST @	· , ,	1,18,552.99
01			Total CESS (	. ,	6,586.28
Р	Gross Total Material +Services (N+C	)+U1) fo	r 33 KV DP W	ith isolator	7,83,766.99
	ı		1		1

#### Annexure-2 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP No. of 33 KV Cut Point with 180 Degree Angle 12 (Ref. Drawing No.-) MATERIALS FOR 33 KV Cut Point with 180 Degree Angle SI. Total Total Description of Materials Unit Rate No. Quantity Amount 13 Mtr. Long H-Pole(GI) No 56.735.71 12 6,80,828.57 1 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of Channel = 2 76.00 390.048 29.643.65 K.g. (2x 9.56x1.7) 63.4368 6,185.09 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280) 97.50 3 K.g. Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 No's of 70.20864 K.g. 76.00 5,335.86 Channel = (2x 9.56x0.306) 5 Danger Plate, 1 no's No 104.00 12 1.248.00 97.50 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) KG 3.6108 352.05 6 104.00 3,744.00 GI barbed wire anticlimbing device 3 Kg. Per support Kg 36 8 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) KG 97.50 14.4432 1.408.21 33KV pin insulator polymer 22,464.00 No 624.00 36 9 10 H W fitting(B&S)90KN,4 Bolt 72 No 650.00 46.800.00 11 Disc insulator (B&S)90 KN polymer No. 1.495.00 72 1.07.640.00 12 Earthing of Support (Coil Type) FΑ 215 80 12 2.589.60 13 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing K.g. 97.50 3.144 306.54 PG Clamp for 232 sq.mm AAA conductor NO 1,495.00 72 1,07,640.00 K.g. 15 GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point) 101.40 58.548 5,936.77 16 Black Paint 286.00 3,432.00 17 Yellow Colour Paint for Background 5,184.00 Ltr 216.00 24 Α **Total Cost of materials** 10,30,738.34 В Stock, Storage & Insurance i.e 3% of A 30,922.15 С Sub Total (A+B) 10,61,660.49 D Contigency @ 3% of C 31,849.81 Tools & Plants @ 2% of C Ε 21,233.21 Transportation @ 7.5% of C F 79,624.54 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 35.062.67 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) Н 36.040.71 Erection Charges @ 20% of PSC pole- Not to be used for 33kv 1 Sum of (C to I) J 12,65,471.42 Civil & Services SI. Total Total Description of Materials Unit Unit Rate Quantity No. Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr 6.500.00 42 900 00 1 Cu.mtr 66 2 8.775.00 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 1.35 **Total Civil & Services** 51,675.00 Κ Total (J+K) 13,17,146.42 L Ν Sub Total (L+M) 13,17,146.42 0 Total GST @ 18% of (N) 2,37,086.36 01 Total CESS @ 1% of (N) 13.171.46 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle Р 15,67,404.24 No. of 33 KV Cut Point with 90 Degree Angle 8 (Ref. Drawing No.-) MATERIALS FOR 33 KV Cut Point with 90 Degree Angle SI. Total Total Description of Materials Unit Rate No. Quantity Amount 13 Mtr. Long H-Pole(GI) No 56.735.71 4.53.885.71 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel 2 K.g. 76.00 520.064 39,524.86 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280) 97.50 84.5824 8.246.78 K.g. Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of 4 K.g. 76.00 93.61152 7.114.48 Channel = (4x 9.56x0.306)104.00 5 Danger Plate, 1 no's No. 832.00 6 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) KG 97.50 2.4072 234.70 104.00 2,496.00 GI barbed wire anticlimbing device 3 Kg. Per support 7 Kg 24 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) KG 97.50 9.6288 938.81 33KV pin insulator polymer (4 No's each 90 Deg. Cut point) 624.00 19,968.00 No. 32 10 H W fitting(B&S)90KN,4 Bolt No 650.00 48 31,200.00 Disc insulator (B&S)90 KN polymer No. 1,495.00 48 71,760.00 No. 8 Earthing of Support ( Coil Type ) 215.80 1,726.40 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing K.g. 97.50 2.096 204.36 14 PG Clamp for 232 sq.mm AAA conductor NO. 1,495.00 48 71,760.00

	Annexure-2				
	33kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Points	and Cut-	-Points & 13	Mtr WPB Po	le for DP
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	8	1,300.0
	H.T. Stay set (Complete )	Set	1,365.00	8	10,920.0
	H.T. Stay Insulator Type-C (2 No's.)  7/8 SWG Stay Wire 15kg /stay	No. K.g.	65.00 97.50	8 120	520.0 11.700.0
19	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point)	K.g.	101.40	90.48	9,174.6
20	Black Paint	Ltr	286.00	8	2,288.0
21	Yellow Colour Paint for Background	Ltr	216.00	16	3,456.0
Α	· · · · · · · · · · · · · · · · · · ·		Total Cost of	f materials	7,49,250.7
В	Stoc	k Storag	e & Insurance	ie 3% of A	22,477.5
c		n, otorag		otal (A+B)	
				· '	7,71,728.3
D				@ 3% of C	23,151.8
Е			Tools & Plants	_	14,931.1
F		Tra	ansportation (	2) 7.5% of C	57,879.6
G	Erection Charges (	@ 5% on	Trf/Breaker/W	/PB/ H-Pole	23,375.1
Н	Erection Charges @ 10% of C (except Trf/Breaker/W	PB/ H-Pc	ole/HT stay se	t/PSC pole)	27,905.2
1	Erection Charges @ 20% of	PSC pole	e- Not to be us	sed for 33ky	,
	Enough ondigo @ 20% of	1 00 poi		n of (C to I)	0.40.074.0
	<u>Civil &amp; Services</u>		Sui	11 01 (C 10 1)	9,18,971.2
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	4.40	28,600.0
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.90	5,850.00
3	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	8	18,000.00
K				& Services	52,450.0
L				Total (J+K)	9,71,421.2
N			Sub	Total (L+M)	9,71,421.2
0			Total GST @	18% of (N)	1,74,855.83
01			Total CESS (	@ 1% of (N)	9,714.2
	Gross Total Material +Services (N+O+O1) for 33 KV			` ` '	
D					
Р	` ´	Out i oi	iit with 30 De	gree Angle	11,55,991.32
Р	33 Kv Line Length In KM with 40 Mtr. Span	GutTon	iit with 30 De	10	11,55,991.3
P		Out 1 on	III WILL 30 De		11,55,991.3
	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)	out i on	III WILL SO DE	10	
SI.	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)	Unit	Unit Rate		Total Amount
SI. No.	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI)	<i>Unit</i>	<b>Unit Rate</b> 56,735.71	10  Total Quantity 210	Total Amount 1,19,14,500.0
SI. No.	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each	Unit No No.	Unit Rate 56,735.71 2,340.00	Total Quantity 210 210	Total Amount 1,19,14,500.0 4,91,400.0
SI. No. 1 2 3	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each)	Unit  No No. No.	Unit Rate 56,735.71 2,340.00 195.00	10  Total Quantity  210 210 210	Total Amount 1,19,14,500.0 4,91,400.0 40,950.0
SI. No.	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each	Unit No No.	Unit Rate 56,735.71 2,340.00 195.00 104.00	10  Total Quantity  210 210 210 210	Total Amount 1,19,14,500.0 4,91,400.0 40,950.0 21,840.0
SI. No.	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each)	Unit  No No. No.	Unit Rate 56,735.71 2,340.00 195.00	10  Total Quantity  210 210 210	Total Amount 1,19,14,500.0 4,91,400.0 40,950.0 21,840.0
SI. No. 1 2 3 4	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's.	Unit  No No. No. No. KG	Unit Rate 56,735.71 2,340.00 195.00 104.00	10  Total Quantity  210 210 210 210	Total Amount 1,19,14,500.00 4,91,400.0 40,950.0 21,840.0 6,160.9
SI. No. 1 2 3 4 5	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	Unit  No No. No. No.	Unit Rate 56,735.71 2,340.00 195.00 104.00 97.50	Total Quantity 210 210 210 210 63.19	Total Amount 1,19,14,500.0 4,91,400.0 40,950.0 21,840.0 6,160.9 65,520.0
\$1. No. 1 2 3 4 5 6	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	Unit  No No. No. No. KG KG	56,735.71 2,340.00 195.00 104.00 97.50 104.00 97.50	Total Quantity 210 210 210 210 63.19 630.00 252.76	Total Amount 1,19,14,500.01 4,91,400.01 40,950.0 21,840.01 6,160.9 65,520.00 24,643.7
SI. No. 1 2 3 4 5 6	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer	Unit  No No. No. No. KG	Unit Rate 56,735.71 2,340.00 195.00 104.00 97.50 104.00	Total Quantity 210 210 210 210 63.19 630.00	Total Amount 1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 61,160.93 65,520.00 24,643.7 3,93,120.00
\$I. No. 1 2 3 4 5 6 7	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) 33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	Unit  No No. No. KG KG KG No.	Unit Rate 56,735.71 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02	Total Amount 1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 6,160.90 65,520.00 24,643.7 3,93,120.00 45,318.00 5,364.44
\$I. No.  1 2 3 4 5 6 7 8 8 9 10 111	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	No No. No. No. KG Kg KG No. No. K.g.	Unit Rate 56,735.71 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 97.50 621.08 97.50	70tal Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50	Total Amount  1,19,14,500.00 4,91,400.00 21,840.00 6,160.9: 65,520.00 24,643.7 3,93,120.00 45,318.00 5,364.4: 30,876.3i
\$I. No.  1 2 3 4 5 6 7 8 8 9 10 11 12	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) 33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor	Unit  No No. No. KG KG No. No. KG KG No. No. K.g.	Unit Rate 56,735.71 2,340.00 195.00 104.00 97.50 624.00 215.80 97.50 101.40 203.45	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 210 304.50 30900.00	Total Amount 1,19,14,500.00 40,950.00 21,840.00 6,160.93 65,520.00 24,643.7 3,93,120.00 45,318.00 5,364.44 30,876.33 62,86,605.00
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor	Unit  No No. No. KG KG KG No. KG No. Mo. KG KG KG No. KG KG KG KG	Unit Rate 56,735.71 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 215.80 97.50 101.40 203.45 842.95	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30	Total Amount 1,19,14,500.0 4,91,400.0 40,950.0 21,840.0 6,160.9 65,520.0 24,643.7 3,93,120.0 45,318.0 5,364.4 30,876.3 62,86,605.0 25,288.3
\$I. No.  1 2 3 4 5 6 7 8 9 10 11 12 13 14	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint	Unit  No No. No. No. KG Kg KG No. No. K.g. K.g. K.g. Ltr	97.50 624.00 215.80 97.50 215.80 97.50 215.80 97.50 215.80 97.50 203.45 842.95 286.00	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0	Total Amount 1,19,14,500.00 4,91,400.00 21,840.0 6,160.9 65,520.0 24,643.7 3,93,120.00 45,318.0 5,364.4 30,876.3 62,86,605.0 25,288.3 60,060.0
\$I. No.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor	Unit  No No. No. KG KG KG No. KG No. Mo. KG KG KG No. KG KG KG KG	97.50 624.00 215.80 97.50 0215.80 97.50 215.80 97.50 216.80 216.80	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 6,160.93 65,520.00 24,643.7 3,93,120.00 45,318.00 5,364.44 30,876.3.0 62,86,605.00 25,288.33 60,060.00 90,720.00
\$I. No.  1 2 3 4 5 6 7 7 8 9 10 11 12 13 14 15 A	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background	Unit  No No. No. KG KG No. No. K.g. K.g. Ltr Ltr	97.50 624.00 215.80 97.50 104.00 97.50 104.00 97.50 624.00 215.80 97.50 101.40 23.45 842.95 286.00 216.00 Total Cost of	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 6,160.93 65,520.00 24,643.7 3,93,120.00 45,318.00 5,364.44 30,876.33 62,86,605.00 25,288.33 60,060.00 90,720.00 1,95,02,366.7
\$I. No.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 A B	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background	Unit  No No. No. KG KG No. No. K.g. K.g. Ltr Ltr	97.50 624.00 215.80 97.50 101.40 215.80 97.50 101.40 7.50 0101.40 07.50 0101.40 07.50 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40	Total Quantity  210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 65,520.00 24,643.7 3,93,120.00 45,318.00 5,364.4 30,876.3 62,86,605.00 25,288.3 60,060.00 90,720.00 1,95,02,366.7 5,85,071.0
\$I. No.  1 2 3 4 5 6 7 7 8 9 10 11 12 13 14 15 A	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background	Unit  No No. No. KG KG No. No. K.g. K.g. Ltr Ltr	97.50 624.00 215.80 97.50 101.40 215.80 97.50 101.40 7.50 0101.40 07.50 0101.40 07.50 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40 0101.40	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 65,520.00 24,643.7 3,93,120.00 45,318.00 5,364.4 30,876.3 62,86,605.00 25,288.3 60,060.00 90,720.00 1,95,02,366.7 5,85,071.0
\$I. No.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 A B	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background	Unit  No No. No. KG KG No. No. K.g. K.g. Ltr Ltr	97.50 624.00 215.80 97.50 101.40 203.45 842.95 286.00 216.00 Total Cost c & Insurance	Total Quantity  210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 65,520.00 24,643.7 3,93,120.00 45,318.00 5,364.4 30,876.3 62,86,605.00 25,288.3 60,060.00 90,720.00 1,95,02,366.7 5,85,071.00 2,00,87,437.7
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 A B C C	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background	Unit  No No. No. KG KG KG No. No. K.g. K.g. K.g. Ltr Ltr	97.50 624.00 215.80 97.50 101.40 203.45 842.95 286.00 216.00 Total Cost c & Insurance	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials i.e 3% of A otal (A+B) @ 3% of C	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 65,520.00 24,643.7 3,93,120.00 45,318.00 5,364.4 30,876.3 60,060.00 90,720.00 1,95,02,366.7 5,85,071.00 2,00,87,437.7 6,02,623.1
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 A B C D E	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background	Unit  No No. No. KG KG No. No. K.g. K.g. K.g. Mtr. EA Ltr Ltr	Unit Rate  56,735.71 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 215.80 97.50 101.40 203.45 842.95 286.00 216.00 Total Cost c e & Insurance Sub T Contigency Tools & Plants	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials i.e 3% of A Total (A+B) @ 3% of C @ 2% of C	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 65,520.00 24,643.7 3,93,120.00 45,318.00 5,364.4 30,876.33 60,86.05.00 25,288.3 60,060.00 90,720.00 1,95,02,366.7 5,85,071.00 2,00,87,437.7 6,02,623.1: 4,01,748.7
\$I. No.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 A B C D E F	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) 33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background	Unit  No No. No. KG KG No. No. K.g. K.g. Mtr. EA Ltr Ltr	Unit Rate  56,735.71 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 215.80 97.50 215.80 216.00 Total Cost c e & Insurance Sub T Contigency Tools & Plants ansportation @	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials i.e 3% of A Total (A+B) @ 3% of C @ 2% of C @ 2% of C	Total Amount  1,19,14,500.0( 4,91,400.0( 40,950.0( 21,840.0( 6,160.93) 65,520.0( 24,643.7' 3,93,120.0( 45,318.0( 5,364.4' 30,876.3( 60,660.0( 90,720.0( 1,95,02,366.7' 2,00,87,437.7' 6,02,623.1' 4,01,748.7( 15,06,557.8'
\$I. No.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 A B C D E F G	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (Gi) 22Kg each Top bracket 100x50x6mm GI channel (300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) 33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background  Erection Charges (	Unit  No No. No. No. KG Kg KG No. No. K.g. K.g. Ltr Ltr Ltr  Tra  2 5% on	Unit Rate  56,735.71 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 215.80 97.50 101.40 203.45 842.95 286.00 216.00 Total Cost c e & Insurance Sub T Contigency Tools & Plants ansportation @ Trf/Breaker/M	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials i.e 3% of A cotal (A+B) @ 3% of C @ 2% of C @ 2% of C	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 65,520.00 24,643.7 3,93,120.00 45,318.00 5,364.4 30,876.33 60,86,05.00 25,288.3 60,060.00 90,720.00 1,95,02,366.7 5,85,071.00 2,00,87,437.7 6,02,623.1: 4,01,748.7 15,06,557.8 6,13,596.7
\$I. No.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 A B C D E F	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel (300mm each) Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) 33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut, Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background  Erection Charges @ 10% of C (except Trf/Breaker/W	Unit  No No. No. KG KG No. No. K.g. K.g. Mtr. EA Ltr Ltr Ltr  Tr: @ 5% on PB/ H-Pc	Unit Rate  56,735.71 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 215.80 97.50 101.40 203.45 842.95 286.00 216.00 Total Cost c e & Insurance Sub T Contigency Fools & Plants ansportation ( Trf/Breaker/M ole/HT stay se	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials i.e 3% of A fotal (A+B) @ 3% of C @ 2% of C @ 2% of C @ 7.5% of C (PB/ H-Pole)	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 65,520.00 24,643.7 3,93,120.00 45,318.00 5,364.4 30,876.33 60,86,05.00 25,288.3 60,060.00 90,720.00 1,95,02,366.7 5,85,071.00 2,00,87,437.7 6,02,623.1: 4,01,748.7 15,06,557.8 6,13,596.7
\$I. No.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 A B C D E F G	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (Gi) 22Kg each Top bracket 100x50x6mm GI channel (300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) 33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background  Erection Charges (	Unit  No No. No. KG KG No. No. K.g. K.g. Mtr. EA Ltr Ltr Ltr  Tr: @ 5% on PB/ H-Pc	Unit Rate  56,735.71 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 215.80 97.50 101.40 203.45 842.95 286.00 216.00 Total Cost c e & Insurance Sub T Contigency Fools & Plants ansportation ( Trf/Breaker/M	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials i.e 3% of A fotal (A+B) @ 3% of C @ 2% of C @ 2% of C @ 7.5% of C (PB/ H-Pole)	Total Amount  1,19,14,500.0( 4,91,400.0( 40,950.0( 21,840.0( 6,160.93) 65,520.0( 24,643.7' 3,93,120.0( 45,318.0( 5,364.4' 30,876.3( 60,060.0( 90,720.0( 1,95,02,366.7' 2,00,87,437.7' 6,02,623.1' 4,01,748.7( 15,06,557.8' 6,13,596.7'
\$1. No.  1 2 3 4 5 6 7 8 9 10 11 11 12 13 14 15 A B C D E F G H	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel (300mm each) Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) 33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut, Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background  Erection Charges @ 10% of C (except Trf/Breaker/W	Unit  No No. No. KG KG No. No. K.g. K.g. Mtr. EA Ltr Ltr Ltr  Tr: @ 5% on PB/ H-Pc	Unit Rate  56,735.71 2,340.00 195.00 104.00 97.50 624.00 215.80 97.50 215.80 97.50 216.00 Total Cost of the Cost o	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials i.e 3% of A fotal (A+B) @ 3% of C @ 2% of C @ 2% of C @ 7.5% of C (PB/ H-Pole)	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 6,160.93 65,520.00 24,643.7 3,93,120.00 45,318.00 25,288.33 60,060.00 90,720.00 1,95,02,366.77 6,02,623.13 4,01,748.70 15,06,557.83 6,13,596.73 7,81,550.23
\$1. No.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 A B C D E F G H I	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel (300mm each) Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) 33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut, Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background  Erection Charges @ 10% of C (except Trf/Breaker/W	Unit  No No. No. KG KG No. No. K.g. K.g. Mtr. EA Ltr Ltr Ltr  Tr: @ 5% on PB/ H-Pc	Unit Rate  56,735.71 2,340.00 195.00 104.00 97.50 624.00 215.80 97.50 215.80 97.50 216.00 Total Cost of the Cost o	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 if materials i.e 3% of A total (A+B) @ 3% of C @ 2% of C @ 7.5% of C PB/ H-Pole t/PSC pole) sed for 33ky	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 6,160.93 65,520.00 24,643.7 3,93,120.00 45,318.00 25,288.33 60,060.00 90,720.00 1,95,02,366.77 6,02,623.13 4,01,748.70 15,06,557.83 6,13,596.73 7,81,550.23
\$1. No.  1 2 3 4 5 6 7 8 9 10 11 11 12 13 14 15 A B C C D E F G H I J	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) 33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut, Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background  Erection Charges @ 10% of C (except Trt/Breaker/W Erection Charges @ 20% of	Unit  No No. No. KG KG No. No. K.g. K.g. Mtr. EA Ltr Ltr Ltr  Tr: @ 5% on PB/ H-Pc	Unit Rate  56,735.71 2,340.00 195.00 104.00 97.50 624.00 215.80 97.50 215.80 97.50 216.00 Total Cost of the Cost o	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials i.e 3% of A cotal (A+B) @ 3% of C @ 2% of C @ 7.5% of C //PB/H-Pole t/PSC pole) sed for 33kv n of (C to I)	Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 6,160.93 65,520.00 24,643.7' 3,93,120.00 45,318.00 5,364.44 30,876.30 62,88.605.00 25,288.33 60,060.00 90,720.00 1,95,02,366.77 6,02,623.13 4,01,748.76 15,06,557.83 6,13,596.75 7,81,550.26
\$1. No.  1 2 3 4 5 6 7 8 9 10 112 13 14 15 A B C D E F G H I	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) 33KV pin insulator polymer Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut, Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background  Erection Charges @ 10% of C (except Trt/Breaker/W Erection Charges @ 20% of	Unit  No No. No. KG KG No. No. K.g. K.g. Mtr. EA Ltr Ltr Ltr  Tr: @ 5% on PB/ H-Pc	Unit Rate  56,735.71 2,340.00 195.00 104.00 97.50 624.00 215.80 97.50 215.80 97.50 216.00 Total Cost of the Cost o	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 if materials i.e 3% of A otal (A+B) @ 3% of C @ 2% of C @ 7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv in of (C to I)	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 6,160.93 65,520.00 24,643.7' 3,93,120.00 45,318.00 25,288.36 60,060.00 90,720.00 1,95,02,366.77 6,02,623.13 4,01,748.76 15,06,557.88 6,13,596.76 7,81,550.26 23,993,514.52
\$I. No.  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 A B C D E F G H I J	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)  MATERIALS FOR 33 KV Pin Points  Description of Materials  13 Mtr. Long H-Pole(GI) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 300mm each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer Earthing of Support (Coil Type)  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut, Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor Black Paint Yellow Colour Paint for Background  Erection Charges @ 10% of C (except Trf/Breaker/W Erection Charges @ 20% of  Civil & Services	Unit  No No. No. KG KG No. No. K.g. K.g. Mtr. EA Ltr  Tr. 20 5% on PB/ H-Pc PSC pole	Unit Rate  56,735.71 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 215.80 97.50 101.40 203.45 842.95 286.00 216.00 Total Cost c e & Insurance Sub T Contigency Tools & Plants ansportation ( Trf/Breaker/M ole/HT stay se	Total Quantity 210 210 210 210 63.19 630.00 252.76 630 210 55.02 304.50 30900.00 30 210.0 420.0 of materials i.e 3% of A cotal (A+B) @ 3% of C @ 2% of C @ 7.5% of C //PB/H-Pole t/PSC pole) sed for 33kv n of (C to I)	Total Amount  1,19,14,500.00 4,91,400.00 40,950.00 21,840.00 6,160.93 65,520.00 24,643.7' 3,93,120.00 45,318.00 5,364.44 30,876.30 62,886,605.00 90,720.00 1,95,02,366.77 6,02,623.13 4,01,748.76 15,06,557.83 6,13,596.75 7,81,550.28

	Annexure-2					
33kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole						
2	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr	1,53,562.50				
к	Total Civil & Services	9,04,312.50				
L	Total (J+K)	2,48,97,827.02				
N	Sub Total (L+M)	2,48,97,827.02				
0	Total GST @ 18% of (N)	44,81,608.86				
01	Total CESS @ 1% of (N)	2,48,978.27				
Р	Gross Total Material +Services (N+O+O1) for 33 KV Pin Points	2,96,28,414.15				
	Gross Total Summary					
1	Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator	34,89,095.60				
2	Gross Total Material +Services (N+O+O1) for 33 KV DP With Isolator	7,83,766.99				
3 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle						
4 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle						
5 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points						
Q	Gross Total Material +Services	3,66,24,672.30				
R	Inspection Fee of Over Head Line (HT) - Rs.1500 up to 1 km.	1,500.00				
S	Inspection Fee of Over Head Line (HT) - Rs. 750/ Additional Km	4,500.00				
Т	Inspection Fee of Drawing Checking and Approval	750.00				
U	Gross Total Material, Services and Inspection Fees (Q+R+S+T)	3,66,31,422.30				

## Standard BoQ and Estimate for 11kV 3C, 400sqmm UG Cable along with 11kV RMU

# **Supply Portion**

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Supply of materials for 11kV, 3Core, 400sqmm, XLPE insulation armoured UG cable with accessories				. ,
а	Length of 11kV 3C, 400sqmm cable (open trench)	Mtr.	2500		
b	Length of 11kV 3C, 400sqmm cable (HDD)	Mtr.	500		
1.1	Supply of 11kV, 3Core, 400sqmm, XLPE insulation armoured UG cable (SC rating of cable in kA- 37.7kA and SC rating of Armour in kA- 15kA)	Mtr.	3000.00	1,950.00	58,50,000.00
1.2	Supply of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, Aluminium UG cable for 3Core (Set)	Set	9	32,912.10	2,96,208.90
1.3	Supply of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, HT UG cable for 3Core (Set)	Set	9	12,456.60	1,12,109.40
1.4	Supply of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 11kV, 3Core, 400 sqmm, HT UG cable for 3Core (Set)	Set	6	18,075.20	1,08,451.20
1.5	Supply of <b>HDPE</b> PE 80-PN8 pipe of <b>160mm</b> diameter (for 400sqmm HT cable laying)	Mtr.	2452.00	775.40	19,01,280.80
2	Supply of 11kV RMU				
	No. of 11kV 3Way RMU (LLV)	nos.			
b	No. of 11kV 4Way RMU (LLVV)	nos.	3		
С	No. of 11kV 3Way RMU (LLV+M)	nos.			
d	No. of 11kV 4Way RMU (LLVV+M)	nos.			
2.1	Supply of 11kV RMU 3 Way, 2 Iso & 1 Brk 630A (LLV)	Nos.	0	4,99,340.00	-
2.2	Supply of 11kV RMU 4 Way, 2 Iso & 2 Brk 630A (LLVV)	Nos.	3	6,97,696.00	20,93,088.00
2.3	Supply of RMU 3W 11kV 630A with metering unit (LLV+M)(CT Ratio to be mentioned)	Nos.	0	5,99,901.00	-
2.4	Supply of RMU 4W 11kV 630A with metering unit (LLVV+M)(CT Ratio to be mentioned)	Nos.	0	8,25,045.00	-
3	Earthing				
3.1	Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for equipment, structure etc.)	kg	39.60	97.50	3,861.00
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	6	1,365.00	8,190.00
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	3		
4.1	Pre-Wired FRTU Panel with FRTU	No.	3	1,21,744.00	3,65,232.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	3	1,00,000.00	3,00,000.00
4.3	Networking Accessories	No.	3	72.00	216.00
4.4	CMR with Mounting Base for Digital Inputs	Nos.	96	650.00	62,400.00
4.5	Interposing Relay for Digital Output	Nos.	48	467.94	22,461.12
4.6	Battery Charger	Nos.	3	15,385.00	46,155.00
4.7	Battery	Nos.	3	8,333.00	24,999.00
4.8	4G Modem cum Router	Nos.	3	18,500.00	55,500.00
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications Instrumentation Cable	Mtr.	120	204.87	24,584.40
4.10	7 C X 1.5 mm2, Armored for Control Output	Mtr.	120	305.58	36,669.60

	Annexure-2				
	Standard BoQ and Estimate for 11kV 3C, 400sqmm UC	G Cable	along with	11kV RMU	
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable 5 P X 1.0 mm2, Armored for Analog Input	Mtr.	120	275.23	33,027.60
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	60	165.25	9,915.00
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	30	150.00	4,500.00
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	60.0	148.43	8,905.80
4.15	Armored CAT6 SFTP Cable	Mtr.	60	45.87	2,752.20
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	60	89.45	5,367.00
4.17	Multi Function Meter	Nos.	6	18,651.00	1,11,906.00
	Sub Total (Supply Portion) (in Rs.)				1,14,87,780.02
Erection	on Portion				
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Laying, Commissioning, Testing of 11kV, 3core, 400sqmm, aluminium, XLPE insulation armoured (extruded type) UG cable by open trench method and HDD method			( 110.)	(iii ito.)
1.1	Laying, Commissioning, Testing of 11kV, 3core, 400sqmm, aluminium, XLPE insulation armoured (extruded type) UG cable by <b>open trench method</b> .	Mtr.	2500.00	94.50	2,36,250.00
1.2	Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	Set	9	2,400.00	21,600.00
1.3	Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	Set	9	1,900.80	17,107.20
1.4	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 11kV, 3Core, 400sqmm, aluminium UG cable kits for 3core (set)	Set	6	1,900.80	11,404.80
1.5	Installation, Laying, Commissioning & Testing of 11kV, 3Core, 2Runs, 400sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (160mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr.	500	2,800.00	14,00,000.00
1.6	Laying of <b>160mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open trench.	Mtr.	2452.00	300.00	7,35,600.00
2	Erection, Commissioning, Wiring and Testing of 11kV RMU				
2.1	Erection of 11kV RMU 3 Way, 2 Iso & 1 Brk 630A (LLV)	Nos.	0	9,639.00	-
2.2	Erection of 11kV RMU 4 Way, 2 Iso & 2 Brk 630A (LLVV)	Nos.	3	9,639.00	28,917.00
2.3	Erection of RMU 3W 11kV 630A with metering unit (LLV+M)	Nos.	0	15,000.00	-
2.4	Erection of RMU 4W 11kV 630A with metering unit (LLVV+M)	Nos.	0	15,000.00	-
3	FRTU and OFC for RMU SCADA Automation				
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	3.0	16,000.00	48,000.00
	Sub Total (Erection Portion) (in Rs.)				24,98,879.00
Civil P	 ortion				
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench				

	Annexure-2				
	Standard BoQ and Estimate for 11kV 3C, 400sqmm U0	3 Cable	along with	11kV RMU	
1.1	Earth work excavation of soil (1mtr. width X 1mtr. depth) Route Length	Mtr	1226		
1.1.a	Earth work excavation of <b>soil</b>	Cum	858.2	700.00	6,00,740.00
1.1.b	Earth work excavation of <b>hard rock</b>	Cum	367.8	1,720.00	6,32,616.00
1.2	Back filling with excavated soil outside and above the trench	Cum	1226	202.00	2,47,652.00
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	613	2,643.67	16,20,570.10
2	Civil works for Prefabricated RCC foundation with supply of all materials				
2.1	Prefabricated RCC foundation of 11kV RMU	Nos.	3	23,145.30	69,435.90
3	Supply of GI Fencing with Gate around each <b>RMU</b>	sqmtr	60	3,600.00	2,16,000.00
4	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.	Set	6	3,700.00	22,200.00
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	48	1,463.40	70,243.20
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	100	1,012.00	1,01,200.00
	Sub Total (Civil Portion) (in Rs.)				35,80,657.20
	Sub Total (Supply Portion)				1,14,87,780.02
В	Stock, Storage & Insurance @ 3 % of A				3,44,633.40
С	Sub Total (A+B)				1,18,32,413.42
D	Contingency @ 3 % of C				3,54,972.40
E	Tools & Plants Charges @ 2% of C (considered for earthing items)				79.54
F	Transportation @ 7.5% of C				8,87,431.01
G	Erection Charges @ 10% of earthing items				397.68
Н	Total (C+D+E+F+G)				1,30,75,294.05
I	Sub Total (Erection Portion + Civil Portion)				60,79,536.20
J	Total Cost (H+I)				1,91,54,830.25
L	Total Estimated Capital Cost i.e. (J+K)				1,91,54,830.25
М	GST @ 18% of L				34,47,869.44
N	Grand Total (L+M)				2,26,02,699.69
0	Inspection Fee of UG Line (HT) - Rs. 375 upto 1 KM.				375.00
Р	Inspection Fee of UG Line (HT) - Rs. 225/ Additional Km				112.50
Q	Inspection Fee of RMU - Rs. 1500/ RMU				4,500.00
R	Inspection Fee of Drawing Checking and Approval				750.00
S	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)				2,26,08,437.19

	Annexure-2				
	11kV Line Length with 40 Mtr. Span using 100 SQ.MMAAA Co	nductor			
	No. of DP required Without AB switch (Ref. Drawing No TPCODL-MVD-0012)			4	
	MATERIALS OF DP Without AB Switch				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)	No	29,661.00	8	2,37,288.00
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 2.3 mtr., 2 no's channel required =( 2x9.56x2.3)	KG	76.00	175.904	13,368.70
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	15.8592	1,546.27
4	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.66 Mtr., 4 no's channel required =( 7.14x1.66x4)	KG	76.00	189.6384	14,412.52
5	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 2.671 mtr., 4 nos angle required =	KG	76.00	192.312	14.615.71
6	(4.5x2.671x4)  Danger Plate, 2 no's.	No.	104.00	8	832.00
	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	2.4072	234.70
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.551 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	8	1,300.00
9	H.T. Stay set (Complete )	Set	1,365.00	8	10,920.00
10 11	H.T. Stay Insulator Type-C 7/10 SWG Stay Wire 15kg /stay	No.	65.00 97.50	8 120	520.00 11,700.00
	Gi Pipe Earthing 40mm. 3 Mtr. Long	K.g. No.	1,365.00	4	5,460.00
13	50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 5x2.36	KG	97.50	47.2	4,602.00
14	GI barbed wire anticlimbing device 3 Kg. Per support, 2 no's qty. required =(2x3kg)	Kg	104.00	24	2,496.00
15	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's =	KG	97.50	9.6288	938.81
16	(8x0.59x0.510) 11 KV pin insulator polymer	No.	260.00	12	3,120.00
17	H W fitting(B&S) 70KN, 3Bolt	No.	455.00	24	10,920.00
	Disc insulator (B&S) 70 KN polymer PG Clamp for 100 sq.mm AAA conductor	No.	1,495.00 754.00	24 24	35,880.00 18,096.00
	GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without AB Switch)	K.g.	101.40	49.044	4,973.06
	Black Paint	Ltr	286.00	4	1,144.00
22 <b>A</b>	Yellow Colour Paint for Background	Ltr	216.00 Total Cost	8 of materials	1,728.00 <b>3,96,095.78</b>
В	Sto	ck, Stora	ge & Insuranc	e i.e 3% of A	11,882.87
<b>C</b>				Total (A+B) y @ 3% of C	<b>4,07,978.65</b> 12,239.36
E			Tools & Plant		7,543.63
F	5 " 0		ransportation		30,598.40
G H	Erection Charges  Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-				12,220.33 13,277.50
<u> </u>	Erection Charges @ 20% o				,
H	Eroston Charges & 2070	r PSC pc			-
j		r PSC pc		m of (C to I)	4,83,857.88
SI.	<u>Civil &amp; Services</u>		Su	m of (C to I)	Total
	<u>Civil &amp; Services</u> Description of Materials	Unit		m of (C to I)	
SI.	<u>Civil &amp; Services</u>	Unit	Su	m of (C to I)	Total Amount
SI. No.	Civil & Services  Description of Materials  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	Unit	Su Unit Rate	Total Quantity	Total Amount 18,000.00
SI. No.	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.	Unit No.	Unit Rate 2,250.00	Total Quantity	Total
\$I. No. 1 2 3	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr	Unit No.	Su  Unit Rate  2,250.00  6,500.00  6,500.00  3,700.00	Total Quantity  8  3.60  0.90	Total Amount 18,000.00 23,400.00 5,850.00
\$I. No. 1 2 3 4	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	No. Cu.mtr	Su  Unit Rate  2,250.00  6,500.00  6,500.00  3,700.00	Total Quantity  8  3.60  0.90  4	Total Amount 18,000.00 23,400.00 5,850.00 14,800.00
\$I. No. 1 2 3	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	No. Cu.mtr	2,250.00 6,500.00 6,500.00 7 Total Civi	Total Quantity  8  3.60  0.90	Total Amount 18,000.00 23,400.00
\$I. No. 1 2 3 4 K L N O	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	No. Cu.mtr	## Company of Company	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) Total (L+M)  18% of (N)	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  62,050.00  5,45,907.88  5,45,907.88  98,263.42
SI. No. 1 2 3 4 K L N	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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 Gl Pipe 40mm/50mm including welding of Gl flat around pipe.	Vnit  No.  Cu.mtr  Cu.mtr  No.	## Company of the Com	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) Total (J+K) Total (J+K) 1 Total (J+M) 1 18% of (N)  @ 18% of (N)	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  62,050.00  5,45,907.88  5,45,907.88  98,263.42  5,459.08
\$1. No. 1  2  3  4  K L N O O1	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Vnit  No.  Cu.mtr  Cu.mtr  No.	## Company of the Com	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) Total (J+K) Total (J+K) 1 Total (J+M) 1 18% of (N)  @ 18% of (N)	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  62,050.00  5,45,907.88  5,45,907.88  98,263.42  5,459.08
\$1. No. 1  2  3  4  K L N O O1	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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 Gl Pipe 40mm/50mm including welding of Gl flat around pipe.	Vnit  No.  Cu.mtr  Cu.mtr  No.	## Company of the Com	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) Total (J+K) Total (J+K) 1 Total (J+M) 1 18% of (N)  @ 18% of (N)	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  62,050.00  5,45,907.88  5,45,907.88  98,263.42  5,459.08
SI. No.  1  2  3  4  K L N O O O 1	Civil & Services  Description of Materials  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 exevation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmx500mmx1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Gross Total Material +Services (N: No. of DP required With AB Switch	Vnit  No.  Cu.mtr  Cu.mtr  No.	## Company of the Com	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) Total (L+M) ② 18% of (N) @ 1% of (N) tt AB Switch  6	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  62,050.00 5,45,907.88 5,45,907.88 98,263.42 5,459.08 6,49,630.37
\$1. No. 1  2  3  4  K L N O O1	Civil & Services  Description of Materials  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 exevation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmx500mmx1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Gross Total Material +Services (No. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)	Vnit  No.  Cu.mtr  Cu.mtr  No.	## Company of the Com	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) Total (L+M)  18% of (N) (@ 1% of (N) tt AB Switch	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  62,050.00  5,45,907.88  5,45,907.88  98,263.42  5,459.08
SI. No.  1  2  3  4  K L N O O1 P	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Gross Total Material +Services (No. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)	Vnit  No.  Cu.mtr  Cu.mtr  No.	## Company	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) Total (L+M) @ 18% of (N) et AB Switch  6  Total	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  62,050.00  5,45,907.88  5,45,907.88  98,263.42  5,459.08  6,49,630.37
SI. No.  1  2  3  4  K. L. N. O. O.1  P. SI. No.	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Mo. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  MATERIALS OF DP With AB Switch	Unit  No.  Cu.mtr  Cu.mtr  No.	## Company of the Com	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) Total (L+M)  1 18 (C t) (N)  1 18 (C t) (N)	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  5,45,907.88  5,45,907.88  98,263.42  5,459.08  6,49,630.37  Total Amount  3,55,932.00
SI. No.  1  2  3  4  K L N O O1 P	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Mo. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required = (2x9.56x3)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	Unit  No.  Cu.mtr  Cu.mtr  No.	### Company of Company	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) Total (L+M) ② 18% of (N) ② 1% of (N) It AB Switch 6  Total Quantity 12	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  5,45,907.88  5,45,907.88  98,263.42  5,459.08  6,49,630.37  Total Amount  3,55,932.00
SI. No.  1  2  3  4  K  L  N  O  O1  P  SI. No.  1  2	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Mo. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required = (2x9.56x3)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)  AB switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr, each channel length 3 Mtr., 2 no's channel	Unit  No.  Cu.mtr  Cu.mtr  No.  Unit  No.	### Company of Company	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) Total (L+M) ② 18% of (N) @ 1% of (N) tt AB Switch 6  Total Quantity 12 344.16	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  5,45,907.88  5,45,907.88  98,263.42  5,459.08  6,49,630.37  Total Amount  3,55,932.00  26,156.16
SI. No. 1  2  3  4  K. L. N. O. O.1  P. No. 1  2  3	Civil & Services  Description of Materials  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 TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Gross Total Material +Services (N:  No. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required = (2x9.56x3)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)  AB switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr, each channel length 3 Mtr., 2 no's channel required = (7.14x3x2)  AB Switch Side Support Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.35 mtr., 2 no's channel	Vnit  No.  Cu.mtr  Cu.mtr  No.  Vnit  No.	### Company of Company	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) Total (L+M) 18 of (N) 20 18% of (N) 6  Total Quantity 12 344.16 23.7888	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  5,45,907.88  98,263.42  5,459.08  6,49,630.37  Total Amount  3,55,932.00  26,156.16  2,319.41  19,535.04
SI. No.  1  2  3  4  K L N O O 1 P  SI. No. 1 2 3 4	Civil & Services  Description of Materials  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 (500mmx500mmx500mm) using 20mm BHG metal with all labour and material as per TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Gross Total Material +Services (N:  No. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required = (2x9.56x3)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)  AB switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr., each channel length 3 Mtr., 2 no's channel required = (7.14x3x2)  AB Switch Side Support Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.35 mtr., 2 no's channel required = (9.56x2x0.35)  Channel Support for down Pipe 75X40X 4.8mm, 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel	Unit  No.  Cu.mtr  Cu.mtr  No.  Unit  No.	### Company of the Co	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) ① 18% of (N) ② 18% of (N) ③ 18% of (N) It AB Switch 6  Total Quantity 12 344.16 23.7888 257.04	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  5,45,907.88  5,45,907.88  98,263.23  5,459.08  6,49,630.37  Total Amount  3,55,932.00  26,156.16  2,319.41  19,535.04  3,051.55
SI. No. 1  2  3  4  K. L. N. O. O.1  P. SI. No. 1  2  3  4  5	Civil & Services  Description of Materials  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 exevation including exevation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPCODL. Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Mo. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required = (2x9.56x3)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)  AB switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr, each channel length 0.35 mtr., 2 no's channel required = (7.14x3x2)  AB Switch Side Support Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.8 Mtr., 1 no's channel required = (7.14x3x2)  AB Switch Side Support Channel 100X50X6mm, 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel required = (7.14x0.8x1)  Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel	Unit  No.  Cu.mtr  Cu.mtr  No.  Unit  No.  KG  KG  KG	### Company of the Co	Total Quantity  8  3.60 0.90  4  1 & Services Total (J+K) Total (L+M) ② 1% of (N) ③ 1% of (N) t AB Switch 6  Total Quantity 12 344.16 23.7888 257.04 40.152	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  5,45,907.88  98,263.42  5,459.08  6,49,630.37   Total Amount  3,55,932.00  26,156.16  2,319.41  19,535.04  3,051.55  2,604.67
SI. No.  1  2  3  4  K L N O O1 P  SI. No. 1 2 3 4 5 6	Civil & Services  Description of Materials  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 (50mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  Gross Total Material +Services (N-No. of DP required With AB Switch (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  (Ref. Drawing No TPCODL-MVD-0001)  MATERIALS OF DP With AB Switch  (Ref. Drawing No 30.44KG/Mtr.)  Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3 mtr., 2 no's channel required = (2x9.56x3)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)  AB switch Mounting Channel 75X40X4.8mm, 7.14KG/Mtr., each channel length 0.35 mtr., 2 no's channel required = (9.56x2.035)  Channel Support for down Pipe 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no's channel required = (9.56x2.035)	Unit  No.  Cu.mtr  Cu.mtr  No.  Unit  No.  KG  KG  KG  KG	### Company of Company	Total Quantity  8  3.60  0.90  4  I & Services Total (J+K) Total (J+K) Total (J+M) ② 18% of (N) ② 1% of (N) tt AB Switch 6  Total Quantity 12 344.16 23.7888 257.04 40.152 34.272	Total Amount  18,000.00  23,400.00  5,850.00  14,800.00  5,45,907.88  5,45,907.88  98,263.42  5,459.08  6,49,630.37  Total Amount  3,55,932.00  26,156.16  2,319.41  19,535.04  3,051.55

9	Annexure-2				
a	11kV Line Length with 40 Mtr. Span using 100 SQ.MMAAA Co				
	Danger Plate, 2 no's.	No.	104.00	12	1,248.00
10	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	3.6108	352.05
11	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.551 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	12	1,950.00
12 13	H.T. Stay set (Complete ) H.T. Stay Insulator Type-C	Set No.	1,365.00 65.00	12 12	16,380.00 780.00
14	7/10 SWG Stay Wire 15kg /stay	K.g.	97.50	180	17,550.00
15	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	12	16,380.00
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	97.50	290.28	28,302.30
17	GI barbed wire anticlimbing device 3 Kg. Per support, 2 no's qty. required =(2x3kg)	Kg	104.00	36	3,744.00
18	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50	14.4432	1,408.21
19	Lightning Arrester(12KV,10KA) (Station Class,class-2)	EA	4,615.00	18	83,070.00
20	AB Switch (11KV,400A.3pole,50Hz)  11 KV pin insulator polymer	Set No.	15,405.00 260.00	6 18	92,430.00 4,680.00
22	H W fitting(B&S) 70KN, 3Bolt	No.	455.00	36	16,380.00
23	Disc insulator (B&S) 70 KN polymer	No.	1,495.00	36	53,820.00
24	PG Clamp for 100 sq.mm AAA conductor	NO.	754.00	36	27,144.00
25	GI Nut , Bolt & Washer of different sizes (13.718 Kg each DP with AB Switch)	K.g.	101.40	82.308	8,346.03
26	Black Paint	Ltr	286.00	6	1,716.00
27 <b>A</b>	Yellow Colour Paint for Background	Ltr	216.00	of materials	2,592.00 <b>8,55,768.00</b>
B	Sto	ock. Stora	age & Insuranc		25,673.04
c		,		Total (A+B)	8,81,441.04
D			Contigend	cy @ 3% of C	26,443.23
Е				ts @ 2% of C	16,536.20
F			ransportation		66,108.08
G H	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H		@ 5% on Trf/		18,330.50 46,019.99
<del></del>	Erection Charges @ 10 % of C (except 11/bleaker/W1 B/11				46,019.99
j				ım of (C to I)	10,54,879.04
	<u>Civil &amp; Services</u>				
SI.	Description of Materials	Unit	Unit Rate	Total	Total
<b>No.</b> 1	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 excivation including excitation,	No	2 250 00	Quantity 12	Amount 27,000,00
'	supply of 0.5Cum cement concrete foundation 1:2:4 size ( 500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPCODL Drawing & Standard.	No.	2,250.00	12	27,000.00
2	Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr	Cu.mtr	6,500.00	5.40	35,100.00
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	1.35	8,775.00
4	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.	3,700.00	12	44,400.00
K	Taround pipe .	l	Total Civ	il & Services	1,15,275.00
L				Total (J+K)	11,70,154.04
N				Total (L+M)	11,70,154.04
0				@ 18% of (N)	2,10,627.73
01	Gross Total Material +Services		Total CESS	. @ 1% of (NI)I	
7	GIOSS TOTAL MATERIAL TOTAL VICES	(NITOTO			11,701.54
Р		(N+O+0			13,92,483.30
P	No. of Cut Point with 180 Degree Angle (Ref. Drawing No TPCODL-MVD-0004)	(N+O+O			
P				h AB Switch	
SI.	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angl	<u>e</u>	1) for DP Wit	4 Total	13,92,483.30 Total
SI. No.	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle Description of Materials	e Unit	1) for DP Wit	4 Total Quantity	13,92,483.30  Total  Amount
SI.	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long. 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required =(	<u>e</u>	1) for DP Wit	4 Total	13,92,483.30  Total
<i>SI. No.</i> 1	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required =(2x9.56x1.2)	Unit No KG	Unit Rate 29,661.00 76.00	4  Total Quantity 4  91.776	Total Amount 1,18,644.00 6,974.98
\$I. No. 1 2	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required = (2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)	Unit No KG KG	Unit Rate 29,661.00 76.00 97.50	4  Total Quantity 4  91.776 21.1456	Total Amount 1,18,644.00 6,974.98 2,061.70
\$I. No. 1 2 3	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required =( 2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required =(2x9.56x0.306)	e Unit No KG KG KG	Unit Rate 29,661.00 76.00 97.50	4  Total Quantity 4  91.776 21.1456 23.40288	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62
\$I. No. 1 2 3 4 5	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required =(2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required =(2x9.56x0.306)  Danger Plate, 1 no's.	Unit No KG KG KG No.	Unit Rate 29,661.00 76.00 97.50 76.00	Total Quantity 4 91.776 21.1456 23.40288 4	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00
\$I. No. 1 2 3	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required =( 2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required =(2x9.56x0.306)	e Unit No KG KG KG	Unit Rate 29,661.00 76.00 97.50	4  Total Quantity 4  91.776 21.1456 23.40288	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62
\$I. No. 1 2 3 4 5	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required =(2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required =(2x9.56x0.306)  Danger Plate, 1 no's.	Unit No KG KG KG No.	Unit Rate 29,661.00 76.00 97.50 76.00	Total Quantity 4 91.776 21.1456 23.40288 4	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00
\$I. No. 1 2 3 4 5	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required = (2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required = (2x9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	e Unit No KG KG KG KG KG	Unit Rate 29,661.00 76.00 97.50 104.00 97.50	Total Quantity 4 91.776 21.1456 23.40288 4 1.2036	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00
\$I. No. 1 2 3 4 5 6 7	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required = (2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required = (2x9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  11 KV pin insulator polymer	Wnit  No  KG  KG  KG  KG  KG  KG  KG	Unit Rate 29,661.00 76.00 97.50 76.00 104.00 97.50 104.00 97.50	4  Total Quantity 4  91.776 21.1456 23.40288 4 1.2036 12 4.8144 12	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00 117.35 1,248.00 469.40 3,120.00
\$I. No. 1 2 3 4 5 6 7 8 9 10	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required = (2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required = (2x9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  11 KV pin insulator polymer  H W fitting(B&S) 70KN, 3Bolt	E Unit No KG KG No. KG KG No. No. No.	Unit Rate 29,661.00 76.00 97.50 104.00 97.50 104.00 97.50 260.00 455.00	Total Quantity 4 91.776 21.1456 23.40288 4 1.2036 12 4.8144 12 24	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00 117.35 1,248.00 469.40 3,120.00 10,920.00
\$I. No. 1 2 3 4 5 6 7 8 9 10 11	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required =( 2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required =(2x9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  11 KV pin insulator polymer  H W fitting(B&S) 70KN, 3Bolt  Disc insulator (B&S) 70 KN polymer	Wonit  No  KG  KG  KG  No.  KG  KG  No.  KG  KG  No.  KG  KG  No.  No.  No.	Unit Rate 29,661.00 76.00 97.50 104.00 97.50 104.00 97.50 260.00 455.00 1,495.00	Total Quantity 4 91.776 21.1456 23.40288 4 1.2036 12 4.8144 12 24 24	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00 117.35 1,248.00 469.40 3,120.00 10,920.00 35,880.00
\$I. No. 1 2 3 4 5 6 7 8 9 10 11 12	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required = (2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required = (2x9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  11 KV pin insulator polymer  H W fitting(B&S) 70KN, 3Bolt  Disc insulator (B&S) 70 KN polymer  Earthing of Support (Coil Type )	Work  KG  KG  KG  KG  KG  No.  KG  KG  KG  No.  KG  KG  KG  KG  KG  KG  KG  KG  KG  K	Unit Rate 29,661.00 76.00 97.50 104.00 97.50 104.00 97.50 265.00 1,495.00 215.80	4  Total Quantity 4  91.776 21.1456 23.40288 4 1.2036 12 4.8144 12 24 24 4	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00 117.35 1,248.00 469.40 3,120.00 10,920.00 35,880.00 863.20
\$I. No. 1 2 3 4 5 6 7 8 9 10 11 12 13	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required = (2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required = (2x9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  11 KV pin insulator polymer  H W fitting(B&S) 70KN, 3Bolt  Disc insulator (B&S) 70 KN polymer  Earthing of Support (Coil Type)  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	Work KG	Unit Rate 29,661.00 76.00 97.50 76.00 104.00 97.50 260.00 455.00 1,495.00 215.80 97.50	4  Total Quantity 4  91.776 21.1456 23.40288 4 1.2036 12 4.8144 12 24 4 1.048	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00 117.35 1,248.00 469.40 3,120.00 10,920.00 35,880.00 863.20 102.18
\$I. No. 1 2 3 4 5 6 7 8 9 10 11 12	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required = (2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required = (2x9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  11 KV pin insulator polymer  H W fitting(B&S) 70KN, 3Bolt  Disc insulator (B&S) 70 KN polymer  Earthing of Support (Coil Type )	Work  KG  KG  KG  KG  KG  No.  KG  KG  KG  No.  KG  KG  KG  KG  KG  KG  KG  KG  KG  K	Unit Rate 29,661.00 76.00 97.50 104.00 97.50 104.00 97.50 265.00 1,495.00 215.80	4  Total Quantity 4  91.776 21.1456 23.40288 4 1.2036 12 4.8144 12 24 24 4	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00 117.35 1,248.00 469.40 3,120.00 10,920.00 35,880.00 863.20 102.18 18,096.00
\$I. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required = (2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required = (2x9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  11 KV pin insulator polymer  H W fitting(B&S) 70KN, 3Bolt  Disc insulator (B&S) 70 KN polymer  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  PG Clamp for 100 sq.mm AAA conductor	Wnit  No  KG  KG  KG  No.  KG  KG  No.  KG  KG  No.  No.  No.  No.  No.  No.  No.  No	Unit Rate 29,661.00 76.00 97.50 76.00 104.00 97.50 104.00 97.50 104.00 97.50 260.00 455.00 1,495.00 215.80 97.50 754.00	Total Quantity 4 91.776 21.1456 23.40288 4 1.2036 12 4.8144 12 24 24 1.048 24	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00 117.35 1,248.00 469.40 3,120.00 10,920.00 35,880.00 863.20 102.18 18,096.00 1,439.88
\$I. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required =(2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required =(2x9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  11 KV pin insulator polymer  H W fitting(B&S) 70KN, 3Bolt  Disc insulator (B&S) 70 KN polymer  Earthing of Support (Coil Type)  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  PG Clamp for 100 sq.mm AAA conductor  GI Nut , Bolt & Washer of different sizes (3.55 Kg each Cut Pole)	Wnit  No  KG  KG  KG  No.  KG  KG  No.  KG  No.  KG  No.  No.  KG  No.  No.  KG  KG  No.  No.  KG  KG	76.00 97.50 104.00 97.50 260.00 97.50 104.00 97.50 260.00 1,495.00 215.80 97.50 754.00 101.40 286.00	12 4.8144 1.24 24 4 1.048 24 1.42 2 8	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00 117.35 1,248.00 469.40 3,120.00 10,920.00 35,880.00 863.20 102.18 18,096.00 1,439.88 572.00 1,728.00
\$I. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 A	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required = (2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required = (2x9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  11 KV pin insulator polymer  H W fitting(B&S) 70KN, 3Bolt  Disc insulator (B&S) 70 KN, 3Bolt  Disc insulator (B&S) 70 KN, 3Bolt  Disc insulator (Bolt 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  PG Clamp for 100 sq.mm AAA conductor  GI Nut , Bolt & Washer of different sizes (3.55 Kg each Cut Pole)  Black Paint  Yellow Colour Paint for Background	Work  Wo  KG  KG  KG  No.  KG  KG  No.  KG  No.  No.  No.  EA  K.g.  NO.  K.g.  Ltr  Ltr	Unit Rate 29,661.00 76.00 97.50 76.00 104.00 97.50 104.00 97.50 260.00 455.00 1,495.00 1,495.00 101.40 286.00 216.00 Total Cost	Total Quantity 4 91.776 21.1456 23.40288 4 1.2036 12 4.8144 12 24 24 4 1.048 24 14.2 2 8 of materials	Total Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00 117.35 1,248.00 469.40 3,120.00 10,920.00 35,880.00 863.20 102.18 18,096.00 1,439.88 572.00 1,728.00 2,04,431.31
SI. No. 1 2 3 4 5 6 7 8 8 9 10 11 12 13 14 15 16 17 A B	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required = (2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required = (2x9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  11 KV pin insulator polymer  H W fitting(B&S) 70KN, 3Bolt  Disc insulator (B&S) 70 KN, 3Bolt  Disc insulator (B&S) 70 KN, 3Bolt  Disc insulator (Bolt 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  PG Clamp for 100 sq.mm AAA conductor  GI Nut , Bolt & Washer of different sizes (3.55 Kg each Cut Pole)  Black Paint  Yellow Colour Paint for Background	Work  Wo  KG  KG  KG  No.  KG  KG  No.  KG  No.  No.  No.  EA  K.g.  NO.  K.g.  Ltr  Ltr	Unit Rate 29,661.00 76.00 97.50 76.00 104.00 97.50 104.00 97.50 104.00 97.50 260.00 455.00 1,495.00 215.80 97.50 754.00 101.40 286.00 216.00 Total Cost	4  Total Quantity 4 91.776 21.1456 23.40288 4 1.2036 12 4.8144 12 24 24 4 1.048 24 14.2 2 8 of materials ie i.e 3% of A	70tal Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00 117.35 1,248.00 469.40 3,120.00 10,920.00 35,880.00 863.20 102.18 18,096.00 1,439.88 572.00 2,04,431.31 6,132.94
\$I. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 A	(Ref. Drawing No TPCODL-MVD-0004)  MATERIALS FOR 11 KV Cut Point with 180 Degree Angle  Description of Materials  WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 2 no's channel required = (2x9.56x1.2)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)  Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 2 no's channel required = (2x9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  11 KV pin insulator polymer  H W fitting(B&S) 70KN, 3Bolt  Disc insulator (B&S) 70 KN, 3Bolt  Disc insulator (B&S) 70 KN, 3Bolt  Disc insulator (Bolt 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  PG Clamp for 100 sq.mm AAA conductor  GI Nut , Bolt & Washer of different sizes (3.55 Kg each Cut Pole)  Black Paint  Yellow Colour Paint for Background	Work  Wo  KG  KG  KG  No.  KG  KG  No.  KG  No.  No.  No.  EA  K.g.  NO.  K.g.  Ltr  Ltr	Unit Rate 29,661.00 76.00 97.50 104.00 97.50 260.00 455.00 1,495.00 215.80 97.50 101.40 286.00 216.00 Total Cost gge & Insuranc	Total Quantity 4 91.776 21.1456 23.40288 4 1.2036 12 4.8144 12 24 24 4 1.048 24 14.2 2 8 of materials	70tal Amount 1,18,644.00 6,974.98 2,061.70 1,778.62 416.00 117.35 1,248.00 469.40 3,120.00 10,920.00 35,880.00 863.20 102.18 18,096.00 1,439.88 572.00 1,728.00 2,04,431.31

SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
C:	MATERIALS FOR THE PHILIPPING WITH WEB	_		<b>-</b>	<b>-</b> · ·
	MATERIALS FOR 11 KV Pin Points With WPB				
	11 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No TPCODL-MVD-0003)			10	
Р	Gross Total Material +Services (N+O+O1) for 11 K	V Gut PO	mit with 30 D	egree Angle	5,87,654.1
01	Cross Tatal Metalial (Comitica (N) Co CO Co 44/1/	V Cost D	Total CESS	@ 1% of (N)	4,938.2
<b>N</b>				Total (L+M)  2 18% of (N)	<b>4,93,827.0</b> 88,888.8
L				Total (J+K)	4,93,827.0
K		Gu.iilu	·	I & Services	48,937.5
3	Concreting ratio 1:1.5:3 (SUUMMXSUUMMX180UMM) = 0.45Cu.mtr  Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.7	4,387.5
2	with all labour and material as per TPCODL Drawing & Standard.  Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr	Cu.mtr	6,500.00	2.7	17,550.0
	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	No.	2,250.00	12	27,000.0
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
J	Civil & Services		Su	m of (C to I)	4,44,889.
I	Erection Charges @ 20% of		le- Not to be ι	sed for 33kv	
G H	Erection Erection Charges @ 10% of C (except Trf/Breaker/\		@ 5% on Trf/l Pole/HT stay s		9,165.2 15,329.1
F			ransportation	@ 7.5% of C	28,076.6
D E			Tools & Plant	s @ 2% of C	11,230.6 6,731.9
<b>C</b>				Total (A+B) y @ 3% of C	3,74,355.8
В	Sto	ck, Stora	ge & Insuranc	e i.e 3% of A	10,903.5
21 <b>A</b>	Yellow Colour Paint for Background	Ltr	216.00	12 of materials	2,592.0 <b>3,63,452.3</b>
20	Black Paint	Ltr	286.00	3	858.0
	7/10 SWG Stay Wire 15kg /stay GI Nut , Bolt & Washer of different sizes (7.433 Kg each Cut Pole)	K.g. K.g.	97.50 101.40	180 44.598	17,550.0 4,522.2
17	H.T. Stay Insulator Type-C	No.	65.00	12	780.0
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.551 Mtr. Length, 2 no's qty. required ( 1 Pair) H.T. Stay set (Complete )	Pair Set	162.50 1,365.00	12 12	1,950.0 16,380.0
14	PG Clamp for 100 sq.mm AAA conductor	NO.	754.00	36	27,144.0
	Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	EA K.g.	215.80 97.50	6 1.572	1,294.8 153.2
11	Disc insulator (B&S) 70 KN polymer	No.	1,495.00	36	53,820.0
	11 KV pin insulator polymer H W fitting(B&S) 70KN, 3Bolt	No. No.	260.00 455.00	24 36	6,240.0 16,380.0
8	(4x0.59x0.510)	KG	97.50	7.2216	704.1
7	GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	Kg	104.00	18	1,872.0
	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	1.8054	176.0
	-				
	4x9.56x0.306)  Danger Plate, 1 no's.	No.	104.00	6	624.0
4	Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 0.306 mtr., 4 no's channel required =(	KG	76.00	70.20864	5,335.8
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)	K.g.	97.50	63.4368	6,185.0
2	4x9.56x1.2)	KG	76.00	275.328	20,924.9
	WPB (GI) Pole 160x152 (11Mtr. Long, 30.44KG/Mtr.) Straight Cross Arm 100X50X6mm, 9.56 KG/Mtr., each channel length 1.2 mtr., 4 no's channel required =(	No	29,661.00	6	1,77,966.0
No.	Description of Materials	Unit	Unit Rate	Quantity	Amount
SI.			Unit Data	Total	Total
	(Ref. Drawing No TPCODL-MVD-0005)  MATERIALS FOR 11 KV Cut Point with 90 Degree Angle				
	No. of Cut Point with 90 Degree Angle			6	
Р	Gross Total Material +Services (N+O+O1) for 11 KV	Cut Poi	nt with 180 D	egree Angle	3,17,082.6
01				@ 1% of (N)	2,664.5
<b>N</b>				Total (L+M)	<b>2,66,456.0</b> 3
L				Total (J+K)	2,66,456.0
K		<b>J 3.</b>	· ·	I & Services	14,625.0
2	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.45	2,925.0
1	Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr	Cu.mtr	6,500.00	1.80	11,700.0
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
<u> </u>	<u>Civil &amp; Services</u>			01 (0 10 1)	2,31,031.0
J	Erection Charges @ 20% of	f PSC po		m of (C to I)	2,51,831.0
Н	Erection Charges @ 10% of C (except Trf/Breaker/\	NPB/ H-F	Pole/HT stay s	et/PSC pole)	8,836.0
			(a) 5% on Trt/	Breaker/Joist	6,110.1
F G	Facilities		ransportation		15,792.3

	Annexure-2						
	11kV Line Length with 40 Mtr. Span using 100 SQ.MMAAA Co	nductor					
2	11 KV V cross Arm (10.2 K.g. each )	No.	1.053.00	100	1,05,300.00		
3	Top bracket 100x50X6 mm GI channel (2kg each)	No.	195.00	100	19,500.00		
4	Danger Plate, 1 no's. for each pole	No.	104.00	100	10,400.00		
5	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	30.09	2,933.78		
6	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	300.00	31,200.00		
7	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	120.36	11,735.10		
8	11 KV pin insulator polymer, 3 Nos. required for each support	No.	260.00	300	78,000.00		
9	Earthing of Support ( Coil Type )	No.	215.80	100	21,580.00		
_	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	26.20	2,554.50		
	GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	K.g.	101.40	145.00	14,703.00		
12	100 mm2 AAAC	Mtr.	71.50	30900.00	22,09,350.00		
13	Crimping type Midspan Compression Joint for 100 sq.mm AAA conductor	EA	175.25	30	5,257.50		
14	Black Paint	Ltr	286.00	100.0	28,600.00		
15	Yellow Colour Paint for Background	Ltr	216.00	200.0	43,200.00		
A	Tellow Colour Faint for Background	Lu		of materials	55,50,413.88		
В	St	ock Stora	ige & Insuranc		1,66,512.42		
c		ock, Otore		Total (A+B)			
D				cy @ 3% of C	<b>57,16,926.29</b> 1,71,507.79		
					, ,		
E				ts @ 2% of C	1,14,338.53		
F	5 11 01		ransportation		4,28,769.47		
G	Erection Charges				1,52,754.15		
Н	Erection Charges @ 10% of C (except Trf/Breaker/				2,66,184.33		
	Erection Charges @ 20% o	f PSC po			-		
J			Su	ım of (C to I)	68,50,480.56		
	<u>Civil &amp; Services</u>	ı	ı	<u> </u>			
1	Concreting ratio 1:1.5:3 (500mmX500mmX1800mm) = 0.45Cu.mtr	Cu.mtr	6,500.00	45.00	2,92,500.00		
2	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	11.25	73,125.00		
3	Dismantling of 09/11 Mtr. Joist/WPB Pole- 116X100mm (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	1,350.00	50.00	67,500.00		
4	Dismantling of ACSR/AAAC 34/ 55/80 mm2 from overhead line, recoiling, loading, transportation, unloading and staking at a proper place in safe position/ site store	Mtr.	6.30	30900.00	1,94,670.00		
5	Dismantling of 11kV Pin and Disc Insulator including loading, transportation, unloading and staking at a proper place in safe position/ site store.	EA	8.10	150.00	1,215.00		
K			Total Civi	il & Services	6,29,010.00		
L		Tota	al Material+Se	ervices (I+K)	74,79,490.56		
N			Sub	Total (L+M)	74,79,490.56		
0			Total GST (	@ 18% of (N)	13,46,308.30		
01			Total CESS	@ 1% of (N)	74,794.91		
Р							
	,				89,00,593.76		
	Gross Total Summary						
1	Gross Total Material +Services	N+O+∩1	) for DP Witho	out AB Switch	6,49,630.37		
2							
	Gross Total Material +Services (N+0+01) for 11 KV Cut Point with 180 Degree Angle						
	4 Gross Total Material +Services (N+O+O1) for 11 KV Cut Point with 90 Degree Angle						
	5 Gross Total Material +Services (N+O+O1) for 11 KV Pin Points With WPB						
	··						
Q	Inspection For of Over-		/UT\ Do 27	Fun to 1 km			
Q R		lead Line	· /				
Q R S	Inspection Fee of Over Hea	lead Line d Line (H	T) - Rs. 225/ A	Additional Km	750.00		
Q R	Inspection Fee of Over Hea	lead Line d Line (H e of Draw	T) - Rs. 225/ Aring Checking	Additional Km and Approval	750.00 <b>1,18,48,194.29</b>		

		Annexure-3				
	TP CENTRAL	ODISHA DISTRIBUTION LIMITED				
Name of	f the Division :-	PURI ELECTRICAL DIVISION, PURI				
Name of	f the Sub-Division : -	Sakhigopal				
Name of	f the Section : -	Satasankha, Puri				
Name of	f the Work :-	33kV New Line from Satasankha Grid (33kV Proposed Mangalpur Feeder)				
Scope o	of work:-	Laying of 33kV underground cable with 3R, 1CX630sqmm Cable-3.5Ckm. Construction of 33kV 4 Pole with Isolator- 1 No.				
Names (	of Schemes: -	TPCODL CAPEX				
	<u> </u>	ABSTRACT OF ESTIMATE				
SI. No.	Part	Description	Amount			
1	А	Laying of 33kV underground cable with 3R, 1CX630sqmm Cable- 3.5Ckm.	₹ 4,80,61,167.38			
2 B		Construction of 33kV 4 Pole with Isolator- 1 No. ₹ 9,				
		Total Amount	₹ 4,90,39,716.04			
		Total Amount (In Cr)	₹ 4.90			
Total es	timated cost is Rs.4.9 Crore.					

## BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

## Supply Portion

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
	Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories				
а	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	3000		
b	Length of 33kV 1C, 630sqmm cable (HDD)	Mtr.	500		
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	10500	1,495.47	1,57,02,435.00
	Supply of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set	33	11,900.00	3,92,700.00
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	6	6,350.00	38,100.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set		6,100.00	-
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	8952.00	357.60	32,01,235.20
2	Supply of 33kV RMU				
а	No. of 33kV 3Way RMU (LLV+M)	nos.			
b	No. of 33kV 4Way RMU (LLVV+M)	nos.			
С	No. of 33kV 3Way RMU (LLV)	nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.			
е	No. of 33kV 3Way RMU (LLL)	nos.			
f	No. of 33kV 4Way RMU (LLLL)	nos.			
2.1	Supply of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M) (CT Ratio to be mentioned)	Nos.	0	22,93,723.00	-
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M) (CT Ratio to be mentioned)	Nos.	0	31,74,874.00	-
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	23,35,264.00	-
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	-
2.6	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)  Earthing	Nos.	0	19,59,421.00	-
3	, c				
3.1	Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for equipment, structure etc.)	kg	0.00	97.50	-
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	0	1,365.00	-
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	0		
4.1	Pre-Wired FRTU Panel with FRTU	No.	0	1,21,744.00	-
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	0	1,00,000.00	_

Erection Portion  SI. No. Description of items  1 Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with Mtr. 9000 94.50 88	- - - - - - - - -
4.4         CMR with Mounting Base for Digital Inputs         Nos.         0         650.00           4.5         Interposing Relay for Digital Output         Nos.         0         467.94           4.6         Battery Charger         Nos.         0         15,385.00           4.7         Battery         Nos.         0         8,333.00           4.8         4G Modem cum Router         Nos.         0         18,500.00           4.9         Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications Instrumentation Cable Instrumentation Instrume	- - - - - - - - -
4.5         Interposing Relay for Digital Output         Nos.         0         467.94           4.6         Battery Charger         Nos.         0         15,385.00           4.7         Battery         Nos.         0         8,333.00           4.8         4G Modem cum Router         Nos.         0         18,500.00           4.9         Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output Mtr.         0         305.58           4.10         7 C X 1.5 mm2, Armored for Control Output Mtr.         0         305.58           4.11         Twisted Pair Shielded & Over all shielded instrumentation Cable Mtr.         0         275.23           4.12         4 C X 2.5 mm2 Copper cable for extension of CT & PT         Mtr.         0         165.25           4.13         2 C X 4 mm2 Cable for DC Power Supply         Mtr.         0         150.00           4.14         4P X 0.36 mm2, Armored Communication Cable for MFM         Mtr.         0         150.00           4.15         Armored CAT6 SFTP Cable         Mtr.         0         45.87           4.16         Un-Armored CAT6 SFTP Cable         Mtr.         0         89.45           4.17         Multi Function Meter         Nos.	- - - - - - - -
4.6         Battery Charger         Nos.         0         15,385.00           4.7         Battery         Nos.         0         8,333.00           4.8         4G Modern cum Router         Nos.         0         18,500.00           4.9         Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications Instrumentation Cable 27 X 1.5 mm2, Armored for Control Output Mtr.         Mtr.         0         305.58           4.10         Twisted Pair Shielded & Over all shielded Instrumentation Cable Output Cable Shielded & Over all shielded Instrumentation Cable Mtr.         Mtr.         0         275.23           4.11         Twisted Pair Shielded & Over all shielded Instrumentation Cable Mtr.         0         275.23           4.12         4 C X 2.5 mm2 Copper cable for extension of CT & PT         Mtr.         0         165.25           4.13         2 C X 4 mm2 Cable for DC Power Supply         Mtr.         0         150.00           4.14         4P X 0.36 mm2, Armored Communication Cable for MFM         Mtr.         0.0         148.43           4.15         Armored CAT6 SFTP Cable         Mtr.         0         89.45           4.16         Un-Armored CAT6 SFTP Cable         Mtr.         0         89.45           4.17         Multi Function Meter         Nos.         0         1	- - - - - - -
4.7         Battery         Nos.         0         8,333.00           4.8         4G Modem cum Router         Nos.         0         18,500.00           4.9         Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications Instrumentation Cable 17 C X 1.5 mm2, Armored for Control Output Mtr.         Mtr.         0         305.58           4.10         Twisted Pair Shielded & Over all shielded Instrumentation Cable Mtr.         Mtr.         0         275.23           4.11         Twisted Pair Shielded & Over all shielded Instrumentation Cable         Mtr.         0         275.23           4.12         4 C X 2.5 mm2 Copper cable for extension of CT & PT         Mtr.         0         165.25           4.13         2 C X 4 mm2 Cable for DC Power Supply         Mtr.         0         150.00           4.14         4P X 0.36 mm2, Armored Communication Cable for MFM         Mtr.         0.0         148.43           4.15         Armored CAT6 SFTP Cable         Mtr.         0         45.87           4.16         Un-Armored CAT6 SFTP Cable         Mtr.         0         89.45           4.17         Multi Function Meter         Nos.         0         18,651.00           Erection Portion           Sub Total (Supply Portion) (in Rs.)         1,93	- - - - - -
4.8       4G Modem cum Router       Nos.       0       18,500.00         4.9       Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications       Mtr.       0       204.87         4.10       Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output       Mtr.       0       305.58         4.11       Twisted Pair Shielded & Over all shielded Instrumentation Cable       Mtr.       0       275.23         4.12       4 C X 2.5 mm2 Copper cable for extension of CT & PT       Mtr.       0       165.25         4.13       2 C X 4 mm2 Cable for DC Power Supply       Mtr.       0       150.00         4.14       4P X 0.36 mm2, Armored Communication Cable for MFM       Mtr.       0.0       148.43         4.15       Armored CAT6 SFTP Cable       Mtr.       0       45.87         4.16       Un-Armored CAT6 SFTP Cable       Mtr.       0       89.45         4.17       Multi Function Meter       Nos.       0       18,651.00         Erection Portion         SI. No.       Description of items       Unit Quantity       Rate (in Rs.)         1       Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare       August 12 cable with one spare         Laying, Commissioning & Testing of 33kV, 1Co	- - - - -
4.9         Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications         Mtr.         0         204.87           4.10         Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output 7 C X 1.5 mm2, Armored for Control Output 8 Mtr.         Mtr.         0         305.58           4.11         Twisted Pair Shielded & Over all shielded Instrumentation Cable Mtr.         0         275.23           4.12         4 C X 2.5 mm2 Copper cable for extension of CT & PT         Mtr.         0         165.25           4.13         2 C X 4 mm2 Cable for DC Power Supply Mtr.         0         150.00         150.00           4.14         4P X 0.36 mm2, Armored Communication Cable for MFM Mtr.         0         148.43         148.43           4.15         Armored CAT6 SFTP Cable Mtr.         0         45.87         148.43         148.43           4.16         Un-Armored CAT6 SFTP Cable Mtr.         0         89.45         148.651.00         188.651.00         188.651.00           Erection Portion           In part of the security of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare         1         14.500 Mtr.         10.500 Mtr.         10.50	- - - - -
4.9         12 C X 0.5 mm2, Armored cable for Status and Indications         Mtr.         0         204.87           4.10         Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output         Mtr.         0         305.58           4.11         Twisted Pair Shielded & Over all shielded Instrumentation Cable         Mtr.         0         275.23           4.12         4 C X 2.5 mm2 Copper cable for extension of CT & PT         Mtr.         0         165.25           4.13         2 C X 4 mm2 Cable for DC Power Supply         Mtr.         0         150.00           4.14         4P X 0.36 mm2, Armored Communication Cable for MFM         Mtr.         0.0         148.43           4.15         Armored CAT6 SFTP Cable         Mtr.         0         45.87           4.16         Un-Armored CAT6 SFTP Cable         Mtr.         0         89.45           4.17         Multi Function Meter         Nos.         0         18,651.00           Erection Portion           SI. No.         Description of items         Unit Quantity         Rate (in Rs.)           4         Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare         August 12 cable (with Mrs.)	- - - -
A.10   Instrumentation Cable   7 C X 1.5 mm2, Armored for Control Output   Mtr.   0   305.58	- - - -
4.11 Cable         Mil.         0         273.23           4.12 4 C X 2.5 mm2 Copper cable for extension of CT & PT         Mtr.         0         165.25           4.13 2 C X 4 mm2 Cable for DC Power Supply         Mtr.         0         150.00           4.14 4P X 0.36 mm2, Armored Communication Cable for MFM         Mtr.         0.0         148.43           4.15 Armored CAT6 SFTP Cable         Mtr.         0         45.87           4.16 Un-Armored CAT6 SFTP Cable         Mtr.         0         89.45           4.17 Multi Function Meter         Nos.         0         18,651.00           Erection Portion           SI. No.         Description of items         Unit         Quantity         Rate (in Rs.)           1         Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare         Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with         Mtr.         9000         94.50         94.50	-
4.12       4 C X 2.5 mm2 Copper cable for extension of CT & PT       Mtr.       0       165.25         4.13       2 C X 4 mm2 Cable for DC Power Supply       Mtr.       0       150.00         4.14       4P X 0.36 mm2, Armored Communication Cable for MFM       Mtr.       0.0       148.43         4.15       Armored CAT6 SFTP Cable       Mtr.       0       45.87         4.16       Un-Armored CAT6 SFTP Cable       Mtr.       0       89.45         4.17       Multi Function Meter       Nos.       0       18,651.00         Erection Portion         SI. No.       Description of items       Unit       Quantity       Rate (in Rs.)       4         1       Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare       Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with       Mtr.       9000       94.50       94.50	<u>-</u>
4.14 4P X 0.36 mm2, Armored Communication Cable for MFM Mtr. 0.0 148.43  4.15 Armored CAT6 SFTP Cable Mtr. 0 45.87  4.16 Un-Armored CAT6 SFTP Cable Mtr. 0 89.45  4.17 Multi Function Meter Nos. 0 18,651.00  Sub Total (Supply Portion) (in Rs.) 1,93  Erection Portion  SI. No. Description of items Unit Quantity Rate (in Rs.) (in	_
4.15 Armored CAT6 SFTP Cable  4.16 Un-Armored CAT6 SFTP Cable  4.17 Multi Function Meter  Sub Total (Supply Portion) (in Rs.)  Erection Portion  SI. No.  Description of items  Unit Quantity  Rate (in Rs.)  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with Mtr. 9000 94.50 85	=
4.16 Un-Armored CAT6 SFTP Cable  4.17 Multi Function Meter  Sub Total (Supply Portion) (in Rs.)  Erection Portion  SI. No.  Description of items  Unit Quantity  Rate (in Rs.)  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with	_
4.17 Multi Function Meter Nos. 0 18,651.00  Sub Total (Supply Portion) (in Rs.) 1,93  Erection Portion  SI. No. Description of items Unit Quantity Rate (in Rs.) (in Rs.) (in Rs.) (in Rs.) (in Rs.)	_
Sub Total (Supply Portion) (in Rs.)  Erection Portion  SI. No. Description of items  1 Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with Mtr. 9000 94.50 88	_
Erection Portion  SI. No. Description of items  1 Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with Mtr. 9000 94.50 88	-
SI. No. Description of items  Unit Quantity  Rate (in Rs.)  1 Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with	3,34,470.20
No. Description of items Unit Quantity (in Rs.)  1 Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with Mtr. 9000 94.50 88	
1 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with	mount in Rs.)
630sqmm, XLPE insulation (extruted type) UG cable (with	
formation by <b>open trench method</b> .	3,50,500.00
Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG Set 33 2,400.00 cable kits	79,200.00
1.3 Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Set  6  2,081.70	12,490.20
1.4 Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Set  0 2,081.70	_
HDPE Pipe.	
trencn.	,50,000.00
2 Erection, Commissioning, Wiring and Testing of 33kV RMU	5,85,600.00
2.1 Erection of RMU 33KV 3WAY 630A WITH METERING UNIT Nos. 0 15,000.00	

	Annexure-3						
	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along wit	h 33kV RMU			
2.2	Erection of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M)	Nos.	0	15,000.00	-		
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-		
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	8,000.00	-		
2.5	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	8,000.00	-		
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	8,000.00	-		
3	FRTU and OFC for RMU SCADA Automation						
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	0.0	16,000.00	-		
	Sub Total (Erection Portion) (ir	Rs.)			70,77,790.20		
Civil P	ortion	ı	<del>                                     </del>	B.4.	A		
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)		
1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench						
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	2984				
1.1.a	Earth work excavation of <b>soil</b>	Cum	2506.56	700.00	17,54,592.00		
1.1.b	Earth work excavation of <b>hard rock</b>	Cum	1074.24	1,720.00	18,47,692.80		
1.2	Back filling with excavated soil outside and above the trench	Cum	3580.8	202.00	7,23,321.60		
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	1492	2,643.67	39,44,356.58		
2	Civil works for Prefabricated RCC foundation with supply of all materials						
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	0	23,145.30	_		
3	Supply of GI Fencing with Gate around each <b>RMU</b>	sqmtr	0	3,600.00	-		
4	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 .	Set	0	3,700.00	-		
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	48	1,463.40	70,243.20		
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	117	1,012.00	1,18,404.00		
	Sub Total (Civil Portion) (in Rs.)						
Α	Sub Total (Supply Portion)				1,93,34,470.20		
В		5,80,034.11					
С	1,99,14,504.31						
D	Contingency @ 3 % of C				5,97,435.13		
Е	Tools & Plants Charges @ 2% of C (considered for earthing it	ems)			-		
F	F Transportation @ 7.5% of C						

	Annexure-3						
	BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33k	V RMU					
G	Erection Charges @ 10% of earthing items	-					
Н	Total (C+D+E+F+G)	2,20,05,527.26					
I	Sub Total (Erection Portion + Civil Portion)	1,55,36,400.38					
J	Total Cost (H+I)	3,75,41,927.64					
L	Total Estimated Capital Cost i.e. (J+K)	3,75,41,927.64					
М	GST @ 18% of L	67,57,546.97					
M1	CESS @ 1% of L	37,54,192.76					
N	Grand Total (L+M)	4,80,53,667.38					
0	Inspection Fee of UG Line (HT) - Rs. 3000/ km.	3,000.00					
Р	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km	3,750.00					
Q	Inspection Fee of RMU - Rs. 1500/ RMU	-					
R	Inspection Fee of Drawing Checking and Approval	750.00					
S	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)	4,80,61,167.38					

# Annexure-3 BoQ and Estimate for 33 KV 4 Pole using WPB GI Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) with Isolator and LA

No. of 33 KV 4-Pole with Isolator					
	MATERIALS FOR 33 KV 4-P With Isolator	•			
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB(GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	4	1,37,288.00
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 8 no's channel required =( 8x9.56x4.3)	KG	76.00	328.864	24,993.66
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 24 no's required = (24x2.36x0.280)	KG	97.50	15.8592	1,546.27
4	Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =( 2x7.14x4.3)/ Isolator	KG	76.00	184.212	14,000.11
5	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 8 no's channel required =( 8x7.14x4.3)	KG	76.00	245.616	18,666.82
6	50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 8 nos angle required = (8*4.5*4.927)	KG	76.00	177.372	13,480.27
7	Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no channel required =( 1x7.14x0.8)/ Isolator	KG	76.00	17.136	1,302.34
8	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 no angle required = (1*4.5*0.388)/ Isolator	KG	76.00	5.238	398.09
9	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 no angle required = (1*4.5*0.340)/ Isolator	KG	76.00	4.59	348.84
10	Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel required =( 2x9.56x0.5)/ Isolator	KG	76.00	28.68	2,179.68
	Danger Plate, 2 no's.	No.	104.00	2	208.00
12	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	0.6018	58.68
13	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	3	4,095.00
14	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 5 mtr. For raising)	KG	97.50	62.54	6,097.65
	GI barbed wire anticlimbing device 3 Kg. Per support, 4 no's qty. required =(4x3kg)	Kg	104.00	12	1,248.00
16	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 16 no's = (16x0.59x0.510)	KG	97.50	4.8144	469.40
	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	9	1,21,095.00
18	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with Pl(Polymer)	Set	66,000.00	3	1,98,000.00
	33KV pin insulator polymer	No.	624.00	6	3,744.00
	H W fitting(B&S)90KN,4 Bolt	No.	650.00	18	11,700.00
	Disc insulator (B&S) 90 KN polymer PG Clamp for 232 sq.mm AAA conductor	No.	1,495.00 1.495.00	18 24	26,910.00 35,880.00
	232 sq.mm AAA conductor	Mtr.	203.45		6,286.61
	GI Nut , Bolt & Washer of different sizes	K.g.	101.40		4,563.00
	Black Paint	Ltr	286.00	1	286.00
	Yellow Colour Paint for Background	Ltr	216.00	2	432.00
Α			Total Cost o	f materials	6,35,277.41
В	B Stock, Storage & Insurance i.e 3% of A				
С	,				6,54,335.74
D	Contigency @ 3% of C				19,630.07
E			ools & Plants	<u> </u>	13,002.36
-			nsportation @	•	49,075.18 7,070.33
G	G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole				

	Annexure-3					
	BoQ and Estimate for 33 KV 4 Pole using WPB GI Pole 160x152 (13Mtr. Long, 30.44)	KG/Mtr.)	with Isolato	r and LA		
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Po	le/HT sta	y set/GI Pole	/PSC pole)	50,871.12	
Ι	Erection Charges @ 20% of P	SC pole-	Not to be us	ed for 33kv	-	
J	Sum of (C to I)					
	<u>Civil &amp; Services</u>					
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	2.2	14,300.00	
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.45	2,925.00	
3	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.	3,700.00	3	11,100.00	
K			Total Civil	& Services	28,325.00	
L	L Total (J+K)					
N	N Sub Total (L+M)				8,22,309.80	
0	O Total GST @ 18% of (N)					
01		To	tal CESS @	1% of (O1)	8,223.10	
P	Gross Total Material +Services (N+O+	O1) for 3	3 KV 4-P Wi	th Isolator	9,78,548.67	

		Annexure-4					
	TP	CENTRAL ODISHA DISTRIBUTION LIMITED					
Name of the [	Division :-	NED, Nimapada					
Name of the S	Sub-Division : -	Pipili					
Name of the S	Section : -	Pipili No1					
Name of the V	Work :-	33kV New Line from Pratapsasan Grid (33kV Proposed Trahia Feeder)	achyutanagar				
Scope of wor	k:-	Conductor- 7Ckm.Construction of 33kV U/G Line with 3R, 1C	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC Conductor- 7Ckm.Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable-1Ckm. Construction for 1 no. of 33kV Outdoor Bay at Trahiachyuta Nagar PSS.				
Names of Sch	nemes: -	TPCODL CAPEX	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE					
SI. No.	Part	Description	Amount				
1	А	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC Conductor- 7Ckm.	₹ 2,61,36,726.20				
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable-1Ckm.	₹ 1,40,53,343.76				
3 C		Construction for 1 no. of 33kV Outdoor Bay at Trahiachyuta Nagar PSS.	₹ 36,39,033.16				
		Total Amount	₹ 4,38,29,103.13				
		Total Amount (In Cr)	₹ 4.38				
Total estimate	ed cost is Rs.4.38 C	rore.					

#### Annexure-4 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP No. of 33 KV DP required Without Isolator (Ref. Drawing No.- TPCODL-HVD-0004) MATERIALS FOR 33 KV DP Without Isolator Total Total Unit Rate Description of Materials Unit No. Quantity Amount WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 20 6,86,440.00 Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =( 2 KG 76.00 621.4 47,226.40 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280) 3 KG 97.50 39.648 3,865.68 Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's KG 76 00 699 72 53 178 72 channel required =( 5x7.14x1.96) 50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = KG 76.00 617.76 46,949.76 (4\*4.5\*3.432) 2,080.00 6 No. 104.00 Danger Plate, 2 no's 20 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = KG 97.50 6.018 586.76 (2x0.59x0.510) H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair) Pair 162.50 20 3,250.00 Set 27,300.00 H.T. Stay set (Complete) 1,365.00 20 10 H.T. Stay Insulator Type-C (2 No's.) No. 65.00 40 2,600.00 7/8 SWG Stay Wire 15kg /stay K.g. 97.50 300 29,250.00 Gi Pipe Earthing 40mm. 3 Mtr. Long No. 1,365.00 10 13,650.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 13 KG 97.50 118 11,505.00 14 104.00 60 6,240.00 GI barbed wire anticlimbing device 3 Kg. Per support Kg Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = 24.072 KG 97 50 2 347 02 (8x0.59x0.510) 18,720.00 16 33KV pin insulator polymer No. 624.00 30 H W fitting(B&S) 90KN,4 Bolt 17 No. 650.00 60 39.000.00 18 Disc insulator (B&S) 90 KN polymer No. 1.495.00 60 89.700.00 19 PG Clamp for 232 sq.mm AAA conductor NO 1,495.00 60 89,700.00 12,432.65 GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator) K.g. 101.40 122.61 Black Paint Ltr 286.00 10 2,860.00 Yellow Colour Paint for Background Ltr 22 216.00 20 4.320.00 **Total Cost of materials** Α 11,93,201.99 В Stock, Storage & Insurance i.e 3% of A 35,796.06 С Sub Total (A+B) 12,28,998.05 D Contigency @ 3% of C 36,869.94 Ε Tools & Plants @ 2% of C 23,013.33 F Transportation @ 7.5% of C 92,174.85 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 35,351.66 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/GI Pipe/PSC pole) 44,363.33 Н Erection Charges @ 20% of PSC pole- Not to be used for 33kv 1 J Sum of (C to I) 14,60,771.17 Civil & Services SI. Total Total Description of Materials Unit **Unit Rate** Quantity No. Amount Fixing of 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, including excvation, supply of 0.5Cum No. 2.250.00 20 45,000.00 cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6.500.00 11 71.500.00 3 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr 6.500.00 2.25 Cu.mtr 14.625.00 Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth No. 3,700.00 10 37,000.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe **Total Civil & Services** κ 1,68,125.00 L Total (J+K) 16,28,896.17 N Sub Total (L+M) 16,28,896.17 0 Total GST @ 18% of (N) 2.93.201.31 O1 Total CESS @ 1% of (N 16,288.96 P Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 19,38,386.44 No. of 33 KV DP required With Isolator 4 (Ref. Drawing No.- TPCODL-TCE-0001) MATERIALS FOR 33 KV DP With Isolator

33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP

SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	8	2,74,576.00	
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 2x9.56x4.3)	KG	76.00	328.864	24,993.66	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	15.8592	1,546.27	
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	76.00	122.808	9,333.41	
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	76.00	245.616	18,666.82	
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	76.00	491.232	37,333.63	
7	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	76.00	354.744	26,960.54	
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	76.00	22.848	1,736.45	
9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	76.00	6.984	530.78	
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	76.00	6.12	465.12	
11	(1 4.5 0.540) Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel required =( 2x9.56x0.5)	KG	76.00	38.24	2,906.24	
12	Danger Plate. 2 no's.	No.	104.00	8	832.00	
13	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	2.4072	234.70	
14	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	8	1,300.00	
	H.T. Stay set (Complete )	Set	1,365.00	8	10,920.00	
16	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	16	1,040.00	
17	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	120	11,700.00	
18 19	Gi Pipe Earthing 40mm. 3 Mtr. Long 50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh	No. KG	1,365.00 97.50	8 226.56	10,920.00 22,089.60	
20	formation and 2.5 mtr. For raising)= 24x2.36 GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	24	2,496.00	
21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50	9.6288	938.81	
22	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	12	1,61,460.00	
23	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with PI(Polymer)	Set	66,000.00	4	2,64,000.00	
	33KV pin insulator polymer	No.	624.00	12	7,488.00	
	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	24	15,600.00	
	Disc insulator (B&S) 90 KN polymer PG Clamp for 232 sq.mm AAA conductor	No.	1,495.00 1,495.00	24 24	35,880.00 35,880.00	
	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	101.40	88.6	8,984.04	
	Black Paint	Ltr	286.00	4	1,144.00	
30	Yellow Colour Paint for Background	Ltr	216.00	8	1,728.00	
Α			Total Cost o		9,93,684.08	
В	Stock,	Storage	& Insurance	i.e 3% of A	29,810.52	
С			Sub T	otal (A+B)	10,23,494.60	
D			Contigency	@ 3% of C	30,704.84	
Е		To	ools & Plants	@ 2% of C	19,730.76	
F			nsportation @		76,762.10	
	Freetien Chernes @					
G	Erection Charges @				14,140.66	
H	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Po Erection Charges @ 20% of P		<u> </u>		70,372.49	
J	, J @			of (C to I)	12,35,205.45	
⊢ّ	<u>Civil &amp; Services</u>		Can	(5 10 1)	12,00,200.40	
	OTTH & OCITIOGS					
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	8	18,000.00	
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	4.4	28,600.00	
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.9	5,850.00	
4	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.	3,700.00	8	29,600.00	
ĸ	Total Civil & Services					
L				Total (J+K)	13,17,255.45	
				<u> </u>		
N			Sub 1	Total (L+M)	13,17,255.45	

	Annexure-4					
	kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poi					
0			Total GST @	` 1	2,37,105.98	
01	Onesa Tatal Material (Osmisaa (N)O		Total CESS @	` ` '	13,172.55	
P	Gross Total Material +Services (N+O+	O1) for	33 KV DP W	th Isolator	15,67,533.99	
	No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No)			10		
	MATERIALS FOR 33 KV Cut Point with 180 Degree Ang	<u>ale</u>		ı .		
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	13 Mtr. Long H-Pole(GI) Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of	No	56,735.71	10	5,67,357.14	
2	Channel = (2x 9.56x1.7)	K.g.	76.00	325.04	24,703.04	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)	K.g.	97.50	52.864	5,154.24	
4	Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 No's of Channel = (2x 9.56x0.306)	K.g.	76.00	58.5072	4,446.55	
5	Danger Plate, 1 no's.	No.	104.00	10	1,040.00	
6	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	3.009	293.38	
7	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	30	3,120.00	
8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	12.036	1,173.51	
9	33KV pin insulator polymer	No.	624.00	30	18,720.00	
	H W fitting(B&S)90KN,4 Bolt Disc insulator (B&S)90 KN polymer	No.	650.00 1,495.00	60 60	39,000.00 89,700.00	
12	Earthing of Support ( Coil Type )	EA	215.80	10	2,158.00	
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	2.62	255.45	
	PG Clamp for 232 sq.mm AAA conductor GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point)	NO. K.g.	1,495.00 101.40	60 48.79	89,700.00 4,947.31	
	Black Paint	Ltr	286.00	10	2,860.00	
17	Yellow Colour Paint for Background	Ltr	216.00	20	4,320.00	
Α_	0.1		Total Cost o		8,58,948.61	
В	Stock	Storage	& Insurance		25,768.46	
C D			Contigency	otal (A+B)	8,84,717.07	
F		T	ools & Plants		26,541.51 17,694.34	
F			nsportation @		66,353.78	
G	Erection Charges @				29,218.89	
H	Erection Charges @ 10% of C (except Trf/Breaker/WF				30,033.92	
ī	Erection Charges @ 20% of P				-	
J			Sun	of (C to I)	10,54,559.52	
	<u>Civil &amp; Services</u>					
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	5.5	35,750.00	
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	1.125	7,312.50	
К			Total Civil		43,062.50	
L				Total (J+K)	10,97,622.02	
N			Sub 1	otal (L+M)	10,97,622.02	
0		-	Total GST @	18% of (N)	1,97,571.96	
01	Total CESS @ 1% of (N)					
Р	Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle					
	No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No)			4		
	MATERIALS FOR 33 KV Cut Point with 90 Degree Ang	<u>le</u>				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	13 Mtr. Long H-Pole(GI)	No	56,735.71	4	2,26,942.86	
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = $(4x9.56x1.7)$	K.g.	76.00	260.032	19,762.43	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)	K.g.	97.50	42.2912	4,123.39	
		1	1	i T		
4	Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)	K.g.	76.00	46.80576	3,557.24	
4 5	No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.	K.g.	76.00 104.00	46.80576		
	No's of Channel = (4x 9.56x0.306)				3,557.24 416.00 117.35	

	Annexure-4						
33	BkV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Pol	nts and	Cut-Points &	13 Mtr WP	B Pole for DP		
8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	4.8144	469.40		
9	33KV pin insulator polymer (4 No's each 90 Deg. Cut point)	No.	624.00	16	9,984.00		
	H W fitting(B&S)90KN,4 Bolt Disc insulator (B&S)90 KN polymer	No.	650.00 1,495.00	24 24	15,600.00 35,880.00		
11		No.	215.80	4	863.20		
13		K.g.	97.50	1.048	102.18		
	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	24	35,880.00		
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) H.T. Stay set (Complete )	Pair Set	162.50 1,365.00	4	650.00 5,460.00		
17	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	4	260.00		
18		K.g.	97.50	60	5,850.00		
19 20	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point) Black Paint	K.g. Ltr	101.40 286.00		4,587.34 1,144.00		
21	Yellow Colour Paint for Background	Ltr	216.00		1,728.00		
Α			Total Cost o		3,74,625.39		
В	Stock,	Storage	& Insurance	i.e 3% of A	11,238.76		
С				otal (A+B)	3,85,864.15		
D			Contigency	` '	11,575.92		
E		To	ools & Plants	_	7,465.55		
F			nsportation @		28,939.81		
G	Erection Charges @			_	11,687.56		
Н	Erection Charges @ 10% of C (except Trf/Breaker/WP				13,952.64		
H	Erection Charges @ 20% of P			' '	10,902.04		
<del>                                     </del>	Election onaliges & 20 % of 1	OO POIC		of (C to I)	4,59,485.64		
٣	Civil & Services		Ouii	101 (0 101)	4,55,465.64		
SI.	Description of Materials	Unit	Unit Rate	Total	Total		
<b>No.</b>	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	Quantity 2.20	14,300.00		
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.45	2,925.00		
	Coupling faulo 1.1.5.5 with difficulty ( 300/300/430) - 0.1125 Cd filli	Cu.iiii	0,300.00	0.43	2,923.00		
3	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	4	9,000.00		
К			Total Civil	& Services	26,225.00		
L			•	Total (J+K)	4,85,710.64		
N			Sub 1	Γotal (L+M)	4,85,710.64		
0		•	Total GST @	18% of (N)	87,427.91		
01		٦	Total CESS @	0 1% of (N)	4,857.11		
Р	Gross Total Material +Services (N+O+O1) for 33 KV (	Cut Poin	t with 90 Deg	gree Angle	5,77,995.66		
					,		
	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No )			7			
	MATERIALS FOR 33 KV Pin Points						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	13 Mtr. Long H-Pole(GI)	No	56,735.71	147	83,40,150.00		
2	33 KV V cross Arm (GI) 22Kg each	No.	2,340.00	147	3,43,980.00		
3	Top bracket 100x50x6mm GI channel ( 300mm each)	No.	195.00		28,665.00		
4	Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	No.	104.00		15,288.00		
5	Back Clamp for danger Plate 2533 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 nos = (1x0.59x0.510)	KG	97.50	44.23	4,312.65		
6	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	441.00	45,864.00		
7	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50		17,250.60		
8	33KV pin insulator polymer	No.	624.00	441	2,75,184.00		
9	Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	No. K.g.	215.80 97.50		31,722.60 3,755.12		
	GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	K.g.	101.40		21,613.41		
12	232 sq.mm AAA conductor	Mtr.	203.45	21630.00	44,00,623.50		
13	Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor	EA	842.95		17,701.87		
14 15	Black Paint Vellow Colour Paint for Background	Ltr Ltr	286.00		42,042.00 63,504.00		
A							
B Stock, Storage & Insurance i.e 3% of A					<b>1,36,51,656.74</b> 4,09,549.70		
C	Olock,	2.5. age		otal (A+B)	1,40,61,206.44		
			Contigency		4,21,836.19		
E		Т,	ools & Plants		2,81,224.13		
F			nsportation @				
G	Freatier Observed				10,54,590.48		
	Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 4,29,517.73						

	Annexure-4					
33	kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poi	nts and	Cut-Points &	. 13 Mtr WP	B Pole for DP	
Н	H Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC po					
Ι	Erection Charges @ 20% of P	SC pole-			-	
J			Sun	of (C to I)	1,67,95,460.16	
	<u>Civil &amp; Services</u>			I I		
SI. No.	Description of Materials  Unit Unit Rate Quantity					
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 80.85					
2	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr					
К	K Total Civil & Services					
L Total (J+K)					1,74,28,478.91	
N	N Sub Total (L+M)					
0		1	Total GST @	18% of (N)	31,37,126.20	
01		T	otal CESS @	0 1% of (N)	1,74,284.79	
Р	Gross Total Material +Services	(N+O+O	1) for 33 KV	Pin Points	2,07,39,889.91	
	Once Tetal Ourses					
_	Gross Total Summary	\1\ for 22	KV DD With	aut laalatar	19,38,386.44	
2	Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator  Gross Total Material +Services (N+O+O1) for 33 KV DP With Isolator					
3	` '					
4	Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle					
5	( , ,					
Q						
R	Inspection Fee of Over Head Line (HT) - Rs.1500 up to 1 km.				<b>2,61,29,976.20</b> 1,500.00	
s	Inspection Fee of Over Head Line (HT) - Rs. 750/ Additional Km					
T	Inspection Fee of	, ,			<b>4,500.00</b> 750.00	
U Gross Total Material, Services and Inspection Fees (Q+R+S+T)					2,61,36,726.20	

## BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

# Supply Portion

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories				
a	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	700		
b	Length of 33kV 1C, 630sqmm cable (HDD)	Mtr.	300		
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	3000	1,495.47	44,86,410.00
1.2	Supply of Straight throU/Gh jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set	6	11,900.00	71,400.00
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	6	6,350.00	38,100.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set		6,100.00	1
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	2052.00	357.60	7,33,795.20
2	Supply of 33kV RMU		1		
а	No. of 33kV 3Way RMU (LLV+M)	nos.			
b	No. of 33kV 4Way RMU (LLVV+M)	nos.			
С	No. of 33kV 3Way RMU (LLV)	nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.			
е	No. of 33kV 3Way RMU (LLL)	nos.			
f	No. of 33kV 4Way RMU (LLLL)	nos.			
2.1	Supply of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M) (CT Ratio to be mentioned)	Nos.	0	22,93,723.00	-
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M) (CT Ratio to be mentioned)	Nos.	0	31,74,874.00	-
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	23,35,264.00	-
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	-
2.6	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	19,59,421.00	-
<b>3</b> 3.1	Earthing Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for equipment, structure etc.)	kg	0.00	97.50	<u> </u>
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	0	1,365.00	-
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	0		
4.1	Pre-Wired FRTU Panel with FRTU	No.	0	1,21,744.00	-
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	0	1,00,000.00	-

	Annexure-4							
BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU								
4.3	Networking Accessories	No.	0	72.00	-			
4.4	CMR with Mounting Base for Digital Inputs	Nos.	0	650.00	-			
4.5	Interposing Relay for Digital Output	Nos.	0	467.94	-			
4.6	Battery Charger	Nos.	0	15,385.00	-			
4.7	Battery	Nos.	0	8,333.00	-			
4.8	4G Modem cum Router	Nos.	0	18,500.00	-			
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	0	204.87	-			
4.10	Instrumentation Cable	Mtr.	0	305.58	-			
4.11	7 C X 1.5 mm2, Armored for Control Output Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	0	275.23	-			
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	0	165.25	-			
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	0	150.00	-			
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	0.0	148.43	-			
4.15	Armored CAT6 SFTP Cable	Mtr.	0	45.87	-			
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	0	89.45	-			
4.17	Multi Function Meter	Nos.	0	18,651.00	-			
	Sub Total (Supply Portion) (in	Rs.)			53,29,705.20			
	Erection Portion	on						
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)			
1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare							
1.1	Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by <b>open trench method</b> .	Mtr.	2100	94.50	1,98,450.00			
1.2	Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits	Set	6	2,400.00	14,400.00			
1.3	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	6	2,081.70	12,490.20			
1.4	Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	0	2,081.70	-			
1.5	Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr.	900	2,300.00	20,70,000.00			
1.6	Laying of <b>110mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open trench.	Mtr.	2052.00	300.00	6,15,600.00			
2	Erection, Commissioning, Wiring and Testing of 33kV RMU							
2.1	Erection of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M)	Nos.	0	15,000.00	-			

	Annexure-4				
	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	e along wit	n 33kV RMU	
2.2	Erection of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M)	Nos.	0	15,000.00	-
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	8,000.00	-
2.5	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	8,000.00	-
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	8,000.00	-
3	FRTU and OFC for RMU SCADA Automation				
3.1	Services of FRTU Panel, Communication and Other	EA	0.0	16,000.00	_
	Supplied System Sub Total (Erection Portion) (ir	De )		·	29,10,940.20
	Sub Total (Election Portion) (II	KS.)	I I		29,10,940.20
Civil P	ortion	<u> </u>	l	·	
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench				
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	684		
1.1.a	Earth work excavation of <b>soil</b>	Cum	574.56	700.00	4,02,192.00
1.1.b	Earth work excavation of <b>hard rock</b>	Cum	246.24	1,720.00	4,23,532.80
1.2	Back filling with excavated soil outside and above the trench	Cum	820.8	202.00	1,65,801.60
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	342	2,643.67	9,04,135.36
2	Civil works for Prefabricated RCC foundation with supply of all materials				
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	0	23,145.30	-
3	Supply of GI Fencing with Gate around each <b>RMU</b>	sqmtr	0	3,600.00	-
4	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 .	Set	0	3,700.00	-
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	48	1,463.40	70,243.20
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	33	1,012.00	33,396.00
Sub Total (Civil Portion) (in Rs.)					
Α	Sub Total (Supply Portion)				53,29,705.20
B Stock, Storage & Insurance @ 3 % of A					
C Sub Total (A+B)					54,89,596.36
D	Contingency @ 3 % of C				1,64,687.89
E	Tools & Plants Charges @ 2% of C (considered for earthing it	ems)			-
F	Transportation @ 7.5% of C				4,11,719.73

	Annexure-4				
	BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33k	V RMU			
G	Erection Charges @ 10% of earthing items	-			
Н	Total (C+D+E+F+G)	60,66,003.97			
I	Sub Total (Erection Portion + Civil Portion)	49,10,241.16			
J	Total Cost (H+I)	1,09,76,245.13			
K	Other Overhead /(including Supervision Charges) @ 6 % of J				
L	Total Estimated Capital Cost i.e. (J+K)	1,09,76,245.13			
М	GST @ 18% of L	19,75,724.12			
M1	CESS @ 1% of L	10,97,624.51			
N	Grand Total (L+M)	1,40,49,593.76			
0	Inspection Fee of UG Line (HT) - Rs. 3000/ km.	3,000.00			
Р	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km				
Q	Inspection Fee of RMU - Rs. 1500/ RMU	-			
R	Inspection Fee of Drawing Checking and Approval	750.00			
S	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)	1,40,53,343.76			

Cons	Construction of 33kV Outdoor Bay arrangement.					
	No. of Bus isolator requirement			3		
<u> </u>	No. of VCB Requirement			_1 		
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	T-1 GI Column(7.25 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel) for 33kV incoming line, Nominal Unit Wt - 0.35 MT	Nos.	26,600.00	1	26,600.00	
2	T-2 GI Column (7.25mtr long, consisting of 2 Nos 175X75X6 mm channel) for 33kV incoming line -1 no, Nominal Unit Wt - 0.42 MT	Nos.	31,920.00	1	31,920.00	
3	T-1A GI Column ( for 33 kv Bus) ( 6 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel jointed by plates) Nominal Unit Wt - 0.31 MT	Nos.	23,560.00	2	47,120.00	
4	T-2A GI Column ( for 33 kv Bus) (6 mtr long, consisting of 2 Nos 175X75X6 mm channel jointed by plates) Nominal Unit Wt - 0.37 MT	Nos.	28,120.00	2	56,240.00	
5	G-3 GI Beam(5.05mtr long, consisting of 2 Nos 150X75 X5.7mm) for 33kV incoming line - (2 nos. Beam- one for Surge Arrester and other for Isolator, Nominal Unit Wt - 0.2 MT)	Nos.	15,200.00	1	15,200.00	
6	G-2 GI Beam (6.1 mtr long, consisting of 2 Nos 125X65 X5.3 mm channel jointed by plates) for 33kV Bus Stringing , Nominal Unit Wt - 0.175 MT)	Nos.	13,300.00	4	53,200.00	
7	Equipment Structures (GI) For 33 KV Isolator (Unit Wt of Equipment Structures per set - 0.33 MT)	KG	76.00	990	75,240.00	
8	Equipment Structures (GI) For 33 KV Vacuum Circuit Breaker (Unit Wt of Equipment Structures per set - 0.2 MT)	KG	76.00	200	15,200.00	
9	GI Column for 33 KV CT (Unit Wt of Equipment Structures per set - 0.285 MT)	KG	76.00	285	21,660.00	
10	GI Spikes with cone and GI ( 2 nos) base plate 10mm (50x3000 mm GI pipe) (Unit Wt=0.035 MT)	Nos.	3,641.92	4	14,567.67	
11	GI Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	8	10,920.00	
12	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr. For Isolator/VCB , 10 metre mesh formation )= 20x2.36	KG	97.50	188.8	18,408.00	
13	400 sq.mm ACSR for 33kV side jumpering and Bus Formation etc.	KM	2,74,300.00	0.1	27,430.00	
14	33 kV 1250 AMP Double break (Turn & twist center rotating) isolator with earth switch with PI(Polymer)	Set	1,31,157.00	3	3,93,471.00	
15	33KV Outdoor VCB-1600A, with indoor CR panel without PT, with outdoor CT (CTR- 600-300-150/1-1A, 15VA, STC 25KA/3sec, class: 0.5, 5P10) for feeder protection	EA	7,02,000.00	1	7,02,000.00	
16	33KV.Single Phase PT(33KV/ V3 / 110V/ V3) (Oil cooled ) CLASS 0.5 / 3P, with O/P burden of 100VA	EA	33,046.00	3	99,138.00	
17	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	12	1,61,460.00	
18	Control Cable 10Core x 2.5 mm <sup>2</sup>	Mtr	429.00	150	64,350.00	
19	Control Cable 16Core x 2.5 mm <sup>2</sup>	Mtr	523.90	150	78,585.00	
20	Control Cable 4Core x 2.5 mm <sup>2</sup>	Mtr	145.60	50	7,280.00	
21	Control Cable 7Core x 2.5 mm <sup>2</sup> Disc insulator (B&S) 90 KN polymer	Mtr	236.60	50	11,830.00	
22	H W fitting(B&S) 90 KN,4 Bolt	No.	1,495.00	18	26,910.00	
23	8 bolted (M-12) "T" clamp ACSR Zebra run & 232 mm2 drop	No.	650.00 1,404.00	18 18	11,700.00 25,272.00	
25	PG Clamp for 232 sq.mm AAA conductor	No.	1,404.00	48	71,760.00	
26	GI Nut , Bolt & Washer of different sizes (13.718 Kg each Stroutures)	K.g.	101.40	54.872	5,564.02	
27	Black Paint	Ltr	286.00	4	1,144.00	
28	Yellow Colour Paint for Background	Ltr	286.00	8	2,288.00	
A	Total Cost of materials 20,76,457.6					
В	Sto	ck, Stora	ge & Insurance		62,293.73	
С			Sub T	otal (A+B)	21,38,751.42	
D			Contigency	@ 3% of C	64,162.54	
	·					

	Alliexule-4						
Cons	struction of 33kV Outdoor Bay arrangement.						
E Tools & Plants @ 2% of C							
F	Transportation @ 7.5% of 0						
G	Erection Charges @ 5% on Trf/Breaker/Jois						
H	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole				36,153.00 1,40,444.38		
ī							
J							
	<u>Civil &amp; Services</u>			11 01 (0 10 1)	25,82,692.74		
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
A	VCB Foundation						
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	7.28	3,508.96		
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	4.00	800.00		
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	1020.00	0.34	348.08		
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.46	2,334.15		
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	2.83	18,362.50		
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	13.25	3,988.25		
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	140.00	15,260.00		
В	CT & PT Foundation			0.00	-		
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	7.97	3,840.94		
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	4.50	900.00		
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	900.00	0.36	326.70		
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.36	1,862.19		
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	2.36	15,356.25		
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	14.94	4,496.94		
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	122.43	13,344.87		
С	Column as per Drawing Schedule-			0.00	-		
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works  Filling available excavated earth (excluding rock) in trenches, plinth, eides of	Cum	482.00	51.31	24,731.30		
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	24.00	4,800.00		

Cons	struction of 33kV Outdoor Bay arrangement.				
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	2.10	10,773.00
4	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	14.18	92,137.50
5	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	89.64	26,981.64
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	734.58	80,069.22
D	Isolator				
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	14.18	6,832.35
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	6.00	1,200.00
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.85	4,363.07
4	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	8.55	55,575.00
5	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	44.82	13,490.82
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	367.29	40,034.61
7	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.	3700.00	8	29,600.00
K			Total Civil	& Services	4,75,318.33
L				Total (J+K)	30,58,011.06
N	Sub Total (L+M)				
0	Total GST @ 18% of (N)				
Р	P Total Cess @ 1% of (N)				
Q	Gross	Total Ma	aterial +Service	es (N+O+P)	36,39,033.16

		Annexure-5	
		TP CENTRAL ODISHA DISTRIBUTION LTD.	
Name of the	Division :-	NAYAGARH ELECTRICAL DIVISION, NAYAGARH	
Name of the	Sub-Division : -	Daspalla	
Name of the	Section : -	Daspalla, Nayagarh	
Name of the	Work :-	33kV New Lines from Daspalla Grid (33kV Proposed Daspalla, Banigochha &	Gania Feeders)
Scope of wo	ork:-	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC cov 0.35Ckm. Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm conductor- 0.37Ckm. Construction of 33kV O/H Line using 13mtr WPB Pole & covered conductor- 32Ckm. Construction of 33kV U/G Line with 3R, 1CX630s Construction of 33kV 4 Pole structure with Isolator- 2nos.	AAAC covered 241sqmm AAAC
Names of So	chemes: -	TPCODL CAPEX	
		ABSTRACT OF ESTIMATE	
SI. No.	Part	Description	Gross Total
1	А	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 0.35Ckm.	₹ 12,97,797.24
2	В	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 0.37Ckm.	₹ 13,33,614.81
3	С	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 32Ckm.	₹ 12,23,63,262.25
4	D	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm.	₹ 1,44,82,689.32
5	E	Construction of 33kV 4 Pole structure with Isolator- 2nos.	₹ 20,90,891.18
		Total Estimated Cost	₹ 14,15,68,254.81
		Total Estimated Cost (in Cr)	₹ 14.16

#### Annexure-5 33kV Line Length using 241 SQ.MM. -AAA Conductor (0.35Ckm) No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No.- TPCODL-HVD-0002) MATERIALS FOR 33 KV Cut Point with 180 Degree Angle SI. Total Total Unit Rate Description of Materials Unit Quantity Amount WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 34,322.00 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of K.g. 2,470.30 76.00 32.504 Channel = (2x 9.56x1.7) 5.2864 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280) 97.50 515.42 3 K.g. Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 K.g. 5.85072 444.65 76.00 No's of Channel = (2x 9.56x0.306)104.00 104.00 Danger Plate, 1 no's. No. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = KG 97.50 0.3009 29.34 (1x0.59x0.510) 104.00 312.00 3 GI barbed wire anticlimbing device 3 Kg. Per support Kg Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97 50 1.2036 117.35 (4x0.59x0.510) No. 624.00 1,872.00 9 33KV pin insulator polymer 10 Non Metallic Ties 33KV (For covered conductor) No. 331.00 3 993.00 11 IPC for 241 sq.mm AAA conductor (For covered conductor) 915.00 5,490.00 No. 6 Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole 12 Set 2 332.00 664.00 3,900.00 13 H W fitting(B&S)90KN,4 Bolt No. 650.00 6 14 Disc insulator (B&S)90 KN polymer No. 1,495.00 6 8,970.00 15 Earthing of Support (Coil Type) EΑ 215.80 1 215.80 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing K.g. 97.50 0.262 25.55 17 GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point) K.g. 101.40 4.879 494.73 286.00 18 **Black Paint** Ltr 286.00 19 Yellow Colour Paint for Background I tr 216.00 432.00 Total Cost of materials 61,658.15 Stock, Storage & Insurance i.e 3% of A В 1,849.74 С Sub Total (A+B) 63,507.89 D Contigency @ 3% of C 1.905.24 Е Tools & Plants @ 2% of C 1,270.16 F Transportation @ 7.5% of C 4,763.09 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 1,767.58 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) 2,815.62 Н Erection Charges @ 20% of PSC pole- Not to be used for 33kv Sum of (C to I) J 76,029.58 Civil & Services SI. Total Total Unit Unit Rate Description of Materials No. Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr 6,500.00 Cu.mtr 0.55 3,575.00 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 0.1125 731.25 6.500.00 Κ **Total Civil & Services** 4,306.25 Total (J+K) 80,335.83 Sub Total (L+M) Ν 80,335.83 Total GST @ 18% of (N) 0 14,460.45 01 Total GST @ 1% of (N) 803.36 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle Р 95,599.64 No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No.- TPCODL-HVD-0003) MATERIALS FOR 33 KV Cut Point with 90 Degree Angle SI. Total Total Description of Materials Unit Unit Rate Quantity No. Amount 34,322.00 1 WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34.322.00 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of K.g. 76.00 65.008 4,940.61 10.5728 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280) K.g. 97.50 1,030.85 Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 76.00 11.70144 889.31 K.g. No's of Channel = (4x 9.56x0.306) Danger Plate, 1 no's. No. 104.00 104.00 1 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = KG 97.50 0.3009 29.34 (1x0.59x0.510)312.00 104.00 GI barbed wire anticlimbing device 3 Kg. Per support Kg 3 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97.50 1.2036 117.35 (4x0.59x0.510) No. 624.00 4 2,496.00 33KV pin insulator polymer (4 No's each 90 Deg. Cut point) 10 H W fitting(B&S)90KN,4 Bolt No. 650.00 6 3,900.00 11 Disc insulator (B&S)90 KN polymer No. 1.495.00 6 8.970.00

	Annexure-5						
	33kV Line Length using 241 SQ.MMAAA Conductor (0.3	5Ckm)					
12	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	4	1,324.00		
13	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	6	5,490.00		
14	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	Set	332.00	2	664.00		
15	Earthing of Support ( Coil Type )	No.	215.80	1	215.80		
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	0.262	25.55		
17	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair)	Pair	162.50 1.365.00	1	162.50		
	H.T. Stay set (Complete ) H.T. Stay Insulator Type-C (2 No's.)	Set No.	1,365.00	1	1,365.00 65.00		
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	15	1,462.50		
	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point) K.g. 101.40 11.31						
	Black Paint         Ltr         286.00         1           Yellow Colour Paint for Background         Ltr         216.00         2						
23							
A B	Stock	Storage	& Insurance		<b>69,750.63</b> 2,092.52		
	Stock,	Storage		-	· · · · · · · · · · · · · · · · · · ·		
С				otal (A+B)	71,843.15		
D			Contigency		2,155.29		
E			Tools & Plants		1,373.93		
F			ransportation @		5,388.24		
G	Erection Charges (	② 5% on	Trf/Breaker/W	PB/ H-Pole	1,767.58		
Н	Erection Charges @ 10% of C (except Trf/Breaker/W	PB/ H-P	ole/HT stay set	/PSC pole)	3,334.48		
ı	Erection Charges @ 20% of	PSC pol	e- Not to be us	ed for 33kv	-		
J			Sun	of (C to I)	85,862.68		
	<u>Civil &amp; Services</u>						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	0.55	3,575.00		
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.11	731.25		
3	Fixing of 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, including excvation, supply of 0.5Cum ement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all abour and material (Excavation of earth will be done of size 500X500X1500 mm.)						
к			Total Civil	& Services	6,556.25		
L			-	Γotal (J+K)	92,418.93		
N				otal (L+M)			
				` '	92,418.93		
0			Total GST @		16,635.41		
01			Total GST @	` '	924.19		
Р	Gross Total Material +Services (N+O+O1) for 33 KV	/ Cut Po	int with 90 De	gree Angle	1,09,978.53		
	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)			0.35			
	MATERIALS FOR 33 KV Pin Points						
SI.	Description of Materials	Unit	Unit Rate	Total	Total		
<b>No.</b>	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	Quantity 7	Amount 2,40,254.00		
	33 KV V cross Arm (GI) 22Kg each	No.	2,340.00	7	16,380.00		
3	Top bracket 100x50x6mm GI channel ( 2kg each)	No.	195.00	7	1,365.00		
4	Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	No.	104.00	7	728.00		
5	(1x0.59x0.510)	KG	97.50	2.11	205.36		
6	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	21.00	2,184.00		
7	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	KG	97.50	8.43	821.46		
8	(4x0.59x0.510) 33KV pin insulator polymer	No.	624.00	21	13,104.00		
_	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	21	6,951.00		
	Earthing of Support ( Coil Type )	No.	215.80	7	1,510.60		
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	1.83	178.82		
12	GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole	K.g.	101.40	10.15	1,029.21		
13	)	Set	332.00	14	4,648.00		
14	241 sq.mm AAA conductor	Mtr.	386.00	1081.50	4,17,459.00		
15	Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	EA	4,701.00	0 7.0	- 0.000.00		
16 17	Black Paint Yellow Colour Paint for Background	Ltr Ltr	286.00 216.00	7.0 14.0	2,002.00 3,024.00		
	TOROW COROLL I dilit for background	LU	Total Cost o		7,11,844.45		
<u>A</u>	01	k Ctore					
В	Stoc	r, siorag	ge & Insurance		21,355.33		
С				otal (A+B)	7,33,199.78		
D			Contigency		21,995.99		

	Annexure-5				
	33kV Line Length using 241 SQ.MMAAA Conductor (0.3	5Ckm)			
E Tools & Plants @ 2% of					
F		Tr	ansportation @	7.5% of C	54,989.98
G	Erection Charges (	0 5% on	Trf/Breaker/W	PB/ H-Pole	12,373.08
Н	Erection Charges @ 10% of C (except Trf/Breaker/W	PB/ H-P	ole/HT stay set	/PSC pole)	48,573.82
Т	Erection Charges @ 20% of				-
J			Sun	of (C to I)	8,85,796.65
۴	Civil & Services			( ,	0,00,700.00
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	3.85	25,025.00
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00		5,118.75
K			Total Civil	& Services	30,143.75
L Total (J+K)					9,15,940.40
N			Sub 1	Total (L+M)	9,15,940.40
0			Total GST @	18% of (N)	1,64,869.27
01			Total GST @	0 1% of (N)	9,159.40
Р	Gross Total Material +Service	s (N+O+	O1) for 33 KV	Pin Points	10,89,969.07
	Gross Total Summary				
1	Gross Total Material +Services (N+O+				-
2	Gross Total Material +Services (N+				-
3	Gross Total Material +Services (N+O+O1) for 33 K			0 0	95,599.64
4	Gross Total Material +Services (N+O+O1) for 33 k				1,09,978.53
5 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points					10,89,969.07
Q Gross Total Material +Services					12,95,547.24
R Inspection Fee of Over Head Line (HT) - Rs. 1500 upto 1 KN					1,500.00
S	Inspection Fee of Over Head				
Т	Inspection Fee		0 0		750.00
U	Gross Total Material, Services	and Ins	pection Fees (	Q+R+S+T)	12,97,797.24

#### Annexure-5 33kV Line Length using 241 SQ.MM. -AAA Conductor (0.37Ckm) No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No.- TPCODL-HVD-0002) MATERIALS FOR 33 KV Cut Point with 180 Degree Angle SI. Total Total Unit Rate Description of Materials Unit Quantity Amount WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 34,322.00 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of K.g. 2,470.30 76.00 32.504 Channel = (2x 9.56x1.7) 5.2864 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280) 97.50 515.42 3 K.g. Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 K.g. 5.85072 444.65 76.00 No's of Channel = (2x 9.56x0.306)104.00 104.00 Danger Plate, 1 no's. No. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = KG 97.50 0.3009 29.34 (1x0.59x0.510) 104.00 312.00 3 GI barbed wire anticlimbing device 3 Kg. Per support Kg Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97 50 1.2036 117.35 (4x0.59x0.510) No. 624.00 1,872.00 9 33KV pin insulator polymer 10 Non Metallic Ties 33KV (For covered conductor) No. 331.00 3 993.00 11 IPC for 241 sq.mm AAA conductor (For covered conductor) 915.00 5,490.00 No. 6 Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole 12 Set 2 332.00 664.00 3,900.00 13 H W fitting(B&S)90KN,4 Bolt No. 650.00 6 14 Disc insulator (B&S)90 KN polymer No. 1,495.00 6 8,970.00 15 Earthing of Support (Coil Type) EΑ 215.80 1 215.80 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing K.g. 97.50 0.262 25.55 17 GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point) K.g. 101.40 4.879 494.73 286.00 18 **Black Paint** Ltr 286.00 19 Yellow Colour Paint for Background I tr 216.00 432.00 Total Cost of materials 61,658.15 Stock, Storage & Insurance i.e 3% of A В 1,849.74 С Sub Total (A+B) 63,507.89 D Contigency @ 3% of C 1.905.24 Е Tools & Plants @ 2% of C 1,270.16 F Transportation @ 7.5% of C 4,763.09 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 1,767.58 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) 2,815.62 Н Erection Charges @ 20% of PSC pole- Not to be used for 33kv Sum of (C to I) J 76,029.58 Civil & Services SI. Total Total Unit Unit Rate Description of Materials No. Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr 6,500.00 Cu.mtr 0.55 3,575.00 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 0.1125 731.25 6.500.00 Κ **Total Civil & Services** 4,306.25 Total (J+K) 80,335.83 Sub Total (L+M) Ν 80,335.83 Total GST @ 18% of (N) 0 14,460.45 01 Total GST @ 1% of (N) 803.36 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle Р 95,599.64 No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No.- TPCODL-HVD-0003) MATERIALS FOR 33 KV Cut Point with 90 Degree Angle SI. Total Total Description of Materials Unit Unit Rate Quantity No. Amount 34,322.00 1 WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34.322.00 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of K.g. 76.00 65.008 4,940.61 10.5728 1,030.85 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280) K.g. 97.50 Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 76.00 11.70144 889.31 K.g. No's of Channel = (4x 9.56x0.306) Danger Plate, 1 no's. No. 104.00 104.00 1 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = KG 97.50 0.3009 29.34 (1x0.59x0.510)312.00 104.00 GI barbed wire anticlimbing device 3 Kg. Per support Kg 3 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97.50 1.2036 117.35 (4x0.59x0.510) No. 624.00 4 2,496.00 33KV pin insulator polymer (4 No's each 90 Deg. Cut point) 10 H W fitting(B&S)90KN,4 Bolt No. 650.00 6 3,900.00 11 Disc insulator (B&S)90 KN polymer No. 1.495.00 6 8.970.00

l	Annexure-5						
	33kV Line Length using 241 SQ.MMAAA Conductor (0.3	7Ckm)					
12	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	4	1,324.00		
13	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	6	5,490.00		
14	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	Set	332.00	2	664.00		
15	Earthing of Support ( Coil Type )	No.	215.80	1	215.80		
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	0.262	25.55		
17	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair) H.T. Stay set (Complete)	Pair	162.50 1.365.00	1	1,365.00		
	H.T. Stay Insulator Type-C (2 No's.)	Set No.	65.00	1	65.00		
20	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	15	1,462.50 1.146.83		
	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point)  K.g. 101.40 11.31						
22	Black Paint         Ltr         286.00         1           Yellow Colour Paint for Background         Ltr         216.00         2						
A	Tellow Colour Faint for Background	Lu	Total Cost of		432.00 <b>69,750.6</b> 3		
В	Stock	Storage	& Insurance		2,092.52		
L <sub>c</sub>	Stock,	Otorage					
				otal (A+B)	71,843.15		
<u>D</u>			Contigency	_	2,155.29		
E			Tools & Plants		1,373.93		
F			ansportation @		5,388.24		
G	Erection Charges (				1,767.58		
н	Erection Charges @ 10% of C (except Trf/Breaker/W	PB/ H-P	ole/HT stay set	/PSC pole)	3,334.48		
1	Erection Charges @ 20% of	PSC pol	e- Not to be us	ed for 33kv	-		
J			Sum	of (C to I)	85,862.68		
	<u>Civil &amp; Services</u>						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1 2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	0.55	3,575.00		
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	Cu.mtr No.	6,500.00 2,250.00	0.11	731.25 2,250.00		
к			Total Civil	& Services	6,556.25		
					· · · · · · · · · · · · · · · · · · ·		
L				Total (J+K)	92,418.93		
N			Sub 1	otal (L+M)	92,418.93		
0			Total GST @	18% of (N)	16,635.41		
01			Total GST @	) 1% of (N)	924.19		
Р	Gross Total Material +Services (N+O+O1) for 33 KV	Cut Po	int with 90 Dec	gree Angle	1,09,978.53		
33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001) 0.37							
	·			0.37			
<u> </u>	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points				Total		
SI. No.	·	Unit	Unit Rate	0.37  Total Quantity	Total Amount		
<b>No.</b>	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	Total Quantity	<b>Amount</b> 2,40,254.00		
<b>No.</b> 1 2	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each	No No.	34,322.00 2,340.00	Total Quantity 7	Amount 2,40,254.00 16,380.00		
<b>No.</b>	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No No. No.	34,322.00 2,340.00 195.00	Total Quantity	Amount 2,40,254.00 16,380.00 1,365.00		
No. 1 2 3 4	Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	No No.	34,322.00 2,340.00	Total Quantity 7 7 7	Amount 2,40,254.00 16,380.00 1,365.00 728.00		
No. 1 2 3 4 5	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support	No No. No.	34,322.00 2,340.00 195.00 104.00	Total Quantity 7 7 7 7	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36		
No. 1 2 3 4 5	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	No No. No. No.	34,322.00 2,340.00 195.00 104.00 97.50	Total Quantity 7 7 7 7 7 2.11	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00		
No. 1 2 3 4 5 6	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	No No. No. No. KG Kg	34,322.00 2,340.00 195.00 104.00 97.50 104.00	Total Quantity 7 7 7 7 2.11 21.00 8.43	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00 821.46		
No. 1 2 3 4 5 6 7	Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	No No. No. No. KG Kg KG	34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00	Total Quantity 7 7 7 7 7 2.11 21.00 8.43 21	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00 821.46		
No. 1 2 3 4 5 6 7 8 9	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	No No. No. No. KG Kg	34,322.00 2,340.00 195.00 104.00 97.50 104.00	Total Quantity 7 7 7 7 2.11 21.00 8.43	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00 821.46 13,104.00 6,951.00		
No. 1 2 3 4 5 6 7 8 9 10 11	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support (Coil Type)  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	No No. No. KG Kg KG No. No. No.	34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80 97.50	Total Quantity 7 7 7 7 2.11 21.00 8.43 21 21 7 1.83	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00 821.46 13,104.00 6,951.00 178.82		
No. 1 2 3 4 5 6 7 8 9 10 11 12	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	No No. No. KG Kg KG No. No.	34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80	Total Quantity 7 7 7 7 2.11 21.00 8.43 21 21 7 1.83 10.15	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00 821.46 13,104.00 6,951.00 178.82		
No. 1 2 3 4 5 6 7 8 9 10 11	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support (Coil Type)  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	No No. No. KG Kg KG No. No. No.	34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80 97.50	Total Quantity 7 7 7 7 2.11 21.00 8.43 21 21 7 1.83	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00 821.46 13,104.00 6,951.00 1,510.60 178.82 1,029.21		
No.  1 2 3 4 5 6 7 8 9 10 11 12 13	MATERIALS FOR 33 KV Pin Points  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 2kg each) Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer Non Metallic Ties 33KV (For covered conductor) Earthing of Support ( Coil Type ) No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	No No. No. KG KG No. No. No. KG KG KG No. No. No. K.g. K.g. K.g.	34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00	Total Quantity 7 7 7 7 2.11 21.00 8.43 21 21 7 1.83 10.15 14 1143.30	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00 821.46 13,104.00 6,951.00 1,7510.60 178.82 1,029.21 4,648.00		
No.           1           2           3           4           5           6           7           8           9           10           11           12           13           14           15	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	No No. No. KG KG No. No. No. KG KG No. No. K.g. K.g. K.g.	34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00	Total Quantity 7 7 7 7 2.11 21.00 8.43 21 21 7 1.83 10.15 14 1143.30 0	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00 821.46 13,104.00 6,951.00 1,510.60 178.82 1,029.21 4,648.00 4,41,313.80		
No.           1           2           3           4           5           6           7           8           9           10           11           12           13           14           15           16	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	No No. No. KG KG No. No. No. KG No. No. K.g. K.g. K.g. Ltr	34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00	Total Quantity 7 7 7 7 7 2.11 21.00 8.43 21 21 7 1.83 10.15 14 1143.30 0 7.0	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00 821.46 13,104.00 6,951.00 1,510.60 178.82 1,029.21 4,648.00 4,41,313.80		
No.           1           2           3           4           5           6           7           8           9           10           11           12           13           14           15           16           17	MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	No No. No. KG KG No. No. No. KG KG No. No. K.g. K.g. K.g.	34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00	Total Quantity 7 7 7 7 7 2.11 21.00 8.43 21 21 7 1.83 10.15 14 1143.30 0 7.0 14.0	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00 821.46 13,104.00 6,951.00 1,510.60 178.82 1,029.21 4,648.00 4,41,313.80		
No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 A	MATERIALS FOR 33 KV Pin Points  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor  Black Paint  Yellow Colour Paint for Background	No No. No. KG KG No. No. No. KG KG Ltr Ltr	34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00 216.00 Total Cost o	Total Quantity 7 7 7 7 2.11 21.00 8.43 21 21 7 1.83 10.15 14 1143.30 0 7.0 14.0 f materials	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00 821.46 13,104.00 6,951.00 1,510.60 178.82 1,029.21 4,648.00 4,41,313.80 - 2,002.00 3,024.00 7,35,699.25		
No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 A B	MATERIALS FOR 33 KV Pin Points  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor  Black Paint  Yellow Colour Paint for Background	No No. No. KG KG No. No. No. KG KG Ltr Ltr	34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00 216.00 Total Cost of the second of the	Total Quantity 7 7 7 7 2.11 21.00 8.43 21 21 7 1.83 10.15 14 1143.30 0 7.0 14.0 f materials i.e 3% of A	Amount 2,40,254.00 16,380.00 1,365.00 728.00 205.36 2,184.00 821.46 13,104.00 6,951.00 1,510.60 178.82 1,029.21 4,648.00 4,41,313.80 2,002.00 3,024.00 7,35,699.25 22,070.98		
No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 A	MATERIALS FOR 33 KV Pin Points  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor  Black Paint  Yellow Colour Paint for Background	No No. No. KG KG No. No. No. KG KG Ltr Ltr	34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00 216.00 Total Cost of the second of the	Total Quantity 7 7 7 7 2.11 21.00 8.43 21 21 7 1.83 10.15 14 1143.30 0 7.0 14.0 f materials i.e 3% of A			

	Annexure-5				
	33kV Line Length using 241 SQ.MMAAA Conductor (0.3	7Ckm)			
E Tools & Plants @ 2% of					
F Transportation @ 7.5% of					
G	Erection Charges (	) 5% on	Trf/Breaker/W	PB/ H-Pole	12,373.08
Н	Erection Charges @ 10% of C (except Trf/Breaker/W	PB/ H-Po	ole/HT stay set	/PSC pole)	51,030.86
ı	Erection Charges @ 20% of	PSC pole	e- Not to be us	ed for 33kv	-
J			Sum	of (C to I)	9,15,895.44
	Civil & Services			<u>, 1</u>	, ,
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	3.85	25,025.00
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.79	5,118.75
K			Total Civil 8	& Services	30,143.75
L Total (J+K)					
N Sub Total (L+M)					
0			Total GST @	18% of (N)	1,70,287.05
01			Total GST @	) 1% of (N)	9,460.39
Р	Gross Total Material +Service	s (N+O+	01) for 33 KV	Pin Points	11,25,786.64
<u> </u>					
	Gross Total Summary				
1	Gross Total Material +Services (N+O+				-
2	Gross Total Material +Services (N+				-
3	Gross Total Material +Services (N+O+O1) for 33 KV			0 0	95,599.64
4 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle					
5 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points					11,25,786.64
Q Gross Total Material +Services					13,31,364.81
R Inspection Fee of Over Head Line (HT) - Rs. 1500 upto 1 KM					1,500.00
S Inspection Fee of Over Head Line (HT) - Rs. 750/ Additional Kn					
Т	Inspection Fee		<u> </u>	- ' '	750.00
U	Gross Total Material, Services	and Ins	pection Fees (	Q+R+S+T)	13,33,614.81

	Annexure-5					
	33kV Line Length using 241 SQ.MMAAA Conductor	(32Ckm)				
	No. of 33 KV DP required Without Isolator (Ref. Drawing No TPCODL-HVD-0004)			58		
	MATERIALS FOR 33 KV DP Without Isolator	l				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	116	39,81,352.00	
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =(2x9.56x3.25)	KG	76.00	3604.12	2,73,913.12	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	229.9584	22,420.94	
4	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's channel required = (5x7.14x1.96)	KG	76.00	4058.376	3,08,436.58	
5	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = (4*4.5*3.432)	KG	76.00	3583.008	2,72,308.61	
6	Danger Plate, 2 no's.	No.	104.00	116	12,064.00	
7	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	34.9044	3,403.18	
8	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	116	18,850.00	
9	H.T. Stay set (Complete )	Set	1,365.00	116	1.58.340.00	
10	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	232	15,080.00	
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	1740	1,69,650.00	
12	Gi Pipe Earthing 40mm. 3 Mtr. Long 50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)=	No.	1,365.00	58	79,170.00	
13	5x2.36	KG	97.50	684.4	66,729.00	
14	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	348	36,192.00	
15	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50	139.6176	13,612.72	
16	33KV pin insulator polymer	No.	624.00	174	1,08,576.00	
17	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	174	57,594.00	
18	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	348	3,18,420.00	
19	Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole)	Set	332.00	232	77,024.00	
20	H W fitting(B&S)90KN,4 Bolt	No.	650.00	348	2,26,200.00	
21	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	348 711.138	5,20,260.00	
22	GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator)  Black Paint	K.g. Ltr	101.40 286.00	58	72,109.39 16,588.00	
24	Yellow Colour Paint for Background	Ltr	216.00	116	25,056.00	
Α			Total Cost	of materials	68,53,349.54	
В	Stoc	ck, Stora	ge & Insuranc	e i.e 3% of A	2,05,600.49	
С			Sub	Total (A+B)	70,58,950.02	
D			Contigeno	y @ 3% of C	2,11,768.50	
Е			Tools & Plant	s @ 2% of C	1,32,092.55	
F		Tı	ansportation	@ 7.5% of C	5,29,421.25	
G	Erection Charges (	@ 5% on	Trf/Breaker/\	VPB/ H-Pole	2,05,039.63	
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F				2,50,383.48	
H	Erection Charges @ 20% of			' '		
┪	Ercodon ondiges @ 2078 or	1 00 po		m of (C to I)	83,87,655.43	
⊢ٌ	Civil & Services			111 01 (0 10 1)	03,07,033.43	
<u> </u>	CIVII & SELVICES					
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	116	2,61,000.00	
3	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr Cu.mtr	6,500.00 6,500.00	63.8 13.05	4,14,700.00 84,825.00	
٣	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber	Ou.IIII	0,300.00	10.00	04,023.00	
4	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.	3,700.00	58	2,14,600.00	
K	K Total Civil & Services					
ᆫ	L Total (J+K					
N				Total (L+M)	93,62,780.43	
0				2) 18% of (N)	16,85,300.48	
01				@ 1% of (N)	93,627.80	
Р	Gross Total Material +Services (N+O+O	01) for 3	3 KV DP With	out Isolator	1,11,41,708.71	
<del></del>	No. of 33 KV DP required With Isolator					
	(Ref. Drawing No TPCODL-TCE-0001)  MATERIALS FOR 33 KV DP With Isolator			6		

SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	12	4,11,864.00
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 2x9.56x4.3)	KG	76.00	493.296	37,490.50
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	23.7888	2,319.41
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	76.00	184.212	14,000.11
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	76.00	368.424	28,000.22
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	76.00	736.848	56,000.45
7	50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	76.00	532.116	40,440.82
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	76.00	34.272	2,604.67
9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	76.00	10.476	796.18
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	76.00	9.18	697.68
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	76.00	57.36	4,359.36
12	Danger Plate, 2 no's.			12	1,248.00
13	Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = KG 97.50 3.6108		352.05		
14	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	12	1,950.00
	H.T. Stay set (Complete )	Set	1,365.00	12	16,380.00
	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00		1,560.00
	7/8 SWG Stay Wire 15kg /stay Gi Pipe Earthing 40mm. 3 Mtr. Long	K.g.	97.50 1,365.00		17,550.00 16,380.00
19	50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For	No. KG	97.50		33,134.40
20	mesh formation and 2.5 mtr. For raising)= 24x2.36 GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	36	3,744.00
21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50		1,408.21
22	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	18	2,42,190.00
23	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with PI(Polymer)	Set	66,000.00	6	3,96,000.00
24	33KV pin insulator polymer	No.	624.00	18	11,232.00
25	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	18	5,958.00
26	IPC for 241 sq.mm AAA conductor (For covered conductor) Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each	No.	915.00	36	32,940.00
27	Pole ) H W fitting(B&S)90KN,4 Bolt	Set No.	332.00 650.00	24 36	7,968.00 23,400.00
29	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	36	53,820.00
	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	101.40		13,476.06
_	Black Paint Valley Colour Point for Pookground	Ltr	286.00 216.00		1,716.00
	Yellow Colour Paint for Background	Ltr		of materials	2,592.00 <b>14,83,572.12</b>
<u>A</u>	04-	.1. 04			
В	Stoc	ck, Stora		e i.e 3% of A	44,507.16
С				Total (A+B)	15,28,079.28
D			Contigend	cy @ 3% of C	45,842.38
E			Tools & Plant	ts @ 2% of C	29,452.89
F		Ti	ransportation	@ 7.5% of C	1,14,605.95
G	Erection Charges	@ 5% on	Trf/Breaker/\	WPB/ H-Pole	21,211.00
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F	Pole/HT s	stay set/GI Po	le/PSC pole)	1,04,842.48
I	Erection Charges @ 20% of	PSC po	le- Not to be ι	used for 33kv	-
J			Sı	ım of (C to I)	18,44,033.97
	Civil & Services			. ,	
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	12	27,000.00
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr Cu.mtr	6,500.00 6,500.00	6.6 1.35	42,900.00 8,775.00
4	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.	3,700.00	12	44,400.00
К			Total Civi	il & Services	1,23,075.00
L				Total (J+K)	19,67,108.97
N			Sub	Total (L+M)	19,67,108.97
0			Total GST (	@ 18% of (N)	3,54,079.61
•					

P Gross Total Material +Services (N+  No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No TPCODL-HVD-0002)  MATERIALS FOR 33 KV Cut Point with 180 Degree	O+01) fc	or 33 KV DP \	With Isolator	23,40,859.68				
MATERIALS FOR 33 KV Cut Point with 180 Degree								
MATERIALS FOR 33 KV Cut Point with 180 Degree		No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No TPCODIHVD-0002)						
			44					
I	<u>Angle</u>							
SI. No. Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount				
1 WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	44	15,10,168.00				
2 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of Channel = (2x 9.56x1.7)	K.g.	76.00	1430.176	1,08,693.38				
3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)								
4 Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 No's of Channel = (2x 9.56x0.306)	K.g.	76.00	257.43168	19,564.81				
5 Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	No.	104.00	44	4,576.00				
6 (1x0.59x0.510)  7 GI barbed wire anticlimbing device 3 Kg. Per support	KG	97.50 104.00	13.2396	1,290.86 13,728.00				
Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	Kg KG	97.50	52.9584	5,163.44				
(4x0.59x0.510) 9 33KV pin insulator polymer	No.	624.00	132	82,368.00				
10 Non Metallic Ties 33KV (For covered conductor)	No.	331.00		43,692.00				
11 IPC for 241 sq.mm AAA conductor (For covered conductor) Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each	No.	915.00	264	2,41,560.00				
Pole )	Set	332.00		29,216.00				
13 H W fitting(B&S)90KN,4 Bolt 14 Disc insulator (B&S)90 KN polymer	No.	650.00 1,495.00	264 264	1,71,600.00 3,94,680.00				
15 Earthing of Support ( Coil Type )	EA.	215.80		9,495.20				
16 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50		1,123.98				
17 GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point) 18 Black Paint	K.g.	101.40 286.00		21,768.15 12,584.00				
19 Yellow Colour Paint for Background	Ltr Ltr	216.00		19,008.00				
A			of materials	27,12,958.47				
	ck, Stora	ige & Insuranc	e i.e 3% of A	81,388.75				
С		Sub	Total (A+B)	27,94,347.23				
D		Contigend	cy @ 3% of C	83,830.42				
E		<del>_</del>	ts @ 2% of C	55,886.94				
<del>-  </del>   F		ransportation		2,09,576.04				
G Erection Charges			<u> </u>	77,773.65				
H Erection Charges @ 10% of C (except Trf/Breaker/V				1,23,887.42				
Erection Charges @ 20% of				- 1,20,001.12				
J			um of (C to I)	33,45,301.70				
Civil & Services			- ( /	00, 10,00 0				
SI. No. Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount				
1 Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	24.2	1,57,300.00				
2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr			32,175.00				
K		Total Civi	il & Services	1,89,475.00				
L N		CL	Total (J+K) Total (L+M)	35,34,776.70				
N O			@ 18% of (N)	<b>35,34,776.70</b> 6,36,259.81				
01			@ 18 % of (N)	35,347.77				
P Gross Total Material +Services (N+O+O1) for 33 KV	Cut Poi		<u> </u>	42,06,384.27				
No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)			20					
MATERIALS FOR 33 KV Cut Point with 90 Degree A	1ngle							
SI. No. Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount				
1 WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	20	6,86,440.00				
2 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)	K.g.	76.00	1300.16	98,812.16				
Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)		97.50	211.456	20,616.96				
4 Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)	K.g.	76.00	234.0288	17,786.19				
5 Danger Plate, 1 no's.  Peak Clamp for depart Plate 35V2 mm, flat 0.50Kg/Mtr. Elet of 0.510mtr langth 1 no's =	No.	104.00	20	2,080.00				
Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	6.018	586.76				
	Kg	104.00	60	6,240.00				
7 GI barbed wire anticlimbing device 3 Kg. Per support Back Clamp for anticlimbing device 25X3 mm. flat. 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =								
7 Gl barbed wire anticlimbing device 3 Kg. Per support  8 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  9 33KV pin insulator polymer (4 No's each 90 Deg. Cut point)	KG No.	97.50 624.00		2,347.02 49,920.00				

11 12								
12	Disc insulator (B&S)90 KN polymer	No.	1,495.00	120	1,79,400.00			
	,	No.	331.00	80	26,480.00			
13	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	120	1,09,800.00			
14	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each	Set	332.00	40	13,280.00			
	Pole )							
15	Earthing of Support ( Coil Type )	No.	215.80	20	4,316.00			
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	5.24	510.90			
17	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	20	3,250.00			
18	H.T. Stay set (Complete )	Set	1,365.00	20	27,300.00			
	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	20	1,300.00			
20	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	300	29.250.00			
21	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point)	K.g.	101.40	226.2	22,936.68			
22	Black Paint	Ltr	286.00	20	5,720.00			
23	Yellow Colour Paint for Background	Ltr	216.00	40	8,640.00			
Α			Total Cost	of materials	13,95,012.66			
В	Stock	Storage	e & Insurance	eie 3% of A	41,850.38			
	, · · ·							
С								
D	- · · · · · · · · · · · · · · · · · · ·							
Е			Tools & Plant	s @ 2% of C	27,478.60			
F		Т	ransportation	@ 7.5% of C	1,07,764.73			
	G Erection Charges @ 5% on Trf/Breaker/WPB/ H-							
н	Erection Charges @ 10% of C (except Trf/Breaker/W	/PB/ H-P	ole/HT stay s	et/PSC pole)	66,689.68			
-	Erection Charges @ 20% of	PSC po	le- Not to be ι	ised for 33kv	-			
J			Su	m of (C to I)	17,17,253.61			
⊢∸	Civil & Services			()	,,200.01			
_	<u> </u>							
SI.	Description of Materials	Unit	Unit Rate	Total	Total			
No.	<u> </u>	_		Quantity	Amount			
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	11.00	71,500.00			
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	2.25	14,625.00			
	Fixing of 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, including excvation, supply of							
3	0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal	No.	2,250.00	20	45,000.00			
	with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)							
	That all labour and material (Excuration of out it will be done of old object of out it will be							
K			Total Civi	I & Services	1,31,125.00			
L				Total (J+K)	18,48,378.61			
N			Sub	Total (L+M)	18,48,378.61			
				` 1				
0			Total GST (	② 18% of (N)	3,32,708.15			
01			Total GST	@ 1% of (N)	40 400 70			
U .	Total GST @ 1% of (N)							
P	Gross Total Material +Services (N+O+O1) for 33 KV	/ Cut Po		<del>*                                    </del>	18,483.79 <b>21,99,570.54</b>			
_	Gross Total Material +Services (N+O+O1) for 33 K	/ Cut Po		<del>*                                    </del>	,			
_	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)	/ Cut Po		<del>*                                    </del>	,			
P		/ Cut Po		egree Angle	21,99,570.54			
P SI.	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)	Unit		agree Angle 32 Total	21,99,570.54 Total			
P SI. No.	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials	Unit	unit with 90 D	32 Total Quantity	21,99,570.54 Total Amount			
SI. No.	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	<i>Unit</i> No	Unit Rate 34,322.00	32  Total Quantity 672	21,99,570.54  Total  Amount 2,30,64,384.00			
SI. No. 1 2	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each	Unit No No.	Unit Rate 34,322.00 2,340.00	32  Total Quantity 672 672	21,99,570.54  Total  Amount 2,30,64,384.00 15,72,480.00			
SI. No.	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)	Unit No No. No.	Unit Rate 34,322.00 2,340.00 195.00	32  Total Quantity 672 672 672 672	21,99,570.54  Total  Amount 2,30,64,384.00 15,72,480.00 1,31,040.00			
SI. No. 1 2 3 4	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each	Unit No No. No.	Unit Rate 34,322.00 2,340.00 195.00 104.00	32  Total Quantity 672 672 672 672 672 672	70tal Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00			
SI. No. 1 2 3	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	Unit No No. No.	Unit Rate 34,322.00 2,340.00 195.00	32  Total Quantity 672 672 672 672 672 202.20	Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97			
SI. No. 1 2 3 4	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support	Unit No No. No.	Unit Rate 34,322.00 2,340.00 195.00 104.00	32  Total Quantity 672 672 672 672 672 672	70tal Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00			
SI. No. 1 2 3 4 5	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	Unit No No. No. No. KG	Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50	32  Total Quantity 672 672 672 672 672 202.20	Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97			
SI. No. 1 2 3 4 5 6 7	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	Unit No No. No. KG Kg KG	Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50	32  Total Quantity 672 672 672 672 202.20 2016.00 808.82	21,99,570.54  Total Amount 2,30,64,384.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87			
SI. No. 1 2 3 4 5 6 7 8	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer	Unit No No. No. KG KG KG No.	Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00	32  Total Quantity 672 672 672 672 202.20 2016.00 808.82 2016	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00			
SI. No. 1 2 3 4 5 6 7 8 9	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)	Unit No No. No. KG KG KG No. No.	Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00	70tal Quantity 672 672 672 672 202.20 2016.00 808.82 2016 2016	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00			
SI. No. 1 2 3 4 5 6 7 8 8 9 10	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )	Unit No No. No. KG Kg KG No. No.	Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80	32  Total Quantity 672 672 672 672 202.20 2016.00 808.82 2016 2016 672	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60			
SI. No. 1 2 3 4 5 6 7 8 9 10 11	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)	Vnit No No. No. KG Kg KG No. No. KG	Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80 97.50	32  Total Quantity 672 672 672 672 672 202.20 2016.00 808.82 2016 2016 672 176.06	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24			
SI. No. 1 2 3 4 5 6 7 8 8 9 10 11	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each	Unit No No. No. KG Kg KG No. No. No. KG Kg KG	Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80 97.50	70tal Quantity 672 672 672 672 202.20 2016.00 808.82 2016 2016 672 176.06 974.40	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16			
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	Unit No No. No. KG KG No. No. No. Set	Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00	70tal Quantity 672 672 672 672 202.20 2016.00 808.82 2016 2016 672 176.06 974.40 1344	70tal Amount 2,30,64,384.00 15,72,480.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16 4,46,208.00			
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	Unit No No. No. KG KG No. No. No. KG KG No. No. K.g. K.g. K.g.	Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00	70tal Quantity 672 672 672 672 202.20 2016.00 808.82 2016 2016 672 176.06 974.40 1344 98880.00	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16 4,46,208.00 3,81,67,680.00			
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	Unit No No. No. KG KG No. No. No. KG No. No. K.g. K.g. K.g. Set Mtr. EA	Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00	32  Total Quantity 672 672 672 672 202.20 2016.00 808.82 2016 2016 672 176.06 974.40 1344 98880.00 96	70tal Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16 4,46,208.00 3,81,67,680.00 4,51,296.00			
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	Unit No No. No. KG KG No. No. No. K.g. K.g. K.g. K.g. Ltr	Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00	70tal Quantity 672 672 672 672 202.20 2016.00 808.82 2016 2016 672 176.06 974.40 1344 98880.00 96 672.0	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16 4,46,208.00 3,81,67,680.00 4,51,296.00 1,92,192.00			
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	Unit No No. No. KG KG No. No. No. KG No. No. K.g. K.g. K.g. Set Mtr. EA	Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50 104.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00 216.00	70tal Quantity 672 672 672 672 202.20 2016.00 808.82 2016 2016 672 176.06 974.40 1344 98880.00 96 672.0 1344.0	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16 4,46,208.00 3,81,67,680.00 4,51,296.00 1,92,192.00 2,90,304.00			
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	Unit No No. No. KG KG No. No. No. K.g. K.g. K.g. K.g. Ltr	Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50 104.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00 216.00	70tal Quantity 672 672 672 672 202.20 2016.00 808.82 2016 2016 672 176.06 974.40 1344 98880.00 96 672.0	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16 4,46,208.00 3,81,67,680.00 4,51,296.00 1,92,192.00			
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	### The content of th	Unit No No. No. KG KG No. No. No. K.g. K.g. K.g. Set Mtr. EA Ltr	Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50 104.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00 216.00	## Total Quantity   672     672     672     672     672     672     202.20     2016.00     808.82     2016     2016     2016     672     176.06     974.40     1344     98880.00     96     672.0     1344.0     of materials	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16 4,46,208.00 3,81,67,680.00 4,51,296.00 1,92,192.00 2,90,304.00			
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 A B	### The content of th	Unit No No. No. KG KG No. No. No. K.g. K.g. K.g. Set Mtr. EA Ltr	Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00 216.00 Total Cost	## Total Quantity   672     672     672     672     672     672     202.20     2016.00     808.82     2016     2016     2016     974.40     1344     98880.00     96     672.0     1344.0     of materials     e i.e 3% of A	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16 4,46,208.00 3,81,67,680.00 4,51,296.00 1,92,192.00 2,90,304.00 6,68,79,978.84 20,06,399.37			
SI. No. 1 2 3 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 16 17 A B C C	### The content of th	Unit No No. No. KG KG No. No. No. K.g. K.g. K.g. Set Mtr. EA Ltr	## Unit Rate    34,322.00	32  Total Quantity 672 672 672 672 672 202.20 2016.00 808.82 2016 2016 672 176.06 974.40 1344 98880.00 96 672.0 1344.0 of materials e i.e 3% of A Total (A+B)	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16 4,46,208.00 3,81,67,680.00 4,51,296.00 1,92,192.00 2,90,304.00 6,68,79,978.84 20,06,399.37 6,88,86,378.21			
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 A B	### The content of th	Unit No No. No. KG KG No. No. No. K.g. K.g. K.g. Set Mtr. EA Ltr	## Unit Rate    34,322.00	## Total Quantity   672     672     672     672     672     672     202.20     2016.00     808.82     2016     2016     2016     974.40     1344     98880.00     96     672.0     1344.0     of materials     e i.e 3% of A	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16 4,46,208.00 3,81,67,680.00 4,51,296.00 1,92,192.00 2,90,304.00 6,68,79,978.84 20,06,399.37			
SI. No. 1 2 3 3 4 5 6 6 7 8 9 10 11 12 13 14 15 16 16 17 A B C C	### The content of th	Wnit No No. No. KG KG No. No. No. K.g. K.g. K.g. Set Mtr. EA Ltr Ltr	## Unit Rate    34,322.00	32  Total Quantity 672 672 672 672 202.20 2016.00 808.82 2016 2016 672 176.06 974.40 1344 98880.00 96 672.0 1344.0 of materials e i.e 3% of A Total (A+B) y @ 3% of C	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16 4,46,208.00 3,81,67,680.00 4,51,296.00 1,92,192.00 2,90,304.00 6,68,79,978.84 20,06,399.37 6,88,86,378.21			
SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 A B C C	### The content of th	Wnit No No. No. KG KG No. No. K.g. K.g. Set Mtr. EA Ltr Ltr	## Unit Rate    34,322.00	## Total Quantity ## 672 ## 672 ## 672 ## 672 ## 672 ## 672 ## 202.20 ## 2016.00 ## 888.2 ## 2016 ## 2016 ## 2016 ## 672 ## 176.06 ## 974.40 ## 1344 ## 98880.00 ## 96 ## 672.0 ## 1344.0 ## of materials ## i.e 3% of A ## Total (A+B) ## @ 3% of C ## s @ 2% of C	21,99,570.54  Total Amount 2,30,64,384.00 15,72,480.00 1,31,040.00 69,888.00 19,714.97 2,09,664.00 78,859.87 12,57,984.00 6,67,296.00 1,45,017.60 17,166.24 98,804.16 4,46,208.00 3,81,67,680.00 4,51,296.00 1,92,192.00 2,90,304.00 6,68,79,978.84 20,06,399.37 6,88,86,378.21 20,66,591.35			

G	Erection Charges @ 5% on Trf/Breaker/WPB/ H-F						
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pol						
ı	I Erection Charges @ 20% of PSC pole- Not to be used for 33k						
J Sum of (C to I)							
Civil & Services							
SI. No. Description of Materials  Unit Unit Rate Quantity							
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	24,02,400.00					
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr         Cu.mtr         Cu.mtr         6,500.00         75.60	4,91,400.00					
ĸ	Total Civil & Services	28,93,800.00					
L Total (J+K)							
N Sub Total (L+M)							
O Total GST @ 18% of (N)							
O1 Total GST @ 1% of (N)							
Р	Gross Total Material +Services (N+O+O1) for 33 KV Pin Points	10,24,49,239.06					
	Gross Total Summary						
1	Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator	1,11,41,708.71					
2	Gross Total Material +Services (N+O+01) for 33 KV DP With Isolator	23,40,859.68					
3	3 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle						
4 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle							
5 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points							
Q Gross Total Material +Services							
R Inspection Fee of Over Head Line (HT) - Rs. 1500 upto 1 KM							
S	S Inspection Fee of Over Head Line (HT) - Rs. 750/ Additional Km						
Т							
U Gross Total Material, Services and Inspection Fees (Q+R+S+T							

## BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

### Supply Portion

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories			, ,	, , ,
а	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	800		
b	Length of 33kV 1C, 630sqmm cable (HDD)	Mtr.	200		
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	3000	1,495.47	44,86,410.00
1.2	Supply of Straight throU/Gh jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set	9	11,900.00	1,07,100.00
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	6	6,350.00	38,100.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set		6,100.00	-
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	2352.00	357.60	8,41,075.20
2	Supply of 33kV RMU				
а	No. of 33kV 3Way RMU (LLV+M)	nos.			
b	No. of 33kV 4Way RMU (LLVV+M)	nos.			
С	No. of 33kV 3Way RMU (LLV)	nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.			
е	No. of 33kV 3Way RMU (LLL)	nos.			
f	No. of 33kV 4Way RMU (LLLL)	nos.			
2.1	Supply of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M) (CT Ratio to be mentioned)	Nos.	0	22,93,723.00	-
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M) (CT Ratio to be mentioned)	Nos.	0	31,74,874.00	-
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	23,35,264.00	-
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	-
2.6	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS)	Nos.	0	19,59,421.00	-
3	Earthing Earthing Conductor: 50X6 mm (2.4kg./mtr.) GI Flat for				
3.1	equipment, structure etc.)	kg	0.00	97.50	-
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	0	1,365.00	-
4	FRTU for RMU SCADA Automation	<b>"</b>			
a 4.4	No. of FRTU	nos.	0	4.04.744.00	
4.1	Pre-Wired FRTU Panel with FRTU  Menogod Lever? Ethernet Switch (FRTU Panel)	No.	0	1,21,744.00	-
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)  Networking Accessories	No.	0	1,00,000.00 72.00	-
4.3	CMR with Mounting Base for Digital Inputs	Nos.	0	650.00	-
4.5	Interposing Relay for Digital Output	Nos.	0	467.94	-
4.6	Battery Charger	Nos.	0	15,385.00	_
	- Salaryon			10,000.00	

	Annexure-	5			
	BoQ and Estimate for 33kV, 1C 630sqmm l	J/G Cab	le along w	ith 33kV RMU	
4.7	Battery	Nos.	0	8,333.00	-
4.8	4G Modem cum Router	Nos.	0	18,500.00	-
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	0	204.87	-
4.10	Instrumentation Cable	Mtr.	0	305.58	_
4.11	7 C X 1.5 mm2, Armored for Control Output Twisted Pair Shielded & Over all shielded Instrumentation	Mtr.	0	275.23	_
4.12	Cable 4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	0	165.25	-
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	0	150.00	-
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	0.0	148.43	-
4.15	Armored CAT6 SFTP Cable	Mtr.	0	45.87	-
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	0	89.45	-
4.17	Multi Function Meter	Nos.	0	18,651.00	-
	Sub Total (Supply Portion) (in	Rs.)			54,72,685.20
	Erection Port	tion			
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare			,,	, ,
1.1	Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by <b>open trench method</b> .	Mtr.	2400	94.50	2,26,800.00
1.2	Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits	Set	9	2,400.00	21,600.00
1.3	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	6	2,081.70	12,490.20
1.4	Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	0	2,081.70	-
1.5	Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr.	800	2,300.00	18,40,000.00
1.6	Laying of <b>110mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open trench.	Mtr.	2352.00	300.00	7,05,600.00
2	Erection, Commissioning, Wiring and Testing of 33kV RMU				
2.1	Erection of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M)	Nos.	0	15,000.00	-
2.2	Erection of RMU 33KV 4WAY 630A WITH METERING UNIT	Nos.	0	15,000.00	-
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	8,000.00	-
2.5	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	8,000.00	-
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS)	Nos.	0	8,000.00	-
3	(LLLL) FRTU and OFC for RMU SCADA Automation				
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	0.0	16,000.00	-
	Sub Total (Erection Portion) (ii	n Rs.)			28,06,490.20

#### Annexure-5 BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU Civil Portion Rate Amount SI. Description of items Unit Quantity (in Rs.) (in Rs.) No. Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-1.1 Mtr 784 Route Length 4,60,992.00 Earth work excavation of soil Cum 658.56 700.00 1.1.a 1.1.b Earth work excavation of hard rock Cum 282.24 1,720.00 4,85,452.80 Back filling with excavated soil outside and above the trench Cum 940.8 202.00 1.90.041.60 1.2 Damage of asphalt/tar road and other utilities and 392 1.3 reconstructing to bring to its original shape after laying of Mtr 2,643.67 10,36,318.89 cable in open trench (1mtr. width) Civil works for Prefabricated RCC foundation with supply of all materials 2.1 Prefabricated RCC foundation of 33kV RMU Nos. 0 23.145.30 Supply of GI Fencing with Gate around each RMU 3,600.00 sqmtr 0 Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation soil treatment with bentonide powder, calculation of earth Set n 3,700.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe. Supply and erection of GI Pipe of dia. 150mm, Class-B 5 Mtr 48 1,463.40 70.243.20 Supply and Erection of Cable Route Marker along the cable 6 Nos. 33 1,012.00 33,396.00 route at an interval of 30mtrs with civil works Sub Total (Civil Portion) (in Rs.) 22,76,444.49 Α Sub Total (Supply Portion) 54,72,685.20 Stock, Storage & Insurance @ 3 % of A В 1,64,180.56 С Sub Total (A+B) 56,36,865.76 D 1,69,105.97 Contingency @ 3 % of C Ε Tools & Plants Charges @ 2% of C (considered for earthing items) F Transportation @ 7.5% of C 4,22,764.93 G Erection Charges @ 10% of earthing items Н Total (C+D+E+F+G) 62,28,736.66 Sub Total (Erection Portion + Civil Portion) 50,82,934.69 J Total Cost (H+I) 1,13,11,671.35 Total Estimated Capital Cost i.e. (J+K) L 1,13,11,671.35 GST @ 18% of L М 20.36.100.84 CESS @ 1% of L M1 11,31,167.13 Grand Total (L+M) 1,44,78,939.32 Ν Inspection Fee of UG Line (HT) - Rs. 3000/ km. 3,000.00 Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km Q Inspection Fee of RMU - Rs. 1500/ RMU Inspection Fee of Drawing Checking and Approval R 750.00 Gross Total Material, Services and Inspection Fees (N+O+P+Q+R) 1,44,82,689.32

BoQ and Estimate for 33 KV 4 Pole using WPB GI Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) with Isolator and LA

2

No.   Description of Materials   Unit   Unit   Unit   Validate   Country   Amount   Amount   Unit   Unit   Validate   Country   Amount   Unit   Unit   Validate   Country   Amount   Unit   Unit   Validate   Country		MATERIALS FOR 33 KV 4-P With Isolator						
2   Top Chammel 1900XSDXRmm, 0.96 KG3Mr., each chamnel length, 3 mir., 8 no's chammel required =   KG   76.00   657.728   49.987.3	No.	Description of Materials	Unit		1			
Sept. Sept. 3   Sept. 3   Sept. 4   Sept. 5   Sept. 4   Sept. 5	1							
4 solution Support Cahnner (75400 x 4.8 mm. 7.14 KGMtr., each channel length 4.3 Mtr., 2 no's		8x9.56x4.3)	KG	76.00	657.728	49,987.33		
Double Pole Beiling Channel FSQMD KE, Bei	3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 24 no's required = (24x2.36x0.280)	KG	97.50	31.7184	3,092.54		
Company   Comp	4	•••	KG	76.00	122.808	9,333.41		
0   0   0   0   0   0   0   0   0   0	כ	channel required =( 8x7.14x4.3)	KG	76.00	491.232	37,333.63		
O. M. Mill., 1 no channel required = (18.7.140.8) V solution   S. Mill., 1 no angle required =   KG   76.00   12.222   928.8   10.450.388) V solution   V solut	6	(8*4.5*4.927)	KG	76.00	354.744	26,960.54		
14.50.389   isolator   isolator		0.8 Mtr., 1 no channel required =( 1x7.14x0.8)/ Isolator	KG	76.00	39.984	3,038.78		
1	0	(1*4.5*0.388)/ Isolator	KG	76.00	12.222	928.87		
1	9	(1*4.5*0.340)/ Isolator	KG	76.00	10.71	813.96		
12 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = KG 97.50 1.2036 117.31 31 GP pee Earthing 40mm. 3 Mtr. Long No. 1.365.00 6 8,190.01 42 S0x5mm Clast for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh (G 97.50 125.08 12,195.31 formation and 5 mtr. For relating) 150 float brief wire anticliaribing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 16 no's = Kg 104.00 24 2,496.00 150 float brief wire anticliaribing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 16 no's = Kg 97.50 9,6288 933.88 17 (1500.59x0.510) 12 (1500	10		KG	76.00	66.92	5,085.92		
17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3   17.3		<u> </u>	No.	104.00	4	416.00		
14   Softmin Gil Flat for earthing, 238kg/mtr., (15 Mtr. For LA, 4 Mtr for Isolator Body, 2.5 mtr. For mesh formation and 5 mtr. For raising)   12,195.31   12,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,195.31   13,	12	(2x0.59x0.510)				117.35		
Moreation and 5 mitr. For raising)   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,196.5   12,1	13	1 0	No.	1,365.00	6	8,190.00		
10		formation and 5 mtr. For raising)				12,195.30		
16   (180.59x0.510)   17.50x0.510   18.00x0.510   19.00x0.510   19.00	15		Kg	104.00	24	2,496.00		
18   38 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with   Set   66,000.00   7   4,62,000.00   19   33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with   No.   624.00   12   7,488.00   19   33 KV pin insulator polymer   No.   650.00   36   23,400.00   10   10 kin switcher (BAS) 90 KM polymer   No.   1,495.00   36   53,820.00   10   10   10   10   10   10   10		(16x0.59x0.510)				938.81		
Pi(Polymer)	18	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with				4,62,000.00		
10								
10   10   10   10   10   10   10   10						23,400.00		
Paragraph   Par						53,820.00		
24   GI Nut, Bolt & Washer of different sizes   K.g.   101.40   90   9,126.00     5   Black Paint   Ltr   286.00   2   572.00     6   Yellow Colour Paint for Background   Ltr   216.00   4   864.00     7   A						71,760.00		
Second   S								
Vellow Colour Paint for Background								
Stock, Storage & Insurance i.e 3% of A   40,789.88						864.00		
Sub Total (A+B)   14,00,452.54	Α			Total Cost o	f materials	13,59,662.66		
D   Contigency @ 3% of C   42,013.56	В	Stock,	Storage	& Insurance	i.e 3% of A	40,789.88		
Tools & Plants @ 2% of C   27,840,34	С			Sub T	otal (A+B)	14,00,452.54		
Transportation @ 7.5% of C   1,05,033.94	-					42,013.58		
Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   14,140.66   1						27,840.34		
H								
Sum of (C to I)   17,00,401.47	_							
Sum of (C to I)   17,00,401.41		<u> </u>		<u> </u>	. ,	1,10,920.36		
SI.   Description of Materials   Unit   Unit Rate   Quantity   Amount		Erection Charges @ 20% of Ps	SC pole-			17 00 401 41		
SI. No. Description of Materials  1	-	Civil & Services		- Juli	11 01 (0 10 1)	17,00,401.41		
No.   Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr			Unit	Unit Rate	1			
Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.  K  Total Civil & Services 56,650.00  Total (J+K) 17,57,051.4  Sub Total (L+M) 17,57,051.4  Total GST @ 18% of (N) 3,16,269.25  Total CESS @ 1% of (O1) 17,570.5	_				_			
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.  K  Total Civil & Services 56,650.00  Total (J+K) 17,57,051.4  Sub Total (L+M) 17,57,051.4  O  Total GST @ 18% of (N) 3,16,269.20  Total CESS @ 1% of (O1) 17,570.5	_			_		5,850.00		
K         Total Civil & Services         56,650.0           L         Total (J+K)         17,57,051.4           N         Sub Total (L+M)         17,57,051.4           O         Total GST @ 18% of (N)         3,16,269.2           O1         Total CESS @ 1% of (O1)         17,570.5		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				22,200.00		
N         Sub Total (L+M)         17,57,051.4           O         Total GST @ 18% of (N)         3,16,269.2           O1         Total CESS @ 1% of (O1)         17,570.5	Κ			Total Civil	& Services	56,650.00		
O         Total GST @ 18% of (N)         3,16,269.25           O1         Total CESS @ 1% of (O1)         17,570.5	L	L Total (J+K)				17,57,051.41		
O1 Total CESS @ 1% of (O1) 17,570.5	N	Sub Total (L+M)				17,57,051.41		
	0	Total GST @ 18% of (N)						
P Gross Total Material +Services (N+O+O1) for 33 KV 4-P With Isolator 20 00 904 49	01		To	otal CESS @	1% of (O1)	17,570.51		
20,30,031.10	Р	Gross Total Material +Services (N+O+	O1) for 3	33 KV 4-P W	ith Isolator	20,90,891.18		

		Annexure-6				
	T	P CENTRAL ODISHA DISTRIBUTION LIMITED				
Name of	f the Division :-	PURI ELECTRICAL DIVISION, PURI				
Name o	f the Sub-Division : -	Sakhigopal				
Name o	f the Section : -	Satasankha, Puri				
Name of	f the Work :-	33kV New Line from Satasankha Grid (33kV Proposed Satasankh	a-2 Feeder)			
Scope of work:-		Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor-8Ckm. Construction of 33kV U/G Line with 3R, 1CX630sqmm cable- 1.5Ckm. Construction of 33kV 4 Pole structure with Isolator- 1 No.				
Names (	of Schemes: -	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE				
SI. No.	Part	Description	Amount			
1	А	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 8Ckm.	₹ 2,97,35,347.05			
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm cable-1.5Ckm.	₹ 2,12,80,956.31			
3	С	Construction of 33kV 4 Pole structure with Isolator- 1 No.	₹ 9,78,548.67			
		Total Amount	₹ 5,19,94,852.03			
		Total Amount (In Cr)	₹ 5.20			
Total es	timated cost is Rs.5.20	Crore.				

#### Annexure-6 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP No. of 33 KV DP required Without Isolator (Ref. Drawing No.- TPCODL-HVD-0004) MATERIALS FOR 33 KV DP Without Isolator Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34.322.00 24 8.23.728.00 Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =( 2 56,671.68 KG 76.00 745.68 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280) KG 97.50 47.5776 4,638.82 Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's KG 76.00 839.664 63.814.46 channel required =( 5x7.14x1.96) 50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = KG 76.00 741.312 56.339.71 (4\*4.5\*3.432) Danger Plate, 2 no's. No. 104.00 24 2,496.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = KG 97.50 7.2216 704.11 (2x0.59x0.510) H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) Pair 162.50 3,900.00 8 24 H.T. Stay set (Complete) Set 1,365.00 24 32,760.00 10 H.T. Stay Insulator Type-C (2 No's.) No. 48 65.00 3,120.00 7/8 SWG Stay Wire 15kg /stay K.g 97.50 360 35,100.00 Gi Pipe Earthing 40mm. 3 Mtr. Long No. 1,365.00 12 12 16.380.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 13 KG 97.50 141.6 13,806.00 14 GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 72 7,488.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = KG 28.8864 97.50 2,816.42 (8x0.59x0.510) 16 No 624.00 36 22,464.00 33KV pin insulator polymer 17 H W fitting(B&S) 90KN,4 Bolt No. 650.00 72 46,800.00 No. 18 Disc insulator (B&S) 90 KN polymer 1,495.00 72 1,07,640.00 PG Clamp for 232 sq.mm AAA conductor NO 1.495.00 1.07.640.00 20 GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator) K.g. 101.40 147.132 14,919.18 3.432.00 21 Black Paint Ltr 286.00 12 Yellow Colour Paint for Background 22 I tr 216 00 24 5.184.00 **Total Cost of materials** 14,31,842.39 Stock, Storage & Insurance i.e 3% of A В 42.955.27 С Sub Total (A+B) 14,74,797.66 D Contigency @ 3% of C 44,243.93 Tools & Plants @ 2% of C Ε 27,616.00 F Transportation @ 7.5% of C 1,10,609.82 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 42,421.99 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/GI Pipe/PSC pole) Н 53,236.00 1 Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 17,52,925.40 Civil & Services SI. Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount Fixing of 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, including excvation, supply of 0.5 Cum 2,250.00 24 54,000.00 No. cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) 6,500.00 13.2 85,800.00 2 Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mti 3 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 27 17,550.00 Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth No. 3,700.00 12 44,400.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe Κ **Total Civil & Services** 2,01,750.00 L Total (J+K) 19,54,675.40 Sub Total (L+M) Ν 19,54,675.40 Total GST @ 18% of (N) 0 3.51.841.57 Ω1 Total CESS @ 1% of (N 19.546.75 Ρ Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 23,26,063.73 No. of 33 KV DP required With Isolator 4 (Ref. Drawing No.- TPCODL-TCE-0001) MATERIALS FOR 33 KV DP With Isolator

33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP

SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	8	2,74,576.00
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 2x9.56x4.3)	KG	76.00	328.864	24,993.66
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	15.8592	1,546.27
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	76.00	122.808	9,333.41
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	76.00	245.616	18,666.82
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	76.00	491.232	37,333.63
7	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	76.00	354.744	26,960.54
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	76.00	22.848	1,736.45
9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	76.00	6.984	530.78
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	76.00	6.12	465.12
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	76.00	38.24	2,906.24
12	Danger Plate, 2 no's.	No.	104.00	8	832.00
13	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	2.4072	234.70
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	8	1,300.00
15	H.T. Stay set (Complete ) H.T. Stay Insulator Type-C (2 No's.)	Set No.	1,365.00 65.00	8 16	10,920.00 1,040.00
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	120	11,700.00
	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	8	10,920.00
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	97.50	226.56	22,089.60
20	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	24	2,496.00
21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50	9.6288	938.81
22	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	12	1,61,460.00
23	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with PI(Polymer)	Set	66,000.00	4	2,64,000.00
	33KV pin insulator polymer	No.	624.00	12	7,488.00
	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	24	15,600.00
26 27	Disc insulator (B&S) 90 KN polymer PG Clamp for 232 sq.mm AAA conductor	No.	1,495.00 1,495.00	24 24	35,880.00 35,880.00
28	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	101.40	88.6	8,984.04
	Black Paint	Ltr	286.00	4	1,144.00
30	Yellow Colour Paint for Background	Ltr	216.00	8	1,728.00
Α			Total Cost o	f materials	9,93,684.08
В	Stock,	Storage	& Insurance	i.e 3% of A	29,810.52
С			Sub T	otal (A+B)	10,23,494.60
D			Contigency	@ 3% of C	30,704.84
E		To	ools & Plants		19,730.76
F			nsportation @		
	Eraction Charges @				76,762.10
G	Erection Charges @				14,140.66
H	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Po Erection Charges @ 20% of P		·	· '	70,372.49
J	3 6 7	- '		n of (C to I)	12,35,205.45
⊢ٽ	Civil & Services		Cuii	(5 10 1)	. =,00,200.40
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	8	18,000.00
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	4.4	28,600.00
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.9	5,850.00
4	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.	3,700.00	8	29,600.00
к			Total Civil	& Services	82,050.00
L				Total (J+K)	13,17,255.45
N			Sub	Total (L+M)	13,17,255.45

	Annexure-6					
	kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poi					
0			Total GST @		2,37,105.98	
01	Onesa Tatal Material (Osmisa a Alto		Total CESS @	`	13,172.55	
Р	Gross Total Material +Services (N+O+	(01) for	33 KV DP W	tn isolator	15,67,533.99	
	No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No )			13		
	MATERIALS FOR 33 KV Cut Point with 180 Degree Ang	<u>ale</u>				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	13 Mtr. Long H-Pole(GI)	No	56,735.71	13	7,37,564.29	
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of	K.g.	76.00	422.552	32,113.95	
3	Channel = (2x 9.56x1.7) Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)	K.g.	97.50	68.7232	6,700.51	
4	Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2	K.g.	76.00	76.05936	5,780.51	
5	No's of Channel = (2x 9.56x0.306)  Danger Plate, 1 no's.	No.	104.00	13	1,352.00	
6	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	3.9117	381.39	
7	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	39	4,056.00	
8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	15.6468	1,525.56	
	33KV pin insulator polymer	No.	624.00	39	24,336.00	
	H W fitting(B&S)90KN,4 Bolt Disc insulator (B&S)90 KN polymer	No.	650.00	78 78	50,700.00	
	Earthing of Support ( Coil Type )	No. EA	1,495.00 215.80	13	1,16,610.00 2,805.40	
13	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	3.406	332.09	
	PG Clamp for 232 sq.mm AAA conductor GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point)	NO. K.g.	1,495.00 101.40	78 63.427	1,16,610.00 6,431.50	
	Black Paint	Ltr	286.00		3,718.00	
_	Yellow Colour Paint for Background	Ltr	216.00	26	5,616.00	
Α_			Total Cost o		11,16,633.20	
В	Stock	Storage	& Insurance		33,499.00	
С			Contigency	otal (A+B)	11,50,132.19	
D E		Т/	ools & Plants		34,503.97 23,002.64	
F			nsportation @		86,259.91	
G	Erection Charges @				37,984.56	
Н	Erection Charges @ 10% of C (except Trf/Breaker/WF				39,044.10	
ı	Erection Charges @ 20% of P				-	
J	Obid & Coming		Sun	of (C to I)	13,70,927.38	
	<u>Civil &amp; Services</u>					
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	7.15	46,475.00	
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	1.4625	9,506.25	
K			Total Civil	& Services	55,981.25	
L			•	Total (J+K)	14,26,908.63	
N				Total (L+M)	14,26,908.63	
0			Total GST @		2,56,843.55	
01	1 Total CESS @ 1% of (N) 14					
Р	Gross Total Material +Services (N+O+O1) for 33 KV C	ut Point	with 180 De	gree Angle	16,98,021.27	
No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No)						
	MATERIALS FOR 33 KV Cut Point with 90 Degree Ang	<u>le</u>				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	13 Mtr. Long H-Pole(GI)	No	56,735.71	3	1,70,207.14	
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)	K.g.	76.00	195.024	14,821.82	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)	K.g.	97.50	31.7184	3,092.54	
4	Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)	K.g.	76.00	35.10432	2,667.93	
•						
5	Danger Plate, 1 no's.	No.	104.00	3	312.00	
		No. KG	104.00 97.50	3 0.9027	312.00 88.01	

	Annexure-6						
33	kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Pol	nts and	Cut-Points &	13 Mtr WP	B Pole for DP		
8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	3.6108	352.05		
9	33KV pin insulator polymer (4 No's each 90 Deg. Cut point)	No.	624.00	12	7,488.00		
	H W fitting(B&S)90KN,4 Bolt	No.	650.00	18	11,700.00		
11	Disc insulator (B&S)90 KN polymer	No.	1,495.00	18	26,910.00		
	Earthing of Support ( Coil Type )	No.	215.80	3	647.40		
13 14	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing PG Clamp for 232 sq.mm AAA conductor	K.g. NO.	97.50 1,495.00	0.786 18	76.64 26,910.00		
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	3	487.50		
	H.T. Stay set (Complete )	Set	1.365.00	3	4,095.00		
	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	3	195.00		
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	45	4,387.50		
19	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point)	K.g.	101.40	33.93	3,440.50		
20	Black Paint	Ltr	286.00	3	858.00		
21	Yellow Colour Paint for Background	Ltr	216.00	6	1,296.00		
Α			Total Cost o	f materials	2,80,969.04		
В	Stock,	Storage	& Insurance	i.e 3% of A	8,429.07		
C			Sub T	otal (A+B)	2,89,398.11		
			Contigency	· '	8,681.94		
				)			
E			ools & Plants		5,599.16		
F		Tra	nsportation @	7.5% of C	21,704.86		
G	Erection Charges @	5% on T	rf/Breaker/W	PB/ H-Pole	8,765.67		
H	Erection Charges @ 10% of C (except Trf/Breaker/WP				10,464.48		
H	Erection Charges @ 20% of P				10,707.40		
	Election charges @ 20% of P	SC pole-					
J			Sun	of (C to I)	3,44,614.23		
	<u>Civil &amp; Services</u>						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	1.65	10,725.00		
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.34	2,193.75		
3	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	3	6,750.00		
K			Total Civil	& Services	19,668.75		
			-	Total (J+K)	3,64,282.98		
N			Sub 1	otal (L+M)	3,64,282.98		
0		-	Total GST @	, ,	65,570.94		
_				. ,			
01			Total CESS @	, ,	3,642.83		
Р	Gross Total Material +Services (N+O+O1) for 33 KV	Cut Poin	t with 90 Deg	gree Angle	4,33,496.74		
	33 Kv Line Length In KM with 40 Mtr. Span			8			
	(Ref. Drawing No )  MATERIALS FOR 33 KV Pin Points			-			
6,				Tatel	Tatal		
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	13 Mtr. Long H-Pole(GI)	No	56,735.71	168	95,31,600.00		
2	33 KV V cross Arm (GI) 22Kg each	No.	2,340.00	168	3,93,120.00		
3	Top bracket 100x50x6mm GI channel ( 300mm each)	No.	195.00	168	32,760.00		
4	Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	No.	104.00	168	17,472.00		
5 6	(1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support	KG Kg	97.50 104.00	50.55 504.00	4,928.74 52,416.00		
7	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	202.20	19,714.97		
8	33KV pin insulator polymer	No.	624.00	504	3,14,496.00		
9	Earthing of Support ( Coil Type )	No.	215.80		36,254.40		
10	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50		4,291.56		
11	GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	K.g.	101.40		24,701.04		
	232 sq.mm AAA conductor	Mtr.		24720.00	50,29,284.00		
	Crimping type Midspan Compression Joint for 148 sq.mm AAA conductor	EA	842.95		20,230.70 48,048.00		
14							
15							
	A Total Cost of materials						
В	B Stock, Storage & Insurance i.e 3% of A						
С			Sub T	otal (A+B)	1,60,69,950.22		
D			Contigency	@ 3% of C	4,82,098.51		
E		To	ools & Plants		3,21,399.00		
F			nsportation @		12,05,246.27		
					4,90,877.40		
_	G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole						

	Annexure-6					
33	RkV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Pol	nts and	Cut-Points &	. 13 Mtr WP	B Pole for DP	
Н	Erection Charges @ 10% of C (except Trf/Breaker/WP	B/ H-Pol	e/HT stay set	/PSC pole)	6,25,240.22	
ı	Erection Charges @ 20% of P	SC pole-	Not to be us	ed for 33kv	-	
J			Sun	n of (C to I)	1,91,94,811.62	
	<u>Civil &amp; Services</u>	1		1		
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	92.40	6,00,600.00	
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	18.90	1,22,850.00	
K Total Civil & Services						
L Total (J+K)						
N	N Sub Total (L+M)					
0	Total GST @ 18% of (N)					
01		1	otal CESS @	0 1% of (N)	1,99,182.62	
Р	Gross Total Material +Services	(N+O+O	1) for 33 KV	Pin Points	2,37,02,731.32	
	07.110					
_	Gross Total Summary	) f 00	KV/ DD W/#		00 00 000 70	
1	Gross Total Material +Services (N+0+0 Gross Total Material +Services (N+0				23,26,063.73	
3	· ·				15,67,533.99 16,98,021.27	
4	, ,					
5	, , ,				4,33,496.74 2,37,02,731.32	
Q					2,97,02,731.32	
R				1,500.00		
s					5,250.00	
T	Inspection Fee of	. ,			750.00	
U	Gross Total Material, Services a	nd Inspe	ection Fees (	Q+R+S+T)	2,97,35,347.05	

#### Annexure-6 BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU Supply Portion Rate Amount Unit Quantity **Description of items** No. (in Rs.) (in Rs.) Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories Length of 33kV 1C, 630sqmm cable (open trench) Mtr. 1000 Length of 33kV 1C, 630sqmm cable (HDD) Mtr. 500 Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE 1.1 insulation U/G Cable (SC rating of cable in kA- 59.4kA and Mtr. 4500 1,495.47 67,29,615.00 SC rating of Armour in kA-20kA) Supply of Straight throU/Gh jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable Set 12 11.900.00 1.42.800.00 kits for 1Core Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for Set 12 6,350.00 76,200.00 1.3 Supply of Indoor termination kits Heat Shrinkable type 1.4 suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for Set 6,100.00 Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G 2904.00 Mtr. 357.60 10,38,470.40 Supply of 33kV RMU No. of 33kV 3Way RMU (LLV+M) nos. а No. of 33kV 4Way RMU (LLVV+M) b nos. No. of 33kV 3Way RMU (LLV) С nos. No. of 33kV 4Way RMU (LLVV) d nos. No. of 33kV 3Way RMU (LLL) nos. f No. of 33kV 4Way RMU (LLLL) nos. Supply of RMU 33KV 3WAY 630A WITH METERING UNIT 2.1 0 Nos. 22,93,723.00 (LLV+M) (CT Ratio to be mentioned) Supply of RMU 33KV 4WAY 630A WITH METERING UNIT 2.2 Nos. 0 31,74,874.00 (LLVV+M) (CT Ratio to be mentioned) 2.3 Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV) Nos. 0 17,87,101.00 2.4 Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV) Nos. 0 23,35,264.00 2.5 Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL) Nos. 0 14,46,210.00 Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS) 2.6 0 Nos. 19,59,421.00 (LLLL) 3 **Earthing** Earthing Conductor: 50X6 mm (2.4kg./mtr.) GI Flat for 3.1 0.00 97.50 kg equipment, structure etc.) 3.2 Pipe Earthing 40mm. GI Pipe Nos. 0 1,365.00 **FRTU for RMU SCADA Automation** No. of FRTU 0 nos. Pre-Wired FRTU Panel with FRTU 4.1 No. 0 1.21.744.00 4.2 Managed Layer2 Ethernet Switch (FRTU Panel) No. 0 1,00,000.00 4.3 0 72.00 Networking Accessories No.

Nos.

4.4

CMR with Mounting Base for Digital Inputs

650.00

l	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along wit	h 33kV RMU				
4.5	Interposing Relay for Digital Output	Nos.	0	467.94	-			
4.6	Battery Charger	Nos.	0	15,385.00	-			
4.7	Battery	Nos.	0	8,333.00	-			
4.8	4G Modem cum Router	Nos.	0	18,500.00	-			
1491	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	0	204.87	-			
4 40	Instrumentation Cable	Mtr.	0	305.58	-			
	7 C X 1.5 mm2, Armored for Control Output Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	0	275.23	-			
	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	0	165.25	-			
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	0	150.00	-			
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	0.0	148.43	-			
4.15	Armored CAT6 SFTP Cable	Mtr.	0	45.87	-			
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	0	89.45	-			
4.17	Multi Function Meter	Nos.	0	18,651.00	-			
	Sub Total (Supply Portion) (in	Rs.)			79,87,085.40			
Erection Portion								
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)			
1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare			(III KS.)	(iii No.)			
1.1	Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by <b>open trench method</b> .	Mtr.	3000	94.50	2,83,500.00			
1.2	Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits	Set	12	2,400.00	28,800.00			
	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	12	2,081.70	24,980.40			
1.4	Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	0	2,081.70	-			
1.5	Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr.	1500	2,300.00	34,50,000.00			
	Laying of <b>110mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open trench.	Mtr.	2904.00	300.00	8,71,200.00			
2	Erection, Commissioning, Wiring and Testing of 33kV RMU							
	Erection of RMU 33KV 3WAY 630A WITH METERING UNIT	Nos.	0	15,000.00	-			
2.1		ı						
2.1	(LLV+M) Erection of RMU 33KV 4WAY 630A WITH METERING UNIT	Nos.	0	15,000.00	-			
2.1		Nos.	0	15,000.00 8,000.00	-			

	Annexure-6					
	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along witl	h 33kV RMU		
2.5	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	8,000.00	-	
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	8,000.00	-	
3	FRTU and OFC for RMU SCADA Automation					
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	0.0	16,000.00	-	
	Sub Total (Erection Portion) (ir	n Rs.)			46,58,480.40	
Civil P	ortion					
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)	
	Civil works with supply of all materials like cement, MS			,	,	
1	tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench					
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	968			
1.1.a	Earth work excavation of <b>soil</b>	Cum	813.12	700.00	5,69,184.00	
1.1.b	Earth work excavation of hard rock	Cum	348.48	1,720.00	5,99,385.60	
1.2	Back filling with excavated soil outside and above the trench	Cum	1161.6	202.00	2,34,643.20	
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	484	2,643.67	12,79,536.58	
2	Civil works for Prefabricated RCC foundation with supply of all materials					
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	0	23,145.30	_	
3	Supply of GI Fencing with Gate around each RMU	sqmtr	0	3,600.00	-	
4	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 .	Set	0	3,700.00	-	
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	96	1,463.40	1,40,486.40	
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	50	1,012.00	50,600.00	
	Sub Total (Civil Portion) (in F	Rs.)			28,73,835.78	
A	Sub Total (Supply Portion)				<b>79,87,085.40</b> 2,39,612.56	
В						
С						
	D Contingency @ 3 % of C					
E						
F						
G						
	H Total (C+D+E+F+G)					
<u> </u>	Sub Total (Erection Portion + Civil Portion)				75,32,316.18	
J	Total Cost (H+I)				1,66,22,817.43	
L	Total Estimated Capital Cost i.e. (J+K)				1,66,22,817.43	
M	GST @ 18% of L				29,92,107.14	

#### **Annexure-6** BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU CESS @ 1% of L 16,62,281.74 Ν Grand Total (L+M) 2,12,77,206.31 О Inspection Fee of UG Line (HT) - Rs. 3000/ km. 3,000.00 Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km Q Inspection Fee of RMU - Rs. 1500/ RMU Inspection Fee of Drawing Checking and Approval R 750.00 S Gross Total Material, Services and Inspection Fees (N+O+P+Q+R) 2,12,80,956.31

BoQ and Estimate for 33 KV 4 Pole using WPB GI Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) with Isolator and LA								
	No. of 33 KV 4-Pole with Isolator			1				
MATERIALS FOR 33 KV 4-P With Isolator								
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
1	WPB(GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	4	1,37,288.00			
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 8 no's channel required =( 8x9.56x4.3)	KG	76.00	328.864	24,993.66			
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 24 no's required = (24x2.36x0.280)	KG	97.50	15.8592	1,546.27			
4	Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =( 2x7.14x4.3)/ Isolator	KG	76.00	184.212	14,000.11			
5	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 8 no's channel required =( 8x7.14x4.3)	KG	76.00	245.616	18,666.82			
6	50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 8 nos angle required = (8*4.5*4.927)	КG	76.00	177.372	13,480.27			
7	Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no channel required =( 1x7.14x0.8)/ Isolator	KG	76.00	17.136	1,302.34			
8	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 no angle required = (1*4.5*0.388)/ Isolator	KG	76.00	5.238	398.09			
9	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 no angle required = (1*4.5*0.340)/ Isolator	KG	76.00	4.59	348.84			
10	Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel required =( 2x9.56x0.5)/ Isolator	KG	76.00	28.68	2,179.68			
11	Danger Plate, 2 no's.	No.	104.00	2	208.00			
12	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	0.6018	58.68			
13	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	3	4,095.00			
14	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 5 mtr. For raising)	KG	97.50	62.54	6,097.65			
15	GI barbed wire anticlimbing device 3 Kg. Per support, 4 no's qty. required =(4x3kg)	Kg	104.00	12	1,248.00			
16	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 16 no's = (16x0.59x0.510)	KG	97.50	4.8144	469.40			
17	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	9	1,21,095.00			
18	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with PI(Polymer)	Set	66,000.00		1,98,000.00			
	33KV pin insulator polymer H W fitting(B&S)90KN.4 Bolt	No.	624.00 650.00	6 18	3,744.00 11.700.00			
	Disc insulator (B&S) 90 KN polymer	No.	1,495.00		26,910.00			
	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	24	35,880.00			
	232 sq.mm AAA conductor GI Nut , Bolt & Washer of different sizes	Mtr. K.g.	203.45 101.40	30.9 45	6,286.61 4,563.00			
25	Black Paint	Ltr	286.00	1	286.00			
	Yellow Colour Paint for Background	Ltr	216.00	2	432.00			
<u>А</u> В	Stock		Total Cost o & Insurance		<b>6,35,277.41</b> 19,058.32			
c				otal (A+B)	6,54,335.74			
D			Contigency		19,630.07			
Е		To	ols & Plants	@ 2% of C	13,002.36			
F		Trar	nsportation @	7.5% of C	49,075.18			
G	Erection Charges @				7,070.33			
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol	e/HT sta	y set/GI Pole	/PSC pole)	50,871.12			
I	Erection Charges @ 20% of Polymers	SC pole-			-			
J	Olali O Osasiasa		Sun	n of (C to I)	7,93,984.80			
<u>.,</u>	<u>Civil &amp; Services</u>	l		Total	Total			
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	2.2	14,300.00			
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.45	2,925.00			
3	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.	3,700.00	3	11,100.00			
К								
L				Total (J+K)	8,22,309.80			
N		_		Total (L+M)	8,22,309.80			
0			Total GST @		1,48,015.76			
01 <b>P</b>	Gross Total Material +Services (N+O+		otal CESS @		8,223.10 <b>9,78,548.67</b>			
	GIUSS TULAI MALETIAI TOEI VILES (NTOT	J 1) 101 3	O I V 4-F VV	iai isolatof	9,10,040.0/			

		Annexure-7				
	Т	P CENTRAL ODISHA DISTRIBUTION LIMITED				
Name of the	e Division :-	KHORDHA ELECTRICAL DIVISION, KHORDHA				
Name of the	e Sub-Division : -	KHORDHA ,KHD, Khordha				
Name of the	e Section : -	Khordha III, Khordha				
Name of the	e Work :-	33kV New Line from Argul Grid (33kV Proposed Delang New Feed	der)			
Scope of work:-		Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC Conductor-6.5Ckm. Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 3.5Ckm. Construction of 33kV 4 Pole structure with Isolator- 1 No.				
Names of S	chemes: -	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE				
SI. No.	Part	Description	Amount			
1	А	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC Conductor- 6.5Ckm.	₹ 2,43,62,298.52			
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable-3.5Ckm.	₹ 4,81,18,624.20			
3	С	Construction of 33kV 4 Pole structure with Isolator- 1 No.	₹ 9,78,548.67			
		Total Amount	₹ 7,34,59,471.39			
•		Total Amount (In Cr)	₹ 7.35			

#### Annexure-7 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP No. of 33 KV DP required Without Isolator (Ref. Drawing No.- TPCODL-HVD-0004) MATERIALS FOR 33 KV DP Without Isolator SI. Total Total Unit Rate Description of Materials Unit No. Quantity Amount WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) 6,17,796.00 No 34,322.00 18 Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =( KG 42,503.76 2 76.00 559.26 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280) KG 97.50 35.6832 3,479.11 Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's 4 KG 76.00 629.748 47,860.85 channel required =( 5x7.14x1.96) 50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = KG 76.00 555.984 42,254.78 Danger Plate, 2 no's No. 104.00 18 1,872.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = KG 97.50 5.4162 528.08 (2x0 59x0 510) H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) Pair 162.50 18 2,925.00 Set 1,365.00 18 24,570.00 H.T. Stay set (Complete) H.T. Stay Insulator Type-C (2 No's.) No. 65.00 36 2,340.00 7/8 SWG Stay Wire 15kg /stay K.g. 97.50 270 26,325.00 Gi Pipe Earthing 40mm. 3 Mtr. Long 12 No. 1.365.00 9 12,285.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= KG 97.50 106.2 10,354.50 GI barbed wire anticlimbing device 3 Kg. Per support 104.00 54 5,616.00 Kg Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = 15 KG 97.50 21.6648 2,112.32 (8x0.59x0.510) 16 No. 624.00 27 16,848.00 33KV pin insulator polymer 17 H W fitting(B&S) 90KN,4 Bolt No. 650.00 54 35,100.00 Disc insulator (B&S) 90 KN polymer No. 1,495.00 54 80,730.00 54 80,730.00 19 PG Clamp for 232 sq.mm AAA conductor NO 1,495.00 GI Nut, Bolt & Washer of different sizes (12.261 Kg each DP without Isolator) 110.349 K.g 101.40 11.189.39 2,574.00 21 Black Paint Ltr 286.00 9 22 Yellow Colour Paint for Background Ltr 216.00 18 3,888.00 Α **Total Cost of materials** 10,73,881.79 В Stock, Storage & Insurance i.e 3% of A 32,216.45 С Sub Total (A+B) 11,06,098.24 D Contigency @ 3% of C 33,182.95 Е Tools & Plants @ 2% of C 20,712.00 82,957.37 F Transportation @ 7.5% of C Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 31,816.49 Н Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/GI Pipe/PSC pole) 39,927.00 Erection Charges @ 20% of PSC pole- Not to be used for 33kv 1 J Sum of (C to I) 13,14,694.05 Civil & Services SI. Total Total Unit Rate Description of Materials Unit No. Quantity Amount Fixing of 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, including excyation, supply of 0.5 Cum No. 2,250.00 18 40,500.00 cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mti 6.500.00 9.9 64.350.00 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 2.025 13,162.50 Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth No. 3,700.00 9 33,300.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe **Total Civil & Services** Κ 1,51,312.50 L Total (J+K) 14,66,006.55 Ν Sub Total (L+M) 14,66,006.55 0 Total GST @ 18% of (N 2,63,881.18 Total CESS @ 1% of (N) 01 14,660.07 Р Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 17,44,547.80 No. of 33 KV DP required With Isolator 4 (Ref. Drawing No.- TPCODL-TCE-0001) MATERIALS FOR 33 KV DP With Isolator Total Total Unit Rate Description of Materials Unit Quantity No. Amount

#### 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) 34,322.00 2,74,576.00 No Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 76.00 328.864 24.993.66 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280) 3 KG 97.50 15.8592 1,546.27 Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's KG 76.00 122.808 9,333.41 channel required =( 1x7.14x4.3) Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel KG 76.00 245.616 18,666.82 required =( 2x7.14x4.3) Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's 6 KG 76 00 491 232 37.333.63 channel required =( 4x7.14x4.3) 50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = 7 KG 354.744 76.00 26,960.54 Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length KG 76.00 22.848 1.736.45 0.8 Mtr., 1 no's channel required =( 1x7.14x0.8) Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = KG 76.00 6.984 530.78 Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = KG 76 00 6 12 465.12 (1\*4.5\*0.340) Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's 11 KG 76.00 38 24 2.906.24 channel required =( 2x9.56x0.5) 12 Danger Plate, 2 no's. 104.00 832.00 No 8 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = 13 KG 97.50 2.4072 234.70 (2x0.59x0.510) H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair) Pair 162.50 8 1,300.00 1,365.00 15 H.T. Stay set (Complete) Set 8 10,920.00 16 16 H.T. Stay Insulator Type-C (2 No's.) No. 65 00 1.040.00 7/8 SWG Stay Wire 15kg /stay K.g. 97.50 120 11,700.00 Gi Pipe Earthing 40mm. 3 Mtr. Long No. 1,365.00 8 10,920.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh KG 97 50 226 56 22 089 60 formation and 2.5 mtr. For raising)= 24x2.36 104.00 24 2,496.00 20 GI barbed wire anticlimbing device 3 Kg. Per support Kg Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = 938.81 KG 97 50 9 6288 (8x0.59x0.510) 22 Lightning Arrester(30KV,10KA) (Station Class,class-2) EΑ 13,455.00 12 1,61,460.00 33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with Set 66,000.00 4 2,64,000.00 PI(Polymer) 7,488.00 624.00 24 33KV pin insulator polymer No 12 25 H W fitting(B&S) 90KN,4 Bolt No 650.00 24 15,600.00 26 Disc insulator (B&S) 90 KN polymer No. 1.495.00 24 35,880.00 PG Clamp for 232 sq.mm AAA conductor NO 1,495.00 24 35,880.00 28 GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator) K.g. 101.40 88.6 8.984.04 Black Paint Ltr 286.00 4 1,144.00 Yellow Colour Paint for Background 30 I tr 216.00 R 1,728.00 **Total Cost of materials** 9,93,684.08 Α В Stock, Storage & Insurance i.e 3% of A 29,810.52 С Sub Total (A+B) 10,23,494.60 30,704.84 D Contigency @ 3% of C Ε Tools & Plants @ 2% of C 19,730.76 F Transportation @ 7.5% of C 76,762.10 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 14,140.66 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/GI Pipe/PSC pole) 70,372.49 Н Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 12,35,205.45 Civil & Services SI. Total Total Description of Materials Unit Unit Rate No. Quantity Amount Fixing of 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, including excvation, supply of 0.5 Cum No. 2,250.00 8 18.000.00 cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mti 6.500.00 4.4 28.600.00 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6 500 00 5 850 00 3 0.9 Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth No. 3.700.00 8 29.600.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe **Total Civil & Services** Κ 82.050.00 13,17,255.45 Total (J+K) N Sub Total (L+M) 13,17,255.45 Total GST @ 18% of (N) 0 2,37,105.98 Total CESS @ 1% of (N) 01 13,172.55

	Annexure-7							
33	kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poi	nts and	Cut-Points &	13 Mtr WP	B Pole for DP			
Р	Gross Total Material +Services (N+O+	-O1) for	33 KV DP W	ith Isolator	15,67,533.99			
	No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No)		l	10				
	MATERIALS FOR 33 KV Cut Point with 180 Degree And	<u>le</u>	ı					
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
1	13 Mtr. Long H-Pole(GI) Straight Group Arm Channel 100 v F0 v 6 mm 0 F6 V 6 mtr. peah channel langth 1.7 Mtr. 3 Nole of	No	56,735.71	10	5,67,357.14			
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of Channel = (2x 9.56x1.7)	K.g.	76.00		24,703.04			
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280) Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2	K.g.	97.50		5,154.24			
4	No's of Channel = (2x 9.56x0.306)	K.g.	76.00		4,446.55			
	Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	No.	104.00	10	1,040.00			
ь	(1x0.59x0.510)	KG	97.50	3.009	293.38			
7	GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	Kg	104.00		3,120.00			
8	(4x0.59x0.510)	KG	97.50	12.036	1,173.51			
	33KV pin insulator polymer H W fitting(B&S)90KN,4 Bolt	No.	624.00 650.00		18,720.00 39,000.00			
11	Disc insulator (B&S)90 KN polymer	No.	1,495.00	60	89,700.00			
12	Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	EA K.g.	215.80 97.50	10 2.62	2,158.00 255.45			
14	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	60	89,700.00			
	GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point)  Black Paint	K.g. Ltr	101.40 286.00		4,947.31 2,860.00			
	Yellow Colour Paint for Background	Ltr	216.00		4,320.00			
A		_	Total Cost o		8,58,948.61			
В	Stock,	Storage	& Insurance	i.e 3% of A	25,768.46			
С			Sub T	otal (A+B)	8,84,717.07			
D			Contigency	@ 3% of C	26,541.51			
Е		To	ools & Plants	@ 2% of C	17,694.34			
F			nsportation @		66,353.78			
G	Erection Charges @				29,218.89			
Н	Erection Charges @ 10% of C (except Trf/Breaker/WP			· '	30,033.92			
<u> </u>	Erection Charges @ 20% of P	SC pole-			- 40.54.550.50			
J	Civil & Services		Sun	n of (C to I)	10,54,559.52			
SI.	Description of Materials	Unit	Unit Rate	Total	Total			
<b>No.</b>	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	Quantity 5.5	35,750.00			
	Couping ratio 1:1.5:3 (300HHHX2200HHH) = 0.330d.HHI  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00		7,312.50			
	Coupling faulo 1.1.5.5 with difficulty (500/500/450) = 0.1125 Cd filld	Cu.iiiii	1	& Services				
K L				& Services Total (J+K)	43,062.50 10,97,622.02			
N				Total (L+M)	10,97,622.02			
0		-	Total GST @	· '	1,97,571.96			
01			Total CESS (	` 1	10,976.22			
P	Gross Total Material +Services (N+O+O1) for 33 KV C			` '	13,06,170.20			
┝┶	Gross Total Material +Services (N+O+O1) 10f 33 KV C	ut Point	WILLI TOU DE	gree Angle	13,06,170.20			
	No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No)							
	MATERIALS FOR 33 KV Cut Point with 90 Degree Ang	<u>le</u>						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
1	13 Mtr. Long H-Pole(GI) Straight Cross Arm Channel 100 v 50 v 6 mm, 0 56 KG/mtr, each channel longth 1.7 Mtr. 4 No's of	No	56,735.71	3	1,70,207.14			
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)	K.g.	76.00		14,821.82			
	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4	K.g.	97.50		3,092.54			
4	No's of Channel = (4x 9.56x0.306)	K.g.	76.00		2,667.93			
5	Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	No.	104.00		312.00			
6	(1x0.59x0.510)	KG	97.50		88.01			
7	GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	Kg	104.00	9	936.00			
8	Back Clamp for anticlimbing device 25x3 mm. flat, 0.59kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	3.6108	352.05			
	33KV pin insulator polymer (4 No's each 90 Deg. Cut point)	No.	624.00		7,488.00			
10	H W fitting(B&S)90KN,4 Bolt	No.	650.00	18	11,700.00			

	Annexure-7				
33	kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poi	nts and	Cut-Points &	13 Mtr WP	B Pole for DP
11	Disc insulator (D.S.C)00 (All naturals	No	1 405 00	10	26.040.00
	Disc insulator (B&S)90 KN polymer Earthing of Support ( Coil Type )	No.	1,495.00 215.80	18 3	26,910.00 647.40
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50		76.64
14	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	18	26,910.00
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	3	487.50
	H.T. Stay set (Complete )	Set	1,365.00	3	4,095.00
	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	3	195.00
18	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	45	4,387.50 3.440.50
	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point) Black Paint	K.g. Ltr	101.40 286.00		3,440.50 858.00
	Yellow Colour Paint for Background	Ltr	216.00		1,296.00
A	TOTOW COLOUR T WITH TOT BUOKGIOUTIC	_	Total Cost o		2,80,969.04
B	Stock		& Insurance		8,429.07
_	Stock,	Storage			-
С				otal (A+B)	2,89,398.11
D			Contigency	@ 3% of C	8,681.94
Ε		To	ools & Plants	@ 2% of C	5,599.16
F		Trai	nsportation @	7.5% of C	21,704.86
G	Erection Charges @	5% on T	rf/Breaker/W	PB/ H-Pole	8,765.67
H	Erection Charges @ 10% of C (except Trf/Breaker/WP				10,464.48
∺	Erection Charges @ 20% of P			· '	10,404.40
_	Election Charges (#) 20% 01 P	oo pole-			-
J	01/10 0 - 1 - 1		Sun	of (C to I)	3,44,614.23
	<u>Civil &amp; Services</u>		ı		
SI.	Description of Materials	Unit	Unit Rate	Total	Total
No.	·			Quantity	Amount
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	1.65	10,725.00
2	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.34	2,193.75
3	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	3	6,750.00
K			Total Civil	& Services	19,668.75
L				Total (J+K)	3,64,282.98
N			Sub 1	Total (L+M)	3,64,282.98
0		-	Total GST @	18% of (N)	65,570.94
01		7	Total CESS @	0 1% of (N)	3,642.83
P	Gross Total Material +Services (N+O+O1) for 33 KV (				4,33,496.74
	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No )			6.5	
	MATERIALS FOR 33 KV Pin Points		1	I	
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	13 Mtr. Long H-Pole(GI)	No	56,735.71	137	77,72,792.86
2	33 KV V cross Arm (GI) 22Kg each	No.	2,340.00	137	3,20,580.00
3	Top bracket 100x50x6mm Gl channel ( 300mm each)	No.	195.00	137	26,715.00
4	Danger Plate, 1 no's.	No.	104.00	137	14,248.00
5	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	41.22	4,019.27
6	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	411.00	42,744.00
7	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =				•
	(4x0.59x0.510)	KG	97.50		16,077.09
	33KV pin insulator polymer	No.	624.00	411	2,56,464.00
	Earthing of Support (Coil Type)	No.	215.80	137	29,564.60
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	K.g. K.g.	97.50 101.40		3,499.67 20,143.11
	232 sq.mm AAA conductor	Mtr.	203.45		40,86,293.25
	Crimping type Midspan Compression Joint for 148 sq.mm AAA conductor	EA.	842.95		15,173.03
	Black Paint	Ltr	286.00		39,182.00
15	Yellow Colour Paint for Background	Ltr	216.00	274.0	59,184.00
Α			Total Cost o	f materials	1,27,06,679.87
В	Stock,	Storage	& Insurance	i.e 3% of A	3,81,200.40
С			Sub T	otal (A+B)	1,30,87,880.26
			Contigency	<u> </u>	3,92,636.41
E		т.	ools & Plants		
					2,61,757.61
l F		Frai	nsportation @	2 7.5% of C	9,81,591.02
G	Erection Charges @	5% on T			4,00,298.83
	Erection Charges @ Erection Charges @ 10% of C (except Trf/Breaker/WP	5% on T			
G		5% on T B/ H-Pol	e/HT stay set	/PSC pole)	
G H	Erection Charges @ 10% of C (except Trf/Breaker/WP	5% on T B/ H-Pol	e/HT stay set · Not to be us	/PSC pole)	4,00,298.83 5,08,190.36 - <b>1,56,32,354.49</b>

	Annexure-7						
33	33kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP						
	<u>Civil &amp; Services</u>						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	75.35	4,89,775.00		
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	15.41	1,00,181.25		
ĸ	Total Civil & Services						
L	Total (J+K)						
N	Sub Total (L+M)						
0	Total GST @ 18% of (N)						
01	Total CESS @ 1% of (N)				1,62,223.11		
Р	Gross Total Material +Services (N+O+O1) for 33 KV Pin Points				1,93,04,549.78		
	Gross Total Summary						
1	( 1 1 )				17,44,547.80		
2	` '				15,67,533.99		
3	, ,				13,06,170.20		
4	Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle						
5	Gross Total Material +Services (N+O+O1) for 33 KV Pin Points				1,93,04,549.78		
Q					2,43,56,298.52		
R	Inspection Fee of Over Head Line (HT) - Rs.1500 up to 1 km.				1,500.00		
s	Inspection Fee of Over Head Line (HT) - Rs. 750/ Additional Km				3,750.00		
Т	Inspection Fee of Drawing Checking and Approval			750.00			
U	Gross Total Material, Services and Inspection Fees (Q+R+S+T) 2,43,62,298.52						

# Standard BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

# Supply Portion

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories				
а	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	3000		
b	Length of 33kV 1C, 630sqmm cable (HDD)	Mtr.	500		
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	10500	1,495.47	1,57,02,435.00
1.2	Supply of Straight throU/Gh jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set	33	11,900.00	3,92,700.00
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	12	6,350.00	76,200.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set		6,100.00	-
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	8904.00	357.60	31,84,070.40
2	Supply of 33kV RMU				
а	No. of 33kV 3Way RMU (LLV+M)	nos.			
b	No. of 33kV 4Way RMU (LLVV+M)	nos.			
С	No. of 33kV 3Way RMU (LLV)	nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.			
е	No. of 33kV 3Way RMU (LLL)	nos.			
f	No. of 33kV 4Way RMU (LLLL)	nos.			
2.1	Supply of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M) (CT Ratio to be mentioned)	Nos.	0	22,93,723.00	-
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M) (CT Ratio to be mentioned)	Nos.	0	31,74,874.00	-
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	23,35,264.00	-
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL) Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS)	Nos.	0	14,46,210.00	-
2.6 <b>3</b>	(LLLL)  Earthing	Nos.	0	19,59,421.00	-
	Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for				
3.1	equipment, structure etc.)	kg	0.00	97.50	-
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	0	1,365.00	-
4	FRTU for RMU SCADA Automation			_	
а	No. of FRTU	nos.	0		
4.1	Pre-Wired FRTU Panel with FRTU	No.	0	1,21,744.00	-
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	0	1,00,000.00	-

Annexure-7						
Standard BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU						
4.3	Networking Accessories	No.	0	72.00	-	
4.4	CMR with Mounting Base for Digital Inputs	Nos.	0	650.00	-	
4.5	Interposing Relay for Digital Output	Nos.	0	467.94	-	
4.6	Battery Charger	Nos.	0	15,385.00	-	
4.7	Battery	Nos.	0	8,333.00	-	
4.8	4G Modem cum Router	Nos.	0	18,500.00	-	
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	0	204.87	-	
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	0	305.58	-	
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	0	275.23	-	
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	0	165.25	-	
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	0	150.00	-	
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	0.0	148.43	-	
4.15	Armored CAT6 SFTP Cable	Mtr.	0	45.87	-	
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	0	89.45	-	
4.17	Multi Function Meter	Nos.	0	18,651.00	-	
	Sub Total (Supply Portion) (in	Rs.)			1,93,55,405.40	
	Erection Portion	on				
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)	
1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare					
1.1	Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by <b>open trench method</b> .	Mtr.	9000	94.50	8,50,500.00	
1.2	Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits	Set	33	2,400.00	79,200.00	
1.3	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	12	2,081.70	24,980.40	
1.4	Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	0	2,081.70	-	
1.5	Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method</b> with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr.	1500	2,300.00	34,50,000.00	
1.6	Laying of <b>110mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open trench.	Mtr.	8904.00	300.00	26,71,200.00	
2	Erection, Commissioning, Wiring and Testing of 33kV RMU					
2.1	Erection of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M)	Nos.	0	15,000.00	-	

	Annexure-7						
	Standard BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU						
2.2	Erection of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M)	Nos.	0	15,000.00	-		
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-		
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	8,000.00	1		
2.5	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	8,000.00	1		
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	8,000.00	ı		
3	FRTU and OFC for RMU SCADA Automation						
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	0.0	16,000.00	-		
	Sub Total (Erection Portion) (ir	Rs.)			70,75,880.40		
Civil P	ortion						
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)		
1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench						
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	2968				
1.1.a	Earth work excavation of <b>soil</b>	Cum	2493.12	700.00	17,45,184.00		
1.1.b	Earth work excavation of <b>hard rock</b>	Cum	1068.48	1,720.00	18,37,785.60		
1.2	Back filling with excavated soil outside and above the trench	Cum	3561.6	202.00	7,19,443.20		
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	1484	2,643.67	39,23,207.21		
2	Civil works for Prefabricated RCC foundation with						
2.1	supply of all materials Prefabricated RCC foundation of 33kV RMU	Nos.	0	23,145.30			
3	Supply of GI Fencing with Gate around each <b>RMU</b>	sqmtr	0	3,600.00			
4	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 .	Set	0	3,700.00	-		
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	96	1,463.40	1,40,486.40		
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	117	1,012.00	1,18,404.00		
Sub Total (Civil Portion) (in Rs.)					84,84,510.41		
A Sub Total (Supply Portion)					1,93,55,405.40		
B Stock, Storage & Insurance @ 3 % of A				5,80,662.16			
C Sub Total (A+B)				1,99,36,067.56			
D	3 7 3				5,98,082.03		
E Tools & Plants Charges @ 2% of C (considered for earthing items)				-			
F Transportation @ 7.5% of C				14,95,205.07			

	Annexure-7				
	Standard BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU				
G	Erection Charges @ 10% of earthing items	-			
Н	Total (C+D+E+F+G)	2,20,29,354.66			
I	Sub Total (Erection Portion + Civil Portion)	1,55,60,390.81			
J	Total Cost (H+I)	3,75,89,745.47			
L	Total Estimated Capital Cost i.e. (J+K)	3,75,89,745.47			
М	GST @ 18% of L	67,66,154.18			
M1	CESS @ 1% of L	37,58,974.55			
N	Grand Total (L+M)	4,81,14,874.20			
0	Inspection Fee of UG Line (HT) - Rs. 3000/ km.	3,000.00			
Р	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km				
Q	Inspection Fee of RMU - Rs. 1500/ RMU	-			
R	Inspection Fee of Drawing Checking and Approval	750.00			
S	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)	4,81,18,624.20			

#### Annexure-7 BoQ and Estimate for 33 KV 4 Pole using WPB GI Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) with Isolator and LA No. of 33 KV 4-Pole with Isolator MATERIALS FOR 33 KV 4-P With Isolator Total Total Unit Description of Materials **Unit Rate** Quantity No Amount WPB(GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 1,37,288.00 Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 8 no's channel required =( KG 328.864 24,993.66 2 76.00 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 24 no's required = (24x2.36x0.280) KG 97.50 15.8592 1,546.27 Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's KG 76.00 184.212 14,000.11 channel required =( 2x7.14x4.3)/ Isolator Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 8 no's KG 76.00 245.616 18.666.82 channel required =( 8x7.14x4.3) 50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 8 nos angle required = KG 76.00 177.372 13,480.27 (8\*4.5\*4.927) Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 7 KG 76.00 17 136 1 302 34 0.8 Mtr., 1 no channel required =( 1x7.14x0.8)/ Isolator Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 no angle required = KG 76.00 5.238 398.09 (1\*4 5\*0 388)/ Isolator Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 no angle required = KG 76.00 4.59 348.84 (1\*4.5\*0.340)/ Isolator Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's 10 KG 76.00 28.68 2,179.68 channel required =( 2x9.56x0.5)/ Isolator 104.00 11 Danger Plate, 2 no's. No. 2 208.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = KG 97.50 0.6018 58.68 (2x0.59x0.510) 13 Gi Pipe Earthing 40mm. 3 Mtr. Long No. 1,365.00 4,095.00 3 50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh KG 97.50 62.54 6,097.65 formation and 5 mtr. For raising) GI barbed wire anticlimbing device 3 Kg. Per support, 4 no's qty. required =(4x3kg) 104.00 12 1,248.00 Kg Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 16 no's = KG 97.50 4.8144 469.40 Lightning Arrester(30KV,10KA) (Station Class,class-2) EΑ 13,455.00 9 1,21,095.00 33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with 66.000.00 1.98.000.00 18 Set 3 PI(Polymer) 19 33KV pin insulator polymer 624.00 6 3,744.00 No. 20 H W fitting(B&S)90KN,4 Bolt 650.00 18 11,700.00 No. 21 Disc insulator (B&S) 90 KN polymer No 1,495.00 18 26,910.00 22 PG Clamp for 232 sq.mm AAA conductor NO 1.495.00 24 35.880.00 23 232 sq.mm AAA conductor Mtr. 203.45 30.9 6,286.61 24 GI Nut, Bolt & Washer of different sizes K.g. 101.40 45 4,563.00 25 Black Paint Ltr 286.00 1 286.00 26 Yellow Colour Paint for Background Ltr 216.00 432.00 **Total Cost of materials** 6,35,277.41 Α В Stock, Storage & Insurance i.e 3% of A 19,058.32 С Sub Total (A+B) 6,54,335.74 D Contigency @ 3% of C 19,630.07 Е Tools & Plants @ 2% of C 13,002.36 F Transportation @ 7.5% of C 49,075.18 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 7,070.33 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/Gl Pole/PSC pole) Н 50,871.12 Erection Charges @ 20% of PSC pole- Not to be used for 33kv 1 J Sum of (C to I) 7,93,984.80 Civil & Services SI. Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr 6,500.00 14,300.00 Cu.mtr 2.2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 0.45 2,925.00 Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth No. 3,700.00 3 11,100.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe **Total Civil & Services** 28,325.00 Κ Total (J+K) 8,22,309.80 L Ν Sub Total (L+M) 8,22,309.80 0 Total GST @ 18% of (N) 1,48,015.76 01 Total CESS @ 1% of (O1) 8,223.10 Р Gross Total Material +Services (N+O+O1) for 33 KV 4-P With Isolator 9,78,548.67

		Annexure-8							
	7	TP CENTRAL ODISHA DISTRIBUTION LIMITED							
Name o	lame of the Division :- PURI ELECTRICAL DIVISION, PURI								
Name o	f the Sub-Division : -	Sakhigopal, Puri							
Name o	f the Section : -	Satasankha, Puri							
Name o	f the Work :-	33kV New Line from Satasankha Grid (33kV Proposed Satasankha	a-1 Feeder)						
Scope of work:-		Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor-6Ckm. Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable-3.5Ckm.Construction of 33kV 4 Pole structure with Isolator- 2 Nos.							
Names	of Schemes: -	TPCODL CAPEX							
		ABSTRACT OF ESTIMATE							
SI. No.	Part	Description	Amount						
1	A	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 6Ckm.	₹ 2,19,30,088.90						
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable-3.5Ckm.	₹ 4,80,60,417.38						
3	C Construction of 33kV 4 Pole structure with Isolator- 2 Nos.		₹ 17,88,268.61						
		Total Amount	₹ 7,17,78,774.88						
		Total Amount (In Cr)	₹ 7.18						
Total es	stimated cost is Rs.7.1	8 Crore.							

	No. of 33 KV DP required Without Isolator			11		
	(Ref. Drawing No TPCODL-HVD-0004)  MATERIALS FOR 33 KV DP Without Isolator					
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	22	7,55,084.00	
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required = (2x9.56x3.25)	KG	76.00	683.54	51,949.04	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	43.6128	4,252.25	
4	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's channel required = (5x7.14x1.96)	KG	76.00		58,496.59	
5	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = (4*4.5*3.432)	KG	76.00		51,644.74	
6	Danger Plate, 2 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's =	No.	104.00	22	2,288.00	
7	(2x0.59x0.510)	KG	97.50	6.6198	645.43	
9	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair)	Pair Set	162.50	22	3,575.00 30,030.00	
	H.T. Stay set (Complete ) H.T. Stay Insulator Type-C (2 No's.)	No.	1,365.00 65.00	44	2,860.00	
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	330	32,175.00	
12		No.	1,365.00	11	15,015.00	
13	50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 5x2.36	KG	97.50	129.8	12,655.50	
14	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	66	6,864.00	
15	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50	26.4792	2,581.72	
	33KV pin insulator polymer H W fitting(B&S) 90KN,4 Bolt	No.	624.00 650.00	33 66	20,592.00 42,900.00	
	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	66	98.670.00	
	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	66	98,670.00	
	GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator)	K.g.	101.40		13,675.92	
21	Black Paint	Ltr	286.00	11	3,146.00	
22	Yellow Colour Paint for Background	Ltr	216.00	22	4,752.00	
Α			Total Cost o		13,12,522.19	
В	Stock,	Storage	& Insurance	i.e 3% of A	39,375.67	
С			Sub T	otal (A+B)	13,51,897.85	
D			Contigency	@ 3% of C	40,556.94	
Е		To	ols & Plants	@ 2% of C	25,314.66	
F		Trar	nsportation @	7.5% of C	1,01,392.34	
G	Erection Charges @	5% on T	rf/Breaker/W	PB/ H-Pole	38,886.83	
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Po	le/HT sta	y set/GI Pipe	/PSC pole)	48,799.67	
I	Erection Charges @ 20% of P	SC pole-	Not to be us	ed for 33kv	-	
J	Civil & Services		Sum	of (C to I)	16,06,848.29	
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	22	49,500.00	
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	12.1	78,650.00	
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	2.475	16,087.50	
4	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.	3,700.00	11	40,700.00	
Κ			Total Civil	& Services	1,84,937.50	
L			7	Total (J+K)	17,91,785.79	
N	Sub Total (L+M)					
0						
	O1 Total CESS @ 1% of (N)					
01						
01 <b>P</b>	Gross Total Material +Services (N+O+O1	,			21,32,225.09	
	Gross Total Material +Services (N+O+O1	7.0.00.				
	No. of 33 KV DP required With Isolator (Ref. Drawing No TPCODL-TCE-0001)	, 101 00 1		1		

33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP

SI.	Description of Materials	Unit	Unit Rate	Total	Total	
No.	•			Quantity	Amount 68,644.00	
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  No 34,322.00 2  Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =(					
2	2x9.56x4.3)	KG	76.00	82.216	6,248.42	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280) Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's	KG	97.50	3.9648	386.57	
4	channel required =( 1x7.14x4.3)	KG	76.00	30.702	2,333.35	
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	76.00	61.404	4,666.70	
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	76.00	122.808	9,333.41	
7	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	76.00	88.686	6,740.14	
8	1. 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	76.00	5.712	434.11	
9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	76.00	1.746	132.70	
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	76.00	1.53	116.28	
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	76.00	9.56	726.56	
12	Danger Plate, 2 no's.	No.	104.00	2	208.00	
13	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	0.6018	58.68	
14	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	2	325.00	
	H.T. Stay set (Complete )	Set	1,365.00	2	2,730.00	
16 17	H.T. Stay Insulator Type-C (2 No's.) 7/8 SWG Stay Wire 15kg /stay	No. K.g.	65.00 97.50	4 30	260.00 2,925.00	
	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	2	2,730.00	
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	97.50	56.64	5,522.40	
20	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	6	624.00	
21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50	2.4072	234.70	
22	Lightning Arrester(30KV,10KA) (Station Class,class-2)  33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with	EA	13,455.00	3	40,365.00	
23	PI(Polymer)	Set	66,000.00	1	66,000.00	
	33KV pin insulator polymer H W fitting(B&S) 90KN,4 Bolt	No.	624.00 650.00	3 6	1,872.00 3,900.00	
	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	6	8,970.00	
	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	6	8,970.00	
28 29	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)  Black Paint	K.g. Ltr	101.40 286.00	22.15 1	2,246.01 286.00	
30	Yellow Colour Paint for Background	Ltr	216.00	2	432.00	
Α			Total Cost o		2,48,421.02	
В	Stock,	Storage	& Insurance	i.e 3% of A	7,452.63	
С			Sub T	otal (A+B)	2,55,873.65	
D			Contigency		7,676.21	
Е		To	ools & Plants	@ 2% of C	4,932.69	
F		Trar	nsportation @	7.5% of C	19,190.52	
G	Erection Charges @	5% on T	rf/Breaker/W	PB/ H-Pole	3,535.17	
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Po	le/HT sta	y set/GI Pipe	/PSC pole)	17,593.12	
I	Erection Charges @ 20% of P	SC pole-	Not to be us	ed for 33kv	-	
J			Sun	of (C to I)	3,08,801.36	
	<u>Civil &amp; Services</u>		-			
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	2	4,500.00	
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	1.1	7,150.00	
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00			0.225	1,462.50	
4	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.	3,700.00	2	7,400.00	
к			Total Civil	& Services	20,512.50	
L				Total (J+K)	3,29,313.86	
N				Total (L+M)	3,29,313.86	
			J	,/	-,0,510.00	

	Annexure-8					
33	kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poi	nts and	Cut-Points &	13 Mtr WP	B Pole for DP	
0						
01 <b>P</b>	Cross Total Material + Services (N+A)		Total CESS @	` `	3,293.14	
	Gross Total Material +Services (N+O+	(O1) 10r	33 KV DP W	th isolator	3,91,883.50	
	No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No)			8		
	MATERIALS FOR 33 KV Cut Point with 180 Degree And	<u>yle</u>				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
_1_	13 Mtr. Long H-Pole(GI) Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of	No	56,735.71	8	4,53,885.71	
2	Channel = (2x 9.56x1.7)	K.g.	76.00	260.032	19,762.43	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280) Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2	K.g.	97.50	42.2912	4,123.39	
4	No's of Channel = (2x 9.56x0.306)	K.g.	76.00	46.80576	3,557.24	
5	Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	No.	104.00	8	832.00	
6	(1x0.59x0.510)	KG	97.50	2.4072	234.70	
7	GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	Kg	104.00	24	2,496.00	
8	(4x0.59x0.510)	KG	97.50	9.6288	938.81	
9	33KV pin insulator polymer H W fitting(B&S)90KN,4 Bolt	No.	624.00 650.00	24 48	14,976.00 31,200.00	
	Disc insulator (B&S)90 KN polymer	No.	1,495.00	48	71,760.00	
12	Earthing of Support ( Coil Type )	EA	215.80	8	1,726.40	
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing PG Clamp for 232 sq.mm AAA conductor	K.g. NO.	97.50 1,495.00	2.096 48	204.36 71,760.00	
	GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point)	K.g.	101.40		3,957.84	
	Black Paint	Ltr	286.00	8	2,288.00	
17	Yellow Colour Paint for Background	Ltr	216.00 Total Cost o	16	3,456.00	
<u>А</u> В	Stock		& Insurance		<b>6,87,158.89</b> 20.614.77	
C	Slock	, Storage		otal (A+B)	7,07,773.66	
			Contigency	` 1	21,233.21	
E		To	ools & Plants		14,155.47	
F			nsportation @		53,083.02	
G	Erection Charges @	5% on T	rf/Breaker/W	PB/ H-Pole	23,375.11	
Н	Erection Charges @ 10% of C (except Trf/Breaker/WP	B/ H-Pol	e/HT stay set	/PSC pole)	24,027.14	
ı	Erection Charges @ 20% of P	SC pole-	Not to be us	ed for 33kv	-	
J	01.70.0		Sun	of (C to I)	8,43,647.62	
	<u>Civil &amp; Services</u>	Ι				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	4.4	28,600.00	
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.9	5,850.00	
К			Total Civil	& Services	34,450.00	
L			•	Total (J+K)	8,78,097.62	
N			Sub 1	otal (L+M)	8,78,097.62	
0		-	Гotal GST @	18% of (N)	1,58,057.57	
01		7	otal CESS @	0 1% of (N)	8,780.98	
Р	Gross Total Material +Services (N+O+O1) for 33 KV C	ut Point	with 180 De	gree Angle	10,44,936.16	
	No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No ) MATERIALS FOR 33 KV Cut Point with 90 Degree Ang	10		4		
<u>,</u>	MATERIALS FOR 33 RV Cut Foilit with 30 Degree Ang	<u></u>		Total	T-4-1	
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
2	13 Mtr. Long H-Pole(GI)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)	No K.g.	56,735.71 76.00	4 260.032	2,26,942.86 19,762.43	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)	K.g.	97.50	42.2912	4,123.39	
			i	ı T		
4	Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)	K.g.	76.00	46.80576	3,557.24	
4 5	No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.	No.	104.00	4	416.00	
4	No's of Channel = (4x 9.56x0.306)				· · · · · · · · · · · · · · · · · · ·	

	Annexure-8				
33	kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poi	nts and	Cut-Points &	13 Mtr WP	B Pole for DP
8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	4.8144	469.40
9	33KV pin insulator polymer (4 No's each 90 Deg. Cut point)	No.	624.00	16	9,984.00
10	H W fitting(B&S)90KN,4 Bolt	No.	650.00	24	15,600.00
	Disc insulator (B&S)90 KN polymer	No.	1,495.00		35,880.00
	Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	No. K.g.	215.80 97.50		863.20 102.18
	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00		35,880.00
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	4	650.00
	H.T. Stay set (Complete ) H.T. Stay Insulator Type-C (2 No's.)	Set No.	1,365.00 65.00		5,460.00 260.00
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50		5,850.00
19	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point)	K.g.	101.40	45.24	4,587.34
	Black Paint	Ltr	286.00		1,144.00
21 <b>A</b>	Yellow Colour Paint for Background	Ltr	216.00 Total Cost o		1,728.00
B	Stock		& Insurance		<b>3,74,625.39</b> 11,238.76
C	Stock,	Storage		otal (A+B)	
				<u> </u>	3,85,864.15
D		т.	Contigency ools & Plants		11,575.92
E				$\check{}$	7,465.55
F	5 // O		nsportation @	_	28,939.81
G	Erection Charges @				11,687.56
Н	Erection Charges @ 10% of C (except Trf/Breaker/WP				13,952.64
	Erection Charges @ 20% of P	SC pole-			-
J	0:700		Sun	n of (C to I)	4,59,485.64
	<u>Civil &amp; Services</u>	ı			
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	2.20	14,300.00
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.45	2,925.00
3	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	4	9,000.00
K			Total Civil	& Services	26,225.00
L				Total (J+K)	4,85,710.64
N				Γotal (L+M)	4,85,710.64
0			Total GST @	18% of (N)	87,427.91
01		7	Total CESS @	② 1% of (N)	4,857.11
Р	Gross Total Material +Services (N+O+O1) for 33 KV (	Cut Poin	t with 90 De	gree Angle	5,77,995.66
	33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)			6	
	MATERIALS FOR 33 KV Pin Points				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	13 Mtr. Long H-Pole(GI)	No	56,735.71		71,48,700.00
2	33 KV V cross Arm (GI) 22Kg each	No.	2,340.00	126	2,94,840.00
<u>3</u> 4	Top bracket 100x50x6mm Gl channel ( 300mm each) Danger Plate, 1 no's.	No.	195.00 104.00		24,570.00 13,104.00
5	Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	No. KG	97.50		3,696.56
6	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	378.00	39,312.00
7	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	151.65	14,786.23
	33KV pin insulator polymer	No.	624.00		2,35,872.00
9 10	Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	No.	215.80 97.50		27,190.80 3,218.67
	GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	K.g. K.g.	101.40		3,218.67 18,525.78
12	232 sq.mm AAA conductor	Mtr.	203.45		37,71,963.00
	Crimping type Midspan Compression Joint for 148 sq.mm AAA conductor	EA	842.95		15,173.03
14 15	Black Paint Yellow Colour Paint for Background	Ltr Ltr	286.00 216.00		36,036.00 54,432.00
A	TORON COROLL I AIRLEOF DAORYFOURIU		Total Cost o		1,17,01,420.06
В	Stock		& Insurance		3,51,042.60
C	Clock,	ago		otal (A+B)	1,20,52,462.66
			Contigency	`	3,61,573.88
E		Tr	ools & Plants		2,41,049.25
F			nsportation @	<u> </u>	9,03,934.70
<u> </u>	1	1101	p-:.uu.on (u	,	5,05,554.70

Annexure-8						
33	BkV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poi	nts and	Cut-Points &	. 13 Mtr WP	B Pole for DP	
G	Erection Charges @	5% on T	rf/Breaker/W	PB/ H-Pole	3,68,158.05	
Н	Erection Charges @ 10% of C (except Trf/Breaker/WP	B/ H-Pol	e/HT stay set	/PSC pole)	4,68,930.17	
Ι	Erection Charges @ 20% of P	SC pole-	Not to be us	ed for 33kv	-	
J			Sun	n of (C to I)	1,43,96,108.71	
	<u>Civil &amp; Services</u>		ı	1		
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	69.30	4,50,450.00	
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	14.18	92,137.50	
K	Total Civil & Services					
L	L Total (J+K)					
N	N Sub Total (L+M)					
0			Total GST @	18% of (N)	26,88,965.32	
01		T	Total CESS @	0 1% of (N)	1,49,386.96	
Р	Gross Total Material +Services	(N+O+O	1) for 33 KV	Pin Points	1,77,77,048.49	
	Gross Total Summary					
1	Gross Total Material +Services (N+O+C				21,32,225.09	
2	Gross Total Material +Services (N+C				3,91,883.50	
3	Gross Total Material +Services (N+O+O1) for 33 KV				10,44,936.16	
4	, ,				5,77,995.66	
5					1,77,77,048.49	
Q R	* 1 11 11 11 11 11 11 11				<b>2,19,24,088.90</b> 1,500.00	
S				3,750.00		
T					750.00	
U	Gross Total Material, Services a				2,19,30,088.90	
	1 2.555 Fotal material, convictor a	рс	(	/	_, .0,00,000.00	

# BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

# Supply Portion

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
	Supply of materials for 33kV, 1Core, 630sqmm				
1	Aluminium, XLPE insulation U/G Cable (aloing with				
	1core spare cable) with accessories Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	3000		
a b	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	500		
<u> </u>	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE	10.01.	000		
1.1	insulation U/G Cable (SC rating of cable in kA- 59.4kA and	Mtr.	10500	1,495.47	1,57,02,435.00
	SC rating of Armour in kA-20kA)				
	Supply of Straight throU/Gh jointing kits Heat Shrinkable type			44.000.00	
1.2	suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable	Set	33	11,900.00	3,92,700.00
	kits for 1Core Supply of Outdoor termination kits Heat Shrinkable type				
1.3	suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for	Set	6	6,350.00	38,100.00
	1Core	""		0,000.00	30,100.00
	Supply of Indoor termination kits Heat Shrinkable type				
1.4	suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for	Set		6,100.00	-
	1Core				
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G	Mtr.	8952.00	357.60	32,01,235.20
1.5	cable	IVIU.	0332.00	337.00	32,01,233.20
	1	ı			
2	Supply of 33kV RMU				
а	No. of 33kV 3Way RMU (LLV+M)	nos.			
b	No. of 33kV 4Way RMU (LLVV+M)	nos.			
С	No. of 33kV 3Way RMU (LLV)	nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.			
е	No. of 33kV 3Way RMU (LLL)	nos.			
f	No. of 33kV 4Way RMU (LLLL)	nos.			
2.1	Supply of RMU 33KV 3WAY 630A WITH METERING UNIT	Nos.	0	22,93,723.00	
2.1	(LLV+M) (CT Ratio to be mentioned)	1103.	U	22,93,723.00	
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT	Nos.	0	31,74,874.00	-
	(LLVV+M) (CT Ratio to be mentioned)				
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	_
	, , , ,			, ,	
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	23,35,264.00	-
	Edippy of time don't 444711 cook (218211112 Bitt) (2244)	1100.		20,00,201.00	
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	-
	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS)	<b>.</b>		40.50.404.00	
2.6	(LLLL)	Nos.	0	19,59,421.00	-
3	Earthing				
3.1	Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for	kg	0.00	97.50	_
<u> </u>	equipment, structure etc.)	9		57.50	
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	0	1,365.00	-
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	0		
4.1	Pre-Wired FRTU Panel with FRTU	No.	0	1,21,744.00	-
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	0	1,00,000.00	-
4.3	Networking Accessories	No.	0	72.00	-
4.4	CMR with Mounting Base for Digital Inputs	Nos.	0	650.00	-

	Annexure-o								
	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	e along wit	h 33kV RMU					
4.5	Interposing Relay for Digital Output	Nos.	0	467.94	-				
4.6	Battery Charger	Nos.	0	15,385.00	-				
4.7	Battery	Nos.	0	8,333.00	-				
4.8	4G Modem cum Router	Nos.	0	18,500.00	-				
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	0	204.87	-				
4.10	Instrumentation Cable	Mtr.	0	305.58	-				
4.11	7 C X 1.5 mm2, Armored for Control Output Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	0	275.23	-				
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	0	165.25	-				
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	0	150.00	-				
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	0.0	148.43	-				
4.15	Armored CAT6 SFTP Cable	Mtr.	0	45.87	-				
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	0	89.45	-				
4.17	Multi Function Meter	Nos.	0	18,651.00	-				
	Sub Total (Supply Portion) (in	Rs.)			1,93,34,470.20				
	Erection Portion								
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)				
1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare								
1.1	Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by <b>open trench method</b> .	Mtr.	9000	94.50	8,50,500.00				
1.2	Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits	Set	33	2,400.00	79,200.00				
1.3	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	6	2,081.70	12,490.20				
1.4	Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	0	2,081.70	-				
1.5	Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr.	1500	2,300.00	34,50,000.00				
1.6	Laying of <b>110mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open trench.	Mtr.	8952.00	300.00	26,85,600.00				
2	Erection, Commissioning, Wiring and Testing of 33kV RMU								
2.1	Erection of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M)	Nos.	0	15,000.00	-				
2.2	Erection of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M)	Nos.	0	15,000.00	-				
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	<del>-</del>				
	LIGOROLI OLIVINO GOLVI OVVIVI GOGIV (ZIGETIV. IBIVIV) (ZEV)	1100.	_	-,					
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	8,000.00	-				

### **Annexure-8** BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) 2.5 Nos. 8,000.00 Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) 2.6 Nos. 0 8,000.00 (LLLL) FRTU and OFC for RMU SCADA Automation Services of FRTU Panel, Communication and Other 3.1 EΑ 0.0 16,000.00 Supplied System Sub Total (Erection Portion) (in Rs.) 70.77.790.20 Civil Portion SI. Rate Amount Description of items Unit Quantity No. (in Rs.) (in Rs.) Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Mtr 2984 1.1 Route Length Earth work excavation of soil 2506.56 700.00 17,54,592.00 1.1.a Cum 1.1.b Earth work excavation of hard rock Cum 1074.24 1,720.00 18,47,692.80 Cum 3580.8 202.00 1.2 Back filling with excavated soil outside and above the trench 7,23,321.60 Damage of asphalt/tar road and other utilities and 1492 39,44,356.58 1.3 reconstructing to bring to its original shape after laying of Mtr 2,643.67 cable in open trench (1mtr. width) Civil works for Prefabricated RCC foundation with 2 supply of all materials Prefabricated RCC foundation of 33kV RMU 2.1 0 23,145.30 Nos. Supply of GI Fencing with Gate around each RMU sqmtr 0 3,600.00 Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation , soil treatment with bentonide powder , calculation of earth Set 0 3,700.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe. Supply and erection of GI Pipe of dia. 150mm, Class-B Mtr 48 1.463.40 70.243.20 (8Mtr.) Supply and Erection of Cable Route Marker along the cable Nos. 117 1,012.00 1,18,404.00 route at an interval of 30mtrs with civil works Sub Total (Civil Portion) (in Rs.) 84,58,610.18 **Sub Total (Supply Portion)** 1,93,34,470.20 Α В Stock, Storage & Insurance @ 3 % of A 5,80,034.11 C Sub Total (A+B) 1,99,14,504.31 D Contingency @ 3 % of C 5,97,435.13 Ε Tools & Plants Charges @ 2% of C (considered for earthing items) F Transportation @ 7.5% of C 14,93,587.82 Erection Charges @ 10% of earthing items G Total (C+D+E+F+G) 2,20,05,527.26 Н Sub Total (Erection Portion + Civil Portion) 1,55,36,400.38

3,75,41,927.64

3,75,41,927.64

67,57,546.97

Total Cost (H+I)

GST @ 18% of L

Total Estimated Capital Cost i.e. (J+K)

J

L

### **Annexure-8** BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU М1 CESS @ 1% of L 37,54,192.76 Grand Total (L+M) 4,80,53,667.38 Inspection Fee of UG Line (HT) - Rs. 3000/ km. 0 3,000.00 Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km 3,000.00 Q Inspection Fee of RMU - Rs. 1500/ RMU Inspection Fee of Drawing Checking and Approval 750.00 S Gross Total Material, Services and Inspection Fees (N+O+P+Q+R) 4,80,60,417.38

No. of 33 KV + Pole with Windows   No. of 33 KV + Pole with Windows   No. of 34 KV + Pol windows   No. of 34 KV + Po		Annexure-8					
Description of Materials		BoQ and Estimate for 33 KV 4 Pole using WPB GI Pole 160x152 (13Mtr. Long, 30.44	KG/Mtr.)	with Isolate	or and LA		
No.		No. of 33 KV 4-Pole with Isolator			2		
No.		MATERIALS FOR 33 KV 4-P With Isolator					
2         To Channel 100XSDX0Rmm, 9.56 KG/Mr., each channel length, 24 note required = (9x.95.96x.3)         KG         76.00         657.78         49.987.33           3         Fish Pilate 50x6 mm., 238 kg/Mr., each 0.280 mt. length, 24 note required = (24x2.36x0.280)         KG         97.50         31.7184         3.002.54           4         channel required = (27.14x4.3) floation         KG         76.00         307.02         23.333.52           5         channel required = (27.14x4.3) floation         KG         76.00         307.02         23.333.52           6         channel required = (27.14x4.3) floation         KG         76.00         307.02         23.333.52           8         3xx505/mem. of Eleming Channel FXAGAVA 6 8mm., 7.14KG/Mr., each channel length         KG         76.00         36.744         29.000.54           8         3xx505/mem. of Eleming Channel FXAGAVA 6 8mm., 7.14KG/Mr., each channel length         KG         76.00         28.56         2.170.56           8         3xx505/mem. of Eleming Channel FXAGAVA 6 8mm., 7.14KG/Mr., each channel length         KG         76.00         8.73         68.34           9         3xx505/mem. of Eleming Channel Support Angle, 4 SKg, intr., each angle length 0.38mm., 1 no angle required = (2xx505)         KG         76.00         7.55         59.14         69.00         7.50         8.73		Description of Materials	of Materials Unit Rate Quantity				
Section   Sec	1		No	34,322.00	8	2,74,576.00	
A solution Support Calment   75400 x 4, 9mm. x 1, 744G/Mtr., each channel length 4.3 Mtr., 2 no's   KG   76.00   307.02   23.333 s 2	2		KG	76.00	657.728	49,987.33	
Obusine Pole Belling Channer 1 SYMAX 4 Amm., 7.14KG/Mtr., each channel length 4.3 Mtr., 8 no's belling Channer 1 SYMAX 4 Amm., 7.14KG/Mtr., each channel length 4.3 Mtr., 8 no's belling Channer 1 SYMAX 4 Amm., 7.14KG/Mtr., each channel length 4.3 Mtr., 8 no's angle required =	3		KG	97.50	31.7184	3,092.54	
Section   Programme   Progr	4	channel required =( 2x7.14x4.3)/ Isolator	KG	76.00	307.02	23,333.52	
6         500-500-500-500-mm. GI Bracing Angle, 4.5Kg Jmtr., aeah angle length 4.927 mtr., 8 nos angle required = (8'4.5'4.92'6.00') a 34.7.1 n. o. days and a 34.7.1 n. o. angle required = (8'4.5'4.92'6.00') a 8.7.3 n. o. 63.4.8 n. o. 34.7.1 n. o. angle required = (8'4.5'4.92'6.00') a 8.7.3 n. o. 63.4.8 n. o. 34.7 n. o. angle required = (8'4.5'4.92'6.00') a 8.7.3 n. o. 63.4.8 n. o. 34.7 n. o. angle required = (8'4.5'4.92'6.00') a 8.7.3 n. o. 63.4.8 n. o. 34.7 n. o. angle required = (1.4.5'4.92'6.00') b leadstor (1.4.5'4.92'6.00') b leads	5		KG	76.00	491.232	37,333.63	
7   Solidor Operating Down Pipe Support Canhmel 75X40X 4 8mm, 7.14KG/Mr., each channel length 0.8 Mir., 1 no channel required 1 (17.146.0) Biolator   KG   76.00   8.73   683.48	6	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 8 nos angle required =	KG	76.00	354.744	26,960.54	
8 Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.38mtr., 1 no angle required = KG 76.00 8.73 8.73 863.48 1/14.570.38pt / seator	7	Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length	KG	76.00	28.56	2,170.56	
9 Down Pipe Base Support Angle, 4 SKg, Mirr, each angle length 0.34mtr., 1 no angle required = KG 76.00 7.65 581.40 (14.50.34) Isolator Support Side Cahnnel 100X50X8mm, 9.56 KGMkr., each channel length 0.5 mtr., 2 no's KG 76.00 47.8 3.832.80 channel required = (2.95.806.05) Isolator Support Side Cahnnel 100X50X8mm, 9.56 KGMkr., each channel length 0.5 mtr., 2 no's KG 76.00 47.8 3.832.80 channel required = (2.95.806.05) Isolator Support Side Cahnnel 100X50X8mm, 9.56 KGMkr., each channel length 0.5 mtr., 2 no's KG 76.00 47.8 416.00 22.026 11.0 anger Plate, 2 no's KG 97.50 10.00 4 416.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22	8	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 no angle required =	KG	76.00	8.73	663.48	
10 sloater Support Side Cahnnel 100/SDXR6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel reguited = (2.95 Se05, 5) sloater of support Side Cahnnel reguited = (2.95 Se05, 5) sloater of support Side Cahnnel reguited = (2.95 Se05, 5) sloater of support Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95 Se05, 5) sloater of Side Cahnnel reguited = (2.95	9	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 no angle required =	KG	76.00	7.65	581.40	
Danger Hale, 2 no's.   No.   104.00   4   416.00	10	Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's	KG	76.00	47.8	3,632.80	
17   18   19   19   19   19   19   19   19	11		No.	104.00	4		
13   Gi   Pipe Earthing 40mm. 3 Mtr. Long   6   8.190.00   14   500/mm (16   Ital for earthing) 2.36kg/mtr. (15 Mtr. For LA, 4 Mtr for Isolator Body, 2.5 mtr. For mesh   KG   97.50   12.508   12.195.30   15.008   12.195.30   15.008   12.195.30   15.008   12.195.30   15.008   12.195.30   15.008   12.195.30   15.008   12.195.30   15.008   12.195.30   15.008   12.195.30   15.008   12.195.30   15.008   12.195.30   15.008   12.195.30   15.008   12.195.30   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.008   15.	12		KG	97.50	1.2036	117.35	
15   15   15   15   15   15   15   15	13		No.	1.365.00	6	8.190.00	
15   Glarbede Wire anticlimbing device 3 Kg. Per support, 4 no's dty, required -(4x3kg)   Kg   104.00   24   2,496.00		50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh				·	
16	15	GI barbed wire anticlimbing device 3 Kg. Per support, 4 no's qty. required =(4x3kg)	Kg	104.00	24	2,496.00	
Total Cost   To	16		KG	97.50	9.6288	938.81	
	17	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	15	2,01,825.00	
My fitting(BaS)90KN A Boit   No.   650.00   36   23,400.00	18		Set	66,000.00	5	3,30,000.00	
10   Disc insulator (B&S) 90 KN polymer   No.						· · · · · · · · · · · · · · · · · · ·	
PG Clamp for 232 sq.mm AAA conductor   NO.   1,495.00   48   71,760.00	_						
24   3   Nut, Bolt & Washer of different sizes   K.g.   101.40   90   9.126.00     25   Black Paint   Ltr   286.00   2   572.00     3   Yellow Colour Paint for Background   Ltr   216.00   4   864.00     4   A   A   A   A   A   A   A     5   Black Paint   Total Cost of materials   11,58,113.48     6   Stock, Storage & Insurance i.e 3% of A   34,743.40     7   C   Sub Total   A+B   11,92,856.88     8   Stock   Storage & Insurance i.e 3% of A   34,743.40     8   Stock   Storage & Insurance i.e 3% of A   34,743.40     9   C   Sub Total   A+B   11,92,856.88     1   C   Contigency @ 3% of C   23,688.42     1   F   E   Erection Charges @ 5% on Tri/Breaker/WPB/ H-Pole   14,140.66     1   Erection Charges @ 10% of C (except Tri/Breaker/WPB/ H-Pole/HT stay set/G Pole/PSC pole)   90,160.79     1   Erection Charges @ 10% of C (except Tri/Breaker/WPB/ H-Pole/HT stay set/G Pole/PSC pole)   90,160.79     1   Erection Charges @ 20% of PSC pole Not to be used for 33kv   -						71,760.00	
Black Paint   Lit   286 00   2   572 00   20   792 00   20   792 00   20   792 00   20   20   20   20   20   20   20							
26   Vellow Colour Paint for Background							
Total Cost of materials   11,58,113.48	_						
Stock, Storage & Insurance i.e 3% of A   34,743,40		To the to the total and the to					
Sub Total (A+B)   11,92,856.88		Stock.					
Contigency @ 3% of C   35,785.71		,					
Tools & Plants @ 2% of C   23,688.42							
Transportation @ 7.5% of C   89,464.27			To	<u> </u>		-	
Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole   14,140.66						-	
H		Freetien Charres @					
Erection Charges @ 20% of PSC pole- Not to be used for 33kv   Sum of (C to I)   14,46,096.73						-	
Sum of (C to I)   14,46,096.73				<u> </u>	' '	90,160.79	
SI		Erection Charges @ 20% or P	SC pole-			-	
SI. No. Description of Materials  Unit Unit Rate Quantity Amount  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr 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.  K Total Civil & Services Total (J+K) 15,02,746.73  N Total GST @ 18% of (N) 2,70,494.41  Total CESS @ 1% of (O1) 15,027.47	J			Sun	n of (C to I)	14,46,096.73	
No.         Description of Materials         Unit Vinit Rate Quantity         Quantity         Amount           1         Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr         Cu.mtr         6,500.00         4.4         28,600.00           2         Couping ratio 1:1.5:3 with dimension (500X500X450) = 0.1125 Cu mtr         Cu.mtr         6,500.00         0.9         5,850.00           3         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.         3,700.00         6         22,200.00           L         Total Civil & Services         56,650.00           L         Total (J+K)         15,02,746.73           N         Sub Total (L+M)         15,02,746.73           O         Total GST @ 18% of (N)         2,70,494.41           O1         Total CESS @ 1% of (O1)         15,027.47		<u>Civil &amp; Services</u>					
2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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 .  K  Total Civil & Services  56,650.00  Total (J+K)  15,02,746.73  O  Total GST @ 18% of (N)  2,70,494.41  Total CESS @ 1% of (O1)  15,027.47		Description of Materials	Unit	Unit Rate			
2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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 .  K  Total Civil & Services  56,650.00  Total (J+K)  15,02,746.73  O  Total GST @ 18% of (N)  2,70,494.41  Total CESS @ 1% of (O1)  15,027.47	1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	4.4	28,600.00	
3 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 .  K Total Civil & Services 56,650.00  L Total (J+K) 15,02,746.73  N Sub Total (L+M) 15,02,746.73  O Total GST @ 18% of (N) 2,70,494.41  O1 Total CESS @ 1% of (O1) 15,027.47	2						
L     Total (J+K)     15,02,746.73       N     Sub Total (L+M)     15,02,746.73       O     Total GST @ 18% of (N)     2,70,494.41       O1     Total CESS @ 1% of (O1)     15,027.47	3	including excavation, soil treatment with bentonide powder, calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat	No.	3,700.00	6	22,200.00	
N         Sub Total (L+M)         15,02,746.73           O         Total GST @ 18% of (N)         2,70,494.41           O1         Total CESS @ 1% of (O1)         15,027.47	K Total Civil & Services				56,650.00		
O         Total GST @ 18% of (N)         2,70,494.41           O1         Total CESS @ 1% of (O1)         15,027.47	L	L Total (J+K)				15,02,746.73	
O1 Total CESS @ 1% of (O1) 15,027.47	N			Sub 1	otal (L+M)	15,02,746.73	
	0		1	Γotal GST @	18% of (N)	2,70,494.41	
	01		To	tal CESS @	1% of (O1)	15,027.47	
	Р	Gross Total Material +Services (N+O+	O1) for 3	33 KV 4-P W	ith Isolator		

	Annexure-9								
	7	TP CENTRAL ODISHA DISTRIBUTION LIMITED							
Name o	ame of the Division :- SED								
Name o	f the Sub-Division : -	Salepur							
Name o	f the Section : -	Bahugram							
Name of	f the Work :-	33kV New Lines from Bahugram Grid (33kV Proposed Bahugram-1 Feeders)	and Bahugram-2						
Scope of work:-		Construction of 33kV Double Ckt. O/H Line using 13mtr H-Pole & 232sqmm AAAC Conductor- 7Ckm. Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable-0.5Ckm along wit 1no. 33kV 4W RMU. Construction of 33kV 4 Pole structure with Isolator- 9nos. Construction for 2 nos. of 33kV Outdoor Bay at Bahugram-2 PSS.							
Names (	of Schemes: -	TPCODL CAPEX							
		ABSTRACT OF ESTIMATE							
SI. No.	Part	Description	Amount						
1	А	Construction of 33kV Double Ckt. O/H Line using 13mtr H-Pole & 232sqmm AAAC Conductor- 7Ckm.	₹ 3,35,63,373.53						
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable-0.5Ckm along wit 1no. 33kV 4W RMU.	₹ 1,09,14,996.89						
3	С	Construction of 33kV 4 Pole structure with Isolator- 9nos.	₹ 45,86,219.94						
4 D		Construction for 2 nos. of 33kV Outdoor Bay at Bahugram-2 PSS. ₹							
5		Total Amount	₹ 5,60,16,474.76						
		Total Amount (In Cr)	₹ 5.60						

#### Annexure-9 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP No. of 33 KV Cut Point with 180 Degree Angle 14 (Ref. Drawing No.-) MATERIALS FOR 33 KV Cut Point with 180 Degree Angle SI. Total Total Description of Materials Unit Unit Rate No. Quantity Amount 7,94,300.00 1 13 Mtr. Long H-Pole(GI) No 56,735.71 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of 2 76.00 1365,168 1,03,752.77 K.g. Channel = (3x2x 9.56x1.7)Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (24x2.36x0.280) 97.50 222.0288 21,647.81 3 K.a Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 76.00 K.g. No's of Channel = (2x 9.56x0.306) 5 Danger Plate, 1 no's. No. 104.00 14 1,456.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = 6 KG 97.50 4.2126 410.73 (1x0.59x0.510)7 GI barbed wire anticlimbing device 3 Kg. Per support 104.00 42 4,368.00 Kg Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97.50 16.8504 1,642.91 (4x0.59x0.510) No. 624.00 84 52,416.00 33KV pin insulator polymer 10 H W fitting(B&S)90KN,4 Bolt No. 650.00 168 1,09,200.00 No. 1,495.00 Disc insulator (B&S)90 KN polymer 168 2.51.160.00 FΑ Earthing of Support ( Coil Type ) 215 80 14 3.021.20 K.g. 13 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing 97.50 3.668 357.63 PG Clamp for 232 sq.mm AAA conductor NO 1,495.00 168 2,51,160.00 15 GI Nut, Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point) K.g. 101.40 68.306 6,926.23 286.00 16 Ltr 4.004.00 IBlack Paint 14 Yellow Colour Paint for Background 28 6.048.00 17 Ltr 216.00 Α Total Cost of materials 16,11,871.28 В Stock, Storage & Insurance i.e 3% of A 48,356.14 С Sub Total (A+B) 16,60,227.42 D Contigency @ 3% of C 49,806.82 Е Tools & Plants @ 2% of C 33,204.55 F Transportation @ 7.5% of C 1,24,517.06 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 40.906.45 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) Н 84,209.84 Erection Charges @ 20% of PSC pole- Not to be used for 33kv 1 J Sum of (C to I) 19,92,872.13 Civil & Services SI. Total Total Unit Unit Rate Description of Materials No Quantity Amount 1 Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 7 7 50.050.00 10,237.50 2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6.500.00 1.575 Κ **Total Civil & Services** 60,287.50 L Total (J+K) 20,53,159.63 Sub Total (L+M) Ν 20,53,159.63 0 Total GST @ 18% of (N) 3,69,568.73 01 Total CESS @ 1% of (N) 20.531.60 Р Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle 24,43,259.96 33 Kv Line Length In KM with 40 Mtr. Span 7 (Ref. Drawing No.-MATERIALS FOR 33 KV Pin Points SI. Total Total Description of Materials Unit Unit Rate No. Quantity Amount 91,34,450.00 13 Mtr. Long H-Pole(GI) No 56.735.71 161 1 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of 15,30,694.62 2 K.g. 97.50 15699 Channel = (2x 9.56x1.7) Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 12 no's required = (12x2.36x0.280) 97.50 K.g. 1277 1.24.474.90 3 4 Danger Plate, 1 no's. No. 104.00 161 16,744.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = KG 97.50 48.44 4.723.38 (1x0.59x0.510)6 GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 483.00 50,232.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 193.78 18,893.51 97.50 (4x0.59x0.510) 624.00 6,02,784.00 966 8 No. 33KV pin insulator polymer Earthing of Support (Coil Type) No. 215.80 161 34.743.80 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing K.g. 97.50 42.18 4,112.75 GI Nut, Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 101.40 K.g. 700.35 71,015.49 Mtr 203.45 43260.00 88,01,247.00 12 232 sq.mm AAA conductor 13 Crimping type Midspan Compression Joint for 148 sq.mm AAA conductor EΑ 842.95 42 35.403.73 14 Black Paint Ltr 286.00 161.0 46.046.00

	Annexure-9					
3	3kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Po	ints and	Cut-Points &	13 Mtr WPE	3 Pole for DP	
15	Yellow Colour Paint for Background	Ltr	216.00	322.0	69,552.00	
Α			Total Cost o		2,05,45,117.17	
В	Stock	k, Storage	e & Insurance	i.e 3% of A	6,16,353.52	
С				otal (A+B)	2,11,61,470.69	
D			Contigency	_	6,34,844.12	
E			ools & Plants		4,23,229.41	
F			nsportation @	_	15,87,110.30	
G	Erection Charges @				4,70,424.18	
Н	Erection Charges @ 10% of C (except Trf/Breaker/W				11,75,298.72	
ı	Erection Charges @ 20% of	PSC pole			-	
J			Sun	n of (C to I)	2,54,52,377.42	
SI.	<u>Civil &amp; Services</u>			Total	Total	
No.	Description of Materials	Unit	Unit Rate	Quantity	Amount	
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	88.55	5,75,575.00	
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	18.11	1,17,731.25	
κ			Total Civil	& Services	6,93,306.25	
L				Total (J+K)	2,61,45,683.67	
N			Sub 1	Γotal (L+M)	2,61,45,683.67	
0			Total GST @	18% of (N)	47,06,223.06	
01			Total CESS @	0 1% of (N)	2,61,456.84	
Р	Gross Total Material +Services	(N+O+C	01) for 33 KV	Pin Points	3,11,13,363.56	
	Gross Total Summary					
1	Gross Total Material +Services (N	+O) for 3	3 KV DP With	out Isolator	-	
2	Gross Total Material +Services	(N+O) fo	or 33 KV DP V	Vith Isolator	-	
3	Gross Total Material +Services (N+O+O1) for 33 KV	/ Cut Poi	nt with 180 De	gree Angle	24,43,259.96	
4	Gross Total Material +Services (N+O) for 33 k	(V Cut Po	oint with 90 De	egree Angle	-	
5	Gross Total Material +Services (N+O+O1) for 33 KV Pin Points					
Q		Gross 1	Total Material	+Services	3,35,56,623.53	
R	Inspection Fee of Over Head Line (HT) - Rs.1500 up to 1 km.					
S	S Inspection Fee of Over Head Line (HT) - Rs. 750/ Additional Km					
Т	Inspection Fee of	of Drawing	g Checking ar	nd Approval	750.00	
U	Gross Total Material, Services and Inspection Fees (Q+R+S+T) 3					

# BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

# Supply Portion

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories				
а	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	500		
b	Length of 33kV 1C, 630sqmm cable (HDD)	Mtr.			
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	1500	1,495.47	22,43,205.00
1.2	Supply of Straight throU/Gh jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set		11,900.00	-
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	9	6,350.00	57,150.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	9	6,100.00	54,900.00
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	1428.00	357.60	5,10,652.80
	Completed 221/V DBALL	I	1		
2 a	Supply of 33kV RMU  No. of 33kV 3Way RMU (LLV+M)	nos.			
b	No. of 33kV 4Way RMU (LLVV+M)	nos.			
C	No. of 33kV 3Way RMU (LLV)	nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.	1		
e	No. of 33kV 3Way RMU (LLL)	nos.	-		
f	No. of 33kV 4Way RMU (LLLL)	nos.			
2.1	Supply of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M) (CT Ratio to be mentioned)	Nos.	0	22,93,723.00	-
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M) (CT Ratio to be mentioned)	Nos.	0	31,74,874.00	-
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	1	23,35,264.00	23,35,264.00
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	-
2.6	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS)	Nos.	0	19,59,421.00	-
3	Earthing Earthing Conductor: 50X6 mm (2.4kg./mtr.) GI Flat for				
3.1	equipment, structure etc.)	kg	13.20	97.50	1,287.00
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	2	1,365.00	2,730.00
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	1		
4.1	Pre-Wired FRTU Panel with FRTU	No.	1	1,21,744.00	1,21,744.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	1	1,00,000.00	1,00,000.00
4.3	Networking Accessories	No.	1	72.00	72.00
4.4	CMR with Mounting Base for Digital Inputs	Nos.	32	650.00	20,800.00

BoQ and Estimate for 33kV, 1C 630sqmm U/C Interposing Relay for Digital Output	G Cable	along wit	L COLVEDIALL	
Interposing Relay for Digital Output			n 33KV RIMU	
	Nos.	16	467.94	7,487.04
Battery Charger	Nos.	1	15,385.00	15,385.00
Battery	Nos.	1	8,333.00	8,333.00
4G Modem cum Router	Nos.	1	18,500.00	18,500.00
Instrumentation Cable 12 C X 0.5 mm2. Armored cable for Status and Indications	Mtr.	40	204.87	8,194.80
Instrumentation Cable	Mtr.	40	305.58	12,223.20
Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	40	275.23	11,009.20
4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	20	165.25	3,305.00
2 C X 4 mm2 Cable for DC Power Supply	Mtr.	10	150.00	1,500.00
4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	20.0	148.43	2,968.60
Armored CAT6 SFTP Cable	Mtr.	20	45.87	917.40
Un-Armored CAT6 SFTP Cable	Mtr.	20	89.45	1,789.00
Multi Function Meter	Nos.	2	18,651.00	37,302.00
Sub Total (Supply Portion) (in	Rs.)			55,76,719.04
Erection Portion	n			
Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare				
Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.	Mtr.	1500	94.50	1,41,750.00
Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits	Set	0	2,400.00	-
Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	9	2,081.70	18,735.30
Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	9	2,081.70	18,735.30
1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method</b> with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr.	0	2,300.00	-
Laying of <b>110mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open trench.	Mtr.	1428.00	300.00	4,28,400.00
Erection, Commissioning, Wiring and Testing of 33kV RMU				
	Nos.	0	15,000.00	
Erection of RMU 33KV 3WAY 630A WITH METERING UNIT	1105.	l I	-,	-
(LLV+M) Erection of RMU 33KV 4WAY 630A WITH METERING UNIT	Nos.	0	15,000.00	-
(LLV+M)		0		-
(LLV+M) Erection of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M)	Nos.		15,000.00	- 8,000.00
	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output Twisted Pair Shielded & Over all shielded Instrumentation Cable 4 C X 2.5 mm2 Copper cable for extension of CT & PT 2 C X 4 mm2 Cable for DC Power Supply 4P X 0.36 mm2, Armored Communication Cable for MFM Armored CAT6 SFTP Cable Un-Armored CAT6 SFTP Cable Un-Armored CAT6 SFTP Cable Wulti Function Meter  Sub Total (Supply Portion) (in  Erection Portice  Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open tench.	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output Twisted Pair Shielded & Over all shielded Instrumentation Cable 4 C X 2.5 mm2 Copper cable for extension of CT & PT  Mtr. 2 C X 4 mm2 Cable for DC Power Supply  Mtr. 4P X 0.36 mm2, Armored Communication Cable for MFM  Armored CAT6 SFTP Cable  Mtr.  Multi Function Meter  Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cabl	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output Twisted Pair Shielded & Over all shielded Instrumentation Cable 4 C X 2.5 mm2 Copper cable for extension of CT & PT Attr. 20 20 C X 4 mm2 Cable for DC Power Supply Mtr. 40 40 41 C X 2.5 mm2 Copper cable for extension of CT & PT Attr. 40 41 C X 2.5 mm2 Copper cable for extension of CT & PT Attr. 40 41 C X 2.5 mm2 Copper cable for Extension of CT & PT Attr. 40 41 C X 2.5 mm2 Copper cable for Extension of CT & PT Attr. 41 C X 2.5 mm2 Copper cable for DC Power Supply Attr. 42 C X 4 mm2 Cable for DC Power Supply Attr. 42 C X 4 mm2 Cable for DC Power Supply Attr. 43 C X 4 mm2 Cable for DC Power Supply Attr. 44 C X 2.5 mm2 Cable for DC Power Supply Attr. 45 C X 4 mm2 Cable for DC Power Supply Attr. 46 C X 2.5 mm2 Cable for DC Power Supply Attr. 47 C X 1.5 mm2 Cable for MFM Attr. 40 A	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output 7 C X 1.5 mm2, Armored for Control Output 17 C X 1.5 mm2, Armored for Control Output 17 C X 1.5 mm2, Armored for Control Output 18 C X 2.5 mm2 Copper cable for extension of CT & PT 19 Mtr. 10 165.25 10 C X 4 mm2 Cable for DC Power Supply 19 Mtr. 10 150.00 11 Mtr. 10 150.00 11 Mtr. 10 150.00 12 C X 4 mm2 Cable for DC Power Supply 19 Mtr. 10 150.00 11 Mtr. 10 150.00 11 Mtr. 10 150.00 11 Mtr. 10 150.00 12 C X 4 mm2 Cable for DC Power Supply 19 Mtr. 10 150.00 11 Mtr. 20 18 9.45 11 Mtr. 20 18 9.45 12 C X 4 mm2 Cable for DC Power Supply 19 Mtr. 20 18 9.45 18 Mtr. 20 8 9.45 20 Mtr. 20 Mtr. 20 8 9.45 20 Mtr. 20 8 9.45 20 Mtr. 20 8 9.45 20 Mtr. 20 Mtr. 20 8 9.45 20 Mtr. 20

	Annexure-9							
	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along witl	h 33kV RMU				
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS)	Nos.	0	8,000.00	-			
3	(LLLL) FRTU and OFC for RMU SCADA Automation			,				
3.1	Services of FRTU Panel, Communication and Other	EA	1.0	16,000.00	16,000.00			
	Supplied System Sub Total (Erection Portion) (ir	l Rs.)		,	6,31,620.60			
Civil D								
Civil P SI.		11::4	0	Rate	Amount			
No.	Description of items	Unit	Quantity	(in Rs.)	(in Rs.)			
1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench							
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)- Route Length	Mtr	476					
1.1.a	Earth work excavation of <b>soil</b>	Cum	399.84	700.00	2,79,888.00			
1.1.b	Earth work excavation of hard rock	Cum	171.36	1,720.00	2,94,739.20			
1.2	Back filling with excavated soil outside and above the trench	Cum	571.2	202.00	1,15,382.40			
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	238	2,643.67	6,29,193.61			
2	Civil works for Prefabricated RCC foundation with supply of all materials							
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	1	23,145.30	23,145.30			
3	Supply of GI Fencing with Gate around each <b>RMU</b>	sqmtr	20	3,600.00	72,000.00			
4	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.	Set	2	3,700.00	7,400.00			
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	72	1,463.40	1,05,364.80			
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	17	1,012.00	17,204.00			
	Sub Total (Civil Portion) (in F	Rs.)	<u>'</u>		15,44,317.31			
Α	Sub Total (Supply Portion)				55,76,719.04			
В	Stock, Storage & Insurance @ 3 % of A				1,67,301.57			
С	Sub Total (A+B)				57,44,020.61			
D	Contingency @ 3 % of C				1,72,320.62			
E	Tools & Plants Charges @ 2% of C (considered for earthing it	tems)			26.51			
F	Transportation @ 7.5% of C				4,30,801.55			
G	Erection Charges @ 10% of earthing items				132.56			
Н	Total (C+D+E+F+G)				63,47,301.85			
I	Sub Total (Erection Portion + Civil Portion)				21,75,937.91			
J	Total Cost (H+I)				85,23,239.76			
L	Total Estimated Capital Cost i.e. (J+K)				85,23,239.76			
М	GST @ 18% of L				15,34,183.16			
M1	CESS @ 1% of L				8,52,323.98			
N	N Grand Total (L+M)							

	Annexure-9						
	BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU						
0	Inspection Fee of UG Line (HT) - Rs. 3000/ km.	3,000.00					
Р	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km						
Q	Inspection Fee of RMU - Rs. 1500/ RMU	1,500.00					
R	Inspection Fee of Drawing Checking and Approval	750.00					
s	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)	1,09,14,996.89					

BoQ and Estimate for 33 KV 4 Pole using WPB GI Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) with Isolator and LA							
	No. of 33 KV 4-Pole with Isolator			9			
	MATERIALS FOR 33 KV 4-P With Isolator						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	WPB(GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	36	12,35,592.00		
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 8 no's channel required =( 8x9.56x4.3)	KG	76.00	2959.776	2,24,942.98		
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 24 no's required = (24x2.36x0.280)	KG	97.50	142.7328	13,916.45		
4	Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =( 2x7.14x4.3)/ Isolator	KG	76.00	122.808	9,333.41		
5	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 8 no's channel required =( 8x7.14x4.3)	KG	76.00	2210.544	1,68,001.34		
6	50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 8 nos angle required = (8*4.5*4.927)	KG	76.00	1596.348	1,21,322.45		
7	Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no channel required =( 1x7.14x0.8)/ Isolator	KG	76.00	11.424	868.22		
8	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 no angle required = (1*4.5*0.388)/ Isolator	KG	76.00	3.492	265.39		
9	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 no angle required = (1*4.5*0.340)/ Isolator	KG	76.00	3.06	232.56		
10	Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel required =( 2x9.56x0.5)/ Isolator	KG	76.00	19.12	1,453.12		
11	Danger Plate, 2 no's.	No.	104.00	18	1,872.00		
12	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	5.4162	528.08		
13	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	27	36,855.00		
14	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 5 mtr. For raising)	KG	97.50	562.86	54,878.85		
15	GI barbed wire anticlimbing device 3 Kg. Per support, 4 no's qty. required =(4x3kg)	Kg	104.00	108	11,232.00		
16	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 16 no's = (16x0.59x0.510)	KG	97.50	43.3296	4,224.64		
17	Lightning Arrester(30KV,10KA) (Station Class,class-2)  33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with	EA	13,455.00	6	80,730.00		
18	PI(Polymer)	Set	66,000.00	2	1,32,000.00		
19 20	33KV pin insulator polymer H W fitting(B&S)90KN,4 Bolt	No.	624.00 650.00	54 162	33,696.00 1,05,300.00		
	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	162	2,42,190.00		
	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	216	3,22,920.00		
	232 sq.mm AAA conductor GI Nut , Bolt & Washer of different sizes	Mtr.	203.45	278.1	56,579.45		
	Black Paint	K.g. Ltr	101.40 286.00	405 9	41,067.00 2,574.00		
26	Yellow Colour Paint for Background	Ltr	216.00	18	3,888.00		
Α			Total Cost o	f materials	29,06,462.93		
В	Stock,	Storage	& Insurance	i.e 3% of A	87,193.89		
С				otal (A+B)	29,93,656.82		
D			Contigency		89,809.70		
E			ols & Plants		59,113.92		
F	Erostian Charman (A)		nsportation @		2,24,524.26		
G H	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Po				63,632.99 1,68,303.64		
H	Erection Charges @ 10 % of C (except 11/bleaker/W1 b) 114 of C				1,00,303.04		
J		- Po.o		n of (C to I)	35,99,041.34		
Ť	Civil & Services			, , ,			
SI.		He!4	Unit Dat	Total	Total		
No.	Description of Materials	Unit	Unit Rate	Quantity	Amount		
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	19.8	1,28,700.00		
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	4.05	26,325.00		
3	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.	3,700.00	27	99,900.00		
K			Total Civil	& Services	2,54,925.00		
L				Total (J+K)	38,53,966.34		
N				Total (L+M)	38,53,966.34		
0			otal GST @		6,93,713.94		
01			tal CESS @		38,539.66		
Р	Gross Total Material +Services (N+O+	O1) for 3	33 KV 4-P W	ith Isolator	45,86,219.94		

#### Annexure-9 Construction for 1 no. of 33kV Outdoor Bay arrangement consisting of 1 VCB and 2 isolator). No. of Bus isolator requirement 6 2 No. of VCB Requirement Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount T-1 GI Column(7.25 mtr long, consisting of 2 Nos of 150X76X6.5 mm 26,600.00 1 Nos. 2 53,200.00 channel) for 33kV incoming line, Nominal Unit Wt - 0.35 MT T-2 GI Column (7.25mtr long, consisting of 2 Nos 175X75X6 mm channel) for 31,920.00 2 Nos. 2 63,840.00 33kV incoming line -1 no, Nominal Unit Wt - 0.42 MT T-1A GI Column (for 33 kv Bus) (6 mtr long, consisting of 2 Nos of 23,560.00 94,240.00 3 Nos. 4 150X76X6.5 mm channel jointed by plates) Nominal Unit Wt - 0.31 MT T-2A GI Column (for 33 kv Bus) (6 mtr long, consisting of 2 Nos 175X75X6 Nos 28.120.00 4 1.12.480.00 mm channel jointed by plates) Nominal Unit Wt - 0.37 MT G-3 GI Beam(5.05mtr long, consisting of 2 Nos 150X75 X5.7mm) for 33kV incoming line - (2 nos. Beam- one for Surge Arrester and other for Isolator, Nos. 15,200.00 2 30,400.00 Nominal Unit Wt - 0.2 MT) G-2 GI Beam (6.1 mtr long, consisting of 2 Nos 125X65 X5.3 mm channel Nos 13,300.00 8 1,06,400.00 jointed by plates) for 33kV Bus Stringing, Nominal Unit Wt - 0.175 MT) Equipment Structures (GI) For 33 KV Isolator (Unit Wt of Equipment KG 76.00 1980 1,50,480.00 Structures per set - 0.33 MT) Equipment Structures (GI) For 33 KV Vacuum Circuit Breaker (Unit Wt of KG 76.00 400 30.400.00 Equipment Structures per set - 0.2 MT) GI Column for 33 KV CT (Unit Wt of Equipment Structures per set - 0.285) 9 KG 76.00 570 43,320.00 MT) GI Spikes with cone and GI ( 2 nos) base plate 10mm (50x3000 mm GI pipe) 10 Nos. 3,641.92 8 29,135.35 (Unit Wt=0.035 MT) GI Pipe Earthing 40mm. 3 Mtr. Long No. 1,365.00 16 21,840.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr. For Isolator/VCB, 10 metre 12 KG 97.50 377.6 36,816.00 mesh formation )= 20x2.36 400 sq.mm ACSR for 33kV side jumpering and Bus Formation etc. KM2,74,300.00 27,430.00 13 0.1 33 kV 1250 AMP Double break (Turn & twist center rotating) isolator with 14 Set 1,31,157.00 6 7,86,942.00 earth switch with PI(Polymer) 33KV Outdoor VCB-1600A, with indoor CR panel without PT, with outdoor CT (CTR- 600-300-150/1-1A, 15VA, STC 25KA/3sec, class: 0.5, 5P10) for feeder EΑ 7,02,000.00 2 14,04,000.00 protection 33KV.Single Phase PT(33KV/ V3 / 110V/ V3) (Oil cooled ) CLASS 0.5 / 3P, EΑ 33.046.00 6 1,98,276.00 with O/P burden of 100VA Lightning Arrester(30KV,10KA) (Station Class,class-2) 13,455.00 24 3,22,920.00 17 EΑ Control Cable 10Core x 2.5 mm<sup>2</sup> Mtr 429.00 300 1.28.700.00 523.90 300 1,57,170.00 Mtr 19 Control Cable 16Core x 2.5 mm<sup>2</sup> 20 Control Cable 4Core x 2.5 mm<sup>2</sup> Mtr 145.60 100 14.560.00 236.60 100 23.660.00 21 Mtr Control Cable 7Core x 2.5 mm<sup>2</sup> 22 Disc insulator (B&S) 90 KN polymer No. 1,495.00 36 53,820.00 23 H W fitting(B&S) 90KN,4 Bolt No. 650.00 36 23.400.00 24 8 bolted (M-12) "T" clamp ACSR Zebra run & 232 mm2 drop No. 1,404.00 36 50,544.00 PG Clamp for 232 sq.mm AAA conductor NO. 1,495.00 96 1,43,520.00 25 109.744 26 101.40 11,128.04 GI Nut, Bolt & Washer of different sizes (13.718 Kg each Strcutures) K.g. 27 Black Paint Ltr 286.00 8 2,288.00 286.00 4,576.00 28 Yellow Colour Paint for Background Ltr 16 Α **Total Cost of materials** 41.25.485.39 В Stock, Storage & Insurance i.e 3% of A 1,23,764.56 С Sub Total (A+B) 42,49,249.95 Contigency @ 3% of C D 1,27,477.50

	Annexure-9				
Con	struction for 1 no. of 33kV Outdoor Bay arrangement consisting of	1 VCB a	and 2 isolate	or).	
E			Tools & Plants	s @ 2% of C	84,985.00
F			ransportation (		3,18,693.75
G			@ 5% on Trf/E		72,306.00
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/				2,78,063.47
l-	Erection Charges @ 20% of	PSC po			-
J	Civil & Services		Su	m of (C to I)	51,30,775.67
SI.				Total	Total
No.	Description of Materials	Unit	Unit Rate	Quantity	Amount
Α	VCB Foundation				
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	14.56	7,017.92
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	8.00	1,600.00
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	1020.00	0.68	696.15
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.91	4,668.30
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	5.65	36,725.00
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	26.50	7,976.50
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	280.00	30,520.00
В	CT & PT Foundation			0.00	-
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	15.94	7,681.88
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	9.00	1,800.00
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	900.00	0.73	653.40
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.73	3,724.38
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	4.73	30,712.50
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	29.88	8,993.88
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	244.86	26,689.74
С	Column as per Drawing Schedule-			0.00	-
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	51.31	24,731.30
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	24.00	4,800.00

### Annexure-9 Construction for 1 no. of 33kV Outdoor Bay arrangement consisting of 1 VCB and 2 isolator). Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cum 5130.00 2.10 10.773.00 Cement :3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and 6500.00 14.18 92.137.50 Cum reinforcement - All work up to plinth level : 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass 301.00 89.64 26,981.64 Sqm Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated 109.00 80,069.22 734.58 Kg bars of grade Fe-500D or more. D Isolator Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & 1 Cum 482.00 28.35 13,664.70 machinery for excavation of cable trench & other civil works Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & Cum 200.00 12.00 2.400.00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cum 5130.00 1.70 8.726.13 Cement :3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal size). Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and Cum 6500.00 17.10 1,11,150.00 reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass 301.00 89.64 26,981.64 Sqm Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated 109.00 734.58 80,069.22 Kg bars of grade Fe-500D or more. Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation, soil treatment with bentonide powder , calculation of earth 3700.00 16 59,200.00 No. resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe **Total Civil & Services** 7,11,143.99 Κ L Total (J+K) 58,41,919.66 Sub Total (L+M) 58,41,919.66 Ν 0 Total GST @ 18% of (N) 10,51,545.54 Ρ Total Cess @ 1% of (N) 58,419.20 Q Gross Total Material +Services (N+O+P) 69.51.884.40

		Annexure-10			
	Т	P CENTRAL ODISHA DISTRIBUTION LIMITED			
Name o	f the Division :-	CED			
Name o	f the Sub-Division : -	Badachana			
Name o	f the Section : -	Balichandrapur			
Name of the Work :- 33kV New Line from Balichandrapur Grid (33kV Proposed Balchandrapur-1 and Balichandrapur-2 Feeders)					
Scope c	of work:-	Construction of 33kV Double Ckt. O/H Line using 13mtr H-Pole & 2 conductor- 2 Ckm. Construction of 33kV O/H Line using 13mtr H-Pole AAAC conductor- 10 Ckm. Construction of 33kV U/G Line with 3R, Cable- 1 Ckm along with 2nos. 33kV 4W RMU. Construction for 2nd Outdoor Bay at Balichandrapur PSS.	ole & 232sqmm 1CX630sqmm		
Names	of Schemes: -	TPCODL CAPEX			
		ABSTRACT OF ESTIMATE			
SI. No.	Part	Description	Amount		
1	А	Construction of 33kV Double Ckt. O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 2 Ckm.	₹ 95,90,606.72		
2	В	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 10 Ckm.	₹ 3,71,86,161.18		
3	С	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1 Ckm along with 2nos. 33kV 4W RMU.	₹ 2,27,35,918.32		
4	D	Construction for 2nos. of 33kV Outdoor Bay at Balichandrapur PSS.	₹ 69,51,884.40		
		Total Amount	₹ 7,64,64,570.62		
		Total Amount (In Cr)	₹ 7.65		

33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No.-) MATERIALS FOR 33 KV Cut Point with 180 Degree Angle Total Total Description of Materials Unit Unit Rate Quantity No. Amount No 56,735.71 2,26,942.86 13 Mtr. Long H-Pole(GI) 1 4 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of K.g. 76.00 390 048 29,643.65 Channel = (3x2x 9.56x1.7) K.g. 97.50 63.4368 6,185.09 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (24x2.36x0.280) Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 K.g. 76.00 0 No's of Channel = (2x 9.56x0.306)104.00 4 5 Danger Plate, 1 no's. No 416.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = 6 1.2036 KG 97.50 117.35 (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 12 1,248.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = 8 KG 97.50 4.8144 469.40 (4x0.59x0.510) 33KV pin insulator polymer No 624 00 24 14,976.00 10 H W fitting(B&S)90KN,4 Bolt No. 650.00 48 31,200.00 11 Disc insulator (B&S)90 KN polymer No 1,495.00 48 71,760.00 Earthing of Support (Coil Type) EΑ 215.80 863.20 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing 97 50 1 048 102.18 K.g. 14 PG Clamp for 232 sq.mm AAA conductor NO 1,495.00 48 71,760.00 15 GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point) K.g. 101.40 19.516 1,978.92 1,144.00 16 Black Paint Ltr 286.00 17 Yellow Colour Paint for Background Ltr 216.00 1,728.00 **Total Cost of materials** Α 4,60,534.65 В Stock, Storage & Insurance i.e 3% of A 13,816.04 С Sub Total (A+B) 4,74,350.69 D Contigency @ 3% of C 14,230.52 Tools & Plants @ 2% of C F 9.487.01 F Transportation @ 7.5% of C 35,576.30 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 11,687.56 G Н Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) 24,059.95 Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 5,69,392.04 Civil & Services SI. Total Total Unit Rate Description of Materials No. Quantity Amount 1 Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 14,300.00 2 Cu.mtr 2.925.00 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr 6.500.00 0.45Total Civil & Services Κ 17,225.00 L Total (J+K) 5,86,617.04 Sub Total (L+M) 5,86,617.04 N 0 Total GST @ 18% of (N) 1,05,591.07 01 Total CESS @ 1% of (N) 5,866.17 Р Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle 6,98,074.28 33 Kv Line Length In KM with 40 Mtr. Span 2 (Ref. Drawing No.-, MATERIALS FOR 33 KV Pin Points Total Total SI. Unit Description of Materials **Unit Rate** No. Quantity Amount No 56,735.71 46 26,09,842.86 13 Mtr. Long H-Pole(GI) Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of 2 K.g. 97 50 4486 4.37.341.32 Channel = (2x 9.56x1.7)3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 12 no's required = (12x2.36x0.280) K.g. 97.50 365 35,564.26 No. 104.00 46 4,784.00 Danger Plate, 1 no's Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = 5 KG 97.50 13.84 1,349.54 (1x0.59x0.510) 138.00 6 Ka 104.00 14,352.00 GI barbed wire anticlimbing device 3 Kg. Per support Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97.50 55.37 5,398.15 (4x0.59x0.510) 33KV pin insulator polymer No. 624.00 276 1,72,224.00 Earthing of Support ( Coil Type ) No 215.80 46 9,926.80 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing 12.05 K.g. 97.50 1.175.07 20,290.14 11 GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) K.g. 101.40 200.10 Mtr 203.45 25,14,642.00 232 sq.mm AAA conductor 12360.00 Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor 842.95 EΑ 12 10.115.35 286.00 13,156.00 14 Black Paint Ltr 46.0

#### Annexure-10 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP 15 Yellow Colour Paint for Background 19,872.00 **Total Cost of materials** 58,70,033.48 В Stock, Storage & Insurance i.e 3% of A 1,76,101.00 С Sub Total (A+B) 60,46,134.48 D Contigency @ 3% of C 1,81,384.03 Ε Tools & Plants @ 2% of C 1,20,922.69 Transportation @ 7.5% of C 4,53,460.09 1,34,406.91 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) 3,35,799.63 Н Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 72,72,107.83 Civil & Services SI. Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 25.30 1,64,450.00 2 33,637.50 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 5.18 Κ **Total Civil & Services** 1,98,087.50 L Total (J+K) 74,70,195.33 Sub Total (L+M) Ν 74,70,195.33 0 Total GST @ 18% of (N) 13,44,635.16 01 Total CESS @ 1% of (N) 74,701.95 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points Ρ 88,89,532.45 **Gross Total Summary** Gross Total Material +Services (N+O) for 33 KV DP Without Isolator 1 Gross Total Material +Services (N+O) for 33 KV DP With Isolator 2 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle 3 6,98,074.28 4 Gross Total Material +Services (N+O) for 33 KV Cut Point with 90 Degree Angle 5 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points 88,89,532.45 Q **Gross Total Material +Services** 95,87,606.72 Inspection Fee of Over Head Line (HT) - Rs.1500 up to 1 km. R 1,500.00 S Inspection Fee of Over Head Line (HT) - Rs. 750/ Additional Km 750.00

750.00

95,90,606.72

Inspection Fee of Drawing Checking and Approval

Gross Total Material, Services and Inspection Fees (Q+R+S+T)

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33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP No. of 33 KV DP required Without Isolator (Ref. Drawing No.- TPCODL-HVD-0004) MATERIALS FOR 33 KV DP Without Isolator SI. Total Total **Unit Rate** Description of Materials Unit No. Quantity Amount WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 30 10,29,660.00 Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =( 2 KG 76.00 932.1 70,839.60 KG 97.50 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280) 59 472 5.798.52 Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's 4 KG 76.00 1049.58 79.768.08 channel required =( 5x7.14x1.96) 50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = 5 KG 76.00 926.64 70,424.64 104.00 No 30 3,120.00 6 Danger Plate, 2 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = KG 97 50 9 027 880 13 (2x0.59x0.510) Pair 162.50 4,875.00 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair) 30 Set 1 365 00 40,950.00 H.T. Stay set (Complete ) 30 10 H.T. Stay Insulator Type-C (2 No's.) No. 65 00 60 3.900.00 11 7/8 SWG Stay Wire 15kg /stay K.g. 97.50 450 43,875.00 15 Gi Pipe Earthing 40mm. 3 Mtr. Long No. 1,365.00 20,475.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 13 KG 97.50 177 17,257.50 5x2.36 14 GI barbed wire anticlimbing device 3 Kg. Per support Kq 104.00 90 9,360.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = 15 KG 97.50 36.108 3,520.53 (8x0.59x0.510) 624.00 45 28,080.00 33KV pin insulator polymer No. H W fitting(B&S) 90KN,4 Bolt No 650.00 90 58.500.00 17 1,34,550.00 18 Disc insulator (B&S) 90 KN polymer No 1,495.00 90 19 PG Clamp for 232 sq.mm AAA conductor NO 1,495.00 90 1,34,550.00 GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator) 101.40 183.915 18,648.98 K.g. 21 Black Paint Ltr 286.00 15 4,290.00 Yellow Colour Paint for Background 22 Ltr 216.00 30 6.480.00 Α **Total Cost of materials** 17,89,802.98 Stock, Storage & Insurance i.e 3% of A 53,694.09 В С Sub Total (A+B) 18,43,497.07 D Contigency @ 3% of C 55.304.91 Ε Tools & Plants @ 2% of C 34,520.00 F Transportation @ 7.5% of C 1,38,262.28 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 53,027.49 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/GI Pipe/PSC pole) Н 66,545.00 Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 21,91,156.75 Civil & Services Total Description of Materials Unit Unit Rate Quantity No. Amount Fixing of 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, including excvation, supply of 0.5Cum 2.250.00 67.500.00 No. 30 cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr 6,500.00 1,07,250.00 Cu.mti 16.5 3 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 3.375 21,937.50 Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth No. 3.700.00 15 55.500.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe Κ **Total Civil & Services** 2,52,187.50 Total (J+K) 24,43,344.25 L N Sub Total (L+M) 24,43,344.25 0 Total GST @ 18% of (N 4 39 801 97 Total CESS @ 1% of (N) Ω1 24.433.44 Р Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 29,07,579.66 No. of 33 KV DP required With Isolator 5 (Ref. Drawing No.- TPCODL-TCE-0001) MATERIALS FOR 33 KV DP With Isolator

SI. No.				T	<b>-</b>			
	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =(	No	34,322.00	10	3,43,220.00			
2	2x9.56x4.3)	KG	76.00	411.08	31,242.08			
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	19.824	1,932.84			
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	76.00	153.51	11,666.76			
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	76.00	307.02	23,333.52			
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	76.00	614.04	46,667.04			
7	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	76.00	443.43	33,700.68			
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	76.00	28.56	2,170.56			
9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	76.00	8.73	663.48			
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	76.00	7.65	581.40			
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	76.00	47.8	3,632.80			
12	Danger Plate, 2 no's.	No.	104.00	10	1,040.00			
13	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	3.009	293.38			
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair)	Pair	162.50	10	1,625.00			
	H.T. Stay set (Complete ) H.T. Stay Insulator Type-C (2 No's.)	Set No.	1,365.00 65.00	10 20	13,650.00 1,300.00			
17	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50		14,625.00			
18	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	10	13,650.00			
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	97.50	283.2	27,612.00			
20	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	30	3,120.00			
21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50	12.036	1,173.51			
22	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	15	2,01,825.00			
23	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with Pl(Polymer)	Set	66,000.00	5	3,30,000.00			
24	33KV pin insulator polymer	No.	624.00	15	9,360.00			
	H W fitting(B&S) 90KN,4 Bolt Disc insulator (B&S) 90 KN polymer	No. No.	650.00 1,495.00	30 30	19,500.00 44,850.00			
27	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	30	44,850.00			
28	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	101.40	110.75	11,230.05			
29 30	Black Paint Yellow Colour Paint for Background	Ltr Ltr	286.00 216.00	5 10	1,430.00 2,160.00			
<b>A</b>	Tellow Colour Faint for Background		Total Cost o	-	12,42,105.10			
В	Stock		& Insurance		37,263.15			
С	Stook,	Otorage		otal (A+B)	12,79,368.25			
D			Contigency	<u> </u>	38,381.05			
E		To	ools & Plants		24,663.46			
					95,952.62			
F Transportation @ 7.5% of C								
G	G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole							
	v c	e/HT sta						
G H I	v c			· '	87,965.62			
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol Erection Charges @ 20% of Pi		Not to be us	· '	-			
H I	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol		Not to be us	ed for 33kv	-			
H I	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol Erection Charges @ 20% of Pi		Not to be us	ed for 33kv	-			
H J SI.	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol Erection Charges @ 20% of Pi	SC pole-	Not to be us	ed for 33kv n of (C to I)	15,44,006.82 Total Amount			
H J SI. No.	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol Erection Charges @ 20% of Pi  Civil & Services  Description of Materials  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all	SC pole-	Not to be us Sun Unit Rate	ed for 33kv n of (C to I) Total Quantity	Total Amount			
H J SI. No.	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol Erection Charges @ 20% of Pol  Civil & Services  Description of Materials  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	Unit No.	Unit Rate	ed for 33kv n of (C to I) Total Quantity	Total Amount 22,500.00			
H     J   SI.   No.	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol Erection Charges @ 20% of Posterior Charges	Unit  No.  Cu.mtr	Unit Rate 2,250.00 6,500.00	ed for 33kv n of (C to I)  Total Quantity  10  5.5	15,44,006.82  Total Amount  22,500.00  35,750.00  7,312.50			
H I J SI. No. 1 2 3	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol Erection Charges @ 20% of Posterior Charges	Unit  No.  Cu.mtr  Cu.mtr	Unit Rate 2,250.00 6,500.00 6,500.00	Total Quantity  10  5.5  1.125	Total Amount  22,500.00  35,750.00  7,312.50			
H I J SI. No. 1 2 3	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol Erection Charges @ 20% of Posterior Charges	Unit  No.  Cu.mtr  Cu.mtr	Unit Rate 2,250.00 6,500.00 3,700.00 Total Civil	Total Quantity  10  5.5  1.125	15,44,006.82 Total			

#### Annexure-10 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP Total GST @ 18% of (N) 2,96,382.48 Total CESS @ 1% of (N) 01 16,465.69 Gross Total Material +Services (N+O+O1) for 33 KV DP With Isolator Р 19,59,417.49 No. of 33 KV Cut Point with 180 Degree Angle 15 (Ref. Drawing No.-) MATERIALS FOR 33 KV Cut Point with 180 Degree Angle SI. Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount 8,51,035.71 13 Mtr. Long H-Pole(GI) No 56.735.71 15 1 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of K.g. 76.00 487.56 37.054.56 Channel = (2x 9.56x1.7) Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280) K.g. 97.50 79.296 7,731.36 Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 87.7608 K.g. 76.00 6.669.82 No's of Channel = (2x 9.56x0.306) No. 104.00 15 1,560.00 Danger Plate, 1 no's Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = KG 97.50 4.5135 440.07 (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 45 4,680.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97.50 18.054 1,760.27 (4x0.59x0.510) 28,080.00 624.00 45 9 No. 33KV pin insulator polymer H W fitting(B&S)90KN,4 Bolt No. 650.00 90 58,500.00 11 Disc insulator (B&S)90 KN polymer No. 1,495.00 90 1,34,550.00 3,237.00 383.18 EΑ 215.80 15 Earthing of Support (Coil Type) 13 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing K.g. 97.50 3.93 14 PG Clamp for 232 sq.mm AAA conductor 1,34,550.00 NO. 1.495.00 90 15 GI Nut, Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point) K.g 101.40 73.185 7,420.96 16 Black Paint 286.00 15 4,290.00 Ltr 17 Yellow Colour Paint for Background Ltr 216.00 6,480.00 **Total Cost of materials** 12,88,422.92 В Stock, Storage & Insurance i.e 3% of A 38.652.69 С Sub Total (A+B) 13,27,075.61 D Contigency @ 3% of C 39,812.27 Tools & Plants @ 2% of C Ε 26,541.51 F Transportation @ 7.5% of C 99,530.67 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 43,828.34 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) Н 45,050.88 Erection Charges @ 20% of PSC pole- Not to be used for 33kv 1 J Sum of (C to I) 15,81,839.28 Civil & Services SI. Total Total Unit Rate Description of Materials Unit No. Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mti 6,500.00 8.25 53,625.00 1 2 10.968.75 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6.500.00 1.6875 Total Civil & Services 64,593.75 κ L Total (J+K) 16,46,433.03 Ν Sub Total (L+M) 16.46.433.03 Total GST @ 18% of (N) 0 2.96.357.95 01 Total CESS @ 1% of (N) 16,464.33 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle 19,59,255.31 No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No.-) MATERIALS FOR 33 KV Cut Point with 90 Degree Angle SI. Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount No 2 83 678 57 13 Mtr. Long H-Pole(GI) 56,735.71 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of 2 76.00 325.04 24,703.04 K.g. 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280) K.g. 97.50 52.864 5,154.24 Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 K.g. 76.00 58.5072 4,446.55 No's of Channel = (4x 9.56x0.306)No. 104.00 5 Danger Plate, 1 no's 520.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = KG 97.50 1.5045 146.69 (1x0 59x0 510) 104.00 1,560.00 GI barbed wire anticlimbing device 3 Kg. Per support Kg 15

Control   Cont	33	kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poi	nts and	Cut-Points &	13 Mtr WP	B Pole for DP
10   HV Mitting@BS-SprotNy4 Brot		(4x0.59x0.510)	KG	97.50	6.018	586.76
10   HV Mitting@BS-SprotNy4 Brot	9		No.	624.00	20	12,480.00
12   Earthurn of Support (Coll Type)   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793   1.0793	10	H W fitting(B&S)90KN,4 Bolt	No.		30	19,500.00
13   No-Se Col view (Dis 4 form) 0.131 KCV Mr 2 Mr. For connecting pole with Coll earthing   K.g.   97.50   1,31   121.77	11	Disc insulator (B&S)90 KN polymer	No.	1,495.00	30	44,850.00
14   PG Clamp for 232 ag mm AAA conductor   No.   1,465 00   30   44,880 0   10   11   17   180 clamp for 505 mm first 1,45(AgMT, .0511 Mr Length 2 no's qty, required (1 Pair)   Pair   120 0   5   62,250   15   11   120 0   5   62,250   15   11   120 0   5   62,250   15   11   120 0   5   62,250   15   11   120 0   5   62,250   15   11   120 0   5   62,250   15   120 0   10   120 0   5   62,250   120 0   10   120 0   10   120 0   10   1			No.	215.80	5	1,079.00
15   H.T. Slavy ed. Compete   Part   102 00   S   812 5   10   11   13   13   13   13   13   13	13	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	1.31	127.73
16, HT. Stary end (Complete)	14	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	30	44,850.00
16, HT. Stary end (Complete)	15	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair		5	812.50
18   78 SWG Staw Wire 15kg After   18	16	H.T. Stay set (Complete )	Set	1,365.00	5	6,825.00
Big   Company	17	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	5	325.00
20   Black Paint   Lif   280.00   5   1.430.00   A   A   Control Colour Paint for Background   Lif   280.00   5   2.160.00   A   A   Colour Paint for Background   Lif   2.160.00   Total Cost of materials   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.882.821.1   4.88	18	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	75	7,312.50
2   Yelwo Codur Paint for Background	19	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point)	K.g.	101.40	56.55	5,734.17
Residence   Stock Storage & Insurance   Execution   A   14,044.5	20		Ltr	286.00	5	1,430.00
Residence   Stock Storage & Insurance   Execution   A   14,044.5	21	Yellow Colour Paint for Background	Ltr	216.00	10	2,160.00
Stock, Storage & Insurance ie 3% of A   14,048.4	Δ			Total Cost o	f materials	
E   Sub Total (A+8)   A2,339.1   E   Total S Plants @ 2% of C   14,463.9   E   Total S Plants @ 2% of C   9,331.9   F   Total S Plants @ 2% of C   9,331.9   F   Total Charges @ 10% of C (accept InfiltreakerWPB H-Pole)   14,509.4   H   Erection Charges @ 10% of C (accept InfiltreakerWPB H-Pole)   14,509.4   I   Erection Charges @ 10% of C (accept InfiltreakerWPB H-Pole)   14,509.4   I   Erection Charges @ 10% of C (accept InfiltreakerWPB H-Pole)   14,509.4   I   Erection Charges @ 10% of C (accept InfiltreakerWPB H-Pole)   14,509.4   I   Concreting ratio 1.1.5.3 (accept InfiltreakerWPB H-Pole)   14,509.4   I   Concreting ratio 1.1.5.3 (b00mmX500mmX200mm) = 0.55Cu.mtr   Cu.mtr   6,500.00   2.75   17,875.0   Concreting ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   Cu.mtr   6,500.00   0.56   3,856.2   Couping ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   Cu.mtr   6,500.00   0.56   3,856.2   Couping ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   Cu.mtr   6,500.00   0.56   3,856.2   Couping ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   Cu.mtr   6,500.00   0.56   3,856.2   Couping ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   Cu.mtr   6,500.00   0.56   3,856.2   Couping ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   Cu.mtr   6,500.00   0.56   3,856.2   Couping ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   Cu.mtr   6,500.00   0.56   3,856.2   Couping ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   Cu.mtr   6,500.00   0.56   3,856.2   Couping ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   Cu.mtr   6,500.00   0.56   3,856.2   Couping ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   6,500.00   0.56   3,856.2   Couping ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   6,500.00   0.56   3,856.2   Couping ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   6,500.00   0.56   0.56   Couping ratio 1.1.5.3 with dimension (500X500X450)= 0.1125 Cu mtr   6,500.00   0.56   0.56   Coup		Charle				
Contingency @ 3% of C		Stock	Storage			14,048.45
Tools & Plants @ 2% of C   9,331.9	С			Sub T	otal (A+B)	4,82,330.19
Tools & Plants @ 2% of C   9,331.9	D			Contigency	@ 3% of C	14 469 91
F						· · · · · · · · · · · · · · · · · · ·
Erection Charges @ 15% of T (except TriBrakeArWPB/H-Pole*	E		10	ools & Plants	@ 2% of C	9,331.94
H	F		Trai	nsportation @	7.5% of C	36,174.76
H	G	Frection Charges @	5% on T	rf/Breaker/M	PB/ H-Pole	14 609 45
Total Civil & Services						
Sum of (C to 1)   5,74,357.0	Н				· '	17,440.80
Civil & Services   Unit   Unit Rate   Total Quantity   Amount	- 1	Erection Charges @ 20% of P	SC pole-	Not to be us	ed for 33kv	-
Civil & Services   Unit   Unit Rate   Total Quantity   Amount				Sum	of (C to I)	5 74 357 05
Description of Materials		Civil & Sonviose			. 6. (6 16 1/	3,74,337.03
Couping ratio 1:1.5:3 with dimension (500X500X450) = 0.1125 Cu mtr	SI. No.		Unit	Unit Rate		
Fixing of 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3)   No.   2,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11,250.00   5   11	1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	2.75	17,875.00
3 stay insulator 4) Stay Wire. SjStay clamps with Nuts & botts. including exevation, supply of 0.5 Cum labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  K  K  Stay 1 stay insulator 4) Stay Wire. SjStay clamps with Nuts & botts. including exevation, supply of 0.5 Cum labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  N  Total Civil & Services 32,781.2  Sub Total (L+M) 6,07,138.3  Sub Total (L+M) 6,07,138.3  Sub Total (L+M) 6,07,138.3  Total CESS @ 1% of (N) 1,09,284.8  P  Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle 7,22,494.5    State	2	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.56	3,656.25
Total (J+K)   6,07,138.3   Sub Total (L+M)   6,07,138.3   Sub Total (L+M)   6,07,138.3   Sub Total (L+M)   6,07,138.3   Sub Total (ESS @ 1% of (N)   1,09,284.8   Sub Total CESS @ 1% of (N)   6,07,138.3   P   Gross Total Material + Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle   7,22,494.5	3	Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all	No.	,		11,250.00
N	K			Total Civil	& Services	32,781.25
No	L			7	Total (J+K)	6,07,138.30
Total GST @ 18% of (N)   1,09,284.8	N			Sub T	Total (I +M)	
Total CESS @ 1% of (N)   6,071.3					_ ` /	
P   Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle   7,22,494.5	0			iotal GST @	18% OF (IN)	1,09,284.89
33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)   10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10   10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10   10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10	01		7	Total CESS @	0 1% of (N)	6,071.38
33 Kv Line Length In KM with 40 Mtr. Span (Ref. Drawing No)   10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10   10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10   10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10     10	В	Gross Total Material +Services (N+O+O1) for 22 KV	Cut Doin	t with 90 Do	aroo Anglo	7 22 404 57
MATERIALS FOR 33 KV Pin Points   Unit   Unit Rate   Unit   Unit Annount   Unit   Unit Rate   Unit   Unit Rate   Unit   Unit Rate   Unit   Unit Rate   Unit   Unit Annount   Unit   Un	-	GIOSS TOTAL MATERIAL T-SELVICES (NTOTOT) TOT 33 KV	Jul Foili	r with an Def	Jiee Aligie	1,22,494.51
MATERIALS FOR 33 KV Pin Points   Unit   Unit Rate   Unit   Unit Annount   Unit   Unit Rate   Unit   Unit Rate   Unit   Unit Rate   Unit   Unit Rate   Unit   Unit Annount   Unit   Un						
SI.   Description of Materials   Unit   Unit Rate   Unit   Unit Rate   Quantity   Total Amount					10	
St. No.   Description of Materials   Unit   Unit Rate   U						
No.   Description of Materials   Unit   Unit Rate   Quantity   Amount		WATERIALS FOR 33 KV PIII POINTS		1		
2   33 KV V cross Arm (GI) 22Kg each   No.   2,340.00   210   4,91,400.00   3   Top bracket 100x50x6mm GI channel (300mm each)   No.   195.00   210   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00   40,950.00	SI. No.	•			Quantity	Amount
3   Top bracket 100x50x6mm GI channel (300mm each)   No.   195.00   210   40,950.0     4   Danger Plate, 1 no's.   No.   104.00   210   21,840.0     5   Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)   KG   97.50   63.19   6,160.9     6   GI barbed wire anticlimbing device 3 Kg. Per support   Kg   104.00   630.00   65,520.0     7   Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (1x0.59x0.510)   KG   97.50   252.76   24,643.7     8   33KV pin insulator polymer   No.   624.00   630   3,93,120.0     9   Earthing of Support (Coil Type)   No.   215.80   210   45,318.0     10   No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing   K.g.   97.50   55.02   5,364.4     11   GI Nut, Bolt & Washer of different sizes (1.45 Kg/ Pin Point)   K.g.   101.40   304.50   30,876.3     13   Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor   EA   842.95   30   25,288.3     14   Black Paint   Ltr   286.00   210.0   60,060.0     15   Yellow Colour Paint for Background   Ltr   216.00   420.0   90,720.0     A   Total Cost of materials   1,95,02,366.7     C   Contigency @ 3% of C   6,02,623.1     E   Tools & Plants @ 2% of C   4,01,7748.7						
4       Danger Plate, 1 no's.       No.       104.00       210       21,840.0         5       Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)       KG       97.50       63.19       6,160.9         6       GI barbed wire anticlimbing device 3 Kg. Per support       Kg       104.00       630.00       65,520.0         7       Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)       KG       97.50       252.76       24,643.7         8       33KV pin insulator polymer       No.       624.00       630       3,93,120.0         9       Earthing of Support ( Coil Type )       No.       215.80       210       45,318.0         10       No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr2 Mtr. For connecting pole with Coil earthing       K.g.       97.50       55.02       5,364.4         11       GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)       K.g.       101.40       304.50       30,876.3         12       232 sq.mm AAA conductor       EA       842.95       30       25,286.05         13       Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor       EA       842.95       30       25,286.05         15       Yellow Colour Paint for Background						
5         Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)         KG         97.50         63.19         6,160.9           6         GI barbed wire anticlimbing device 3 Kg. Per support         Kg         104.00         630.00         65,520.0           7         Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)         KG         97.50         252.76         24,643.7           8         33KV pin insulator polymer         No.         624.00         630         3,93,120.0           9         Earthing of Support ( Coil Type )         No.         215.80         210         45,318.0           10         No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing         K.g.         97.50         55.02         5,364.4           11         GI Nut, Bolt & Washer of different sizes (1.45 Kg/ Pin Point)         K.g.         101.40         304.50         30,876.3           12         232 sq.mm AAA conductor         Mtr.         203.45         30900.00         62,86605.0           13         Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor         EA         842.95         30         25,288.3           14         Black Paint         Ltr         286.00         210.0						
5         (1x0.59x0.510)         KG         97.50         63.19         6,160.9           6         Gl barbed wire anticlimbing device 3 Kg. Per support         Kg         104.00         630.00         65,520.0           7         Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)         KG         97.50         252.76         24,643.7           8         33KV pin insulator polymer         No.         624.00         630         3,93,120.0           9         Earthing of Support (Coil Type)         No.         215.80         210         45,318.0           10         No-8 Gl wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing         K.g.         97.50         55.02         5,364.4           11         Gl Nut, Bolt & Washer of different sizes (1.45 Kg/ Pin Point)         K.g.         101.40         304.50         30,876.3           12         232 sq.mm AAA conductor         Mtr.         203.45         30900.00         62,86,605.0           13         Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor         EA         842.95         30         25,288.3           14         Black Paint         Ltr         286.00         210.0         60,060.0           15         Yellow Colour Paint	4		No.	104.00	210	21,840.00
(1X0.59X0.510) 6 GI barbed wire anticlimbing device 3 Kg. Per support 7 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510) 8 33KV pin insulator polymer 9 Earthing of Support (Coil Type) 10 No. 215.80 210 45,318.0 11 GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 12 232 sq.mm AAA conductor 13 Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor 14 Black Paint 15 Yellow Colour Paint for Background 16 Stock, Storage & Insurance i.e 3% of A 17 Splants @ 2% of C 18 Sub Total (A+B) 2,00,87,437.7 19 Contigency @ 3% of C 2,520.0 25,286.3 26,605.0 26,605.0 27 Contigency @ 3% of C 2,00,87,437.7 28 Contigency @ 3% of C 2,00,87,437.7 29 Contigency @ 3% of C 2,00,87,437.7 20 Contigency @ 3% of C 4,01,748.7	5		KG	97 50	63.19	6,160.93
7       Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)       KG       97.50       252.76       24,643.7         8       33KV pin insulator polymer       No.       624.00       630       3,93,120.0         9       Earthing of Support (Coil Type)       No.       215.80       210       45,318.0         10       No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing       K.g.       97.50       55.02       5,364.4         11       GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)       K.g.       101.40       304.50       30,876.3         12       232 sq.mm AAA conductor       Mtr.       203.45       30900.00       62,866,605.0         13       Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor       EA       842.95       30       25,288.3         14       Black Paint       Ltr       286.00       210.0       60,060.0         15       Yellow Colour Paint for Background       Ltr       216.00       420.0       90,720.0         A       Total Cost of materials       1,95,02,366.7         B       Sub Total (A+B)       2,00,87,437.7         D       Contigency @ 3% of C       6,02,623.1						-
KG       97.50       252.76       24,643.7         8       33KV pin insulator polymer       No.       624.00       630       3,93,120.0         9       Earthing of Support (Coil Type)       No.       215.80       210       45,318.0         10       No-8 Gl wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing       K.g.       97.50       55.02       5,364.4         11       Gl Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)       K.g.       101.40       304.50       30,876.3         12       232 sq.mm AAA conductor       Mtr.       203.45       30900.00       62,86,605.0         13       Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor       EA       842.95       30       25,288.3         14       Black Paint       Ltr       286.00       210.0       60,060.0         15       Yellow Colour Paint for Background       Ltr       216.00       420.0       90,720.0         A       Total Cost of materials         B       Stock, Storage & Insurance i.e 3% of A       5,85,071.0         C       Sub Total (A+B)       2,00,87,437.7         D       Contigency @ 3% of C       6,02,623.1         E						

### Annexure-10 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 6,13,596.75 Н Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) 7,81,550.28 Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 2,39,93,514.52 Civil & Services Total Total Description of Materials Unit **Unit Rate** Quantity Amount 7,50,750.00 Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 115.50 1,53,562.50 2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 23.63 **Total Civil & Services** 9,04,312.50 Total (J+K) 2,48,97,827.02 Sub Total (L+M) 2,48,97,827.02 Ν 0 Total GST @ 18% of (N) 44,81,608.86 Total CESS @ 1% of (N) 01 2,48,978.27 Р Gross Total Material +Services (N+O+O1) for 33 KV Pin Points 2,96,28,414.15 **Gross Total Summary** Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 29,07,579.66 2 Gross Total Material +Services (N+O+O1) for 33 KV DP With Isolator 19,59,417.49 3 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle 19,59,255.31 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle 4 7,22,494.57 5 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points 2,96,28,414.15 Q **Gross Total Material +Services** 3,71,77,161.18 R Inspection Fee of Over Head Line (HT) - Rs.1500 up to 1 km. 1,500.00 Inspection Fee of Over Head Line (HT) - Rs. 750/ Additional Km

6,750.00

3,71,86,161.18

750.00

Inspection Fee of Drawing Checking and Approval

Gross Total Material, Services and Inspection Fees (Q+R+S+T)

S

Т

U

# BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

# Supply Portion

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories			(iii redi)	(iii rigi)
а	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	700		
b	Length of 33kV 1C, 630sqmm cable (HDD)	Mtr.	300		
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA-59.4kA and SC rating of Armour in kA-20kA)	Mtr.	3000	1,495.47	44,86,410.00
1.2	Supply of Straight throU/Gh jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set	9	11,900.00	1,07,100.00
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	21	6,350.00	1,33,350.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	21	6,100.00	1,28,100.00
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	1932.00	357.60	6,90,883.20
2	Supply of 33kV RMU				
а	No. of 33kV 3Way RMU (LLV+M)	nos.			
b	No. of 33kV 4Way RMU (LLVV+M)	nos.			
С	No. of 33kV 3Way RMU (LLV)	nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.	2		
е	No. of 33kV 3Way RMU (LLL)	nos.			
f	No. of 33kV 4Way RMU (LLLL)	nos.			
2.1	Supply of RMU 33KV 3WAY 630A WITH METERING UNIT	Nos.	0	22,93,723.00	_
2.2	(LLV+M) (CT Ratio to be mentioned) Supply of RMU 33KV 4WAY 630A WITH METERING UNIT	Nos.	0	31,74,874.00	<u> </u>
2.3	(LLVV+M) (CT Ratio to be mentioned) Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	2	23,35,264.00	46,70,528.00
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	-
2.6	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	19,59,421.00	-
3	Earthing				
3.1	Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for equipment, structure etc.)	kg	26.40	97.50	2,574.00
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	4	1,365.00	5,460.00
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	2		
4.1	Pre-Wired FRTU Panel with FRTU	No.	2	1,21,744.00	2,43,488.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	2	1,00,000.00	2,00,000.00
4.3	Networking Accessories	No.	2	72.00	144.00
4.4	CMR with Mounting Base for Digital Inputs	Nos.	64	650.00	41,600.00
4.5	Interposing Relay for Digital Output	Nos.	32	467.94	14,974.08
4.6	Battery Charger	Nos.	2	15,385.00	30,770.00

	Annexure-10				
	BoQ and Estimate for 33kV, 1C 630sqmm U/G C	able al	ong with 3	BkV RMU	
4.7	Battery	Nos.	2	8,333.00	16,666.00
4.8	4G Modem cum Router	Nos.	2	18,500.00	37,000.00
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	80	204.87	16,389.60
4.10	Instrumentation Cable	Mtr.	80	305.58	24,446.40
4.11	7 C X 1.5 mm2, Armored for Control Output Twisted Pair Shielded & Over all shielded Instrumentation Cable 5 P X 1.0 mm2, Armored for Analog Input	Mtr.	80	275.23	22,018.40
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	40	165.25	6,610.00
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	20	150.00	3,000.00
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	40.0	148.43	5,937.20
4.15	Armored CAT6 SFTP Cable	Mtr.	40	45.87	1,834.80
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	40	89.45	3,578.00
4.17	Multi Function Meter	Nos.	4	18,651.00	74,604.00
	Sub Total (Supply Portion) (in Rs	.)			1,09,67,465.68
	Erection Portion				
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Erection, Commissioning & Testing of 33kV new line by				/
1.1	3X1Core, 630sqmm, XLPE UG cable with one spare Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.	Mtr.	2100	94.50	1,98,450.00
1.2	Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits	Set	9	2,400.00	21,600.00
1.3	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	21	2,081.70	43,715.70
1.4	Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	21	2,081.70	43,715.70
1.5	Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr.	900	2,300.00	20,70,000.00
1.6	Laying of <b>110mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open trench.	Mtr.	1932.00	300.00	5,79,600.00
2	Erection, Commissioning, Wiring and Testing of 33kV RMU				
2.1	Erection of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M)	Nos.	0	15,000.00	-
2.2	Erection of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M)	Nos.	0	15,000.00	-
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	2	8,000.00	16,000.00
2.5 2.6	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL) Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	8,000.00 8,000.00	<u>-</u>
3	FRTU and OFC for RMU SCADA Automation	<u> </u>			
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	2.0	16,000.00	32,000.00
	Sub Total (Erection Portion) (in Re	s.)			30,05,081.40
Civil P SI.	Description of items	Unit	Quantity	Rate	Amount
No.		<u> </u>		(in Rs.)	(in Rs.)

	Annexure-10							
	BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU							
1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench							
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	644					
1.1.a	Earth work excavation of <b>soil</b>	Cum	540.96	700.00	3,78,672.00			
1.1.b	Earth work excavation of hard rock	Cum	231.84	1,720.00	3,98,764.80			
1.2	Back filling with excavated soil outside and above the trench	Cum	772.8	202.00	1,56,105.60			
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	322	2,643.67	8,51,261.94			
2	Civil works for Prefabricated RCC foundation with supply of all materials							
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	2	23,145.30	46,290.60			
3	Supply of GI Fencing with Gate around each <b>RMU</b>	sqmtr	40	3,600.00	1,44,000.00			
4	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.	Set	4	3,700.00	14,800.00			
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	168	1,463.40	2,45,851.20			
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	33	1,012.00	33,396.00			
	Sub Total (Civil Portion) (in Rs.)				22,69,142.14			
	Sub Total (Supply Portion)				1,09,67,465.68			
В	Stock, Storage & Insurance @ 3 % of A				3,29,023.97			
С	Sub Total (A+B)				1,12,96,489.65			
D	Contingency @ 3 % of C				3,38,894.69			
E	Tools & Plants Charges @ 2% of C (considered for earthing items)				53.02			
F	Transportation @ 7.5% of C				8,47,236.72			
G <b>H</b>	Erection Charges @ 10% of earthing items  Total (C+D+E+F+G)				265.12 <b>1,24,82,939.21</b>			
<del>                                     </del>	Sub Total (Erection Portion + Civil Portion)				52,74,223.54			
J	Total Cost (H+I)				1,77,57,162.75			
L	Total Estimated Capital Cost i.e. (J+K)				1,77,57,162.75			
М	GST @ 18% of L				31,96,289.30			
M1	CESS @ 1% of L							
N	Grand Total (L+M)				2,27,29,168.32			
0	Inspection Fee of UG Line (HT) - Rs. 3000/ km.				3,000.00			
Р	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km							
Q	Inspection Fee of RMU - Rs. 1500/ RMU				3,000.00			
R	Inspection Fee of Drawing Checking and Approval				750.00			
S	Gross Total Material, Services and Inspection Fees (N+O+P+Q+F	₹)			2,27,35,918.32			

#### Annexure-10 Construction for 1 no. of 33kV Outdoor Bay arrangement consisting of 1 VCB and 2 isolator). No. of Bus isolator requirement 6 No. of VCB Requirement 2 Total Total SI. Description of Materials Unit **Unit Rate** No. Quantity **Amount** T-1 GI Column(7.25 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel) 26,600.00 1 Nos. 2 53,200.00 for 33kV incoming line, Nominal Unit Wt - 0.35 MT T-2 GI Column (7.25mtr long, consisting of 2 Nos 175X75X6 mm channel) for 2 2 Nos. 31,920.00 63,840.00 33kV incoming line -1 no, Nominal Unit Wt - 0.42 MT T-1A GI Column (for 33 kv Bus) (6 mtr long, consisting of 2 Nos of 3 23,560.00 94,240.00 Nos. 4 150X76X6.5 mm channel jointed by plates) Nominal Unit Wt - 0.31 MT T-2A GI Column (for 33 kv Bus) (6 mtr long, consisting of 2 Nos 175X75X6 28,120.00 Nos. 1 1,12,480.00 mm channel jointed by plates) Nominal Unit Wt - 0.37 MT G-3 GI Beam(5.05mtr long, consisting of 2 Nos 150X75 X5.7mm) for 33kV incoming line - (2 nos. Beam- one for Surge Arrester and other for Isolator, 15,200.00 30,400.00 Nos. Nominal Unit Wt - 0.2 MT) G-2 GI Beam (6.1 mtr long, consisting of 2 Nos 125X65 X5.3 mm channel 13,300.00 Nos 8 1,06,400.00 jointed by plates) for 33kV Bus Stringing, Nominal Unit Wt - 0.175 MT) Equipment Structures (GI) For 33 KV Isolator (Unit Wt of Equipment Structures 7 KG 76.00 1980 1,50,480.00 per set - 0.33 MT) Equipment Structures (GI) For 33 KV Vacuum Circuit Breaker (Unit Wt of 8 KG 76.00 400 30.400.00 Equipment Structures per set - 0.2 MT) GI Column for 33 KV CT (Unit Wt of Equipment Structures per set - 0.285 MT) KG 76.00 570 43,320.00 GI Spikes with cone and GI (2 nos) base plate 10mm (50x3000 mm GI pipe) Nos. 3,641.92 10 8 29,135.35 (Unit Wt=0.035 MT) GI Pipe Earthing 40mm. 3 Mtr. Long Nο 1,365.00 16 21,840.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr. For Isolator/VCB, 10 metre 12 KG 97.50 377.6 36.816.00 mesh formation )= 20x2.36 13 400 sq.mm ACSR for 33kV side jumpering and Bus Formation etc. KM 2,74,300.00 0.1 27,430.00 33 kV 1250 AMP Double break (Turn & twist center rotating) isolator with earth 1,31,157.00 14 Set 6 7,86,942.00 switch with PI(Polymer) 33KV Outdoor VCB-1600A, with indoor CR panel without PT, with outdoor CT (CTR- 600-300-150/1-1A, 15VA, STC 25KA/3sec, class: 0.5, 5P10) for feeder 7,02,000.00 2 14,04,000.00 15 EΑ protection 33KV.Single Phase PT(33KV/ V3 / 110V/ V3) (Oil cooled ) CLASS 0.5 / 3P. EΑ 33,046.00 1,98,276.00 with O/P burden of 100VA 13,455.00 24 3,22,920.00 17 Lightning Arrester(30KV,10KA) (Station Class,class-2) EΑ 18 Control Cable 10Core x 2.5 mm<sup>2</sup> Mtr 429.00 300 1,28,700.00 523.90 300 1.57.170.00 Mtr 19 Control Cable 16Core x 2.5 mm<sup>2</sup> 20 Control Cable 4Core x 2.5 mm<sup>2</sup> Mtr 145.60 100 14,560.00 Mtr 236.60 100 23,660.00 21 Control Cable 7Core x 2.5 mm<sup>2</sup> 22 Disc insulator (B&S) 90 KN polymer No. 1,495.00 36 53,820.00 650.00 23,400.00 23 H W fitting(B&S) 90KN,4 Bolt No. 36 50,544.00 24 8 bolted (M-12) "T" clamp ACSR Zebra run & 232 mm2 drop No. 1,404.00 36 NO. PG Clamp for 232 sq.mm AAA conductor 1,495.00 96 1,43,520.00 26 GI Nut, Bolt & Washer of different sizes (13.718 Kg each Strcutures) K.g. 101.40 109.744 11,128.04 27 Black Paint Ltr 286.00 2.288.00 8 286.00 Yellow Colour Paint for Background Ltr 16 4.576.00 28 Α **Total Cost of materials** 41,25,485.39 Stock, Storage & Insurance i.e 3% of A В 1,23,764.56 C Sub Total (A+B) 42,49,249.95 Contigency @ 3% of C D 1,27,477.50

	Annexure-10				
Cons	struction for 1 no. of 33kV Outdoor Bay arrangement consisting of 1 VCB a	nd 2 iso	lator).		
Е			Tools & Plants	s @ 2% of C	84,985.00
F			ransportation (	<u> </u>	3,18,693.75
G			@ 5% on Trf/E		72,306.00
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole				2,78,063.47
ı	Erection Charges @ 20% of	PSC po			-
J	Oivil 9 Oursing		Su	m of (C to I)	51,30,775.67
SI.	<u>Civil &amp; Services</u>	1	1	Total	Total
No.	Description of Materials	Unit	Unit Rate	Quantity	Amount
A	VCB Foundation				
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	14.56	7,017.92
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	8.00	1,600.00
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	1020.00	0.68	696.15
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.91	4,668.30
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	5.65	36,725.00
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	26.50	7,976.50
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	280.00	30,520.00
В	CT & PT Foundation			0.00	-
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	15.94	7,681.88
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	9.00	1,800.00
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	900.00	0.73	653.40
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.73	3,724.38
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	4.73	30,712.50
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	29.88	8,993.88
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	244.86	26,689.74
С	Column as per Drawing Schedule-			0.00	-
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools &	Cum	482.00	51.31	24,731.30
2	machinery for excavation of cable trench & other civil works  Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	24.00	4,800.00

	Annexure-10							
Cons	Construction for 1 no. of 33kV Outdoor Bay arrangement consisting of 1 VCB and 2 isolator).							
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	2.10	10,773.00			
4	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	14.18	92,137.50			
5	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	89.64	26,981.64			
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	734.58	80,069.22			
D	Isolator							
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	28.35	13,664.70			
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	12.00	2,400.00			
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	1.70	8,726.13			
4	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum 6500.00	6500.00	17.10	1,11,150.00			
5	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	89.64	26,981.64			
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	734.58	80,069.22			
7	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.	3700.00	16	59,200.00			
K			Total Civil	& Services	7,11,143.99			
L				Total (J+K)	58,41,919.66			
N				Total (L+M)	58,41,919.66			
0			Total GST @		10,51,545.54			
Р	Conso 1	Cotal Ma	Total Cess @	` '	58,419.20 <b>69,51,884.40</b>			
Q Gross Total Material +Services (N+O+P) 69								

		Annexure-11				
		TP CENTRAL ODISHA DISTRIBUTION LIMITED				
Name of th	e Division :-	DHENKANAL ELECTRIC DIVISION (DED)				
Name of th	e Sub-Division : -	Gondia				
Name of the Section : - Gondia						
Name of the Work :- 33kV New Lines from Gondia Grid (33kV Proposed Joranda and College Feeder)						
Scope of w	vork:-	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 2.5Ckm. Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 4Ckm. Construction of 33kV 4 Pole structure with Isolator- 2nos.				
Names of S	Schemes: -	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE				
SI. No.	Part	Description	Amount			
1	А	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 2.5Ckm.	₹ 94,97,340.19			
2	В	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 4Ckm.	₹ 1,48,49,691.06			
4	С	Construction of 33kV 4 Pole structure with Isolator- 2nos.	₹ 21,25,926.06			
		Total Amount	₹ 2,64,72,957.30			
		Total Amount (In Cr)	₹ 2.65			
Total estim	nated cost is Rs.2.	65 Crore.				

	33kV Line Length using 241 SQ.MMAAA Conductor						
No. of 33 KV DP required Without Isolator (Ref. Drawing No TPCODL-HVD-0004)							
<u> </u>	MATERIALS FOR 33 KV DP Without Isolator						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required	No	34,322.00	10	3,43,220.00		
2	100 Chairle 100 \( \delta \d	KG	76.00	310.7	23,613.20		
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	19.824	1,932.84		
4	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's channel required = (5x7.14x1.96)	KG	76.00	349.86	26,589.36		
5	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = (4*4.5*3.432)  Danger Plate, 2 no's.	KG No.	76.00 104.00	308.88 10	23,474.88		
	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's =						
7	(2x0.59x0.510)	KG	97.50	3.009	293.38		
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair)	Pair	162.50	10	1,625.00		
9 10	H.T. Stay set (Complete ) H.T. Stay Insulator Type-C (2 No's.)	Set No.	1,365.00 65.00	10 20	13,650.00 1,300.00		
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	150	14,625.00		
12	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	5	6,825.00		
13	50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 5x2.36	KG	97.50	59	5,752.50		
	GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's =	Kg	104.00	30	3,120.00		
15	(8x0.59x0.510)	KG	97.50	12.036	1,173.51		
	33KV pin insulator polymer	No.	624.00	15	9,360.00		
_	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	15	4,965.00		
18	IPC for 241 sq.mm AAA conductor (For covered conductor) Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole	No. Set	915.00 332.00	30 20	27,450.00 6,640.00		
20	I) H W fitting(B&S)90KN,4 Bolt	No.	650.00	30	19,500.00		
	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	30	44,850.00		
22	GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator)	K.g.	101.40	61.305	6,216.33		
	Black Paint	Ltr	286.00	5	1,430.00		
24	Yellow Colour Paint for Background	Ltr	216.00	10	2,160.00		
_A_			Total Cost of		5,90,805.99		
В	Stock	, Storage	e & Insurance		17,724.18		
<b>C</b>			Sub T Contigency	otal (A+B)	<b>6,08,530.17</b> 18,255.91		
E		т	ools & Plants	•	11,387.29		
F			insportation @	Ŭ	45,639.76		
G	Erection Charges @				17,675.83		
<u> </u>							
H	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Po Erection Charges @ 20% of F		· ·	· '	21,584.78		
J				n of (C to I)	7,23,073.74		
۲	<u>Civil &amp; Services</u>			. ()	.,,-,-,-,-,-		
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	10	22,500.00		
	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	5.5	35,750.00		
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	1.125	7,312.50		
4	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.	3,700.00	5	18,500.00		
K			Total Civil	& Services	84,062.50		
L				Total (J+K)	8,07,136.24		
N			Sub	Γotal (L+M)	8,07,136.24		
0			Total GST @	18% of (N)	1,45,284.52		
01			Total GST (	2) 1% of (N)	8,071.36		
Р	Gross Total Material +Services (N+O+O	1) for 33			9,60,492.13		

33kV Line Length using 241 SQ.MMAAA Conductor								
	No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No TPCODL-HVD-0002)							
<u> </u>	MATERIALS FOR 33 KV Cut Point with 180 Degree Ang	<u>ile</u>						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	3	1,02,966.00			
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of Channel = (2x 9.56x1.7)	K.g.	76.00	97.512	7,410.91			
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280) Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2	K.g.	97.50	15.8592	1,546.27			
4	No's of Channel = (2x 9.56x0.306)	K.g.	76.00	17.55216	1,333.96			
5	Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	No.	104.00	3	312.00			
6	(1x0.59x0.510)	KG	97.50	0.9027	88.01			
7	GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	Kg	104.00	9	936.00			
8	(4x0.59x0.510)	KG	97.50	3.6108	352.05			
10	33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)	No. No.	624.00 331.00	9	5,616.00 2,979.00			
11	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	18	16,470.00			
12	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	Set	332.00	6	1,992.00			
	H W fitting(B&S)90KN,4 Bolt Disc insulator (B&S)90 KN polymer	No.	650.00	18	11,700.00			
	Earthing of Support ( Coil Type )	No. EA	1,495.00 215.80	18 3	26,910.00 647.40			
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	0.786	76.64			
17	GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point) Black Paint	K.g. Ltr	101.40 286.00	14.637 3	1,484.19 858.00			
19	Yellow Colour Paint for Background	Ltr	216.00	6	1,296.00			
Α			Total Cost o	f materials	1,84,974.44			
В	Stock	, Storage	e & Insurance	i.e 3% of A	5,549.23			
С				otal (A+B)	1,90,523.67			
D			Contigency		5,715.71			
E			ools & Plants		3,810.47			
F G	Erection Charges @		Insportation @		14,289.28 5,302.75			
Н	Erection Charges @ 10% of C (except Trf/Breaker/WF				8,446.87			
H	Erection Charges @ 20% of F			' '	- 0,440.07			
J		<u> </u>		n of (C to I)	2,28,088.75			
	<u>Civil &amp; Services</u>							
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	1.65	10,725.00			
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00 Total Civil		2,193.75			
K L				Total (J+K)	<b>12,918.75</b> 2,41,007.50			
N P				Γotal (L+M)	2,41,007.50			
0			Total GST @	, ,	43,381.35			
01			Total GST @	0 1% of (N)	2,410.08			
P_	Gross Total Material +Services (N+O+O1) for 33 KV C	ut Point	t with 180 De	gree Angle	2,86,798.93			
	No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)			2				
	MATERIALS FOR 33 KV Cut Point with 90 Degree Ang	<u>le</u>						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	2	68,644.00			
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)	K.g.	76.00	130.016	9,881.22			
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4	K.g.	97.50	21.1456	2,061.70			
4	No's of Channel = (4x 9.56x0.306)	K.g.	76.00	23.40288	1,778.62			
5	Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	No.	104.00	2	208.00			
6	(1x0.59x0.510)	KG	97.50	0.6018	58.68			

7	JON V LINE LENGTH USING 241 JULIUNAAA CONGUCTOI	33kV Line Length using 241 SQ.MMAAA Conductor							
	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	6	624.00				
8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	2.4072	234.70				
9	33KV pin insulator polymer (4 No's each 90 Deg. Cut point)	No.	624.00	8	4,992.00				
	H W fitting(B&S)90KN,4 Bolt	No.	650.00	12	7,800.00				
11	Disc insulator (B&S)90 KN polymer  Non Metallic Ties 33KV (For covered conductor)	No.	1,495.00 331.00	12 8	17,940.00 2,648.00				
13	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	12	10,980.00				
13	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole	NO.	915.00	12	10,960.00				
14	Earthing of Support ( Coil Type )	Set No.	332.00 215.80	2	1,328.00				
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	0.524	51.09				
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair)	Pair	162.50	2	325.00				
18	H.T. Stay set (Complete )	Set	1,365.00	2	2,730.00				
	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	2	130.00				
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	30	2,925.00				
21	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point)	K.g.	101.40	22.62	2,293.67				
22	Black Paint Yellow Colour Paint for Background	Ltr Ltr	286.00 216.00	4	572.00 864.00				
	Tellow Colour Failit for Background	Lu	Total Cost o	+					
I A		04			1,39,501.27				
В	Stock, v	Storage	& Insurance		4,185.04				
С			Sub T	Total (A+B)	1,43,686.30				
D			Contigency		4,310.59				
E			ools & Plants		2,747.86				
F			ansportation @	_	10,776.47				
G	Erection Charges @	5% on <sup>-</sup>	Trf/Breaker/W	'PB/ H-Pole	3,535.17				
Н	Erection Charges @ 10% of C (except Trf/Breaker/WF	PB/ H-Po	le/HT stay set	t/PSC pole)	6,668.97				
H	Erection Charges @ 20% of F								
	Election onarges @ 20 % or 1	OO poic			4 74 705 20				
J	Civil 9 Comices		Sui	n of (C to I)	1,71,725.36				
<u> </u>	<u>Civil &amp; Services</u>	ı		П					
SI. No.	Description of Materials	Unit	Unit Rate	Total	Total				
1			Ollit Nate	Quantity	Amount				
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	Quantity 1.10	7,150.00				
	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr								
1		Cu.mtr	6,500.00	1.10	7,150.00				
1 2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal	Cu.mtr Cu.mtr	6,500.00 6,500.00	1.10 0.23	7,150.00 1,462.50				
3 <b>K</b>	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal	Cu.mtr Cu.mtr	6,500.00 6,500.00 2,250.00	1.10 0.23 2 2 & Services	7,150.00 1,462.50 4,500.00 13,112.50				
3 <b>K</b>	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal	Cu.mtr Cu.mtr	6,500.00 6,500.00 2,250.00	1.10 0.23 2 & Services Total (J+K)	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86				
3 <b>K</b>	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal	Cu.mtr Cu.mtr	6,500.00 6,500.00 2,250.00 Total Civil	1.10 0.23  2  & Services Total (J+K) Total (L+M)	7,150.00 1,462.50 4,500.00 13,112.50				
3 <b>K</b>	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal	Cu.mtr Cu.mtr	6,500.00 6,500.00 2,250.00	1.10 0.23  2  & Services Total (J+K) Total (L+M)	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86				
3 K	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal	Cu.mtr Cu.mtr	6,500.00 6,500.00 2,250.00 Total Civil	1.10 0.23 2 & Services Total (J+K) Total (L+M)	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86				
3 K L N O O1	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	Cu.mtr Cu.mtr No.	6,500.00 6,500.00 2,250.00  Total Civil Sub 1  Total GST @ Total GST (@	1.10 0.23 2 & Services Total (J+K) Total (L+M) 2.18% of (N) @ 1% of (N)	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38				
3 K L N O	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal	Cu.mtr Cu.mtr No.	6,500.00 6,500.00 2,250.00  Total Civil Sub 1  Total GST @ Total GST (@	1.10 0.23 2 & Services Total (J+K) Total (L+M) 2.18% of (N) @ 1% of (N)	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81				
3 K L N O O1	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	Cu.mtr Cu.mtr No.	6,500.00 6,500.00 2,250.00  Total Civil Sub 1  Total GST @ Total GST (@	1.10 0.23 2 & Services Total (J+K) Total (L+M) 2.18% of (N) @ 1% of (N)	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38				
3 K L N O O1	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV	Cu.mtr Cu.mtr No.	6,500.00 6,500.00 2,250.00  Total Civil Sub 1  Total GST @ Total GST (@	1.10 0.23  2  & Services Total (J+K) Total (L+M) 2 18% of (N) 3 1% of (N) gree Angle	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38				
3 K L N O O1 P	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points	Cu.mtr Cu.mtr No.	6,500.00 6,500.00 2,250.00  Total Civil  Sub 1  Total GST @  Total GST @  nt with 90 De	1.10 0.23  2  & Services Total (J+K) Total (L+M) 2.18% of (N) 2.1% of (N) gree Angle 2.5	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38 2,19,957.05				
3 K L N O O1 P	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials	Cu.mtr Cu.mtr No.	6,500.00 6,500.00 2,250.00  Total Civil  Sub 7  Total GST @  Total GST @  nt with 90 De	1.10 0.23  2  & Services Total (J+K) Total (L+M) 2.18% of (N) 2.1% of (N) gree Angle 2.5  Total Quantity	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38 2,19,957.05				
3  K L N O O1 P SI. No.	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	Cu.mtr No.  Cut Poin  Unit No	6,500.00 6,500.00 2,250.00  Total Civil  Sub 1  Total GST @	1.10 0.23  2  & Services Total (J+K) Total (L+M) 2.18% of (N) 3.1% of (N) gree Angle 2.5  Total Quantity 53	7,150.00 1,462.50 4,500.00  13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38 2,19,957.05  Total Amount 18,19,066.00				
3  K L N O O1 P SI. No. 1 2	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each	Cu.mtr  No.  Cut Poil  Unit  No No.	6,500.00 6,500.00 2,250.00  Total Civil  Sub T  Total GST @  Total GST @  Int with 90 De  Unit Rate 34,322.00 2,340.00	1.10 0.23  2  & Services Total (J+K) Total (L+M) 18% of (N) 19 1% of (N) gree Angle  2.5  Total Quantity 53 53	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38 2,19,957.05  Total Amount 18,19,066.00 1,24,020.00				
3  K L N O O1 P SI. No.	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) 33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.	Cu.mtr No.  Cut Poin  Unit No	6,500.00 6,500.00 2,250.00  Total Civil  Sub 1  Total GST @	1.10 0.23  2  & Services Total (J+K) Total (L+M) 0.18 of (N) 0.1% of (N) 0.1% of (N) 0.2.5  Total Quantity 53 53 53	7,150.00 1,462.50 4,500.00  13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38 2,19,957.05  Total Amount 18,19,066.00				
3  K L N O O1 P SI. No. 1 2 3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	Cu.mtr Cu.mtr No.  Cut Poin  Unit No No.	6,500.00 6,500.00 2,250.00  Total Civil  Sub Total GST @ Total GST @ Int with 90 De  Unit Rate 34,322.00 2,340.00 195.00	1.10 0.23  2  & Services  Total (J+K)  Total (L+M)  2.18% of (N)  3.1% of (N)  gree Angle  2.5  Total  Quantity 53 53 53 53 53	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38 2,19,957.05  Total Amount 18,19,066.00 1,24,020.00 10,335.00				
3  K L N O O1 P SI. No. 1 2 3 4	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) 33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.	Cut Point  No.  Cut Point  No.  No.  No.  No.  No.	6,500.00 6,500.00 2,250.00  Total Civil  Sub 7  Total GST @  Total GST @  total GST @  at with 90 De  Unit Rate 34,322.00 2,340.00 195.00 104.00	1.10 0.23  2  & Services  Total (J+K)  Total (L+M)  2.18% of (N)  3.1% of (N)  gree Angle  2.5  Total  Quantity 53 53 53 53 53	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38 2,19,957.05  Total Amount 18,19,066.00 1,24,020.00 10,335.00 5,512.00				
3 K L N O O1 P SI. No. 1 2 3 4 5 5	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) 33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	Cut Poil  Unit No.  No.  KG	6,500.00 6,500.00 2,250.00  Total Civil  Sub 1  Total GST @  Total GST @  In with 90 De  Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50	1.10 0.23  2  & Services Total (J+K)  Total (L+M)  2.18% of (N)  3.1% of (N)  gree Angle  2.5  Total Quantity 53 53 53 53 15.95	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38 2,19,957.05  Total Amount 18,19,066.00 1,24,020.00 10,335.00 5,512.00 1,554.90				
3  K L N O O1 P SI. No. 1 2 3 4 5 6 7	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 2kg each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	Cut Point  No.  Cut Point  No.  No.  KG  KG  KG	G,500.00 G,500.00 C,250.00 C,250.00 C,250.00 C,250.00 C,250.00 C,250.00 C,250.00 C,340.00 C,3	1.10 0.23  2  & Services  Total (J+K)  Total (L+M)  18% of (N)  1% of (N)  1% of (N)  gree Angle  2.5   Total Quantity  53 53 53 53 15.95 159.00 63.79	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38 2,19,957.05  Total Amount 18,19,066.00 1,24,020.00 10,335.00 5,512.00 1,554.90 16,536.00 6,219.60				
3  K L N O O1 P SI. No. 1 2 3 4 5 6	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) 33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer	Cu.mtr Cu.mtr No.  Cut Point No. No. No. KG KG KG No.	G,500.00 G,500.00 C,250.00 C,250.00 C,250.00 C,250.00 C,250.00 C,250.00 C,250.00 C,340.00 C,3	1.10 0.23  2  & Services  Total (J+K)  Total (L+M)  18% of (N)  1% of (N)  1% of (N)  gree Angle  2.5   Total  Quantity  53 53 53 53 15.95 159.00 63.79 159	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38 2,19,957.05  Total Amount 18,19,066.00 1,24,020.00 10,335.00 5,512.00 1,554.90 16,536.00 6,219.60 99,216.00				
3  K L N O O1 P SI. No. 1 2 3 4 5 6 7	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) 33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 2kg each) Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	Cut Point  No.  Cut Point  No.  No.  KG  KG  KG	6,500.00 6,500.00 2,250.00  Total Civil  Sub Total GST @ Total GST @ Total GST @ 104.00 97.50 104.00 97.50 624.00 331.00	1.10 0.23  2  & Services  Total (J+K)  Total (L+M) 18% of (N) 19 1% of (N) 19 1% of (N) 19 53 53 53 53 53 15.95 159.00 63.79 159	7,150.00 1,462.50 4,500.00 13,112.50 1,84,837.86 1,84,837.86 33,270.81 1,848.38 2,19,957.05  Total Amount 18,19,066.00 1,24,020.00 10,335.00 5,512.00 1,554.90 16,536.00 6,219.60				
3 K L N O O1 P SI. No. 1 2 3 4 4 5 6 7 7 8 9 10 11	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV Cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)	Cu.mtr Cu.mtr No.  Cut Point No. No. No. KG KG KG No. No.	G,500.00 G,500.00 C,250.00 C,250.00 C,250.00 C,250.00 C,250.00 C,250.00 C,250.00 C,340.00 C,3	1.10 0.23  2  & Services Total (J+K)  Total (L+M) 2 18% of (N) 2 1% of (N) gree Angle  2.5  Total Quantity 53 53 53 15.95 159.00 63.79 159 159 53 13.89	7,150.00 1,462.50 4,500.00 1,462.50 4,500.00 1,84,837.86 1,84,837.86 33,270.81 1,848.38 2,19,957.05  Total Amount 18,19,066.00 1,24,020.00 10,335.00 5,512.00 1,554.90 16,536.00 6,219.60 99,216.00 52,629.00				

#### Annexure-11 33kV Line Length using 241 SQ.MM. -AAA Conductor Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole Set 332.00 106 35,192.00 7725.00 29,81,850.00 14 241 sq.mm AAA conductor Mtr. 386.00 28,206.00 15 Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor EΑ 4,701.00 6 16 Black Paint Ltr 286.00 53.0 15,158.00 17 Yellow Colour Paint for Background Ltr 216.00 106.0 22,896.00 **Total Cost of materials** 52,38,974.38 Α Stock, Storage & Insurance i.e 3% of A 1,57,169.23 В С Sub Total (A+B) 53,96,143.61 D Contigency @ 3% of C 1,61,884.31 Ε Tools & Plants @ 2% of C 1,07,922.87 F Transportation @ 7.5% of C 4,04,710.77 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 93,681.90

Н

1

Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole)

Erection Charges @ 20% of PSC pole- Not to be used for 33kv

3,52,250.56

J	Sum of (C to I)					
	<u>Civil &amp; Services</u>			•		
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	· '	Cu.mtr	6,500.00	29.15	1,89,475.00	
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	5.96	38,756.25	
K			Total Civil	& Services	2,28,231.25	
L			•	Total (J+K)	67,44,825.27	
N			Sub 1	Γotal (L+M)	67,44,825.27	
0			Total GST @	18% of (N)	12,14,068.55	
01			Total GST @	2) 1% of (N)	67,448.25	
Р	Gross Total Material +Services (N+O+O1) for 33 KV Pin Points				80,26,342.08	
	Gross Total Summary					
1	Gross Total Material +Services (N+O+C	01) for 3	3 KV DP With	out Isolator	9,60,492.13	
2	Gross Total Material +Services (N+0	O+01) fo	r 33 KV DP V	Vith Isolator	-	
3	Gross Total Material +Services (N+O+O1) for 33 KV	Cut Poir	nt with 180 De	egree Angle	2,86,798.93	
4	Gross Total Material +Services (N+O+O1) for 33 KV	/ Cut Po	int with 90 De	egree Angle	2,19,957.05	
5	Gross Total Material +Service	,			80,26,342.08	
Q			otal Material		94,93,590.19	
R	Inspection Fee of Over Head Line (HT) - Rs. 1500 upto 1 KM				1,500.00	
S	Inspection Fee of Over Head Li	ine (HT)	- Rs. 750/ Ad	ditional Km	1,500.00	
T	Inspection Fee of	<sup>:</sup> Drawin	g Checking ar	nd Approval	750.00	
U	Gross Total Material, Services a	nd Insp	ection Fees	(Q+R+S+T)	94,97,340.19	

Annexure-11						
33kV Line Length using 241 SQ.MMAAA Conductor						
No. of 33 KV DP required Without Isolator (Ref. Drawing No TPCODL-HVD-0004)						
	MATERIALS FOR 33 KV DP Without Isolator					
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	6	2,05,932.00	
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =( 2x9.56x3.25)	KG	76.00	186.42	14,167.92	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	11.8944	1,159.70	
4	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's channel required =( 5x7.14x1.96)	KG	76.00	209.916	15,953.62	
5	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = (4*4.5*3.432)	KG	76.00	185.328	14,084.93	
6	Danger Plate, 2 no's.	No.	104.00	6	624.00	
7	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	1.8054	176.03	
8	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	6	975.00	
9	H.T. Stay set (Complete )	Set	1,365.00	6	8,190.00	
	H.T. Stay Insulator Type-C (2 No's.) 7/8 SWG Stay Wire 15kg /stay	No. K.g.	65.00 97.50	12 90	780.00 8,775.00	
	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	3	4,095.00	
13	50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 5x2.36	KG	97.50	35.4	3,451.50	
	GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's =	Kg	104.00	18	1,872.00	
15	(8x0.59x0.510)	KG	97.50	7.2216	704.11	
	33KV pin insulator polymer	No.	624.00	9	5,616.00	
17	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	9	2,979.00	
18	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	18	16,470.00	
19	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	Set	332.00	12	3,984.00	
20	H W fitting(B&S)90KN,4 Bolt Disc insulator (B&S) 90 KN polymer	No.	650.00 1,495.00	18 18	11,700.00 26,910.00	
	GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator)	K.g.	101.40		3,729.80	
23	Black Paint	Ltr	286.00	3	858.00	
24	Yellow Colour Paint for Background	Ltr	216.00	6	1,296.00	
Α			Total Cost o		3,54,483.60	
В	Stock	, Storage	e & Insurance	i.e 3% of A	10,634.51	
С			Sub T	otal (A+B)	3,65,118.10	
D			Contigency	@ 3% of C	10,953.54	
Е		Т	ools & Plants	@ 2% of C	6,832.37	
F		Tra	nsportation @	7.5% of C	27,383.86	
G	Erection Charges @	5% on 7	Γrf/Breaker/W	PB/ H-Pole	10,605.50	
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Po	le/HT st	ay set/GI Pipe	PSC pole)	12,950.87	
	Erection Charges @ 20% of F				· -	
J				n of (C to I)	4,33,844.25	
	Civil & Services			. ( /	.,,	
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	6	13,500.00	
	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	3.3	21,450.00	
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Construction Earthing chamber including installation of earthing pipe.Making earthing chamber	Cu.mtr	6,500.00	0.675	4,387.50	
4	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.	3,700.00	3	11,100.00	
К			Total Civil	& Services	50,437.50	
L				Total (J+K)	4,84,281.75	
N			Sub 1	Γotal (L+M)	4,84,281.75	
0			Total GST @	18% of (N)	87,170.71	
01			Total GST @		4,842.82	
Р	Gross Total Material +Services (N+O+O	) for 33		` '	5,76,295.28	
	,					
	No. of 33 KV DP required With Isolator			1		
<u> </u>	(Ref. Drawing No TPCODL-TCE-0001)  MATERIALS FOR 33 KV DP With Isolator					
	MMIENIALS FOR 33 NV DE WILLI ISOIDLOI					

	Annexure-11				
	33kV Line Length using 241 SQ.MMAAA Conducto	or	T		
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	2	68,644.00
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 2x9.56x4.3)	KG	76.00	82.216	6,248.42
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	3.9648	386.57
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	76.00	30.702	2,333.35
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	76.00	61.404	4,666.70
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	76.00	122.808	9,333.41
7	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	76.00	88.686	6,740.14
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	76.00	5.712	434.11
9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	76.00	1.746	132.70
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	76.00	1.53	116.28
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	76.00	9.56	726.56
12	Danger Plate, 2 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's =	No.	104.00	2	208.00
13	(2x0.59x0.510)	KG	97.50	0.6018	58.68
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)  H.T. Stay set (Complete )	Pair Set	162.50 1,365.00	2 2	325.00 2,730.00
	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	4	260.00
17	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	30	2,925.00
	Gi Pipe Earthing 40mm. 3 Mtr. Long 50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh	No.	1,365.00	2	2,730.00
19	formation and 2.5 mtr. For raising)= 24x2.36	KG	97.50	56.64	5,522.40
20	GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's =	Kg KG	104.00 97.50	6 2.4072	624.00 234.70
22	(8x0.59x0.510) Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	3	40,365.00
23	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with PI(Polymer)	Set	66,000.00	1	66,000.00
24	33KV pin insulator polymer	No.	624.00	3	1,872.00
	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	3	993.00
26 27	IPC for 241 sq.mm AAA conductor (For covered conductor)  Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole	No.	915.00	6	5,490.00
	) H W fitting(B&S)90KN,4 Bolt	Set No.	332.00 650.00	6	1,328.00 3,900.00
	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	6	8,970.00
_	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)  Black Paint	K.g.	101.40 286.00	22.15 1	2,246.01 286.00
32	Yellow Colour Paint for Background	Ltr Ltr	216.00		432.00
Α	·		Total Cost of		2,47,262.02
В	Stock	, Storage	e & Insurance	i.e 3% of A	7,417.86
С			Sub T	otal (A+B)	2,54,679.88
D			Contigency	@ 3% of C	7,640.40
Е		Т	ools & Plants	@ 2% of C	4,908.82
F		Tra	ansportation @	7.5% of C	19,100.99
G	Erection Charges @	5% on	Trf/Breaker/W	PB/ H-Pole	3,535.17
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pc				17,473.75
J	Erection Charges @ 20% of F	SC pole		n of (C to I)	3,07,339.00
	<u>Civil &amp; Services</u>				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	2	4,500.00
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	1.1	7,150.00
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.225	1,462.50
4	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.	3,700.00	2	7,400.00
K			Total Civil		20,512.50
L				Total (J+K)	3,27,851.50
N			Sub	Γotal (L+M)	3,27,851.50

Annexure-11										
33kV Line Length using 241 SQ.MMAAA Conductor										
0										
01			Total GST @	, ,	3,278.51 <b>3,90,143.28</b>					
P	Gross Total Material +Services (N+O+01) for 33 KV DP With Isolator									
	No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No TPCODL-HVD-0002) 5									
<u> </u>	MATERIALS FOR 33 KV Cut Point with 180 Degree Ar	nale								
<u> </u>	MATERIALS FOR 35 RV Cutt oint with 100 begree Al	igie								
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount					
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	5	1,71,610.00					
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of Channel = (2x 9.56x1.7)	K.g.	76.00	162.52	12,351.52					
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)	K.g.	97.50	26.432	2,577.12					
4	Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2	K.g.	76.00	29.2536	2,223.27					
5	No's of Channel = (2x 9.56x0.306)  Danger Plate, 1 no's.	No.	104.00	5	520.00					
6	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	1.5045	146.69					
7	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	15	1,560.00					
8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	KG	97.50	6.018	586.76					
9	(4x0.59x0.510) 33KV pin insulator polymer	No.	624.00	15	9,360.00					
	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	15	4,965.00					
11	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	30	27,450.00					
12	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	Set	332.00	10	3,320.00					
13	H W fitting(B&S)90KN,4 Bolt	No.	650.00	30	19,500.00					
	Disc insulator (B&S)90 KN polymer	No.	1,495.00	30	44,850.00					
	Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	EA K.g.	215.80 97.50	5 1.31	1,079.00 127.73					
	GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point)	K.g.	101.40	24.395	2,473.65					
	Black Paint	Ltr	286.00	5	1,430.00					
19	Yellow Colour Paint for Background	Ltr	216.00	10	2,160.00					
Α			Total Cost o		3,08,290.74					
В	Stock	, Storage	e & Insurance		9,248.72					
С				otal (A+B)	<b>3,17,539.46</b> 9,526.18					
D			Contigency	Contigency @ 3% of C						
	Tools & Plants @ 2% of C									
E					6,350.79					
F		Tra	nsportation @	7.5% of C	23,815.46					
	Erection Charges @	Tra 5% on <sup>-</sup>	nsportation @ Trf/Breaker/W	7.5% of C PB/ H-Pole	· · · · · · · · · · · · · · · · · · ·					
F	Erection Charges @ Erection Charges @ 10% of C (except Trf/Breaker/WF	Tra 5% on <sup>-</sup>	nsportation @ Trf/Breaker/W	7.5% of C PB/ H-Pole	23,815.46					
F G		Tra 5% on <sup>-</sup> PB/ H-Po	ansportation @ Trf/Breaker/W le/HT stay se	7.5% of C PB/ H-Pole t/PSC pole)	23,815.46 8,837.92					
F G H	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F	Tra 5% on <sup>-</sup> PB/ H-Po	nnsportation @ Γrf/Breaker/W le/HT stay se - Not to be us	7.5% of C PB/ H-Pole t/PSC pole)	23,815.46 8,837.92					
F G H I J	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F <u>Civil &amp; Services</u>	Tra 5% on <sup>-</sup> PB/ H-Po PSC pole	nnsportation @ Frf/Breaker/W ele/HT stay se - Not to be us Sun	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)	23,815.46 8,837.92 14,078.12 - 3,80,147.92					
F G H I	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F	Tra 5% on <sup>-</sup> PB/ H-Po	ansportation @ Inf/Breaker/W Ie/HT stay set Not to be us Sun Unit Rate	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)	23,815.46 8,837.92 14,078.12 - 3,80,147.92					
F G H J SI. No.	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Tra 5% on <sup>2</sup> PB/ H-Po PSC pole Unit	ansportation @ Frf/Breaker/W Ie/HT stay se - Not to be us Sun Unit Rate 6,500.00	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75	23,815.46 8,837.92 14,078.12 - 3,80,147.92 Total Amount 17,875.00					
F G H I J SI. No.	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials	Tra 5% on <sup>-</sup> PB/ H-Po PSC pole	ansportation @ Trf/Breaker/W Ie/HT stay se - Not to be us Sun Unit Rate 6,500.00 6,500.00	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625	23,815.46 8,837.92 14,078.12 - 3,80,147.92 Total Amount 17,875.00 3,656.25					
F G H I J SI. No.	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Tra 5% on <sup>2</sup> PB/ H-Po PSC pole Unit	Insportation @ Inf/Breaker/W Ide/HT stay set In Not to be us Sun Unit Rate 6,500.00 6,500.00 Total Civil	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services	23,815.46 8,837.92 14,078.12 - 3,80,147.92 Total Amount 17,875.00 3,656.25 21,531.25					
F G H J SI. No.	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Tra 5% on <sup>2</sup> PB/ H-Po PSC pole Unit	Insportation @ Inf/Breaker/W Ide/HT stay set In Not to be us Sun Unit Rate 6,500.00 6,500.00 Total Civil	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (J+K)	23,815.46 8,837.92 14,078.12 - 3,80,147.92 Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17					
F G H J SI. No. 1 2 K L	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Tra 5% on <sup>2</sup> PB/ H-Po PSC pole Unit	Insportation @ Inf/Breaker/W Ide/HT stay set In Not to be us Sun Unit Rate 6,500.00 6,500.00 Total Civil	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (J+K) Fotal (L+M)	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 4,01,679.17					
F G H I J SI. No. 1 2 K L	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Tra 5% on <sup>2</sup> PB/ H-Po PSC pole Unit	unsportation @ Trf/Breaker/W Ie/HT stay se Not to be us Sun Unit Rate 6,500.00 6,500.00 Total Civil Sub Total GST @	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (J+K) Total (L+M) 18% of (N)	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 4,01,679.17 72,302.25					
F G H J SI. No.	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Tre 5% on Debt H-Potential PSC pole  Unit  Cu.mtr Cu.mtr	unsportation ( Trf/Breaker/W Ie/HT stay se Not to be us Sun Unit Rate 6,500.00 6,500.00 Total Civil Total GST ( Total GST (	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (L+M) 18% of (N) ① 1% of (N)	23,815.46 8,837.92 14,078.12 - 3,80,147.92 Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 4,01,679.17					
F G H I J SI. No. 1 2 K L N O O1	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Services (N+O+O1) for 33 KV C	Tre 5% on Debt H-Potential PSC pole  Unit  Cu.mtr Cu.mtr	unsportation ( Trf/Breaker/W Ie/HT stay se Not to be us Sun Unit Rate 6,500.00 6,500.00 Total Civil Total GST ( Total GST (	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (J+K) Total (L+M) 18% of (N) gree Angle	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 72,302.25 4,016.79					
F G H I J SI. No. 1 2 K L N O O1	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Services (N+O+O1) for 33 KV Cu  No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)	Tra 5% on PB H-Po PSC pole  Unit  Cu.mtr  Cu.mtr	unsportation ( Trf/Breaker/W Ie/HT stay se Not to be us Sun Unit Rate 6,500.00 6,500.00 Total Civil Total GST ( Total GST (	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (L+M) 18% of (N) ① 1% of (N)	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 4,01,679.17 72,302.25 4,016.79					
F G H I J J SI. No. 1 2 K L N O O 1 P	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle	Tra 5% on PB H-Po PSC pole  Unit  Cu.mtr  Cu.mtr	unsportation ( Trf/Breaker/W Ie/HT stay se Not to be us Sun Unit Rate 6,500.00 6,500.00 Total Civil Total GST ( Total GST (	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (J+K) Total (L+M) 18% of (N) gree Angle	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 4,01,679.17 72,302.25 4,016.79 4,77,998.21					
F G H I J SI. No. 1 2 K L N O O1	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Services (N+O+O1) for 33 KV Cu  No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)	Tra 5% on PB H-Po PSC pole  Unit  Cu.mtr  Cu.mtr	unsportation ( Trf/Breaker/W Ie/HT stay se Not to be us Sun Unit Rate 6,500.00 6,500.00 Total Civil Total GST ( Total GST (	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (J+K) Total (L+M) 18% of (N) gree Angle	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 4,01,679.17 72,302.25 4,016.79					
F G H I J J SI. No. 1 2 K L N O O 1 P P SI. SI.	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)	Tra 5% on Debt H-Pool PSC pole  Unit  Cu.mtr  Cu.mtr	unsportation @ Trf/Breaker/W le/HT stay se Not to be us Sun  Unit Rate 6,500.00 6,500.00 Total Civil  Total GST @ Total GST @ t with 180 De	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (J+K) Total (L+M) 18% of (N) 19 1% of (N) gree Angle	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 4,01,679.17 72,302.25 4,016.79 4,77,998.21					
F G H I J J SI. No. 1 2 K L N O O 1 P SI. No.	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle Description of Materials	Tra  9 5% on Te  PB/ H-Po  PSC pole  Unit  Cu.mtr  Cu.mtr  Cu.mtr  Unit  Cu.mtr	unit Rate  Unit Rate  6,500.00  6,500.00  Total GST @  Total GST @  t with 180 De	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (J+K) Total (L+M) 18% of (N) 19 ree Angle 3  Total Quantity	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount  17,875.00 3,656.25 21,531.25 4,01,679.17 4,01,679.17 72,302.25 4,016.79 4,77,998.21  Total Amount  1,02,966.00					
F G H I J J SI. No. 1 2 K L N O O 1 P SI. No. 1 2	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Services (N+O+O1) for 33 KV Cut  No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  Serviption of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)	Unit  Cu.mtr  Cu.mtr  Cu.mtr  Cu.mtr  Cu.mtr	unsportation (care from the first and the fi	7.5% of C PB/ H-Pole PB/ H-Pole PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 Services Total (J+K) Total (L+M) 18% of (N) gree Angle  3  Total Quantity 3	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount  17,875.00 3,656.25 21,531.25 4,01,679.17 4,01,679.17 72,302.25 4,016.79 4,77,998.21  Total Amount  1,02,966.00					
F G H I J J SI. No. 1 2 K L N O O 1 P SI. No. 1 2	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Cervital Services  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Couping ratio 1:1.5:3 with dimension (500X500X450) = 0.1125 Cu mtr  Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4	Unit Cu.mtr Cu.mtr Cumtr Cu.mtr Cu.mtr Cu.mtr Cu.mtr	unit Rate  Unit Rate 6,500.00 6,500.00 Total Civil Total GST @ twith 180 De  Unit Rate  4,322.00 76.00	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (J+K) Total (L+M) 18% of (N) 19 1% of (N) gree Angle 3  Total Quantity 3  195.024	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 72,302.25 4,016.79 4,77,998.21  Total Amount 1,02,966.00 14,821.82					
F G H I J SI. No. 1 2 K L N O O1 P SI. No. 1 2 3 3	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Services (N+O+O1) for 33 KV Cut  No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  Serviption of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)	Unit  Cu.mtr  Cu.mtr  Cu.mtr  Cu.mtr  Kut Point  Ku.g.  K.g.	unit Rate 6,500.00 6,500.00 Total Civil Total GST @ with 180 De  Unit Rate 34,322.00 76.00 97.50	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 Services Total (J+K) Total (L+M) 18% of (N) 19 1% of (N) gree Angle  3  Total Quantity 3  195.024 31.7184	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 72,302.25 4,016.79 4,77,998.21  Total Amount 1,02,966.00 14,821.82 3,092.54					
F G H I J J SI. No. 1 2 K L N O O1 P P SI. No. 1 2 3 4	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	Unit Cu.mtr	unit Rate  Grange Grang	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (J+K) Total (L+M) 18% of (N) 19 1% of (N) gree Angle 3  Total Quantity 3 195.024 31.7184 35.10432 3	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 72,302.25 4,016.79 4,77,998.21  Total Amount 1,02,966.00 14,821.82 3,092.54 2,667.93 312.00					
F   G   H   I   J   SI. No.   1   2   K   L   N   O   O   1   P   SI. No.   1   2   3   4   5   6	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	Unit  Cu.mtr  Cu.mtr  Cu.mtr  Cu.mtr  Cu.mtr  Cu.mtr  Cu.mtr  Cu.mtr  Cu.mtr  Cu.mtr	### Company of the co	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (J+K) Total (L+M) 18% of (N) 1% of (N) gree Angle 3  Total Quantity 3 195.024 31.7184 35.10432 3 0.9027	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 72,302.25 4,016.79 4,77,998.21  Total Amount 1,02,966.00 14,821.82 3,092.54 2,667.93 312.00 88.01					
F   G   H   I   J   SI. No.   1   2   K   L   N   O   O   1   P   SI. No.   1   2   3   4   5	Erection Charges @ 10% of C (except Trf/Breaker/WF Erection Charges @ 20% of F  Civil & Services  Description of Materials  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	Unit Cu.mtr	unit Rate  Grange Grang	7.5% of C PB/ H-Pole t/PSC pole) sed for 33kv n of (C to I)  Total Quantity 2.75 0.5625 & Services Total (J+K) Total (L+M) 18% of (N) 19 1% of (N) gree Angle 3  Total Quantity 3 195.024 31.7184 35.10432 3	23,815.46 8,837.92 14,078.12 - 3,80,147.92  Total Amount 17,875.00 3,656.25 21,531.25 4,01,679.17 72,302.25 4,016.79 4,77,998.21  Total Amount 1,02,966.00 14,821.82 3,092.54 2,667.93 312.00					

Annexure-11								
	33kV Line Length using 241 SQ.MMAAA Conducto	or						
9	33KV pin insulator polymer (4 No's each 90 Deg. Cut point)	No.	624.00	12	7,488.00			
10	H W fitting(B&S)90KN,4 Bolt	No.	650.00	18	11,700.00			
11	Disc insulator (B&S)90 KN polymer	No.	1,495.00	18	26,910.00			
	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	12	3,972.00			
13	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	18	16,470.00			
14	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole	Set	332.00	6	1,992.00			
	Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	No. K.g.	215.80 97.50	3 0.786	647.40 76.64			
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair)	Pair	162.50	3	487.50			
18	H.T. Stay set (Complete )	Set	1,365.00	3	4,095.00			
19	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	3	195.00			
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	45	4,387.50			
	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point) Black Paint	K.g. Ltr	101.40 286.00	33.93 3	3,440.50 858.00			
	Yellow Colour Paint for Background	Ltr	216.00	6	1,296.00			
Α			Total Cost o		2,09,251.90			
В	Stock 5	Storage	& Insurance		6,277.56			
С	Stock, V	otor age		otal (A+B)				
				<u> </u>	2,15,529.46			
D			Contigency		6,465.88			
Е		Т	ools & Plants	@ 2% of C	4,121.79			
F		Tra	nsportation @	) 7.5% of C	16,164.71			
G	Erection Charges @	5% on 7	rf/Breaker/W	PB/ H-Pole	5,302.75			
н	Erection Charges @ 10% of C (except Trf/Breaker/WF	PB/ H-Po	le/HT stay set	t/PSC pole)	10,003.45			
$\overline{}$	Erection Charges @ 20% of F							
j				n of (C to I)	2 57 500 04			
1	<u>Civil &amp; Services</u>		Suii	11 01 (C to 1)	2,57,588.04			
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	1.65	10,725.00			
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.34	2,193.75			
3	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	3	6,750.00			
К			Total Civil	& Services	19,668.75			
L				Total (J+K)	2,77,256.79			
_				· '	2,11,230.13			
		N Sub Total (L+M)						
N	` '							
0				<u> </u>	<b>2,77,256.79</b> 49,906.22			
				18% of (N)	49,906.22			
0	Gross Total Material +Services (N+O+O1) for 33 KV		Total GST @ Total GST @	18% of (N)				
0 01	Gross Total Material +Services (N+O+O1) for 33 KV		Total GST @ Total GST @	18% of (N)	49,906.22 2,772.57			
0 01	Gross Total Material +Services (N+O+O1) for 33 KV  33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)		Total GST @ Total GST @	18% of (N)	49,906.22 2,772.57			
0 01 <b>P</b>			Total GST @ Total GST @	18% of (N)  2 1% of (N)  gree Angle  4	49,906.22 2,772.57 <b>3,29,935.58</b>			
0 01 <b>P</b>	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)		Total GST @ Total GST @	18% of (N)  ② 1% of (N)  gree Angle  4	49,906.22 2,772.57 <b>3,29,935.58</b> Total			
O O1 P	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials	Cut Poir	Total GST @ Total GST @ It with 90 De	18% of (N)  18% of (N)  19 1% of (N)  gree Angle  4  Total  Quantity	49,906.22 2,772.57 3,29,935.58 Total Amount			
O O1 P SI. No. 1	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points	Cut Poir	Total GST @ Total GST @ nt with 90 De  Unit Rate 34,322.00	18% of (N)  18 of (N)  18 of (N)  gree Angle  4  Total  Quantity  88	49,906.22 2,772.57 <b>3,29,935.58</b> Total Amount 30,20,336.00			
O O1 P SI. No. 1 2	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	Cut Poir Unit	Total GST @ Total GST @ It with 90 De	18% of (N)  18% of (N)  19 1% of (N)  gree Angle  4  Total  Quantity	49,906.22 2,772.57 3,29,935.58 Total Amount			
O O1 P SI. No. 1 2 3 4	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.	Unit No No.	Total GST @ Total GST @ nt with 90 De  Unit Rate 34,322.00 2,340.00	18% of (N)  2) 1% of (N)  gree Angle  4  Total  Quantity  88  88	49,906.22 2,772.57 3,29,935.58 Total Amount 30,20,336.00 2,05,920.00 17,160.00			
O O1 P SI. No. 1 2 3 4 5	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	Unit No No. No. No. KG	Total GST @ Total GST @ nt with 90 De  Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50	18% of (N)  18% of (N)  1% of (N)  gree Angle  4  Total Quantity  88  88  88  88  26.48	49,906.22 2,772.57 3,29,935.58 Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72			
O O1 P SI. No. 1 2 3 4 5 6	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support	Unit No No. No.	Total GST @ Total GST @ nt with 90 De  Unit Rate 34,322.00 2,340.00 195.00 104.00	18% of (N)  2) 1% of (N)  gree Angle  4  Total Quantity 88 88 88 88 88	49,906.22 2,772.57 <b>3,29,935.58</b> Total Amount 30,20,336.00 2,05,920.00			
O O1 P SI. No. 1 2 3 4 5 6	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	Unit No No. No. No. KG	Total GST @ Total GST @ nt with 90 De  Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50	18% of (N)  18% of (N)  1% of (N)  gree Angle  4  Total Quantity  88  88  88  88  26.48	49,906.22 2,772.57 3,29,935.58 Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72			
O O1 P SI. No. 1 2 3 4 5 6	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support	Unit No No. No. KG	Total GST @ Total GST @ Int with 90 De  Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50	18% of (N) 2 1% of (N) gree Angle  4  Total Quantity 88 88 88 26.48 264.00	49,906.22 2,772.57 3,29,935.58 Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72 27,456.00			
O O1 P SI. No. 1 2 3 4 4 5 6 7 8	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	Unit No No. No. KG KG	Total GST @ Total GST @ Int with 90 December 2,340.00 195.00 104.00 97.50 104.00 97.50	18% of (N) 2 1% of (N) 3 1% of (N) gree Angle 4  Total Quantity 88 88 88 26.48 264.00 105.92	49,906.22 2,772.57 3,29,935.58 Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72 27,456.00 10,326.89			
O O1 P P SI. No. 1 2 3 4 5 6 6 7 8 8 9	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )	Unit No No. No. KG KG KG No.	Total GST @ Total GST @ Int with 90 De  Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80	18% of (N) 2 1% of (N) gree Angle  4  Total Quantity 88 88 88 26.48 264.00 105.92 264 264 88	### Total ### Amount ### 30,20,336.00 ### 20,5,920.00 ### 17,160.00 ### 9,152.00 ### 27,456.00 ### 10,326.89 ### 1,64,736.00 ### 87,384.00 ### 18,990.40			
O O1 P SI. No. 1 2 3 4 5 6 7 8 9 10 11	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	Unit No No. No. KG Kg KG No. No. No. KG Kg	Total GST @ Total GST @ Total GST @ In with 90 De  Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50	18% of (N) 2 1% of (N) 3 1% of (N) gree Angle 4  Total Quantity 88 88 88 26.48 264.00 105.92 264 264 88 23.06	49,906.22 2,772.57 3,29,935.58 Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72 27,456.00 10,326.89 1,64,736.00 87,384.00 18,990.40 2,247.96			
O O1 P SI. No. 1 2 3 4 5 6 7 8 9 10	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel (2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	Unit No No. No. KG Kg KG No. No. No.	Total GST @ Total GST @ Int with 90 De  Unit Rate 34,322.00 2,340.00 195.00 104.00 97.50 104.00 97.50 624.00 331.00 215.80	18% of (N) 2 1% of (N) gree Angle  4  Total Quantity 88 88 88 26.48 264.00 105.92 264 264 88	49,906.22 2,772.57 3,29,935.58 Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72 27,456.00 10,326.89 1,64,736.00 87,384.00 18,990.40 2,247.96			
O O1 P SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole)	Unit No No. No. KG Kg KG No. No. No. Set	Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00	18% of (N) 2 1% of (N) 3 1% of (N) gree Angle 4  Total Quantity 88 88 26.48 264.00 105.92 264 264 88 23.06 127.60 176	49,906.22 2,772.57 3,29,935.58 Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72 27,456.00 10,326.89 1,64,736.00 87,384.00 18,990.40 2,247.96 12,938.64 58,432.00			
O O1 P SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor	Unit No No. No. KG KG No. No. No. Set Mtr.	Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00	18% of (N) 2 1% of (N) 3 1% of (N) gree Angle 4  Total Quantity 88 88 26.48 264.00 105.92 264 264 88 23.06 127.60 176 12360.00	49,906.22 2,772.57 3,29,935.58 Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72 27,456.00 10,326.89 1,64,736.00 87,384.00 18,990.40 2,247.96 12,938.64 58,432.00			
O O1 P SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	Unit No No. No. KG KG No. No. No. Set Mtr. EA	Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00	18% of (N) 2 1% of (N) 3 1% of (N) gree Angle 4  Total Quantity 88 88 88 26.48 264.00 105.92 264 264 88 23.06 127.60 176 12360.00 12	49,906.22 2,772.57 3,29,935.58 Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72 27,456.00 10,326.89 1,64,736.00 87,384.00 18,990.40 2,247.96 12,938.64 58,432.00 47,70,960.00 56,412.00			
O O1 P SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	Unit No No. No. KG KG No. No. No. Set Mtr. EA Ltr	Total GST @ Total GST € In with 90 De  Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00	18% of (N)  2 1% of (N)  3 1% of (N)  gree Angle  4  Total Quantity  88  88  88  26.48  264.00  105.92  264  264  88  23.06  127.60  176  12360.00  12  88.0	49,906.22 2,772.57 3,29,935.58  Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72 27,456.00 10,326.89 1,64,736.00 87,384.00 18,990.40 2,247.96 12,938.64 58,432.00 47,70,960.00 56,412.00 25,168.00			
O O1 P SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	Unit No No. No. KG KG No. No. No. Set Mtr. EA	Total GST @ Total GST @ Total GST @ In with 90 De  Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00 216.00	18% of (N) 2 1% of (N) 3 1% of (N) gree Angle  4  Total Quantity 88 88 88 26.48 264.00 105.92 264 264 88 23.06 127.60 176 12360.00 12 88.0 176.0	49,906.22 2,772.57 3,29,935.58  Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72 27,456.00 10,326.89 1,64,736.00 87,384.00 18,990.40 2,247.96 12,938.64 58,432.00 47,70,960.00 56,412.00 25,168.00 38,016.00			
O O1 P SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 A	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor  Black Paint  Yellow Colour Paint for Background	Unit No No. No. KG KG No. No. No. Set Mtr. EA Ltr Ltr	Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00 216.00 Total Cost o	18% of (N) 2 1% of (N) 3 1% of (N) 3 1% of (N) gree Angle  4  Total Quantity 88 88 88 26.48 264.00 105.92 264 264 88 23.06 127.60 176 12360.00 12 88.0 176.0 f materials	49,906.22 2,772.57 3,29,935.58  Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72 27,456.00 10,326.89 1,64,736.00 87,384.00 18,990.40 2,247.96 12,938.64 58,432.00 47,70,960.00 56,412.00 25,168.00 38,016.00 85,28,217.61			
O O1 P SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor  Black Paint  Yellow Colour Paint for Background	Unit No No. No. KG KG No. No. No. Set Mtr. EA Ltr Ltr	Total GST @ Total GST @ Total GST @ In with 90 De  Unit Rate  34,322.00 2,340.00 195.00 104.00 97.50 624.00 331.00 215.80 97.50 101.40 332.00 386.00 4,701.00 286.00 216.00	18% of (N) 2 1% of (N) 3 1% of (N) 3 1% of (N) gree Angle  4  Total Quantity 88 88 88 26.48 264.00 105.92 264 264 88 23.06 127.60 176 12360.00 12 88.0 176.0 f materials	49,906.22 2,772.57 3,29,935.58  Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72 27,456.00 10,326.89 1,64,736.00 87,384.00 18,990.40 2,247.96 12,938.64 58,432.00 47,70,960.00 56,412.00 25,168.00 38,016.00			
O O1 P SI. No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 A	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)  MATERIALS FOR 33 KV Pin Points  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  33 KV V cross Arm (GI) 22Kg each  Top bracket 100x50x6mm GI channel ( 2kg each)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)  Earthing of Support ( Coil Type )  No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing  GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )  241 sq.mm AAA conductor  Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor  Black Paint  Yellow Colour Paint for Background	Unit No No. No. KG KG No. No. No. Set Mtr. EA Ltr Ltr	Total GST @ Total GST @ Total GST @ It with 90 De It with	18% of (N) 2 1% of (N) 3 1% of (N) 3 1% of (N) gree Angle  4  Total Quantity 88 88 88 26.48 264.00 105.92 264 264 88 23.06 127.60 176 12360.00 12 88.0 176.0 f materials	49,906.22 2,772.57 3,29,935.58  Total Amount 30,20,336.00 2,05,920.00 17,160.00 9,152.00 2,581.72 27,456.00 10,326.89 1,64,736.00 87,384.00 18,990.40 2,247.96 12,938.64 58,432.00 47,70,960.00 56,412.00 25,168.00 38,016.00 85,28,217.61			

	Annexure-11						
	33kV Line Length using 241 SQ.MMAAA Conducto	r					
D	Contigency @ 3% of C						
Е		Т	ools & Plants	@ 2% of C	1,75,681.28		
F		Tra	nsportation @	) 7.5% of C	6,58,804.81		
G	Erection Charges @	5% on 7	Γrf/Breaker/W	PB/ H-Pole	1,55,547.30		
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPI	B/ H-Po	le/HT stay se	t/PSC pole)	5,67,311.81		
-	Erection Charges @ 20% of PS	SC pole	- Not to be us	ed for 33kv	-		
J			Sun	n of (C to I)	1,06,04,931.27		
	<u>Civil &amp; Services</u>						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1		Cu.mtr	6,500.00	48.40	3,14,600.00		
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	9.90	64,350.00		
K	K Total Civil & Services						
L Total (J+K)				1,09,83,881.27			
N				Γotal (L+M)	1,09,83,881.27		
0			Total GST @	` '	19,77,098.63		
01			Total GST (		1,09,838.81		
Р	Gross Total Material +Services	(N+O+C	01) for 33 KV	Pin Points	1,30,70,818.71		
	2 T.1.12						
	Gross Total Summary	14) f 0:	2 I// DD W/:#		5 70 005 00		
1	Gross Total Material +Services (N+O+O				5,76,295.28		
2	Gross Total Material +Services (N+C				3,90,143.28		
3 4	Gross Total Material +Services (N+O+O1) for 33 KV ( Gross Total Material +Services (N+O+O1) for 33 KV				4,77,998.21 3,29,935.58		
_ <del>4</del> _5	,			• •	1,30,70,818.71		
Q							
R	Inspection Fee of Over Head				<b>1,48,45,191.06</b> 1,500.00		
S	Inspection Fee of Over Head Li	ne (HT)	- Rs. 750/ Ad	lditional Km	2,250.00		
Т	Inspection Fee of				750.00		
U	Gross Total Material, Services a	nd Insp	ection Fees	(Q+R+S+T)	1,48,49,691.06		

Annexure-11						
BoQ and Estimate for 33 KV 4 Pole using WPB GI Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) with Isolator and LA						
	No. of 33 KV 4-Pole with Isolator			2		
	MATERIALS FOR 33 KV 4-P With Isolator					
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	WPB(GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 8 no's channel required = (	No	34,322.00	8	2,74,576.00	
2	8x9.56x4.3)	KG	76.00	657.728	49,987.33	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 24 no's required = (24x2.36x0.280)	KG	97.50	31.7184	3,092.54	
4	Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =( 2x7.14x4.3)/ Isolator	KG	76.00	429.828	32,666.93	
5	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 8 no's channel required =( 8x7.14x4.3)	KG	76.00	491.232	37,333.63	
6	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 8 nos angle required = (8*4.5*4.927)	KG	76.00	354.744	26,960.54	
7	Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no channel required =( 1x7.14x0.8)/ Isolator	KG	76.00	39.984	3,038.78	
8	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 no angle required = (1*4.5*0.388)/ Isolator	KG	76.00	12.222	928.87	
9	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 no angle required = (1*4.5*0.340)/ Isolator	KG	76.00	10.71	813.96	
10	Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel required =( 2x9.56x0.5)/ Isolator	KG	76.00	66.92	5,085.92	
11	Danger Plate, 2 no's.	No.	104.00	4	416.00	
12	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	1.2036	117.35	
13	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	6	8,190.00	
14	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 5 mtr. For raising)	KG	97.50	125.08	12,195.30	
15	GI barbed wire anticlimbing device 3 Kg. Per support, 4 no's qty. required =(4x3kg)	Kg	104.00	24	2,496.00	
16	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 16 no's = (16x0.59x0.510)	KG	97.50	9.6288	938.81	
17	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	21	2,82,555.00	
18	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with PI(Polymer)	Set	66,000.00	7	4,62,000.00	
	33KV pin insulator polymer	No.	624.00	12	7,488.00	
	H W fitting(B&S)90KN,4 Bolt Disc insulator (B&S) 90 KN polymer	No. No.	650.00 1,495.00	36 36	23,400.00 53,820.00	
22	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	48	71,760.00	
	232 sq.mm AAA conductor GI Nut , Bolt & Washer of different sizes	Mtr. K.g.	203.45 101.40	61.8 90	12,573.21 9,126.00	
25	Black Paint	Ltr	286.00	2	572.00	
26	Yellow Colour Paint for Background	Ltr	216.00 Total Cost o		864.00 <b>13,82,996.18</b>	
<b>А</b> В	Stock		& Insurance		41,489.89	
C	5.55ti,	Otorago		otal (A+B)	14,24,486.07	
D			Contigency		42,734.58	
Е		To	ools & Plants		28,321.01	
F		Trar	nsportation @	7.5% of C	1,06,836.45	
G	Erection Charges @	5% on T	rf/Breaker/W	PB/ H-Pole	14,140.66	
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol		<u> </u>		1,13,323.71	
	Erection Charges @ 20% of PS	SC pole-			-	
J	Civil & Services		Sun	n of (C to I)	17,29,842.48	
SI.	Description of Materials	Unit	Unit Rate	Total	Total	
No.	-			Quantity	Amount	
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr Cu.mtr	6,500.00 6,500.00	4.4 0.9	28,600.00 5,850.00	
3	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.	3,700.00	6	22,200.00	
К	Januaria Bibo .		Total Civil	& Services	56,650.00	
L				Total (J+K)	17,86,492.48	
N				Total (L+M)	17,86,492.48	
0			Total GST @		3,21,568.65	
01	A. T. W		otal CESS @		17,864.92	
Р	Gross Total Material +Services (N+O+	OI) for 3	3 NV 4-P W	ıın isolator	21,25,926.06	

		Annexure-12					
	TP	CENTRAL ODISHA DISTRIBUTION LIMITED					
Name of the Division :- DHENKANAL ELECTRIC DIVISION (DED)							
Name of the	Sub-Division : -	KAMAKHAYANAGAR					
Name of the	Section : -	Bhuban					
Name of the	Work :-	33kV New Line from Goda Grid (33kV Proposed Bhuban Fe	eder)				
Scope of wo	ork:-		Construction of 33kV O/H line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 3.2Ckm. Construction of 33kV 4 Pole structure with Isolator-1 No.				
Names of S	chemes: -	TPCODL CAPEX	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE					
SI. No.	Part	Description	Amount				
1	А	Construction of 33kV O/H line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 3.2Ckm.	₹ 1,20,52,317.77				
2	В	Construction of 33kV 4 Pole structure with Isolator- 1 No.	₹ 14,50,611.17				
		Total Amount	₹ 1,35,02,928.94				
		Total Amount (In Cr)	₹ 1.35				
Total estima	ated cost is Rs.1.35 C	rore.					

SI. No.	33kV Line Length using 241 SQ.MMAAA Conducto	or			
	No. of 33 KV DP required Without Isolator (Ref. Drawing No TPCODL-HVD-0004)			6	
	MATERIALS FOR 33 KV DP Without Isolator				
	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	12	4,11,864.00
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =( 2x9.56x3.25)	KG	76.00	372.84	28,335.84
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	23.7888	2,319.41
4	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's channel required =( 5x7.14x1.96)	KG	76.00	419.832	31,907.23
5	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = (4*4.5*3.432)	KG	76.00	370.656	28,169.86
6	Danger Plate, 2 no's.	No.	104.00	12	1,248.00
7	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	3.6108	352.05
8	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) H.T. Stay set (Complete )	Pair Set	162.50 1,365.00	12 12	1,950.00
10	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	24	1,560.00
11	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	180	17,550.00
12	Gi Pipe Earthing 40mm. 3 Mtr. Long 50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)=	No.	1,365.00	6	8,190.00
13	Soxemin Gi Fiat for earthing, 2.56kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For faising)= 5x2.36  GI barbed wire anticlimbing device 3 Kg. Per support	KG Kg	97.50 104.00	70.8 36	6,903.00 3,744.00
15	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's =	KG	97.50	14.4432	1,408.21
	(8x0.59x0.510)				
16 17	33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)	No.	624.00 331.00	18 18	11,232.00 5,958.00
18	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	36	32,940.00
19	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	Set	332.00	24	7,968.00
_	H W fitting(B&S)90KN,4 Bolt	No.	650.00	36	23,400.00
21	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	36	53,820.00
22	GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator)  Black Paint	K.g. Ltr	101.40 286.00	73.566 6	7,459.59 1,716.00
24	Yellow Colour Paint for Background	Ltr	216.00	12	2,592.00
Α	-		Total Cost o	f materials	7,08,967.19
В	Stock	, Storage	e & Insurance	i.e 3% of A	21,269.02
С			Sub T	otal (A+B)	7,30,236.21
D			Contigency	@ 3% of C	21,907.09
E		Т	ools & Plants		13,664.75
F			nsportation @		54,767.72
G	Erection Charges @	5% on <sup>-</sup>	Γrf/Breaker/W	PB/ H-Pole	21,211.00
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Po				25,901.74
1	Erection Charges @ 20% of P				
J	Elocation ondages (g. 25 % of 1	OO poid		n of (C to I)	8,67,688.49
	Civil & Services		- Cui	11 01 (0 10 1)	0,07,000.43
SI.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
No.	Fixing of 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, including excvation, supply of 0.5Cum	No.	2,250.00	12	27,000.00
1	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)				
1	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	6.6	
1 2 3	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Construction Earthing chamber including installation of earthing pipe.Making earthing chamber	Cu.mtr	6,500.00	1.35	8,775.00
1	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr				8,775.00
1 2 3	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Cu.mtr	6,500.00 3,700.00	1.35	8,775.00 22,200.00
1 2 3 4	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Cu.mtr	6,500.00 3,700.00 Total Civil	1.35 6	8,775.00 22,200.00 <b>1,00,875.00</b>
1 2 3 4 K	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Cu.mtr	6,500.00 3,700.00 <b>Total Civil</b>	1.35 6 <b>&amp; Services</b>	8,775.00 22,200.00 <b>1,00,875.00</b> 9,68,563.49
1 2 3 4 K	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	No.	6,500.00 3,700.00 <b>Total Civil</b>	1.35 6 & Services Total (J+K) Fotal (L+M)	8,775.00 22,200.00 1,00,875.00 9,68,563.49 9,68,563.49
1 2 3 4 K L N	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	No.	6,500.00 3,700.00 Total Civil	1.35 6 & Services Total (J+K) Total (L+M) 18% of (N)	8,775.00 22,200.00 1,00,875.00 9,68,563.49 9,68,563.49 1,74,341.43
1 2 3 4 K L N O	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	No.	6,500.00 3,700.00  Total Civil  Sub 1  Total GST @  Total GST (@	1.35 6 & Services Total (J+K) Fotal (L+M) 18% of (N) 19 1% of (N)	8,775.00 22,200.00 1,00,875.00 9,68,563.49 9,68,563.49 1,74,341.43 9,685.63
1 2 3 4 K L N O O1	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.	6,500.00 3,700.00  Total Civil  Sub 1  Total GST @  Total GST (@	1.35 6 & Services Total (J+K) Fotal (L+M) 18% of (N) 19 1% of (N)	42,900.00 8,775.00 22,200.00 1,00,875.00 9,68,563.49 9,68,563.49 1,74,341.43 9,685.63 11,52,590.56
1 2 3 4 K L N O O1	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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.	6,500.00 3,700.00  Total Civil  Sub 1  Total GST @  Total GST (@	1.35 6 & Services Total (J+K) Fotal (L+M) 18% of (N) 19 1% of (N)	8,775.00 22,200.00 1,00,875.00 9,68,563.49 9,68,563.49 1,74,341.43 9,685.63

l	33kV Line Length using 241 SQ.MMAAA Conductor								
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount				
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	4	1,37,288.00				
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of Channel = (2x 9.56x1.7)	K.g.	76.00	130.016	9,881.22				
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)	K.g.	97.50	21.1456	2,061.70				
4	Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2	K.g.	76.00	23.40288	1,778.62				
	No's of Channel = (2x 9.56x0.306)	No.	104.00	4	416.00				
5	Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =								
6	(1x0.59x0.510)	KG	97.50	1.2036	117.35				
7	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	12	1,248.00				
8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	4.8144	469.40				
9	33KV pin insulator polymer	No.	624.00	12	7,488.00				
10	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	12	3,972.00				
11	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	24	21,960.00				
12	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	Set	332.00	8	2,656.00				
	H W fitting(B&S)90KN,4 Bolt	No.	650.00	24	15,600.00				
	Disc insulator (B&S)90 KN polymer Earthing of Support ( Coil Type )	No. EA	1,495.00 215.80	24 4	35,880.00 863.20				
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	1.048	102.18				
17	GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point)	K.g.	101.40	19.516	1,978.92				
18	Black Paint	Ltr	286.00	4	1,144.00				
19	Yellow Colour Paint for Background	Ltr	216.00	8	1,728.00				
Α_			Total Cost o	f materials	2,46,632.59				
В	Stock	, Storage	e & Insurance	i.e 3% of A	7,398.98				
С			Sub T	otal (A+B)	2,54,031.57				
D			Contigency	@ 3% of C	7,620.95				
Е		Т	ools & Plants	@ 2% of C	5,080.63				
F		Tra	nsportation @	7.5% of C	19,052.37				
G	Erection Charges @	5% on 1	rf/Breaker/W	PB/ H-Pole	7,070.33				
Н	Erection Charges @ 10% of C (except Trf/Breaker/WF				11,262.49				
H	Erection Charges @ 20% of F			· · ·					
J		- 1		n of (C to I)	3,04,118.34				
۴	Civil & Services			(5 .5 .,	0,04,110.04				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount				
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	2.2	14,300.00				
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr				,000.00				
		Cu.mtr	6,500.00	0.45	2,925.00				
K	, , ,	Cu.mtr	Total Civil	& Services	2,925.00 <b>17,225.00</b>				
L		Cu.mtr	Total Civil	& Services Total (J+K)	2,925.00 <b>17,225.00</b> 3,21,343.34				
L N			Total Civil	& Services Total (J+K) Fotal (L+M)	2,925.00 <b>17,225.00</b> 3,21,343.34 <b>3,21,343.34</b>				
L			Total Civil Sub 7 Total GST @	& Services Total (J+K) Total (L+M) 18% of (N)	2,925.00 <b>17,225.00</b>				
L N			Total Civil	& Services Total (J+K) Total (L+M) 18% of (N)	2,925.00 <b>17,225.00</b> 3,21,343.34 <b>3,21,343.34</b>				
<b>N</b>	Gross Total Material +Services (N+O+O1) for 33 KV C		Total Civil Sub Total GST @ Total GST @	& Services Total (J+K) Total (L+M) 18% of (N) 1% of (N)	2,925.00 <b>17,225.00</b> 3,21,343.34 <b>3,21,343.34</b> 57,841.80				
<b>L N</b> 0 01	Gross Total Material +Services (N+O+O1) for 33 KV C		Total Civil Sub Total GST @ Total GST @	& Services Total (J+K) Total (L+M) 18% of (N) 1% of (N)	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43				
<b>L N</b> 0 01			Total Civil Sub Total GST @ Total GST @	& Services Total (J+K) Total (L+M) 18% of (N) 1% of (N)	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43				
<b>L N</b> 0 01	Gross Total Material +Services (N+O+O1) for 33 KV C	ut Point	Total Civil Sub Total GST @ Total GST @	& Services Total (J+K) Total (L+M) 18% of (N) 1% of (N) gree Angle	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43				
L N O O1 P	Gross Total Material +Services (N+O+O1) for 33 KV Control Material +Services (N+O+O1) for 33 KV Control Material +Services (N+O+O1) for 33 KV Control Material No. of 33 KV Cut Point With 90 Degree And Description of Materials	cut Point gle Unit	Sub Total GST @ Total GST @ Total GST @ with 180 De	& Services Total (J+K) Total (L+M) 18% of (N) 1% of (N) The following th	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57				
L N O O1 P	Gross Total Material +Services (N+O+O1) for 33 KV C  No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree An  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	cut Point	Sub 1 Total GST @ Total GST @ Total GST @ with 180 De	& Services Total (J+K) Fotal (L+M) 18% of (N) 1% of (N) gree Angle 2  Total	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57				
L N O O1 P	Gross Total Material +Services (N+O+O1) for 33 KV Control Material +Services (N+O+O1) for 33 KV Control Material +Services (N+O+O1) for 33 KV Control Material No. of 33 KV Cut Point With 90 Degree And Description of Materials	cut Point gle Unit	Sub Total GST @ Total GST @ Total GST @ with 180 De	& Services Total (J+K) Total (L+M) 18% of (N) 1% of (N) The following th	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57 Total Amount 68,644.00				
L N O O1 P SI. No.	Gross Total Material +Services (N+O+O1) for 33 KV C  No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree An  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of	gle Unit	Sub 1 Total GST @ Total GST @ Total GST @ with 180 De  Unit Rate 34,322.00	& Services Total (J+K) Fotal (L+M) 18% of (N) 1% of (N) Tree Angle 2  Total Quantity 2	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57 Total Amount 68,644.00				
L N O O1 P SI. No.	Gross Total Material +Services (N+O+O1) for 33 KV Cu  No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree An  Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4	gle Unit No K.g.	Total Civil  Sub  Total GST @  Total GST @  with 180 De  Unit Rate  34,322.00  76.00	& Services Total (J+K) Total (L+M) 18% of (N) 19 1% of (N) gree Angle  2  Total Quantity 2  130.016	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57 Total Amount 68,644.00 9,881.22				
L   N   O   O1   P     Si.   No.   1   2   3	Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.	ut Point  gle  Unit  No  K.g.	Sub 1 Total GST @ Total GST @ with 180 De  Unit Rate 34,322.00 76.00 97.50	& Services Total (J+K) Total (L+M) 18% of (N) 1% of (N) 1% of (N) gree Angle  2  Total Quantity 2  130.016 21.1456	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57  Total Amount 68,644.00 9,881.22 2,061.70				
L   N   O   O1   P   SI.   No.   1   2   3   4	Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	gle Unit No K.g. K.g.	Total Civil  Sub 7 Total GST @ Total GST @ with 180 De  Unit Rate 34,322.00 76.00 97.50 76.00	& Services Total (J+K) Total (L+M) 18% of (N) 19 1% of (N) gree Angle  2  Total Quantity 2 130.016 21.1456 23.40288	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57  Total Amount 68,644.00 9,881.22 2,061.70 1,778.62				
L   N   O   O1   P     Si.   No.   1   2   3   4   5	Gross Total Material +Services (N+O+O1) for 33 KV Content with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support	gle Unit No K.g. K.g. K.g.	Total Civil  Sub 1  Total GST @  Total GST @  with 180 De  Unit Rate  34,322.00  76.00  97.50  76.00  104.00	& Services Total (J+K) Fotal (L+M) 18% of (N) 1% of (N) 1% of (N) Total Quantity 2 130.016 21.1456 23.40288 2	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57  Total Amount 68,644.00 9,881.22 2,061.70 1,778.62 208.00				
L   N   O   O1   P     SI.   No.   1   2   3   4   5   6	Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree An Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	gle Unit No K.g. K.g. K.g. Ko.	Total Civil  Sub 1  Total GST @  Total GST @  with 180 De  Unit Rate  34,322.00  76.00  97.50  104.00  97.50	& Services Total (J+K) Fotal (L+M) 18% of (N) 1% of (N) 1% of (N) gree Angle  2  Total Quantity 2 130.016 21.1456 23.40288 2 0.6018	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57  Total Amount 68,644.00 9,881.22 2,061.70 1,778.62 208.00 58.68				
L   N   O   O1   P     SI.   No.   1   2   3   4   5   6   7   8	Gross Total Material +Services (N+O+O1) for 33 KV Cut  No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WATERIALS FOR 33 KV Cut Point with 90 Degree Angle  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	gle Unit No K.g. K.g. No. KG	Total Civil Sub 1 Total GST @ Total GST @ with 180 De  Unit Rate 34,322.00 76.00 97.50 104.00 97.50 104.00 97.50	& Services Total (J+K) Total (L+M) 18% of (N) 1% of (N) 1% of (N) Total Quantity 2 130.016 21.1456 23.40288 2 0.6018 6 2.4072	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57   Total Amount 68,644.00 9,881.22 2,061.70 1,778.62 208.00 58.68 624.00 234.70				
L N O O O 1 P SI. No. 1 2 3 4 5 6 6 7 8 9	Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree An Description of Materials  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	ut Point  gle  Unit  No  K.g.  K.g.  K.g.  K.g.	Total Civil Sub 1 Total GST @ Total GST @ with 180 De  Unit Rate 34,322.00 76.00 97.50 76.00 104.00 97.50 104.00	& Services Total (J+K) Total (L+M) 18% of (N) 1% of (N) 1% of (N) Total Quantity 2 130.016 21.1456 23.40288 2 0.6018	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57  Total Amount 68,644.00 9,881.22 2,061.70 1,778.62 208.00 58.68 624.00				
L   N   O   O1   P   SI.   No.   1   2   3   4   5   6   7   8   9   10   11   11	Gross Total Material +Services (N+O+O1) for 33 KV CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	gle Unit No K.g. K.g. K.g. KG KG No. No. No.	Total Civil  Sub 1  Total GST @  Total GST @  with 180 De   Unit Rate  34,322.00  76.00  97.50  104.00  97.50  104.00  97.50  624.00  650.00  1,495.00	& Services Total (J+K) Fotal (L+M) 18% of (N) 1% of (N) 1% of (N) Total Quantity 2 130.016 21.1456 23.40288 2 0.6018 6 2.4072 8 12 12	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57  Total Amount 68,644.00 9,881.22 2,061.70 1,778.62 208.00 58.68 624.00 234.70 4,992.00 7,800.00 17,940.00				
SI. No. 1 2 3 4 5 6 7 8 9 110 111 12	Gross Total Material +Services (N+O+O1) for 33 KV CD No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer (4 No's each 90 Deg. Cut point)  H W fitting(B&S)90KN, 4 Bolt  Disc insulator (B&S)90KN, 4 Bolt  Disc insulator (B&S)90KN Polymer  Non Metallic Ties 33KV (For covered conductor)	Rut Point  Gle  Unit  No  K.g.  K.g.  K.g.  KG  KG  KG  No.  No.  No.	Total Civil  Sub 1  Total GST @  Total GST @  Total GST @  with 180 De   Unit Rate  34,322.00  76.00  97.50  104.00  97.50  104.00  97.50  624.00  650.00  1,495.00  331.00	& Services Total (J+K) Fotal (L+M) 18% of (N) 19 1% of (N) gree Angle  2  Total Quantity 2 130.016 21.1456 23.40288 2 0.6018 6 2.4072 8 12 12 8	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57  Total Amount 68,644.00 9,881.22 2,061.70 1,778.62 208.00 58.68 624.00 234.70 4,992.00 7,800.00 17,940.00 2,648.00				
SI. No. 1 2 3 4 5 6 7 8 9 110 111 12	Gross Total Material +Services (N+O+O1) for 33 KV CC  No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer (4 No's each 90 Deg. Cut point)  H W fitting(B&S)90KN,4 Bolt Disc insulator (B&S)90KN polymer  Non Metallic Ties 33KV (For covered conductor)	gle Unit No K.g. K.g. K.g. KG KG No. No. No.	Total Civil  Sub 1  Total GST @  Total GST @  with 180 De   Unit Rate  34,322.00  76.00  97.50  104.00  97.50  104.00  97.50  624.00  650.00  1,495.00	& Services Total (J+K) Fotal (L+M) 18% of (N) 1% of (N) 1% of (N) Total Quantity 2 130.016 21.1456 23.40288 2 0.6018 6 2.4072 8 12 12	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57  Total Amount 68,644.00 9,881.22 2,061.70 1,778.62 208.00 58.68 624.00 234.70 4,992.00 7,800.00 17,940.00				
SI. No. 1 2 3 4 5 6 7 8 9 110 111 12	Gross Total Material +Services (N+O+O1) for 33 KV CD No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer (4 No's each 90 Deg. Cut point)  H W fitting(B&S)90KN, 4 Bolt  Disc insulator (B&S)90KN, 4 Bolt  Disc insulator (B&S)90KN Polymer  Non Metallic Ties 33KV (For covered conductor)	Rut Point  Gle  Unit  No  K.g.  K.g.  K.g.  KG  KG  KG  No.  No.  No.	Total Civil  Sub 1  Total GST @  Total GST @  Total GST @  with 180 De   Unit Rate  34,322.00  76.00  97.50  104.00  97.50  104.00  97.50  624.00  650.00  1,495.00  331.00	& Services Total (J+K) Fotal (L+M) 18% of (N) 19 1% of (N) gree Angle  2  Total Quantity 2 130.016 21.1456 23.40288 2 0.6018 6 2.4072 8 12 12 8	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57  Total Amount 68,644.00 9,881.22 2,061.70 1,778.62 208.00 58.68 624.00 234.70 4,992.00 7,800.00 17,940.00 2,648.00				
L N O O1 P SI. No. 1 2 3 4 5 6 6 7 8 9 10 11 12 13	Gross Total Material +Services (N+O+O1) for 33 KV CC  No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)  WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)  Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)  Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)  Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)  33KV pin insulator polymer (4 No's each 90 Deg. Cut point)  H W fitting(B&S)90KN,4 Bolt Disc insulator (B&S)90KN polymer  Non Metallic Ties 33KV (For covered conductor)	Rut Point  Gle  Unit  No  K.g.  K.g.  K.g.  Ko.  KG  KG  No.  No.  No.  No.	Total Civil  Sub 1  Total GST @  Total GST @  with 180 De  Unit Rate  34,322.00  76.00  97.50  104.00  97.50  104.00  97.50  624.00  650.00  1,495.00  331.00  915.00	& Services Total (J+K) Total (L+M) 18% of (N) 1% of (N) 1% of (N) Total Quantity 2 130.016 21.1456 23.40288 2 0.6018 6 2.4072 8 12 12 8 12	2,925.00 17,225.00 3,21,343.34 3,21,343.34 57,841.80 3,213.43 3,82,398.57   Total Amount 68,644.00 9,881.22 2,061.70 1,778.62 208.00 58.68 624.00 234.70 4,992.00 7,800.00 17,940.00 2,648.00 10,980.00				

Annexure-12 33kV Line Length using 241 SQ.MM. -AAA Conductor 16 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing K.g. 97.50 0.524 51.09 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair) Pair 162.50 2 325.00 18 H.T. Stay set (Complete ) Set 1,365.00 2,730.00 H.T. Stay Insulator Type-C (2 No's.) No. 65.00 130.00 19 20 7/8 SWG Stay Wire 15kg /stay K.g. 97.50 30 2,925.00 21 GI Nut, Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point) 101.40 K.g 22.62 2,293.67 22 Black Paint 286 00 572 00 I tr 23 Yellow Colour Paint for Background Ltr 216.00 4 864.00 **Total Cost of materials** 1,39,501.27 Α Stock, Storage & Insurance i.e 3% of A 4,185.04 В С Sub Total (A+B) 1,43,686.30 D Contigency @ 3% of C 4,310.59 Ε Tools & Plants @ 2% of C 2,747.86 F Transportation @ 7.5% of C 10,776.47 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 3,535.17 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) н 6,668.97 Erection Charges @ 20% of PSC pole- Not to be used for 33kv ı Sum of (C to I) J 1,71,725.36 Civil & Services SI. Total Total Description of Materials Unit **Unit Rate** Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 1.10 7,150.00 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mt Cu.mtr 6,500.00 0.23 1,462.50 Fixing of 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, including excvation, supply of 0.5Cum No. 2,250.00 2 4,500.00 cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) **Total Civil & Services** Κ 13.112.50 Total (J+K) 1,84,837.86 L Ν Sub Total (L+M) 1,84,837.86 0 Total GST @ 18% of (N) 33,270.81 01 Total GST @ 1% of (N) 1,848.38 Ρ Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle 2,19,957.05 33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No.- TPCODL-HVD-0001) 3.2 MATERIALS FOR 33 KV Pin Points SI Total Total Description of Materials Unit **Unit Rate** No. Amount Quantity WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 23,33,896.00 68 1 33 KV V cross Arm (GI) 22Kg each Nο 2 340 00 68 1,59,120.00 Top bracket 100x50x6mm GI channel ( 2kg each) No. 195.00 68 13.260.00 4 Danger Plate, 1 no's 104.00 No. 68 7,072.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = KG 97 50 20.46 1.994.97 (1x0.59x0.510) 6 GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 204.00 21,216.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97.50 81.84 7,979.87 (4x0.59x0.510) No. 624.00 204 1,27,296.00 33KV pin insulator polymer Non Metallic Ties 33KV (For covered conductor) 331.00 204 67.524.00 No. No. 14,674.40 10 Earthing of Support (Coil Type) 215.80 68 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing K.g 17.82 1,737.06 12 Gl Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 101.40 9,998.04 98.60 K.q Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole 45,152.00 Set 332.00 241 sq.mm AAA conductor Mtr 386.00 9888.00 38,16,768.00 15 Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor EΑ 4,701.00 42,309.00 9 19.448.00 16 Black Paint Ltr 286.00 68.0 Yellow Colour Paint for Background 17 Ltr 216.00 136.0 29,376.00 **Total Cost of materials** 67,18,821.34 Α Stock, Storage & Insurance i.e 3% of A В 2,01,564.64 C Sub Total (A+B) 69,20,385.98 D Contigency @ 3% of C 2,07,611.58 Tools & Plants @ 2% of C Е 1,38,407.72 F Transportation @ 7.5% of C 5,19,028.95

G H Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole

Erection Charges @ 20% of PSC pole- Not to be used for 33kv

Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole)

1,20,195.64

4,51,647.31

#### Annexure-12 33kV Line Length using 241 SQ.MM. -AAA Conductor Sum of (C to I) J 83,57,277.18 Civil & Services Total Total Description of Materials Unit Unit Rate Quantity No. Amount 2,43,100.00 Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr 6,500.00 37.40 2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 7.65 49,725.00 **Total Civil & Services** 2,92,825.00 Total (J+K) 86,50,102.18 N Sub Total (L+M) 86,50,102.18 Total GST @ 18% of (N) 0 15,57,018.39 01 Total GST @ 1% of (N) 86,501.02 Р Gross Total Material +Services (N+O+O1) for 33 KV Pin Points 1,02,93,621.59 **Gross Total Summary** Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 11,52,590.56 Gross Total Material +Services (N+O+01) for 33 KV DP With Isolator 2 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle 3,82,398.57 3 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle 4 2,19,957.05 5 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points 1,02,93,621.59 Q **Gross Total Material +Services** 1,20,48,567.77 R Inspection Fee of Over Head Line (HT) - Rs. 1500 upto 1 KM 1,500.00 S Inspection Fee of Over Head Line (HT) - Rs. 750/ Additional Km 1,500.00 Т Inspection Fee of Drawing Checking and Approval 750.00 U Gross Total Material, Services and Inspection Fees (Q+R+S+T) 1,20,52,317.77

	BoQ and Estimate for 33 KV 4 Pole using WPB GI Pole 160x152 (13Mtr. Long, 30.44)	KG/Mtr.)	with Isolato	or and LA	
	No. of 33 KV 4-Pole with Isolator			2	
	MATERIALS FOR 33 KV 4-P With Isolator				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB(GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	8	2,74,576.00
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 8 no's channel required =(8x9.56x4.3)	KG	76.00	657.728	49,987.33
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 24 no's required = (24x2.36x0.280)	KG	97.50	31.7184	3,092.54
4	Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =( 2x7.14x4.3)/ Isolator	KG	76.00	184.212	14,000.11
5	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 8 no's channel required =( 8x7.14x4.3)	KG	76.00	491.232	37,333.63
6	50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 8 nos angle required = (8*4.5*4.927)	KG	76.00	354.744	26,960.54
7	Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 0.8 Mtr., 1 no channel required =( 1x7.14x0.8)/ Isolator	KG	76.00	17.136	1,302.34
8	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 no angle required = (1*4.5*0.388)/ Isolator	KG	76.00	5.238	398.09
9	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 no angle required = (1*4.5*0.340)/ Isolator	KG	76.00	4.59	348.84
10	Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel required =( 2x9.56x0.5)/ Isolator	KG	76.00	28.68	2,179.68
	Danger Plate, 2 no's.	No.	104.00	4	416.00
12	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	1.2036	117.35
13	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	6	8,190.00
14	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 5 mtr. For raising)	KG	97.50	125.08	12,195.30
15	GI barbed wire anticlimbing device 3 Kg. Per support, 4 no's qty. required =(4x3kg)	Kg	104.00	24	2,496.00
16	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 16 no's = (16x0.59x0.510)	KG	97.50	9.6288	938.81
17	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	9	1,21,095.00
_	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with PI(Polymer)	Set	66,000.00	3	1,98,000.00
	33KV pin insulator polymer	No.	624.00	12	7,488.00
	H W fitting(B&S)90KN,4 Bolt Disc insulator (B&S) 90 KN polymer	No. No.	650.00 1,495.00	36 36	23,400.00 53,820.00
22	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	48	71,760.00
	232 sq.mm AAA conductor	Mtr.	203.45		12,573.21
	GI Nut , Bolt & Washer of different sizes Black Paint	K.g. Ltr	101.40 286.00	90	9,126.00 572.00
	Yellow Colour Paint for Background	Ltr	216.00	4	864.00
Α			Total Cost o	f materials	9,33,230.77
В	Stock,	Storage	& Insurance	i.e 3% of A	27,996.92
С			Sub T	otal (A+B)	9,61,227.70
D			Contigency	_	28,836.83
E			ools & Plants		19,055.84
F			nsportation @		72,092.08
G	Erection Charges @				14,140.66
H	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol Erection Charges @ 20% of Ps		<u>,                                      </u>	· ′	66,997.87
J	Election charges & 20% of 1 C	50 poic		n of (C to I)	11,62,350.98
Ť	<u>Civil &amp; Services</u>				,0=,000.00
SI. No.	Description of Materials	Unit	Unit Rate	Total	Total
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	Quantity 4.4	28,600.00
2	Couping ratio 1:1.5:3 (300mm/s300mm/s2200mm) = 0.33cd.mti	Cu.mtr	6,500.00	0.9	5,850.00
Ē	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		2,200.00
3	including excavation, soil treatment with bentonide powder, calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat	No.	3,700.00	6	22,200.00
К	around pipe .		Total Civil	& Services	56,650.00
L				Total (J+K)	12,19,000.98
N				Γotal (L+M)	12,19,000.98
0		-	Total GST @	` ′	2,19,420.18
01			otal CESS @	` ,	12,190.01
P	Gross Total Material +Services (N+O+			` ,	14,50,611.17
<u> </u>	2.555 1544 1445 25.1155 (11.5)	,			, ,

		Annexure-13						
	T	P CENTRAL ODISHA DISTRIBUTION LIMITED						
Name of the Division :- TALCHER ELECTRIC DIVISION (TED)								
Name o	of the Sub-Division : -	Parjang						
Name o	of the Section : -	Parjang-1						
Name o	of the Work :-	33kV New Line from Chainpal Grid (33kV Proposed Parjang Feeder	-)					
Scope o	of work:-	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm and conductor-21Ckm. Construction of 33kV U/G Line with 3R, 1CX6301Ckm. Construction of 33kV 4 Pole structure with Isolator-1no. Cor 'PC+6' EHT Tower for river crossing (300mtr. span). Construction for Outdoor Bay at Parjang PSS.	Osqmm Cable- nstruction of 2 nos.					
Names	of Schemes: -	TPCODL CAPEX						
		ABSTRACT OF ESTIMATE						
SI. No.	Part	Description	Amount					
1	А	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC OH covered conductor- 21Ckm.	₹ 8,10,89,787.45					
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable-1Ckm.	₹ 1,40,53,343.76					
3	С	Construction of 33kV 4 Pole structure with Isolator- 1no.	₹ 9,78,548.67					
4	С	Construction of 2 nos. 'PC+6' EHT Tower for river crossing (300mtr. span).	₹ 1,17,58,371.00					
5	D	Construction for 1 no. of 33kV Outdoor Bay at Parjang PSS.	₹ 36,39,033.16					
		Total Amount	₹ 11,15,19,084.04					
		Total Amount (In Cr)	₹ 11.15					

	Annexure-13				
	33kV Line Length using 241 SQ.MMAAA Condu	ctor			
	No. of 33 KV DP required Without Isolator			34	
	(Ref. Drawing No TPCODL-HVD-0004)  MATERIALS FOR 33 KV DP Without Isolator	<u> </u>			
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	68	23,33,896.00
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =( 2x9.56x3.25)	KG	76.00	2112.76	1,60,569.76
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	134.8032	13,143.31
4	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's channel required =( 5x7.14x1.96)	KG	76.00	2379.048	1,80,807.65
5	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = (4*4.5*3.432)	KG	76.00	2100.384	1,59,629.18
6	Danger Plate, 2 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's =	No.	104.00	68	7,072.00
7	[2x0.59x0.510]	KG	97.50	20.4612	1,994.97
8	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	68	11,050.00
9	H.T. Stay set (Complete ) H.T. Stay Insulator Type-C (2 No's.)	Set No.	1,365.00 65.00	68 136	92,820.00 8.840.00
11	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	1020	99,450.00
12	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	34	46,410.00
13	50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 5x2.36	KG	97.50	401.2	39,117.00
14	GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's =	Kg	104.00	204	21,216.00
15	[8x0.59x0.510]	KG	97.50	81.8448	7,979.87
16	33KV pin insulator polymer	No.	624.00	102	63,648.00
17	Non Metallic Ties 33KV (For covered conductor)	No.	331.00 915.00	102 204	33,762.00
19	IPC for 241 sq.mm AAA conductor (For covered conductor) Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole	Set	332.00	136	1,86,660.00 45,152.00
20	H W fitting(B&S)90KN,4 Bolt	No.	650.00	204	1,32,600.00
21	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	204	3,04,980.00
22	GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator)	K.g.	101.40		42,271.02
23 24	Black Paint Yellow Colour Paint for Background	Ltr Ltr	286.00 216.00	34 68	9,724.00 14,688.00
Α	*		Total Cost	of materials	40,17,480.76
В	Sto	ock, Stor	age & Insuranc	e i.e 3% of A	1,20,524.42
С			Sub	Total (A+B)	41,38,005.19
D				y @ 3% of C	1,24,140.16
Е			Tools & Plant		77,433.56
F			Transportation		3,10,350.39
G	Erection Charges				1,20,195.64
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H				1,46,776.52
H	Erection Charges @ 20% o	of PSC p			40.46.004.46
J	Civil & Services		30	ım of (C to I)	49,16,901.46
SI.				Total	Total
No.	Description of Materials	Unit	Unit Rate	Quantity	Amount
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	68	1,53,000.00
3	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr Cu.mtr	6,500.00 6,500.00	37.4 7.65	2,43,100.00 49,725.00
4	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	No.	3,700.00	34	1,25,800.00
<u> </u>	around pipe .		Tatal Of	I O Camelan	F 74 00F CC
K L			lotal Civi	I & Services Total (J+K)	<b>5,71,625.00</b> 54,88,526.46
⊢ N			Quh	Total (J+K)	
0				② 18% of (N)	<b>54,88,526.46</b> 9,87,934.76
01				@ 1% of (N)	54,885.26
P	Gross Total Material +Services (N+O+	+01) for		• • •	65,31,346.48
Ė	21033 Total material - Scrittes (ITTO				
	No. of 33 KV DP required With Isolator (Ref. Drawing No TPCODL-TCE-0001)			8	
	(Ref. Drawing No TPCODL-TCE-0001)  MATERIALS FOR 33 KV DP With Isolator				

	Annexure-13				
	33kV Line Length using 241 SQ.MMAAA Condu	ctor			
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	16	5,49,152.00
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 2x9.56x4.3)	KG	76.00	657.728	49,987.33
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	31.7184	3,092.54
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	76.00	245.616	18,666.82
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	76.00	491.232	37,333.63
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	76.00	982.464	74,667.26
7	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	76.00	709.488	53,921.09
8	1.55 4.527/ 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	76.00	45.696	3,472.90
9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	76.00	13.968	1,061.57
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required =	KG	76.00	12.24	930.24
11	(1*4.5*0.340) Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's	KG	76.00	76.48	5,812.48
	channel required =( 2x9.56x0.5)  Danger Plate, 2 no's.	No.	104.00	16	1,664.00
13	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	4.8144	469.40
14	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	16	2,600.00
	H.T. Stay set (Complete )	Set	1,365.00	16	21,840.00
	H.T. Stay Insulator Type-C (2 No's.) 7/8 SWG Stay Wire 15kg /stay	No.	65.00 97.50	32 240	2,080.00 23,400.00
	Gi Pipe Earthing 40mm. 3 Mtr. Long	K.g. No.	1,365.00	16	21,840.00
10	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	97.50	453.12	44,179.20
	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	48	4,992.00
21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50	19.2576	1,877.62
22	Lightning Arrester(30KV,10KA) (Station Class,class-2)  33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with	EA	13,455.00	24	3,22,920.00
23	PI(Polymer)	Set	66,000.00	8	5,28,000.00
	33KV pin insulator polymer	No.	624.00	24	14,976.00
	Non Metallic Ties 33KV (For covered conductor)  IPC for 241 sg.mm AAA conductor (For covered conductor)	No.	331.00	24	7,944.00 43,920.00
26 27	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole	No. Set	915.00 332.00	48 32	10,624.00
	) H W fitting(B&S)90KN,4 Bolt	No.	650.00	48	31,200.00
	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	48	71,760.00
	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	101.40	177.2	17,968.08
	Black Paint	Ltr	286.00	8	2,288.00
32	Yellow Colour Paint for Background	Ltr	216.00	16	3,456.00
A	Ct.	ook Stor		of materials	19,78,096.16
В <b>С</b>	Si	JCK, SIOI	age & Insuranc	Total (A+B)	59,342.88
D				y @ 3% of C	<b>20,37,439.04</b> 61,123.17
E			Tools & Plant		39,270.52
F			Transportation		1,52,807.93
G	Erection Charges				28,281.33
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H				1,39,789.97
	Erection Charges @ 10% of C (except 11/b) each 11/b) Erection Charges @ 20% of				1,39,709.97
J				ım of (C to I)	24,58,711.96
<u> </u>	<u>Civil &amp; Services</u>				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	16	36,000.00
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	8.8	57,200.00
3	Coupling ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	1.8	11,700.00
4	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.	3,700.00	16	59,200.00
к			Total Civi	I & Services	1,64,100.00
L				Total (J+K)	26,22,811.96
				-	

	Annexure-13							
	33kV Line Length using 241 SQ.MMAAA Condu	ctor						
0			Total GST (	@ 18% of (N)	4,72,106.15			
01			Total GST	@ 1% of (N)	26,228.12			
Р	Gross Total Material +Services (N	+O+01)	for 33 KV DP \	Vith Isolator	31,21,146.23			
	No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No TPCODL-HVD-0002)			30				
	MATERIALS FOR 33 KV Cut Point with 180 Degree	<u>Angle</u>						
SI.	Description of Materials  Unit Unit Rate							
No.	Boothplion of materials	Oint.	ome reace	Quantity	Amount			
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of	No	34,322.00	30	10,29,660.00			
2	Channel = (2x 9.56x1.7)	K.g.	76.00	975.12	74,109.12			
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)	K.g.	97.50	158.592	15,462.72			
4	Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 No's of Channel = (2x 9.56x0.306)	K.g.	76.00	175.5216	13,339.64			
5	Danger Plate, 1 no's.	No.	104.00	30	3,120.00			
6	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	KG	97.50	9.027	880.13			
7	(1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	90	9,360.00			
8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	KG	97.50	36.108	3,520.53			
9	(4x0.59x0.510) 33KV pin insulator polymer	No.	624.00	90	56,160.00			
10	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	90	29,790.00			
11	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	180	1,64,700.00			
12	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole	Set	332.00	60	19,920.00			
13	) H W fitting(B&S)90KN,4 Bolt	No.	650.00	180	1,17,000.00			
14	Disc insulator (B&S)90 KN polymer	No.	1,495.00	180	2,69,100.00			
15		EA	215.80	30	6,474.00			
16 17	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point)	K.g. K.g.	97.50 101.40	7.86 146.37	766.35 14,841.92			
18	Black Paint	Ltr	286.00	30	8,580.00			
19	Yellow Colour Paint for Background	Ltr	216.00	60	12,960.00			
<u> </u>		1 01		of materials	18,49,744.41			
В	St	ock, Stor	age & Insuranc		55,492.33			
C				Total (A+B)	19,05,236.74			
D				cy @ 3% of C	57,157.10			
E F			Tools & Plant Transportation		38,104.73 1,42,892.76			
G	Erection Charges		•					
Н	Erection Charges @ 10% of C (except Trf/Breaker/				53,027.49			
H	Erection Charges @ 10% of C (except 11% bleaker)			' '	84,468.69			
<del>                                     </del>	Licoton onarges & 2070 c	1 1 00 p		ım of (C to I)	22,80,887.52			
⊢∸	Civil & Services			1111 01 (0 10 1)	22,00,007.32			
SI.	Description of Materials	Unit	Unit Rate	Total	Total			
No.	Description of Materials	Onit	Omit Nate	Quantity	Amount			
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	16.5	1,07,250.00			
2 <b>K</b>	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	3.375 I & Services	21,937.50 <b>1,29,187.50</b>			
H			TOTAL CIVI	Total (J+K)	24,10,075.02			
N			Sub	Total (L+M)	24,10,075.02			
0				@ 18% of (N)	4,33,813.50			
01			Total GST	@ 1% of (N)	24,100.75			
Р	Gross Total Material +Services (N+O+O1) for 33 K	V Cut Po	int with 180 D	egree Angle	28,67,989.28			
	No. of 22 KV Cut Point with 00 Dograp Angle							
	No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No TPCODL-HVD-0003)			12				
	MATERIALS FOR 33 KV Cut Point with 90 Degree A	Angle						
SI.	Description of Materials	Unit	Unit Rate	Total	Total			
No.	Description of Materials	Jiill	Onn Nate	Quantity	Amount			
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	12	4,11,864.00			
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)	K.g.	76.00	780.096	59,287.30			
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)	K.g.	97.50	126.8736	12,370.18			
4	Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4	K.g.	76.00	140.41728	10,671.71			
5	No's of Channel = (4x 9.56x0.306)  Danger Plate, 1 no's.	No.	104.00	12	1,248.00			
6	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	KG	97.50	3.6108	352.05			
	(1x0.59x0.510)							
7	GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's =	Kg	104.00	36	3,744.00			
8	(4x0.59x0.510)	KG	97.50	14.4432	1,408.21			

	Annexure-13				
	33kV Line Length using 241 SQ.MMAAA Condu	ctor			
9	33KV pin insulator polymer (4 No's each 90 Deg. Cut point)	No.	624.00	48	29,952.00
10	H W fitting(B&S)90KN,4 Bolt Disc insulator (B&S)90 KN polymer	No. No.	650.00 1,495.00	72 72	46,800.00 1,07,640.00
12	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	48	15,888.00
13	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	72	65,880.00
14	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	Set	332.00	24	7,968.00
15	Earthing of Support (Coil Type)	No.	215.80	12	2,589.60
16	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	3.144	306.54
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	12	1,950.00
18 19	H.T. Stay set (Complete ) H.T. Stay Insulator Type-C (2 No's.)	Set No.	1,365.00 65.00	12 12	16,380.00 780.00
20	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	180	17,550.00
21	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point)	K.g.	101.40	135.72	13,762.01
22	Black Paint  Valley Colour Baint for Background	Ltr	286.00	12	3,432.00
23	Yellow Colour Paint for Background	Ltr	216.00	of materials	5,184.00 <b>8,37,007.60</b>
B	Store	k Stora	ge & Insuranc		25.110.23
	Stoc	k, Stora			-, -
C				Total (A+B)	8,62,117.83
<u> </u>				cy @ 3% of C	25,863.53
E			Tools & Plant		16,487.16
F	_		Transportation	$\check{}$	64,658.84
G	Erection Charges				21,211.00
Н	Erection Charges @ 10% of C (except Trf/Breaker)	WPB/ H	-Pole/HT stay s	et/PSC pole)	40,013.81
	Erection Charges @ 20% of	of PSC p	ole- Not to be ι	used for 33kv	-
J			Sı	ım of (C to I)	10,30,352.17
<u> </u>	<u>Civil &amp; Services</u>		ı	I I	
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	6.60	42,900.00
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	1.35	8,775.00
3	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	12	27,000.00
к			Total Civi	il & Services	78,675.00
L				Total (J+K)	11,09,027.17
N			Sub	Total (L+M)	11,09,027.17
0				@ 18% of (N)	1,99,624.89
				@ 1% of (N)	
01	0 7 (111 (111 (111 (111 (111 (111 (11				11,090.27
Р	Gross Total Material +Services (N+O+O1) for 33 I	V Cut F	OINT WITH 90 D	egree Angle	13,19,742.33
	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)			21	
	MATERIALS FOR 33 KV Pin Points				
SI.	Description of Materials	Unit	Unit Rate	Total	Total
<b>No.</b>	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	Quantity 441	Amount 1,51,36,002.00
2	33 KV V cross Arm (GI) 22Kg each	No.	2,340.00	441	10,31,940.00
3	Top bracket 100x50x6mm GI channel ( 2kg each)	No.	195.00	441	85,995.00
4	Danger Plate, 1 no's.  Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's =	No.	104.00	441	45,864.00
5	(1x0.59x0.510)	KG	97.50	132.70	12,937.95
6	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	1323.00	1,37,592.00
7	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	530.79	51,751.79
8	33KV pin insulator polymer	No.	624.00	1323	8,25,552.00
9	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	1323	4,37,913.00
10		No.	215.80	441	95,167.80
11 12	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	K.g. K.g.	97.50 101.40	115.54 639.45	11,265.35 64,840.23
13	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	Set	332.00	882	2,92,824.00
14	241 sq.mm AAA conductor	Mtr.	386.00	64890.00	2,50,47,540.00
15	Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	EA	4,701.00	63	2,96,163.00
16	Black Paint	Ltr	286.00	441.0	1,26,126.00
17	Yellow Colour Paint for Background	Ltr	216.00	882.0	1,90,512.00
Α				of materials	4,38,89,986.11
В	St	ock, Stor	age & Insuranc	e i.e 3% of A	13,16,699.58
			0.1	T-4-1 (A . D)	
С			Sub	Total (A+B)	4,52,06,685.70

	Annexure-13						
33kV Line Length using 241 SQ.MMAAA Conductor							
D Contigency @ 3% of C							
Е			Tools & Plant	s @ 2% of C	9,04,133.71		
F			Transportation	@ 7.5% of C	33,90,501.43		
G	Erection Charges	6 @ 5% c	on Trf/Breaker/V	VPB/ H-Pole	7,79,504.10		
Н	Erection Charges @ 10% of C (except Trf/Breaker/	WPB/ H	-Pole/HT stay s	et/PSC pole)	29,61,660.36		
ı	Erection Charges @ 20% o	of PSC p	oole- Not to be u	sed for 33kv	-		
J			Su	m of (C to I)	5,45,98,685.88		
	<u>Civil &amp; Services</u>						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	242.55	15,76,575.00		
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	49.61	3,22,481.25 <b>18,99,056.25</b>		
K Total Civil & Services							
L Total (J+K)							
N			Sub	Total (L+M)	5,64,97,742.13		
0			Total GST (	② 18% of (N)	1,01,69,593.58		
01			Total GST	@ 1% of (N)	5,64,977.42		
Р	Gross Total Material +Service	ces (N+C	0+O1) for 33 K	V Pin Points	6,72,32,313.13		
	Gross Total Summary						
1	Gross Total Material +Services (N+0	O+O1) fo	or 33 KV DP Wi	thout Isolator	65,31,346.48		
2	Gross Total Material +Services (	N+O+01	) for 33 KV DP	With Isolator	31,21,146.23		
3 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle					28,67,989.28		
4 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle					13,19,742.33		
5 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points					6,72,32,313.13		
Q			s Total Materi		8,10,72,537.45		
R	Inspection Fee of Over F		. ,		1,500.00		
S	Inspection Fee of Over Hea	<u> </u>			15,000.00		
Т	· ·		wing Checking a		750.00		
U	Gross Total Material, Service	es and Ir	spection Fees	(Q+R+S+T)	8,10,89,787.45		

#### **Annexure-13** BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU **Supply Portion** SI. Rate Amount **Description of items** Unit Quantity No. (in Rs.) (in Rs.) Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core 1 spare cable) with accessories Length of 33kV 1C, 630sqmm cable (open trench) Mtr. 700 а Length of 33kV 1C, 630sqmm cable (HDD) Mtr. 300 b Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and 1.1 Mtr. 3000 1,495.47 44,86,410.00 SC rating of Armour in kA-20kA) Supply of Straight throU/Gh jointing kits Heat Shrinkable type 1.2 suitable for 33kV, 1Core, 630sgmm, aluminium U/G Cable 6 Set 11,900.00 71,400.00 kits for 1Core Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1.3 Set 6 6,350.00 38,100.00 Supply of Indoor termination kits Heat Shrinkable type 1.4 suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for Set 6,100.00 Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G 1.5 Mtr. 2052.00 357.60 7,33,795.20 cable Supply of 33kV RMU 2 No. of 33kV 3Way RMU (LLV+M) nos. а No. of 33kV 4Way RMU (LLVV+M) b nos. No. of 33kV 3Way RMU (LLV) nos. C No. of 33kV 4Way RMU (LLVV) d nos. No. of 33kV 3Way RMU (LLL) е nos. No. of 33kV 4Way RMU (LLLL) f nos. Supply of RMU 33KV 3WAY 630A WITH METERING UNIT 2.1 0 Nos. 22.93.723.00 (LLV+M) (CT Ratio to be mentioned) Supply of RMU 33KV 4WAY 630A WITH METERING UNIT 2.2 0 31,74,874.00 Nos. (LLVV+M) (CT Ratio to be mentioned) 2.3 0 Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV) Nos. 17,87,101.00 2.4 Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV) Nos. 0 23,35,264.00 Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL) 0 14.46.210.00 2.5 Nos. Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS) 2.6 0 Nos. 19,59,421.00 (LLLL) 3 **Earthing** Earthing Conductor: **50X6 mm** (2.4kg./mtr.) **GI Flat** for 3.1 0.00 97.50 kg equipment, structure etc.) 0 3.2 Pipe Earthing 40mm. GI Pipe Nos. 1,365.00 4 FRTU for RMU SCADA Automation No. of FRTU 0 а nos. 4.1 Pre-Wired FRTU Panel with FRTU 0 1,21,744.00 No. 4.2 Managed Layer2 Ethernet Switch (FRTU Panel) No. 0 1,00,000.00

4.3

**Networking Accessories** 

0

72.00

No.

	Annexure-13									
	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along wit	h 33kV RMU						
4.4	CMR with Mounting Base for Digital Inputs	Nos.	0	650.00	-					
4.5	Interposing Relay for Digital Output	Nos.	0	467.94	-					
4.6	Battery Charger	Nos.	0	15,385.00	-					
4.7	Battery	Nos.	0	8,333.00	-					
4.8	4G Modem cum Router	Nos.	0	18,500.00	-					
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	0	204.87	-					
4.10	Instrumentation Cable	Mtr.	0	305.58	-					
4.11	7 C X 1.5 mm2, Armored for Control Output Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	0	275.23	-					
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	0	165.25	-					
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	0	150.00	-					
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	0.0	148.43	-					
4.15	Armored CAT6 SFTP Cable	Mtr.	0	45.87	-					
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	0	89.45	-					
4.17	Multi Function Meter	Nos.	0	18,651.00	-					
	Sub Total (Supply Portion) (in	Rs.)			53,29,705.20					
I		Erection Portion								
	Erection Portion	on								
SI.	Erection Portion Description of items	on Unit	Quantity	Rate	Amount					
SI. No.	Ι		Quantity	Rate (in Rs.)	Amount (in Rs.)					
No.	Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.		Quantity 2100							
No. 1	Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil	Unit		(in Rs.)	(in Rs.)					
No. 1 1.1	Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG	Unit  Mtr.	2100	(in Rs.) 94.50	(in Rs.) 1,98,450.00					
1.1 1.2	Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type	Mtr.	2100	94.50 2,400.00	1,98,450.00 14,400.00					
1.1 1.2 1.3	Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr. Set	2100 6 6	94.50 2,400.00 2,081.70	(in Rs.) 1,98,450.00 14,400.00					
1.1 1.2 1.3	Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of	Mtr. Set Set	2100 6 6	94.50 2,400.00 2,081.70 2,081.70	(in Rs.)  1,98,450.00  14,400.00  12,490.20					
1.1 1.2 1.3 1.4	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open trench.  Erection, Commissioning, Wiring and Testing of 33kV	Mtr. Set Set Mtr.	2100 6 6 0	94.50 2,400.00 2,081.70 2,081.70 2,300.00	(in Rs.)  1,98,450.00  14,400.00  12,490.20  -  20,70,000.00					
1.1 1.2 1.3 1.4 1.5	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open trench.  Erection, Commissioning, Wiring and Testing of 33kV RMU  Erection of RMU 33KV 3WAY 630A WITH METERING UNIT	Mtr. Set Set Mtr.	2100 6 6 0	94.50 2,400.00 2,081.70 2,081.70 2,300.00	(in Rs.)  1,98,450.00  14,400.00  12,490.20  -  20,70,000.00					
1.1 1.2 1.3 1.4 1.5 1.6 2	Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open trench.  Erection, Commissioning, Wiring and Testing of 33kV RMU	Mtr. Set Set Mtr. Mtr.	2100 6 6 0 900 2052.00	94.50 2,400.00 2,081.70 2,300.00 300.00	(in Rs.)  1,98,450.00  14,400.00  12,490.20  -  20,70,000.00					

	Annexure-13				
	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along with	n 33kV RMU	
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	8,000.00	-
2.5	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	8,000.00	-
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	8,000.00	-
3	FRTU and OFC for RMU SCADA Automation Services of FRTU Panel, Communication and Other				
3.1	Supplied System	EA	0.0	16,000.00	-
	Sub Total (Erection Portion) (ir	Rs.)			29,10,940.20
Civil P	ortion				
SI.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench				
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)- Route Length	Mtr	684		
1.1.a	Earth work excavation of <b>soil</b>	Cum	574.56	700.00	4,02,192.00
1.1.b	Earth work excavation of hard rock	Cum	246.24	1,720.00	4,23,532.80
1.2	Back filling with excavated soil outside and above the trench	Cum	820.8	202.00	1,65,801.60
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)  Civil works for Prefabricated RCC foundation with	Mtr	342	2,643.67	9,04,135.36
2	supply of all materials				
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	0	23,145.30	-
4	Supply of GI Fencing with Gate around each RMU  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.	sqmtr Set	0	3,600.00	-
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	48	1,463.40	70,243.20
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	33	1,012.00	33,396.00
	Sub Total (Civil Portion) (in F	Rs.)	· · · · · · · · · · · · · · · · · · ·		19,99,300.96
Α	Sub Total (Supply Portion)				53,29,705.20
В	Stock, Storage & Insurance @ 3 % of A				1,59,891.16
С	Sub Total (A+B)				54,89,596.36
D	Contingency @ 3 % of C				1,64,687.89
Е	Tools & Plants Charges @ 2% of C (considered for earthing it	ems)			-
F	Transportation @ 7.5% of C				4,11,719.73
G	Erection Charges @ 10% of earthing items				-
Н	Total (C+D+E+F+G)				60,66,003.97

	Annexure-13				
	BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU				
I	Sub Total (Erection Portion + Civil Portion)	49,10,241.16			
J	Total Cost (H+I)	1,09,76,245.13			
L	Total Estimated Capital Cost i.e. (J+K)	1,09,76,245.13			
М	GST @ 18% of L	19,75,724.12			
M1	CESS @ 1% of L	10,97,624.51			
N	Grand Total (L+M)	1,40,49,593.76			
0	Inspection Fee of UG Line (HT) - Rs. 3000/ km.	3,000.00			
Р	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km				
Q	Inspection Fee of RMU - Rs. 1500/ RMU	-			
R	Inspection Fee of Drawing Checking and Approval	750.00			
S	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)	1,40,53,343.76			

#### Annexure-13 BoQ and Estimate for 33 KV 4 Pole using WPB GI Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) with Isolator and LA No. of 33 KV 4-Pole with Isolator MATERIALS FOR 33 KV 4-P With Isolator Total Total Description of Materials Unit Unit Rate Quantity Amount WPB(GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 1,37,288.00 Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 8 no's channel required =( 24,993.66 2 KG 76.00 328.864 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 24 no's required = (24x2.36x0.280) KG 97 50 15.8592 1,546.27 Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's KG 76.00 184.212 14,000.11 channel required =( 2x7.14x4.3)/ Isolator Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 8 no's KG 76.00 245.616 18,666.82 channel required =( 8x7.14x4.3) 50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 8 nos angle required = 6 KG 76.00 177.372 13,480.27 (8\*4.5\*4.927) Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length KG 76.00 17.136 1,302.34 0.8 Mtr., 1 no channel required =( 1x7.14x0.8)/ Isolator Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 no angle required = 8 KG 76.00 5.238 398.09 (1\*4.5\*0.388)/ Isolator Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 no angle required = KG 76.00 4.59 348.84 (1\*4.5\*0.340)/ Isolator Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's 76.00 28.68 2,179.68 10 KG channel required =( 2x9.56x0.5)/ Isolator 11 Danger Plate, 2 no's. No. 104.00 2 208.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = 12 KG 97.50 0.6018 58.68 (2x0.59x0.510) 13 Gi Pipe Earthing 40mm. 3 Mtr. Long No. 1,365.00 3 4,095.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh KG 97.50 62.54 6,097.65 formation and 5 mtr. For raising) GI barbed wire anticlimbing device 3 Kg. Per support, 4 no's qty. required =(4x3kg) Kg 104.00 12 1,248.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 16 no's = KG 4 8144 469 40 16 97.50 (16x0.59x0.510) Lightning Arrester(30KV,10KA) (Station Class,class-2) EΑ 13,455.00 1,21,095.00 9 33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with 66 000 00 3 1,98,000.00 18 Set PI(Polymer) 19 33KV pin insulator polymer No. 624.00 6 3,744.00 20 H W fitting(B&S)90KN,4 Bolt 650.00 11,700.00 No. 18 Disc insulator (B&S) 90 KN polymer 1,495.00 18 26,910.00 No. 22 PG Clamp for 232 sq.mm AAA conductor NO. 1.495.00 24 35 880 00 232 sq.mm AAA conductor Mtr. 203.45 30.9 6,286.61 GI Nut , Bolt & Washer of different sizes K.g. 101.40 45 4,563.00 25 Black Paint Ltr 286.00 1 286.00 26 Yellow Colour Paint for Background 216.00 432.00 Ltr Total Cost of materials 6,35,277.41 Α В Stock, Storage & Insurance i.e 3% of A 19,058.32 Sub Total (A+B) С 6,54,335.74 Contigency @ 3% of C D 19,630.07 Ε Tools & Plants @ 2% of C 13,002.36 F Transportation @ 7.5% of C 49,075.18 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 7,070.33 Н Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/GI Pole/PSC pole) 50,871.12 Erection Charges @ 20% of PSC pole- Not to be used for 33kv 1 J Sum of (C to I) 7,93,984.80 Civil & Services Total Total SI. Unit Unit Rate Description of Materials No. Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr 6,500.00 Cu.mtr 2.2 14,300.00 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 0.45 2,925.00 Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth No. 3,700.00 11,100.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe **Total Civil & Services** Κ 28,325.00 8,22,309.80 Total (J+K) L N Sub Total (L+M) 8,22,309.80 0 Total GST @ 18% of (N) 1,48,015.76 Total CESS @ 1% of (O1) 01 8,223.10 Gross Total Material +Services (N+O+O1) for 33 KV 4-P With Isolator Р 9,78,548.67

#### Annexure-13 Construction of 2 nos. 'PC+6' EHT Tower for River crossing (Span Length- 300 Mtr.) No. of Span 1 Supply of Material for Construction of 'PC+6' EHT Tower **Total** SI.No. Description Unit **Unit Rate Total Amount** Quantity Cost of G.I PC +6 TYPE Tower super structure (Main + Extention +Stub + Template) PC Tower (5.346 MT per Tower) MT 90,000.00 10.692 9,62,280.00 i) +6 Mtr Extention (2.246 MT per Tower) ii) MT 90.000.00 4.492 4.04.280.00 Stub & Cleats (0.610 MT per Tower) ΜT 90,001.00 1.220 1,09,801.22 iv) Template (0.888 MT per Tower) MT 8,696.01 1.776 15,444.11 2 **Nut Bolts** i) PC Tower (0.336 MT per Tower) MT 1,19,078.23 0.672 80,020.57 +6 Mtr Extention (0.111 MT per Tower) МТ 1,19,078.23 0.222 26,435.37 ii) **Conductor and Accessories** 3 232 Sq.mm. Conductor (AAAC) 2,03,450.00 3,77,196.30 i Km 1.854 ii Earth wire 7/1.5, 300 meter + Tower earthing $(50 \times 4) = 500$ Mtr. Km 43,317.74 0.500 21,658.87 iii Double tension Hardware Fittings Set 4,498.00 24 1,07,952.00 Disc insulator (B&S)120 KN polymer Nos 1,872.00 48 89.856.00 İν ٧ Earth wire tension fittings Set 675.31 4 2,701.23 Vibration damper for earth wire 4 νi Nos 539.78 2,159.11 Vibration damper for coductor Nos 566.65 24 13,599.59 vii Copper flexible bond Nos 490.71 2 981.41 viii Phase Plate (R,Y,B) Set 245.35 12 2,944.24 ix Tower Number Plate 243.02 2 486.03 Nos Х 269.89 Circuit Plate 4 1,079.56 Nos χi χij 40 mm Dia. 3Mtr. long G.I Earthing device Nos 1,365.00 4 5,460.00 GI Flat 50 x 6 mm 97.50 200 19,500.00 xiii kg Danger Board 104.00 4 416.00 χiv Nos Bird Guard Nos 429.95 24 10,318.87 ΧV Anticlimbing Device 104.00 211 21,964.80 kg xvi

Loop Connector 490.71 12 5,888.48 xvii Nos **Total Cost of materials** 22.82.423.77 Α Stock, Storage & Insurance @ 3 % of A В 68,472.71 С Sub Total (A+B) 23,50,896.48 D Contingency @ 3 % of C 70,526.89 Ε Tools & Plants Charges @ 2% (considered for earthing items) 401.70 F Transportation @ 7.5% of C 1,76,317.24 G Erection Charges @ 10% of earthing items 2.008.50 Н Total (C+D+E+F+G) 26,00,150.81

Erection Portion						
SI.No.	<b>Description</b> Unit	Rate	Total Quantity	Amount		
1	Cost of G.I PC +6 TYPE Tower super structure (Main + Extention					
	+Stub + Template)					
i)	PC Tower (5.346 MT per Tower)	MT	11,000.00	10.692	1,17,612.00	
ii)	+6 Mtr Extention (2.246 MT per Tower)	MT	11,000.00	4.492	49,412.00	
iii)	Stub & Cleats (0.610 MT per Tower)	MT	11,000.00	1.220	13,420.00	
iv)	Template (0.888 MT per Tower)	MT	11,000.00	1.776	19,536.00	
2	Nut Bolts				ı	
i)	PC Tower (0.336 MT per Tower)	MT	11,000.00	0.672	7,392.00	
ii)	+6 Mtr Extention (0.111 MT per Tower)	MT	11,000.00	0.222	2,442.00	
3	Conductor and Accessories				-	
i	232 Sq.mm. Conductor (AAAC)	Km	52,155.14	1.854	96,695.64	
ii	Earth wire 7/1.5, 300 meter + Tower earthing $(50 \times 4) = 500$ Mtr.	Km	13,038.79	0.500	6,519.39	

	Annexure-13				
Consti	ruction of 2 nos. 'PC+6' EHT Tower for River crossing (Span I	Length	- 300 Mtr.)		
iii	Double tension Hardware Fittings	Set	325.97	24	7,823.27
iv	Disc insulator (B&S)120 KN polymer	Nos	325.97	48	15,646.54
٧	Earth wire tension fittings	Set	325.97	4	1,303.88
vi	Vibration damper for earth wire	Nos	325.97	4	1,303.88
vii	Vibration damper for coductor	Nos	325.97	24	7,823.27
viii	Copper flexible bond	Nos	325.97	2	651.94
ix	Phase Plate (R,Y,B)	Set	325.97	12	3,911.64
Х	Tower Number Plate	Nos	195.58	2	391.16
xi	Circuit Plate	Nos	325.97	4	1,303.88
xii	Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth resistance, including No. Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe.		4	14,800.00	
xiii	Danger Board	Nos	52.00	4	208.00
xiv	Bird Guard	Nos	65.19	24	1,564.65
ΧV	Anticlimbing Device	kg	19.56	211	4,130.69
xvi	Loop Connector	Nos	325.97	12	3,911.64
I	Total Cost of Erection				3,77,803.47
	Civil Portion				
SI.No.	Description	Unit	Rate	Total Quantity	Amount
1	Excavation in all type 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 soil at suitable place after back filling), & if required for filling the foundation, borrowed earth/murrum/sand shall be brought for filling and compaction, including supply of sand, all T&P, labour as required.				
1.1	Soft and loose soil	СИМ	176.86	100	17,686.00
2	Boring for under reemed cast in situ piling with bentonite showing for stabilisation of bore:- Pile diameter (1000 MM) and approximate length of the bore is 25 Mtrs BY DMC method as per approved drawing.	Mtr. length	5,836.14	200	11,67,228.00
3	Supply of all materials like cement, steel, all coarse aggregates, fine aggregates and making pile foundations of the required Tower foundation, including supply of all materials,labours and T&P as per specification in the RCC:1:1:2 (Grade M-25.) (with cost of cement and without steel)	Cum	8,015.00	157	12,58,675.60
4	Steel of different size(as per design) with cutting, bending, binding in position of M.S.Rod for reinforcement of foundation concret of pile of towers including supply of binding wire. (With supply of steel rod (TATA/RINL/SAIL make))	MT	61,968.00	14	8,42,764.80
5	Supply and putting of MS liner of 6mm thickness and 1000mm dia as per approved drawing and as per instruction of engineer in charge.	MT	61,968.00	29	18,21,859.20
6	Pile riser, cap, tie-beam with RCC: 1:1.5:3 (Grade M-20), including supply of all materials like Cement, coarse and fine aggregates, shuttering and supply of labours, de-watering, proper curing of the foundations/concrete and T&P in line with the Specification and as per direction of Engineer in Charge. (with cost of cement and without steel)	Cum	7,107.12	140	9,94,996.80
7	Steel of different size(as per design) with cutting, bending, binding in position of M.S.Rod for reinforcement of foundation concret of pile riser, cap and tie beam including supply of binding wire. (With supply of steel rod (TATA/RINL/SAIL make))	МТ	61,968.00	11	6,81,648.00

	Annexure-13				
Const	ruction of 2 nos. 'PC+6' EHT Tower for River crossing (Span	Length	- 300 Mtr.)		
8	Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm), fine aggregates, cement in tower foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge.(With Cement)	10	49,787.60		
9	Shoring And Shuttering required in wet or special locations with supply of all materials, T&P and Labour.(Required for riser works above ground level)	Sq.Mt	341.92	200	68,384.00
J	Total Cost of Civil Work				
K	Total Cost of Erection, Foundation and Civil Works (I+J)				
L	Total Cost (H+K				
N	Total Estimated Capital Cost (L+M)				98,80,984.28
0	GST @ 18% of N 17,				17,78,577.17
01	CSS @ 1% of N				
Р	Total (N+O)				1,17,58,371.00

# Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator).

-	No. of Bus isolator requirement 3				
	No. of VCB Requirement	1			
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	T-1 GI Column(7.25 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel) for 33kV incoming line, Nominal Unit Wt - 0.35 MT	Nos.	26,600.00	1	26,600.00
2	T-2 GI Column (7.25mtr long, consisting of 2 Nos 175X75X6 mm channel) for 33kV incoming line -1 no, Nominal Unit Wt - 0.42 MT	Nos.	31,920.00	1	31,920.00
3	T-1A GI Column ( for 33 kv Bus) ( 6 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel jointed by plates) Nominal Unit Wt - 0.31 MT	Nos.	23,560.00	2	47,120.00
4	T-2A GI Column ( for 33 kv Bus) (6 mtr long, consisting of 2 Nos 175X75X6 mm channel jointed by plates) Nominal Unit Wt - 0.37 MT	Nos.	28,120.00	2	56,240.00
5	G-3 GI Beam(5.05mtr long, consisting of 2 Nos 150X75 X5.7mm) for 33kV incoming line - (2 nos. Beam- one for Surge Arrester and other for Isolator, Nominal Unit Wt - 0.2 MT)	Nos.	15,200.00	1	15,200.00
6	G-2 GI Beam (6.1 mtr long, consisting of 2 Nos 125X65 X5.3 mm channel jointed by plates) for 33kV Bus Stringing , Nominal Unit Wt - 0.175 MT)	Nos.	13,300.00	4	53,200.00
7	Equipment Structures (GI) For 33 KV Isolator (Unit Wt of Equipment Structures per set - 0.33 MT)	KG	76.00	990	75,240.00
8	Equipment Structures (GI) For 33 KV Vacuum Circuit Breaker (Unit Wt of Equipment Structures per set - 0.2 MT)	KG	76.00	200	15,200.00
9	GI Column for 33 KV CT (Unit Wt of Equipment Structures per set - 0.285 MT)	KG	76.00	285	21,660.00
10	GI Spikes with cone and GI ( 2 nos) base plate 10mm (50x3000 mm GI pipe) (Unit Wt=0.035 MT)	Nos.	3,641.92	4	14,567.67
11	GI Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	8	10,920.00
12	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr. For Isolator/VCB , 10 metre mesh formation )= 20x2.36	KG	97.50	188.8	18,408.00
13	400 sq.mm ACSR for 33kV side jumpering and Bus Formation etc.	KM	2,74,300.00	0.1	27,430.00
14	33 kV 1250 AMP Double break (Turn & twist center rotating) isolator with earth switch with PI(Polymer)	Set	1,31,157.00	3	3,93,471.00
15	33KV Outdoor VCB-1600A, with indoor CR panel without PT, with outdoor CT (CTR- 600-300-150/1-1A, 15VA, STC 25KA/3sec, class: 0.5, 5P10) for feeder protection	EA	7,02,000.00	1	7,02,000.00
16	33KV.Single Phase PT(33KV/ V3 / 110V/ V3) (Oil cooled ) CLASS 0.5 / 3P, with O/P burden of 100VA	EA	33,046.00	3	99,138.00
17	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	12	1,61,460.00
18	Control Cable 10Core x 2.5 mm <sup>2</sup>	Mtr	429.00 150		64,350.00
19	Control Cable 16Core x 2.5 mm <sup>2</sup>	Mtr	523.90	150	78,585.00
20	Control Cable 4Core x 2.5 mm <sup>2</sup>	Mtr	145.60	50	7,280.00
21	Control Cable 7Core x 2.5 mm <sup>2</sup>	Mtr	236.60	50	11,830.00
22	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	18	26,910.00
23	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	18	11,700.00
24	8 bolted (M-12) "T" clamp ACSR Zebra run & 232 mm2 drop	No.	1,404.00	18	25,272.00
25	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	48	71,760.00
26	GI Nut , Bolt & Washer of different sizes (13.718 Kg each Strcutures)	K.g.	101.40	54.872	5,564.02
27	Black Paint	Ltr	286.00	4	1,144.00
28	Yellow Colour Paint for Background	Ltr	286.00	8	2,288.00
Α	A Total Cost of materials 20,76,45			20,76,457.69	
В	Stoo	k, Stora	ge & Insurance	i.e 3% of A	62,293.73
С				otal (A+B)	21,38,751.42
D	Contigency @ 3% of C 64,162.				

	Annexure-13					
Con	struction for 1 no. of 33kV Outdoor Bay arrangement Consisting of	1 VCB	and 2 isolate	or).		
Е	Tools & Plants @ 2% of C					
F	Transportation @ 7.5% of C					
G			@ 5% on Trf/E		36,153.00	
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/				1,40,444.38	
<u> </u>	Erection Charges @ 20% of	PSC po			-	
J	Civil & Services		Su	m of (C to I)	25,82,692.74	
SI.				Total	Total	
No.	Description of Materials	Unit	Unit Rate	Quantity	Amount	
A	VCB Foundation					
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	7.28	3,508.96	
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	4.00	800.00	
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	1020.00	0.34	348.08	
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.46	2,334.15	
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	2.83	18,362.50	
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	13.25	3,988.25	
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	140.00	15,260.00	
В	CT & PT Foundation			0.00	-	
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	7.97	3,840.94	
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	4.50	900.00	
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	900.00	0.36	326.70	
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.36	1,862.19	
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	2.36	15,356.25	
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	14.94	4,496.94	
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	122.43	13,344.87	
С	Column as per Drawing Schedule-			0.00	-	
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	51.31	24,731.30	
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	24.00	4,800.00	

#### Annexure-13 Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator). Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cum 5130.00 2.10 10.773.00 Cement :3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and 6500.00 14.18 92.137.50 Cum reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass 301.00 89.64 26,981.64 Sqm concrete. Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated 109.00 80,069.22 Kg 734.58 bars of grade Fe-500D or more. D Isolator Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & 1 Cum 482.00 14.18 6,832.35 machinery for excavation of cable trench & other civil works Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & Cum 200.00 6.00 1.200.00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cum 5130.00 0.85 4.363.07 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size). Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and 6500.00 8.55 Cum 55,575.00 reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass 301.00 44.82 13,490.82 Sqm Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated 109.00 367.29 40,034.61 Kg bars of grade Fe-500D or more. Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation, soil treatment with bentonide powder , calculation of earth No. 3700.00 8 29,600.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe **Total Civil & Services** 4,75,318.33 Κ L Total (J+K) 30,58,011.06 Μ Other overheads (Including 6% supervision charges) of L Ν Sub Total (L+M) 30,58,011.06 Total GST @ 18% of (N) 0 5,50,441.99 Ρ Total Cess @ 1% of (N) 30,580.11 Q Gross Total Material +Services (N+O+P) 36,39,033.16

		Annexure-14					
	Т	P CENTRAL ODISHA DISTRIBUTION LIMITED					
Name o	f the Division :-	TALCHER ELECTRIC DIVISION (TED)					
Name o	f the Sub-Division : -	Parjang					
Name o	f the Section : -	Parjang-1					
Name o	f the Work :-	33kV New Line from Kamakhyanagar Grid (33kV Proposed Saanda Feeder)					
Scope o	of work:-	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqr conductor- 25Ckm. Construction of 33kV U/G Line with 3R, 1C) 1CkmConstruction of 33kV 4 Pole struture with Isolator- 1no.					
Names	of Schemes: -	TPCODL CAPEX					
		ABSTRACT OF ESTIMATE					
SI. No.	Part	Description	Amount				
1	А	Construction of 33kV O/H Line using 13mtr WPB Pole & 241sqmm AAAC covered conductor- 25Ckm.	₹ 9,64,03,619.02				
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm cable-1Ckm	₹ 1,40,53,343.76				
3	3 C Construction of 33kV 4 Pole struture with Isolator- 1no. ₹ 9,78		₹ 9,78,548.67				
4 D Construction of 2 nos. 'PC+6' EHT Tower for river crossing (300mtr. span). ₹ 1,17,58		₹ 1,17,58,371.00					
	E Construction for 1 no. of 33kV Outdoor Bay at Parajang PSS. ₹ 36,39,033		₹ 36,39,033.16				
5			1				
6		Total Amount	₹ 12,68,32,915.61				

# Annexure-14 33kV Line Length using 241 SQ.MM. -AAA Conductor No. of 33 KV DP required Without Isolator (Ref. Drawing No.- TPCODL-HVD-0004)

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Fig. Charmel (100XSD/Kmm, 9.56 KG/Mm, each charmel length 3:2 mtr., 2 no's charmel resputed =   KG		MATERIALS FOR 33 KV DP Without Isolator						
Top Chammel 1000500/Rmm, 90 RGOMbtr, each charmed longth 3.25 mtr, 2 or 6 schamed required =   Kid		Description of Materials	Unit	Unit Rate	I I			
2	1		No	34,322.00	76	26,08,472.00		
Double Pole Beiling Channel 75X400X 4.9mm, 7.14KGMMr, each channel length 1.96 Mtr. 5 no*s   KG	2	2x9.56x3.25)				1,79,460.32		
Spock   Spoc	3		KG	97.50	150.6624	14,689.58		
0	4	channel required =( 5x7.14x1.96)	KG	76.00	2658.936	2,02,079.14		
7   Seck Clamp for damper Pilate 25x3 mm. flat, 1, 55KgMht. Flat of 0.510mtr length 2 no's =   KG   97.50   22.8884   2.228.61	5	(4*4.5*3.432)	KG	76.00	2347.488	1,78,409.09		
	6		No.	104.00	76	7,904.00		
B   H. Stay set (Competed )	7		KG	97.50	22.8684	2,229.67		
10   H.T. Slay insulator 'Pyse-C (2 No's)   1.98,000   1.92   9,880,001   1.76 BWG Stay Wire 15kg stylay   K.g. 97.59   11400   1.11,150,001   1.76 BWG Stay Wire 15kg stylay   K.g. 97.59   11400   1.11,150,001   1.76 BWG Stay Wire 15kg stylay   K.g. 97.59   1.76 MWG Stay Stay   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1.70   1	8					12,350.00		
11 7/8 SWG Stay Wire 15kg /stay   1140   1,11,150.00   22   Gi Pipe Earthing 40mm.3 Mrt. Long   38   51,150.00   38   51,150.00   38   51,150.00   38   51,150.00   38   51,150.00   38   51,150.00   38   51,150.00   38   51,150.00   38   51,150.00   38   51,150.00   38   51,150.00   38   51,150.00   38   51,150.00   39   30   30   30   30   30   30	_							
12 Gi   Pipe Earthing 40mm 3 Mir. Long   No.   1,385.00   38   51,870.00								
13   Solkerm GI Flat for earthing 2.36kg/mr. (-2.5 mt. For mesh formation and 2.5 mt. For raising)=   KG   97.50   448.4   43,719.00   50.236   143   GI barbed wire anticlimbing device 3 KQ per support   KG   97.50   448.4   43,719.00   50.236   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00   50.00								
14   Gibarbed wire anticlimbing device 3 Rg. Per support		50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)=				43,719.00		
15   (86.0 590.0 510)	14		Kg	104.00	228	23,712.00		
16   33KV pin insulator polymer	15			97.50	91.4736	8,918.68		
16   IPC for 241 sq.mm.AAA conductor   For covered conductor)	16	33KV pin insulator polymer	No.	624.00	114	71,136.00		
19   Nike (G1) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole   Set   332.00   152   50.464.00		· · · · · · · · · · · · · · · · · · ·				37,734.00		
19	18		No.	915.00	228	2,08,620.00		
21   Disc insulator (B&S) 90 KN polymer   No.   1.495.00   228   3.40,860.00   238   Inches   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40   1.40						50,464.00		
22 GI Nut, Bolt & Washer of different sizes (12.261 Kg each DP without Isolator)						1,48,200.00		
23 Black Paint				,		-, -,		
Vellow Colour Paint for Background			,					
Total Cost of materials								
Stock, Storage & Insurance i.e 3% of A   1,34,703.77		Total Colon Carrette Daving Carre						
Sub Total (A+B)   46,24,829.32   Contigency @ 3% of C   1,38,744.88		Store	k Stora					
D   Contigency @ 3% of C   1,38,744.88		3100	K, Glora					
Tools & Plants @ 2% of C   86,543.39					` ′			
Transportation @ 7.5% of C   3,46,862.20   G   Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole   1,34,336.31   H   Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/GF Pipe/PSC pole)   1,64,044.35   I   Erection Charges @ 20% of PSC pole- Not to be used for 33k	D			Contigeno	y @ 3% of C	1,38,744.88		
Erection Charges @ 5% on Tri/Breaker/WPB/ H-Pole   1,34,336.31	Е			Tools & Plant	s @ 2% of C	86,543.39		
H	F		Ti	ransportation	@ 7.5% of C	3,46,862.20		
Erection Charges @ 20% of PSC pole- Not to be used for 33kv - J Sum of (C to I) 54,95,360.45    Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45   Sum of (C to I) 54,95,360.45	G	Erection Charges (	@ 5% on	Trf/Breaker/\	WPB/ H-Pole	1,34,336.31		
Erection Charges @ 20% of PSC pole- Not to be used for 33kv  J Sum of (C to I) 54,95,360.45  Total Quantity Amount  Total Quantity Amount  I construction Sum of Waterials  Sum of (C to I) 54,95,360.45  I construction Sum of Waterials  No. 2,250.00 76 1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.00  1,71,000.0	Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F	Pole/HT s	stay set/GI Pip	pe/PSC pole)	1,64,044.35		
Sum of (C to 1)   54,95,360.45		3 3 , 1			· '			
Civil & Services   Unit   Un		2.00.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.	. оо ро			E4 0E 260 4E		
SI. No. Description of Materials    Description of Materials	⊢ّ	Civil & Sarvicas			1111 01 (0 10 1)	34,33,360.43		
No. Description of Materials    No. Description of Materials   Country   Country   Country	<u> </u>	<u>Civil d Services</u>	l					
Stay Insulator 4) Stay Wire. 5) Stay clamps with Nuts & bolts, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X50X1500 mm.)  2 Concreting ratio 1:1.5:3 (500mmX500mmX200mm) = 0.55Cu.mtr 3 Couping ratio 1:1.5:3 with dimension (500X500X450) = 0.1125 Cu mtr 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.  K Total Civil & Services 6,38,875.00  K Total GST @ 18% of (N) 11,04,162.38  O Total GST @ 18% of (N) 11,04,162.38  P Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator (Ref. Drawing No TPCODL-TCE-0001)  MATERIALS FOR 33 KV DP With Isolator (Ref. Drawing No TPCODL-TCE-0001)  MATERIALS FOR 33 KV DP With Isolator		Description of Materials	Unit	Unit Rate				
3   Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr		Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)				1,71,000.00		
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.  K  Total Civil & Services 6,38,875.00  L  Total (J+K) 61,34,235.45  N  Sub Total (L+M) 61,34,235.45  O  Total GST @ 18% of (N) 11,04,162.36  P  Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator (Ref. Drawing No TPCODL-TCE-0001)  MATERIALS FOR 33 KV DP With Isolator  (Ref. Drawing No TOtal  MATERIALS FOR 33 KV DP With Isolator  (Ref. Drawing No Total  MATERIALS FOR 33 KV DP With Isolator  (No. Description of Materials								
Total Civil & Services   6,38,875.00		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				1,40,600.00		
Total (J+K)   61,34,235.45     N	К							
N   Sub Total (L+M)   61,34,235.45	L							
Total GST @ 18% of (N)   11,04,162.38				Sub	· ' '			
O1 Total GST @ 1% of (N) 61,342.35 P Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 72,99,740.15  No. of 33 KV DP required With Isolator (Ref. Drawing No TPCODL-TCE-0001)  MATERIALS FOR 33 KV DP With Isolator  SI. Description of Materials								
P Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 72,99,740.15  No. of 33 KV DP required With Isolator (Ref. Drawing No TPCODL-TCE-0001)  MATERIALS FOR 33 KV DP With Isolator  SI. Description of Materials								
(Ref. Drawing No TPCODL-TCE-0001)  MATERIALS FOR 33 KV DP With Isolator  SI. Description of Materials  Unit Unit Rate  Total Total		Gross Total Material +Services (N+O+C	01) for 3		• • •	72,99,740.19		
(Ref. Drawing No TPCODL-TCE-0001)  MATERIALS FOR 33 KV DP With Isolator  SI. Description of Materials  Unit Unit Rate  Total Total								
SI. Description of Materials  MATERIALS FOR 33 KV DP With Isolator  Unit Unit Rate Total Total					10			
I								
		Description of Materials	Unit	Unit Rate	I I			

	Annexure-14						
	33kV Line Length using 241 SQ.MMAAA Conduct						
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =(	No	34,322.00	20	6,86,440.00		
2	2x9.56x4.3)	KG	76.00	822.16	62,484.16		
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	39.648	3,865.68		
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	76.00	307.02	23,333.52		
<u> </u>	Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's	140		24424	40.007.04		
5	channel required =( 2x7.14x4.3)	KG	76.00	614.04	46,667.04		
6	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's	KG	76.00	1228.08	93,334.08		
	channel required =( 4x7.14x4.3) 50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required =						
7	(4*4.5*4.927)	KG	76.00	886.86	67,401.36		
8	Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length	KG	76.00	57.12	4,341.12		
	0.8 Mtr., 1 no's channel required =( 1x7.14x0.8)  Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required						
9	= (1*4.5*0.388)	KG	76.00	17.46	1,326.96		
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required =	KG	76.00	15.3	1,162.80		
<u> </u>	(1*4.5*0.340) Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's				-,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
11	channel required =( 2x9.56x0.5)	KG	76.00	95.6	7,265.60		
12	Danger Plate, 2 no's.	No.	104.00	20	2,080.00		
13	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's =	KG	97.50	6.018	586.76		
	(2x0.59x0.510)						
14	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	20	3,250.00		
	H.T. Stay set (Complete )	Set	1,365.00	20	27,300.00		
	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	40	2,600.00		
	7/8 SWG Stay Wire 15kg /stay Gi Pipe Earthing 40mm. 3 Mtr. Long	K.g. No.	97.50 1,365.00	300 20	29,250.00 27,300.00		
	50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh						
19	formation and 2.5 mtr. For raising)= 24x2.36	KG	97.50	566.4	55,224.00		
20	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	60	6,240.00		
21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50	24.072	2,347.02		
22	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	30	4,03,650.00		
23	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with	Set	66,000.00	10	6,60,000.00		
	PI(Polymer)		624.00	30	18,720.00		
	33KV pin insulator polymer  Non Metallic Ties 33KV (For covered conductor)	No.	331.00	30	9,930.00		
26	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	60	54,900.00		
	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole				,		
27		Set	332.00	40	13,280.00		
	H W fitting(B&S)90KN,4 Bolt	No.	650.00	60	39,000.00		
	Disc insulator (B&S) 90 KN polymer GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	No. K.g.	1,495.00 101.40	60 221.5	89,700.00 22,460.10		
	Black Paint	Ltr	286.00	10	2,860.00		
	Yellow Colour Paint for Background	Ltr	216.00	20	4,320.00		
Α	•		Total Cost	of materials	24,72,620.20		
В	Stoc	k, Stora	ge & Insuranc	e i.e 3% of A	74,178.61		
С			Sub	Total (A+B)	25,46,798.80		
D				y @ 3% of C	76,403.96		
E			Tools & Plant		49,088.16		
F			ransportation		1,91,009.91		
G	Erection Charges (		<u> </u>				
					35,351.66		
H	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F			· '	1,74,737.46		
<u> </u>	Erection Charges @ 20% of	PSC po			-		
J	Ohid A Comitoes		Su	ım of (C to I)	30,73,389.95		
_	<u>Civil &amp; Services</u>	I					
SI.	Description of Materials	Unit	Unit Rate	Total	Total		
No.	•			Quantity	Amount		
	Fixing of 33KV line Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3)						
1	Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts, including excvation, supply of 0.5Cum	No.	2,250.00	20	45,000.00		
'	cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all	110.	2,230.00	20	45,000.00		
	labour and material (Excavation of earth will be done of size 500X500X1500 mm.)						
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	11	71,500.00		
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Construction Earthing chamber including installation of earthing pipe.Making earthing chamber	Cu.mtr	6,500.00	2.25	14,625.00		
١. ١	including excavation, soil treatment with bentonide powder, calculation of earth	l					
4	resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat	No.	3,700.00	20	74,000.00		
around pipe .							
K Total Civil & Services							
L				Total (J+K)	32,78,514.95		
N				Total (L+M)	32,78,514.95		
0				@ 18% of (N)	5,90,132.69		
01			Total GST	@ 1% of (N)	32,785.15		

Annexure-14 33kV Line Length using 241 SQ.MM. -AAA Conductor Gross Total Material +Services (N+O+01) for 33 KV DP With Isolator Ρ 39,01,432.79 No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No.- TPCODL-HVD-0002) 40 MATERIALS FOR 33 KV Cut Point with 180 Degree Angle SI. Total Total Description of Materials Unit Unit Rate No Quantity Amount 1 WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 40 13.72.880.00 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of 2 K.g. 76.00 1300.16 98,812.16 Channel = (2x 9.56x1.7) 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280) K.g 97.50 211.456 20,616.96 Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 K.g. 76.00 234.0288 17,786.19 No's of Channel = (2x 9.56x0.306) 104.00 4,160.00 5 40 Danger Plate, 1 no's. No. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = KG 97.50 12.036 1.173.51 (1x0.59x0.510) 104.00 12,480.00 GI barbed wire anticlimbing device 3 Kg. Per support Kg 120 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97.50 48.144 4,694.04 (4x0.59x0.510) 9 33KV pin insulator polymer No 624.00 120 74,880.00 10 Non Metallic Ties 33KV (For covered conductor) No. 331.00 39,720.00 120 11 IPC for 241 sq.mm AAA conductor (For covered conductor) No. 915.00 240 2,19,600.00 Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole Set 332.00 80 26,560.00 13 H W fitting(B&S)90KN,4 Bolt No. 650.00 240 1,56,000.00 14 Disc insulator (B&S)90 KN polymer No. 1,495.00 240 58,800.00 15 Earthing of Support ( Coil Type ) 215.80 EΑ 40 8,632.00 16 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing 97.50 10.48 K.g 1.021.80 101.40 17 GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point) K.g 195.16 19.789.22 18 Black Paint Ltr 286.00 40 11,440.00 19 Yellow Colour Paint for Background Ltr 216.00 17,280.00 **Total Cost of materials** 24,66,325.88 Α В Stock, Storage & Insurance i.e 3% of A 73,989.78 С Sub Total (A+B) 25,40,315.66 D Contigency @ 3% of C 76,209.47 Ε Tools & Plants @ 2% of C 50,806.31 F Transportation @ 7.5% of C 1,90,523.67 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 70,703.32 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) Н 1,12,624.93 1 Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 30,41,183.36 Civil & Services SI. Total Total Description of Materials Unit Unit Rate Quantity No. Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6.500.00 1.43.000.00 2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu mtr 6 500 00 29 250 00 K **Total Civil & Services** 1,72,250.00 Total (J+K) 32,13,433.36 L Ν Sub Total (L+M) 32,13,433.36 Total GST @ 18% of (N) 0 5,78,418.01 01 Total GST @ 1% of (N) 32,134.33 Р Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle 38,23,985.70 No. of 33 KV Cut Point with 90 Degree Angle 12 (Ref. Drawing No.- TPCODL-HVD-0003)

	(Rei. Drawing No TPCODE-HVD-0003)									
	MATERIALS FOR 33 KV Cut Point with 90 Degree Angle									
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount					
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	12	4,11,864.00					
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)	K.g.	76.00	780.096	59,287.30					
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)	K.g.	97.50	126.8736	12,370.18					
4	Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's of Channel = (4x 9.56x0.306)	K.g.	76.00	140.41728	10,671.71					
5	Danger Plate, 1 no's.	No.	104.00	12	1,248.00					
6	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	3.6108	352.05					
7	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	36	3,744.00					
8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	14.4432	1,408.21					
9	33KV pin insulator polymer (4 No's each 90 Deg. Cut point)	No.	624.00	48	29,952.00					
10	H W fitting(B&S)90KN,4 Bolt	No.	650.00	72	46,800.00					

Annexure-14 33kV Line Length using 241 SQ.MM. -AAA Conductor 1,495.00 1,07,640.00 11 Disc insulator (B&S)90 KN polymer 72 No 12 Non Metallic Ties 33KV (For covered conductor) No. 331.00 48 15,888.00 13 IPC for 241 sq.mm AAA conductor (For covered conductor) 915.00 72 65,880.00 No. Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole 14 Set 332 00 24 7.968.00 15 Earthing of Support (Coil Type) 215.80 12 2.589.60 No. 16 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing K.g. 97.50 3.144 306.54 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) Pair 162.50 12 1,950.00 18 H.T. Stay set (Complete ) Set 1,365.00 12 16,380.00 12 19 H.T. Stay Insulator Type-C (2 No's.) No. 65.00 780.00 20 7/8 SWG Stay Wire 15kg /stay K.g. 97.50 180 17,550.00 21 Gl Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point) K.g 101.40 135.72 13,762.01 286.00 Black Paint Ltr 3.432.00 23 Yellow Colour Paint for Background Ltr 216.00 24 5,184.00 **Total Cost of materials** 8,37,007.60 Α Stock, Storage & Insurance i.e 3% of A В 25,110.23 С Sub Total (A+B) 8,62,117.83 D Contigency @ 3% of C 25.863.53 Tools & Plants @ 2% of C Е 16,487.16 F Transportation @ 7.5% of C 64,658.84 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 21,211.00 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) Н 40,013.81 ı Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 10,30,352.17 Civil & Services SI. Total Total Description of Materials Unit **Unit Rate** No Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr 6.500.00 6.60 42.900.00 Cu.mtr Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 1.35 8,775.00 Fixing of 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, including excvation, supply of 0.5 Cum 2,250.00 27.000.00 12 No. cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) **Total Civil & Services** 78,675.00 Κ L Total (J+K) 11,09,027.17 Ν Sub Total (L+M) 11,09,027.17 Total GST @ 18% of (N) 0 1.99.624.89 01 Total GST @ 1% of (N) 11,090.27 Ρ Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle 13,19,742.33 33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No.- TPCODL-HVD-0001) 25 MATERIALS FOR 33 KV Pin Points Total Total Description of Materials Unit Unit Rate No. Quantity Amount 1 WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 1,80,19,050.00 2 33 KV V cross Arm (GI) 22Kg each 2,340.00 525 12,28,500.00 No. Top bracket 100x50x6mm GI channel (2kg each) No. 195.00 525 1.02.375.00 4 Danger Plate, 1 no's. No 104.00 525 54,600.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = KG 97.50 157.97 15,402.32 (1x0.59x0.510) 104.00 1575.00 1,63,800.00 6 GI barbed wire anticlimbing device 3 Kg. Per support Kg Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97 50 631 89 61,609,28 (4x0.59x0.510) 624.00 1575 9.82.800.00 8 Nο 33KV pin insulator polymer Non Metallic Ties 33KV (For covered conductor) No. 331.00 1575 5,21,325.00 10 Earthing of Support (Coil Type) No. 215.80 525 1,13,295.00 11 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing 137.55 K.g 97.50 13,411.13 GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 101.40 761.25 77,190.75 12 K.g Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) (2 Nos of spike per Set in each Pole 13 Set 332.00 1050 3,48,600.00 2,98,18,500.00 Mtr 386.00 77250.00 241 sq.mm AAA conductor 4.701.00 3.52.575.00 15 Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor FΑ 75 16 Black Paint Ltr 286.00 525.0 1,50,150.00 17 Yellow Colour Paint for Background Ltr 216.00 1050.0 2,26,800.00 Total Cost of materials 5,22,49,983.47 Α В Stock, Storage & Insurance i.e 3% of A 15,67,499.50 С Sub Total (A+B) 5,38,17,482.97 D Contigency @ 3% of C 16 14 524 49

Tools & Plants @ 2% of C

10,76,349.66

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#### Annexure-14 33kV Line Length using 241 SQ.MM. -AAA Conductor Transportation @ 7.5% of C 40,36,311.22 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 9,27,981.08 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) Н 35,25,786.15 1 Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 6,49,98,435.57 Civil & Services SI. Total Total Description of Materials Unit **Unit Rate** Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 18,76,875.00 288.75 3,83,906.25 2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 59.06 Total Civil & Services 22,60,781.25 Total (J+K) 6,72,59,216.82 Sub Total (L+M) Ν 6,72,59,216.82 Total GST @ 18% of (N) 0 1,21,06,659.03 01 Total GST @ 1% of (N) 6,72,592.17 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points Р 8,00,38,468.01 Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 72,99,740.19 1 Gross Total Material +Services (N+O+01) for 33 KV DP With Isolator 2 39,01,432.79 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle 3 38,23,985.70 4 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle 13,19,742.33 5 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points 8,00,38,468.01 Q Gross Total Material +Services 9,63,83,369.02 R Inspection Fee of Over Head Line (HT) - Rs. 1500 upto 1 KM 1,500.00 S Inspection Fee of Over Head Line (HT) - Rs. 750/ Additional Km 18,000.00 Т Inspection Fee of Drawing Checking and Approval 750.00

Gross Total Material, Services and Inspection Fees (Q+R+S+T)

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9,64,03,619.02

# BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

# **Supply Portion**

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
	Supply of materials for 33kV, 1Core, 630sqmm			(	(
1	Aluminium, XLPE insulation U/G Cable (aloing with 1core				
	spare cable) with accessories				
a	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	700		
b	Length of 33kV 1C, 630sqmm cable (HDD) Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE	Mtr.	300		
1.1	insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	3000	1,495.47	44,86,410.00
1.2	Supply of Straight throU/Gh jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set	6	11,900.00	71,400.00
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	6	6,350.00	38,100.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set		6,100.00	-
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	2052.00	357.60	7,33,795.20
2	Supply of 33kV RMU				
a	No. of 33kV 3Way RMU (LLV+M)	nos.			
b	No. of 33kV 4Way RMU (LLVV+M)				
	No. of 33kV 3Way RMU (LLV)	nos.			
C		nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.			
e	No. of 33kV 3Way RMU (LLL)	nos.			
f	No. of 33kV 4Way RMU (LLLL) Supply of RMU 33KV 3WAY 630A WITH METERING UNIT	nos.			
2.1	(LLV+M) (CT Ratio to be mentioned)	Nos.	0	22,93,723.00	-
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M) (CT Ratio to be mentioned)	Nos.	0	31,74,874.00	-
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	23,35,264.00	-
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	
2.6	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	19,59,421.00	-
3	Earthing				
3.1	Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for equipment, structure etc.)	kg	0.00	97.50	-
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	0	1,365.00	-
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	0		
4.1	Pre-Wired FRTU Panel with FRTU	No.	0	1,21,744.00	-
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	0	1,00,000.00	-
4.3	Networking Accessories	No.	0	72.00	-

	BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU							
4.4	CMR with Mounting Base for Digital Inputs	Nos.	0	650.00	-			
4.5	Interposing Relay for Digital Output	Nos.	0	467.94	-			
4.6	Battery Charger	Nos.	0	15,385.00	-			
4.7	Battery	Nos.	0	8,333.00	-			
4.8	4G Modem cum Router	Nos.	0	18,500.00	-			
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	0	204.87	-			
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	0	305.58	-			
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	0	275.23	-			
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	0	165.25	-			
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	0	150.00	-			
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	0.0	148.43	-			
4.15	Armored CAT6 SFTP Cable	Mtr.	0	45.87	-			
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	0	89.45	-			
4.17	Multi Function Meter	Nos.	0	18,651.00	-			
	Sub Total (Supply Portion) (in	Rs.)			53,29,705.20			
	Erection Portion	on		<del>.</del>				
SI.	1							
No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)			
	Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare	Unit	Quantity					
No.	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.	Unit  Mtr.	Quantity 2100					
No. 1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil			(in Rs.)	(in Rs.)			
<b>No. 1</b> 1.1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG	Mtr.	2100	(in Rs.) 94.50	(in Rs.) 1,98,450.00			
No. 1 1.1 1.2	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Mtr.	2100	94.50 2,400.00	1,98,450.00 14,400.00			
No. 1 1.1 1.2 1.3	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type	Mtr. Set	2100	94.50 2,400.00 2,081.70	1,98,450.00 14,400.00			
No. 1 1.1 1.2 1.3	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of	Mtr. Set Set	2100 6 6	94.50 2,400.00 2,081.70 2,081.70	1,98,450.00 14,400.00 12,490.20			
No. 1 1.1 1.2 1.3 1.4	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open	Mtr. Set Set Mtr.	2100 6 6 0	94.50 2,400.00 2,081.70 2,300.00	(in Rs.)  1,98,450.00  14,400.00  12,490.20  -  20,70,000.00			
No. 1 1.1 1.2 1.3 1.4 1.5	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open trench.  Erection, Commissioning, Wiring and Testing of 33kV RMU  Erection of RMU 33KV 3WAY 630A WITH METERING UNIT	Mtr. Set Set Mtr.	2100 6 6 0	94.50 2,400.00 2,081.70 2,300.00	(in Rs.)  1,98,450.00  14,400.00  12,490.20  -  20,70,000.00			
No. 1 1.1 1.2 1.3 1.4 1.5 1.6 2	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open trench.  Erection, Commissioning, Wiring and Testing of 33kV RMU	Mtr. Set Set Mtr. Mtr.	2100 6 6 0 900 2052.00	94.50 2,400.00 2,081.70 2,300.00 300.00	(in Rs.)  1,98,450.00  14,400.00  12,490.20  -  20,70,000.00			

	Annexure-14					
	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along witl	n 33kV RMU		
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-	
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	8,000.00	-	
2.5	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	8,000.00	-	
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	8,000.00	-	
3	FRTU and OFC for RMU SCADA Automation					
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	0.0	16,000.00	-	
	Sub Total (Erection Portion) (ir	n Rs.)	1		29,10,940.20	
Civil P	ortion					
SI.	Description of items	Unit	Quantity	Rate	Amount	
No.	Civil works with supply of all materials like cement, MS			(in Rs.)	(in Rs.)	
1	tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench					
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	684			
1.1.a	Earth work excavation of <b>soil</b>	Cum	574.56	700.00	4,02,192.00	
1.1.b	Earth work excavation of hard rock	Cum	246.24	1,720.00	4,23,532.80	
1.2	Back filling with excavated soil outside and above the trench	Cum	820.8	202.00	1,65,801.60	
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	342	2,643.67	9,04,135.36	
2	Civil works for Prefabricated RCC foundation with supply of all materials					
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	0	23,145.30	-	
3	Supply of GI Fencing with Gate around each RMU	sqmtr	0	3,600.00	-	
4	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 .	Set	0	3,700.00	-	
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	48	1,463.40	70,243.20	
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	33	1,012.00	33,396.00	
	Sub Total (Civil Portion) (in Rs.)					
	Sub Total (Supply Portion)	<u> </u>	<u> </u>		53,29,705.20	
В	Stock, Storage & Insurance @ 3 % of A				1,59,891.16	
С	Sub Total (A+B)				54,89,596.36	
D Contingency @ 3 % of C					1,64,687.89	
Е	Tools & Plants Charges @ 2% of C (considered for earthing it	ems)			-	
F	Transportation @ 7.5% of C				4,11,719.73	
G	Erection Charges @ 10% of earthing items  Total (C+D+E+F+G)				-	
Н		60,66,003.97				

	AllileXute-14					
	BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU					
I	Sub Total (Erection Portion + Civil Portion)	49,10,241.16				
J	Total Cost (H+I)	1,09,76,245.13				
L	Total Estimated Capital Cost i.e. (J+K)	1,09,76,245.13				
М	GST @ 18% of L	19,75,724.12				
M1	CESS @ 1% of L	10,97,624.51				
N	Grand Total (L+M)	1,40,49,593.76				
0	Inspection Fee of UG Line (HT) - Rs. 3000/ km.	3,000.00				
Р	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km					
Q	Inspection Fee of RMU - Rs. 1500/ RMU	_				
R	Inspection Fee of Drawing Checking and Approval	750.00				
S	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)	1,40,53,343.76				

#### Annexure-14 BoQ and Estimate for 33 KV 4 Pole using WPB GI Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) with Isolator and LA No. of 33 KV 4-Pole with Isolator MATERIALS FOR 33 KV 4-P With Isolator Total Total Description of Materials Unit Unit Rate Nο Quantity Amount WPB(GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 1,37,288.00 Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 8 no's channel required =( 2 KG 76.00 328 864 24 993 66 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 24 no's required = (24x2.36x0.280) KG 97.50 15.8592 1,546.27 Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's KG 76.00 184.212 14,000.11 channel required =( 2x7.14x4.3)/ Isolator Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 8 no's KG 76 00 245.616 18,666.82 channel required =( 8x7.14x4.3) 50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 8 nos angle required = 6 KG 76.00 177.372 13,480.27 (8\*4.5\*4.927) Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length KG 76.00 17 136 1.302.34 0.8 Mtr., 1 no channel required =( 1x7.14x0.8)/ Isolator Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 no angle required = 8 KG 76.00 5.238 398.09 1\*4.5\*0.388)/ Isolator Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 no angle required = KG 76.00 4.59 348.84 Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's KG 76.00 28.68 2,179.68 channel required =( 2x9.56x0.5)/ Isolator 104.00 2 208.00 Danger Plate, 2 no's. Nο Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = 12 KG 97.50 0.6018 58.68 (2x0.59x0.510) Gi Pipe Earthing 40mm. 3 Mtr. Long No. 1,365.00 3 4,095.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh KG 62 54 97.50 6,097.65 formation and 5 mtr. For raising) GI barbed wire anticlimbing device 3 Kg. Per support, 4 no's qty. required =(4x3kg) 104.00 12 1,248.00 15 Kg Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 16 no's = 469.40 16 KG 97 50 4 8144 (16x0.59x0.510) Lightning Arrester(30KV,10KA) (Station Class,class-2) 13,455.00 1,21,095.00 EΑ 9 33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with Set 66.000.00 3 1,98,000.00 PI(Polymer) 19 33KV pin insulator polymer No. 624 00 6 3,744.00 20 H W fitting(B&S)90KN,4 Bolt 650.00 11,700.00 No 18 21 Disc insulator (B&S) 90 KN polymer No. 1,495.00 18 26,910.00 22 PG Clamp for 232 sq.mm AAA conductor NO. 1,495.00 24 35,880.00 6,286.61 232 sq.mm AAA conductor Mtr 203.45 30.9 24 GI Nut , Bolt & Washer of different sizes 101.40 45 4,563.00 K.g. Black Paint Ltr 286.00 286.00 Yellow Colour Paint for Background 26 Ltr 216.00 432.00 Total Cost of materials 6,35,277.41 Α В Stock, Storage & Insurance i.e 3% of A 19,058.32 С Sub Total (A+B) 6,54,335.74 D Contigency @ 3% of C 19,630.07 Ε Tools & Plants @ 2% of C 13,002.36 F Transportation @ 7.5% of C 49,075.18 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 7,070.33 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/Gl Pole/PSC pole) Н 50,871.12 Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 7,93,984.80 Civil & Services Total Total **Unit Rate** Description of Materials Unit Quantity No. Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 2.2 14,300.00 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 0.45 2,925.00 Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth No. 3,700.00 3 11,100.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe **Total Civil & Services** Κ 28,325.00 L Total (J+K) 8,22,309.80 N Sub Total (L+M) 8,22,309.80 0 Total GST @ 18% of (N) 1,48,015.76 8,223.10 Ω1 Total CESS @ 1% of (O1) Ρ Gross Total Material +Services (N+O+O1) for 33 KV 4-P With Isolator 9,78,548.67

#### Annexure-14 Construction of 2 nos. 'PC+6' EHT Tower for River crossing (Span Length- 300 Mtr.) No. of Span 1 Supply of Material for Construction of 'PC+6' EHT Tower **Total Amount** SI.No. Unit **Unit Rate Total Quantity** Description Cost of G.I PC +6 TYPE Tower super structure (Main + Extention 1 +Stub + Template) 90,000.00 10.692 9,62,280.00 i) PC Tower (5.346 MT per Tower) MT ii) +6 Mtr Extention (2.246 MT per Tower) MT 90,000.00 4.492 4,04,280.00 Stub & Cleats (0.610 MT per Tower) 90,001.00 1.220 1,09,801.22 iii) MT 8,696.01 15,444.11 iv) Template (0.888 MT per Tower) ΜT 1.776 2 **Nut Bolts** i) PC Tower (0.336 MT per Tower) MT 1.19.078.23 0.672 80.020.57 ii) +6 Mtr Extention (0.111 MT per Tower) MT 1,19,078.23 0.222 26,435.37 **Conductor and Accessories** 3 3,77,196.30 232 Sq.mm. Conductor (AAAC) Km 2,03,450.00 1.854 ii Earth wire 7/1.5, 300 meter + Tower earthing $(50 \times 4) = 500$ Mtr. Km 43,317.74 0.500 21,658.87 iii Double tension Hardware Fittings Set 4,498.00 24 1,07,952.00 Disc insulator (B&S)120 KN polymer 1,872.00 48 89,856.00 iv Nos Earth wire tension fittings Set 675.31 4 2.701.23 v Vibration damper for earth wire Nos 539.78 4 2,159.11 νi 566.65 24 13,599.59 νii Vibration damper for coductor Nos Copper flexible bond 490.71 2 981.41 viii Nos ix Phase Plate (R,Y,B) Set 245.35 12 2,944.24 Tower Number Plate Nos 243.02 2 486.03 Circuit Plate 269.89 1.079.56 Nos 4 χi 40 mm Dia. 3Mtr. long G.I Earthing device Nos 1,365.00 4 5,460.00 χij xiii GI Flat 50 x 6 mm 97.50 200 19,500.00 kg Danger Board Nos 104.00 4 416.00 xiv Bird Guard Nos 429.95 24 10,318.87 ΧV Anticlimbing Device 104.00 211 21,964.80 xvi kg 490.71 5.888.48 xvii Loop Connector Nos 12 22,82,423.77 **Total Cost of materials** Stock, Storage & Insurance @ 3 % of A В 68,472.71 Sub Total (A+B) С 23,50,896.48 D Contingency @ 3 % of C 70,526.89 Tools & Plants Charges @ 2% (considered for earthing items) Ε 401.70 Transportation @ 7.5% of C F 1,76,317.24 Erection Charges @ 10% of earthing items G 2,008.50 Total (C+D+E+F+G) 26,00,150.81 н **Erection Portion** Description SI.No. Unit Rate **Total Quantity Amount** Cost of G.I PC +6 TYPE Tower super structure (Main + Extention 1 +Stub + Template) PC Tower (5.346 MT per Tower) 11,000.00 1,17,612.00 i) ΜT 10.692 11,000.00 ii) +6 Mtr Extention (2.246 MT per Tower) MT 4.492 49,412.00 iii) Stub & Cleats (0.610 MT per Tower) MT 11,000.00 1.220 13,420.00 Template (0.888 MT per Tower) 11,000.00 1.776 19,536.00 iv) MT **Nut Bolts** 2 PC Tower (0.336 MT per Tower) 11,000.00 0.672 7,392.00 i) MT 11.000.00 ii) +6 Mtr Extention (0.111 MT per Tower) MT 0.222 2,442.00 3 **Conductor and Accessories** 232 Sq.mm. Conductor (AAAC) Km 52,155.14 1.854 96,695.64 Earth wire 7/1.5, 300 meter + Tower earthing $(50 \times 4) = 500$ Mtr. 13,038.79 0.500 6,519.39 ii Km Double tension Hardware Fittings 325.97 7,823.27 iii Set 24 325.97 15,646.54 iν Disc insulator (B&S)120 KN polymer Nos 48 325.97 Earth wire tension fittings Set 4 1,303.88 v νi Vibration damper for earth wire Nos 325.97 4 1,303.88 νii Vibration damper for coductor Nos 325.97 24 7,823.27 2 Copper flexible bond 325.97 651.94 viii Nos Phase Plate (R,Y,B) 325.97 12 ix Set 3,911.64

	Annexure-14				
Const	ruction of 2 nos. 'PC+6' EHT Tower for River crossing (Span I	ength	- 300 Mtr.)		
х	Tower Number Plate	Nos	195.58	2	391.16
xi	Circuit Plate	Nos	325.97	4	1,303.88
xii	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.	3,700.00	4	14,800.00
xiii	Danger Board	Nos	52.00	4	208.00
xiv	Bird Guard	Nos	65.19	24	1,564.65
XV	Anticlimbing Device	kg	19.56	211	4,130.69
xvi	Loop Connector	Nos	325.97	12	3,911.64
I	Total Cost of Erection	1100	020.01	12	3,77,803.47
•	Civil Portion				3,11,003.41
SI.No.	Description	Unit	Rate	Total Quantity	Amount
1	Excavation in all type 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 soil at suitable place after back filling), & if required for filling the foundation, borrowed earth/murrum/sand shall be brought for filling and compaction, including supply of sand, all T&P, labour as required.				
1.1	Soft and loose soil	СИМ	176.86	100	17,686.00
2	Boring for under reemed cast in situ piling with bentonite showing for stabilisation of bore:- Pile diameter (1000 MM) and approximate length of the bore is 25 Mtrs BY DMC method as per approved drawing.	Mtr. length	5,836.14	200	11,67,228.00
3	Supply of all materials like cement, steel, all coarse aggregates, fine aggregates and making pile foundations of the required Tower foundation, including supply of all materials,labours and T&P as per specification in the RCC :1:1:2 (Grade M-25.) (with cost of cement and without steel)	Cum	8,015.00	157	12,58,675.60
4	Steel of different size(as per design) with cutting, bending, binding in position of M.S.Rod for reinforcement of foundation concret of pile of towers including supply of binding wire. (With supply of steel rod (TATA/RINL/SAIL make))	МТ	61,968.00	14	8,42,764.80
5	Supply and putting of MS liner of 6mm thickness and 1000mm dia as per approved drawing and as per instruction of engineer in charge.	МТ	61,968.00	29	18,21,859.20
6	Pile riser, cap, tie-beam with RCC: 1:1.5:3 (Grade M-20), including supply of all materials like Cement, coarse and fine aggregates, shuttering and supply of labours, de-watering, proper curing of the foundations/concrete and T&P in line with the Specification and as per direction of Engineer in Charge. (with cost of cement and without steel)	Cum	7,107.12	140	9,94,996.80
7	Steel of different size(as per design) with cutting, bending, binding in position of M.S.Rod for reinforcement of foundation concret of pile riser, cap and tie beam including supply of binding wire. (With supply of steel rod (TATA/RINL/SAIL make))	MT	61,968.00	11	6,81,648.00
8	Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm), fine aggregates, cement in tower foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge.(With Cement)	Cum	4,978.76	10	49,787.60
9	Shoring And Shuttering required in wet or special locations with supply of all materials, T&P and Labour.(Required for riser works above ground level)	Sq.Mt r	341.92	200	68,384.00
J	Total Cost of Civil Work				69,03,030.00
K	Total Cost of Erecti	on, Fou	ındation and C	Civil Works (I+J)	72,80,833.47
L		,		Total Cost (H+K)	98,80,984.28
N		Total		pital Cost (L+M)	98,80,984.28
0		TOTAL		GST @ 18% of N	
				CSS @ 1% of N	17,78,577.17
01					98,809.84
Р				Total (N+O)	1,17,58,371.00

	Annexure-14						
Con	Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator).						
	No. of Bus isolator requirement			3			
	No. of VCB Requirement		ı	1			
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	T-1 GI Column(7.25 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel) for 33kV incoming line, Nominal Unit Wt - 0.35 MT	Nos.	26,600.00	1	26,600.00		
2	T-2 GI Column (7.25mtr long, consisting of 2 Nos 175X75X6 mm channel) for 33kV incoming line -1 no, Nominal Unit Wt - 0.42 MT	Nos.	31,920.00	1	31,920.00		
3	T-1A GI Column ( for 33 kv Bus) ( 6 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel jointed by plates) Nominal Unit Wt - 0.31 MT	Nos.	23,560.00	2	47,120.00		
4	T-2A GI Column ( for 33 kv Bus) (6 mtr long, consisting of 2 Nos 175X75X6 mm channel jointed by plates) Nominal Unit Wt - 0.37 MT	Nos.	28,120.00	2	56,240.00		
5	G-3 GI Beam(5.05mtr long, consisting of 2 Nos 150X75 X5.7mm) for 33kV incoming line - (2 nos. Beam- one for Surge Arrester and other for Isolator, Nominal Unit Wt - 0.2 MT)	Nos.	15,200.00	1	15,200.00		
6	G-2 GI Beam (6.1 mtr long, consisting of 2 Nos 125X65 X5.3 mm channel jointed by plates) for 33kV Bus Stringing , Nominal Unit Wt - 0.175 MT)	Nos.	13,300.00	4	53,200.00		
7	Equipment Structures (GI) For 33 KV Isolator (Unit Wt of Equipment Structures per set - 0.33 MT)	KG	76.00	990	75,240.00		
8	Equipment Structures (GI) For 33 KV Vacuum Circuit Breaker (Unit Wt of Equipment Structures per set - 0.2 MT)	KG	76.00	200	15,200.00		
9	GI Column for 33 KV CT (Unit Wt of Equipment Structures per set - 0.285 MT)	KG	76.00	285	21,660.00		
10	GI Spikes with cone and GI ( 2 nos) base plate 10mm (50x3000 mm GI pipe) (Unit Wt=0.035 MT)	Nos.	3,641.92	4	14,567.67		
11	GI Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	8	10,920.00		
12	$50x6mm\ GI\ Flat\ for\ earthing,\ 2.36kg/mtr.,\ (10\ Mtr.\ For\ Isolator/VCB\ ,\ 10\ metre\ mesh\ formation\ )=\ 20x2.36$	KG	97.50	188.8	18,408.00		
13	400 sq.mm ACSR for 33kV side jumpering and Bus Formation etc.	KM	2,74,300.00	0.1	27,430.00		
14	33 kV 1250 AMP Double break (Turn & twist center rotating) isolator with earth switch with PI(Polymer)	Set	1,31,157.00	3	3,93,471.00		
15	33KV Outdoor VCB-1600A, with indoor CR panel without PT, with outdoor CT (CTR- 600-300-150/1-1A, 15VA, STC 25KA/3sec, class: 0.5, 5P10) for feeder protection	EA	7,02,000.00	1	7,02,000.00		
16	33KV.Single Phase PT(33KV/ V3 / 110V/ V3) (Oil cooled ) CLASS 0.5 / 3P, with O/P burden of 100VA	EA	33,046.00	3	99,138.00		
17	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	12	1,61,460.00		
18	Control Cable 10Core x 2.5 mm <sup>2</sup>	Mtr	429.00	150	64,350.00		
19	Control Cable 16Core x 2.5 mm <sup>2</sup>	Mtr	523.90	150	78,585.00		
20	Control Cable 4Core x 2.5 mm <sup>2</sup>	Mtr	145.60	50	7,280.00		
21	Control Cable 7Core x 2.5 mm <sup>2</sup>	Mtr	236.60	50	11,830.00		
22	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	18	26,910.00		
23	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	18	11,700.00		
24	8 bolted (M-12) "T" clamp ACSR Zebra run & 232 mm2 drop	No.	1,404.00	18	25,272.00		
25	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	48	71,760.00		
26	GI Nut , Bolt & Washer of different sizes (13.718 Kg each Strcutures)	K.g.	101.40	54.872	5,564.02		
27	Black Paint	Ltr	286.00	4	1,144.00		
28	Yellow Colour Paint for Background	Ltr	286.00	8	2,288.00		
Α			Total Cost o	f materials	20,76,457.69		
В	Stoc	k, Stora	ge & Insurance	i.e 3% of A	62,293.73		
С				otal (A+B)	21,38,751.42		
D			Contigency	@ 3% of C	64,162.54		

	Annexure-14							
Con	struction for 1 no. of 33kV Outdoor Bay arrangement Consisting of	1 VCB	and 2 isolate	or).				
Е								
F	Transportation @ 7.5% of C							
G	Erection C	Charges	@ 5% on Trf/E	Breaker/Joist	36,153.00			
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole,	/HT stay	set/PSC pole/	Gl Earthing)	1,40,444.38			
I	Erection Charges @ 20% of	PSC po	le- Not to be u	sed for 33kv	-			
J			Su	m of (C to I)	25,82,692.74			
	<u>Civil &amp; Services</u>							
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
A	VCB Foundation							
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	7.28	3,508.96			
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	4.00	800.00			
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	1020.00	0.34	348.08			
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.46	2,334.15			
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	2.83	18,362.50			
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	13.25	3,988.25			
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	140.00	15,260.00			
В	CT & PT Foundation			0.00	-			
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	7.97	3,840.94			
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	4.50	900.00			
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	900.00	0.36	326.70			
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.36	1,862.19			
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	2.36	15,356.25			
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	14.94	4,496.94			
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	122.43	13,344.87			
С	Column as per Drawing Schedule-			0.00	-			
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools &	Cum	482.00	51.31	24,731.30			
2	machinery for excavation of cable trench & other civil works Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by	Cum	200.00	24.00	4,800.00			
	Engineer-in-charge.							

	Annexure-14							
Con	Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator).							
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	2.10	10,773.00			
4	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	14.18	92,137.50			
5	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	89.64	26,981.64			
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	734.58	80,069.22			
D	Isolator							
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	14.18	6,832.35			
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	6.00	1,200.00			
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.85	4,363.07			
4	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	8.55	55,575.00			
5	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	44.82	13,490.82			
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	367.29	40,034.61			
7	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.	3700.00	8	29,600.00			
K								
L Total (J+K					30,58,011.06			
N				Γotal (L+M)	30,58,011.06			
0			Total GST @		5,50,441.99			
Р			Total Cess @	` '	30,580.11			
Q	Q Gross Total Material +Services (N+O+P				36,39,033.16			

		Annexure-15	
	•	TP CENTRAL ODISHA DISTRIBUTION LIMITED	
Name o	f the Division :-	KED-II	
Name of	f the Sub-Division : -	Mahakalpada	
Name o	f the Section : -	Babar	
Name of	f the Work :-	33kV New Line from Rajnagar Grid (33kV Proposed Badhi Feeder	)
Scope c	of work:-	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm A/20Ckm. Construction of 33kV U/G Line with 3R, 1CX630sqmm Ca Construction of 33kV 4 Pole structure with Isolator- 1 No. Construction for 1 no Bay at Badhi PSS.	ble- 1Ckm. ction of 4 nos. 'PC+6'
Names	of Schemes: -	TPCODL CAPEX	
		ABSTRACT OF ESTIMATE	_
SI. No.	Part	Description	Amount
1	А	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 20Ckm.	₹ 7,39,74,732.65
2	В	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable-1Ckm.	₹ 1,40,53,343.76
3	С	Construction of 33kV 4 Pole structure with Isolator- 1 No.	₹ 9,78,548.67
4	D	Construction of 4 nos. 'PC+6' EHT Tower for river crossing (300mtr. span).	₹ 2,35,16,743.00
5	Е	Construction for 1 no. of 33kV Outdoor Bay at Badhi PSS.	₹ 36,39,033.16
		Total Amount	₹ 11,61,62,401.25
		Total Amount (In Cr)	₹ 11.62

33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP No. of 33 KV DP required Without Isolator (Ref. Drawing No.- TPCODL-HVD-0004) MATERIALS FOR 33 KV DP Without Isolator Total SI. Total Description of Materials **Unit Rate** Unit No. Quantity Amount WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) 34 322 00 64 21,96,608.00 Nο Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =( 2 76.00 1988.48 1,51,124.48 KG Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280) 3 KG 97.50 126.8736 12,370.18 Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's KG 76.00 2239.104 1,70,171.90 channel required =( 5x7.14x1.96) 50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = KG 76.00 1976.832 1,50,239.23 Danger Plate, 2 no's. No. 104.00 64 6,656.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = KG 97.50 19.2576 1,877.62 (2x0.59x0.510) 10,400.00 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) Pair 162.50 64 Set 1,365.00 64 87,360.00 H.T. Stay set (Complete) 10 H.T. Stay Insulator Type-C (2 No's.) No. 65.00 128 8,320.00 960 7/8 SWG Stay Wire 15kg /stay K.g 97.50 93,600.00 Gi Pipe Earthing 40mm. 3 Mtr. Long 32 No. 1.365.00 43.680.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 13 KG 97.50 377.6 36,816.00 104.00 192 19,968.00 GI barbed wire anticlimbing device 3 Kg. Per support Kg Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = KG 97.50 77.0304 7,510.46 (8x0 59x0 510) 16 Nο 624 00 96 59.904.00 33KV pin insulator polymer 17 H W fitting(B&S) 90KN,4 Bolt No. 650.00 1,24,800.00 192 No. 192 Disc insulator (B&S) 90 KN polymer 1,495.00 2,87,040.00 PG Clamp for 232 sq.mm AAA conductor NO 1,495.00 192 2,87,040.00 20 GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator) K.g. 101.40 392.352 39.784.49 Black Paint I tr 286 00 32 9 152 00 22 Yellow Colour Paint for Background Ltr 216.00 64 13,824.00 Α Total Cost of materials 38,18,246.36 Stock, Storage & Insurance i.e 3% of A В 1,14,547.39 С Sub Total (A+B) 39,32,793.76 D Contigency @ 3% of C 1,17,983.81 Tools & Plants @ 2% of C Ε 73,642.66 F Transportation @ 7.5% of C 2,94,959.53 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 1,13,125.31 Н Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/GI Pipe/PSC pole) 1,41,962.67 Erection Charges @ 20% of PSC pole- Not to be used for 33kv 1 J Sum of (C to I) 46,74,467.74 Civil & Services SI. Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount Fixing of 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, including excvation, supply of 0.5 Cum No. 2,250.00 64 1,44,000.00 cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mti 6.500.00 35.2 2.28.800.00 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 7.2 46,800.00 Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth 3.700.00 32 1.18.400.00 No. resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe **Total Civil & Services** 5,38,000.00 Total (J+K) L 52.12.467.74 Sub Total (L+M) N 52,12,467.74 0 Total GST @ 18% of (N) 9,38,244.19 01 Total CESS @ 1% of (N 52,124.68 Ρ Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 62,02,836.61 No. of 33 KV DP required With Isolator 8 (Ref. Drawing No.- TPCODL-TCE-0001) MATERIALS FOR 33 KV DP With Isolator

# Annexure-15 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP

Total Description of Materials Unit Unit Rate No. Quantity Amount WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)
Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 5,49,152.00 No 34,322.00 16 2 KG 76.00 657.728 49,987.33 2x9.56x4.3) 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280) KG 97.50 31.7184 3,092.54 Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's 4 KG 76.00 245.616 18.666.82 channel required =( 1x7.14x4.3) Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel KG 491.232 37,333.63 76.00 required = (2x7.14x4.3)Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's KG 76.00 982.464 74.667.26 channel required =( 4x7.14x4.3) 50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = KG 76.00 709.488 53,921.09 (4\*4.5\*4.927) Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length KG 76 00 45 696 3,472.90 0.8 Mtr., 1 no's channel required =( 1x7.14x0.8) Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = 9 KG 76 00 13.968 1.061.57 (1\*4.5\*0.388) Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = KG 76.00 12.24 930.24 (1\*4.5\*0.340) Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's KG 76.00 76 48 5,812.48 11 channel required =( 2x9.56x0.5) 1,664.00 12 No. 104.00 16 Danger Plate, 2 no's Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = KG 97.50 4.8144 469.40 (2x0.59x0.510) 14 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) Pair 162.50 16 2,600.00 H.T. Stay set (Complete) Set 1,365.00 16 21,840.00 2,080.00 23,400.00 16 H.T. Stay Insulator Type-C (2 No's.) No. 65.00 32 17 7/8 SWG Stay Wire 15kg /stay K.g. 97.50 240 18 Gi Pipe Earthing 40mm. 3 Mtr. Long No 1,365.00 16 21,840.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh KG 453.12 19 97.50 44.179.20 formation and 2.5 mtr. For raising)= 24x2.36 20 GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 48 4,992.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = 21 KG 97.50 19.2576 1,877.62 (8x0.59x0.510) Lightning Arrester(30KV,10KA) (Station Class,class-2) EΑ 13,455.00 24 3,22,920.00 33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with 23 Set 66,000.00 5.28.000.00 8 PI(Polymer) 24 33KV pin insulator polymer No. 624.00 24 14,976.00 H W fitting(B&S) 90KN,4 Bolt No 650.00 48 31,200.00 Disc insulator (B&S) 90 KN polymer No. 1,495.00 48 71,760.00 27 PG Clamp for 232 sq.mm AAA conductor NO 1,495.00 48 71,760.00 GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator 101.40 177.2 17,968.08 K.q 29 Black Paint Ltr 286.00 8 2,288.00 Yellow Colour Paint for Background 16 30 Ltr 216.00 3,456.00 **Total Cost of materials** 19,87,368.16 Α В Stock, Storage & Insurance i.e 3% of A 59.621.04 20,46,989.20 С Sub Total (A+B) D Contigency @ 3% of C 61,409.68 Tools & Plants @ 2% of C Е 39,461.53 F Transportation @ 7.5% of C 1,53,524.19 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 28,281.33 G Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/GI Pipe/PSC pole) Н 1,40,744.98 1 Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 24,70,410.91 Civil & Services SI Total Total Description of Materials Unit **Unit Rate** No Quantity Amount Fixing of 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, including excvation, supply of 0.5 Cum No. 2,250.00 16 36,000.00 cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mti 6.500.00 8.8 57.200.00 3 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 1.8 11.700.00 Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth No. 3,700.00 16 59,200.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe Total Civil & Services 1,64,100.00 L Total (J+K) 26,34,510.91

#### Annexure-15 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP Ν Sub Total (L+M) 26,34,510.91 Total GST @ 18% of (N) 0 4,74,211.96 01 Total CESS @ 1% of (N) 26,345.11 Ρ Gross Total Material +Services (N+O+O1) for 33 KV DP With Isolator 31,35,067.98 No. of 33 KV Cut Point with 180 Degree Angle 30 (Ref. Drawing No.-) MATERIALS FOR 33 KV Cut Point with 180 Degree Angle SI. Total Total Description of Materials **Unit Rate** No. Quantity Amount 17,02,071.43 1 13 Mtr. Long H-Pole(GI) No 56,735.71 30 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of K.g. 2 76.00 975.12 74.109.12 Channel = (2x 9.56x1.7) Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280) 3 K.g. 97.50 158.592 15,462.72 Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 76.00 175.5216 13,339.64 K.g. No's of Channel = (2x 9.56x0.306)Danger Plate, 1 no's. No. 104.00 30 3,120.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = 6 KG 97.50 9.027 880.13 (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 90 9,360.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97.50 36.108 3,520.53 (4x0.59x0.510) No. 624.00 90 56,160.00 33KV pin insulator polymer 10 H W fitting(B&S)90KN,4 Bolt No. 650.00 180 1,17,000.00 180 11 Disc insulator (B&S)90 KN polymer No 1.495.00 2.69.100.00 12 Earthing of Support (Coil Type) EΑ 215 80 30 6,474.00 K.g. No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing 97.50 7.86 766.35 PG Clamp for 232 sq.mm AAA conductor NO. 1,495.00 180 2,69,100.00 GI Nut, Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point) K.g. 101.40 146.37 14,841.92 Ltr 16 Black Paint 286.00 30 8.580.00 Yellow Colour Paint for Background 17 Ltr 216.00 60 12,960.00 **Total Cost of materials** Α 25.76.845.84 Stock, Storage & Insurance i.e 3% of A 77,305.38 В С Sub Total (A+B) 26,54,151.22 D Contigency @ 3% of C 79,624.54 Tools & Plants @ 2% of C 53,083.02 Ε F Transportation @ 7.5% of C 1,99,061.34 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 87.656.68 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) Н 90,101.76 Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 31,63,678.56 Civil & Services Total Total Description of Materials Unit Unit Rate No. Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 16.5 1,07,250.00 1 2 21,937.50 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6.500.00 3.375 Κ **Total Civil & Services** 1.29.187.50 L Total (J+K) 32,92,866.06 Ν Sub Total (L+M) 32,92,866.06 Total GST @ 18% of (N) 0 5,92,715.89 Total CESS @ 1% of (N Ω1 32.928.66 Р Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle 39,18,510.61 No. of 33 KV Cut Point with 90 Degree Angle 10 (Ref. Drawing No.-) MATERIALS FOR 33 KV Cut Point with 90 Degree Angle SI. Total Total Description of Materials Unit Unit Rate No. Quantity Amount 13 Mtr. Long H-Pole(GI) No 56,735.71 5.67.357.14 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of 2 76.00 650.08 49,406.08 K.g Channel = (4x 9.56x1.7) 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280) 97.50 105.728 10,308.48 K.g. Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 K.g. 76.00 117.0144 8.893.09 No's of Channel = (4x 9.56x0.306)Nο 104.00 10 1,040.00 Danger Plate, 1 no's.

#### Annexure-15 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = 3.009 97.50 293.38 GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 30 3,120.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = 12 036 1,173.51 KG 97 50 (4x0.59x0.510) 33KV pin insulator polymer (4 No's each 90 Deg. Cut point) 624.00 24,960.00 No. 40 10 H W fitting(B&S)90KN,4 Bolt No. 650 00 60 39.000.00 11 Disc insulator (B&S)90 KN polymer No. 1,495.00 60 89,700.00 No. 215.80 10 Earthing of Support (Coil Type) 2,158.00 13 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing K.g. 97.50 2.62 255.45 1.495.00 89,700.00 14 PG Clamp for 232 sq.mm AAA conductor NO 60 15 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) Pair 162.50 10 1.625.00 16 H.T. Stay set (Complete ) Set 1,365.00 10 13,650.00 17 H.T. Stay Insulator Type-C (2 No's.) No. 65.00 10 650.00 7/8 SWG Stay Wire 15kg /stay K.g. 97.50 150 14,625.00 GI Nut, Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point) 101.40 11,468.34 K.g. 113.1 20 Black Paint 2,860.00 Ltr 286.00 10 Yellow Colour Paint for Background 21 Ltr 216.00 20 4,320.00 Total Cost of materials Α 9.36.563.47 Stock, Storage & Insurance i.e 3% of A 28,096.90 В С Sub Total (A+B) 9,64,660.38 D Contigency @ 3% of C 28,939.81 Tools & Plants @ 2% of C Ε 18,663.88 F Transportation @ 7.5% of C 72,349.53 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 29,218.89 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) Н 34,881.60 Erection Charges @ 20% of PSC pole- Not to be used for 33kv 1 J Sum of (C to I) 11,48,714.09 Civil & Services SI. Total Total Description of Materials **Unit Rate** Unit No. Quantity Amount 1 Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 5.50 35,750.00 2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 1.13 7,312.50 Fixing of 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, including excvation, supply of 0.5 Cum 2,250.00 10 22,500.00 No. cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) K Total Civil & Services 65,562.50 L Total (J+K) 12,14,276.59 Sub Total (L+M) 12,14,276.59 Ν 0 Total GST @ 18% of (N) 2,18,569.79 Total CESS @ 1% of (N 01 12,142.77 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle Р 14,44,989.14 33 Kv Line Length In KM with 40 Mtr. Span 20 (Ref. Drawing No.-MATERIALS FOR 33 KV Pin Points Total Total SI. Description of Materials Unit **Unit Rate** Quantity No. Amount 13 Mtr. Long H-Pole(GI) No 56.735.71 420 2.38.29.000.00 33 KV V cross Arm (GI) 22Kg each No. 2,340.00 420 9,82,800.00 Top bracket 100x50x6mm GI channel (300mm each) No. 195.00 420 81,900.00 Danger Plate, 1 no's. No. 104.00 420 43,680.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = KG 97.50 126.38 12,321.86 (1x0.59x0.510) 1260.00 GI barbed wire anticlimbing device 3 Kg. Per support 104.00 1,31,040.00 6 Kg Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97.50 505.51 49.287.42 (4x0.59x0.510) 7,86,240.00 No. 624.00 1260 33KV pin insulator polymer

13

15

Α В

С

#### Annexure-15 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP Contigency @ 3% of C 12,05,246.27 Е Tools & Plants @ 2% of C 8,03,497.51 F Transportation @ 7.5% of C 30,13,115.67 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 12,27,193.50 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) Н 15,63,100.55 Erection Charges @ 20% of PSC pole- Not to be used for 33kv ı Sum of (C to I) J 4,79,87,029.04 Civil & Services Total Total Unit Rate Description of Materials Unit Quantity Amount 15,01,500.00 Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 231.00 3,07,125.00 2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 47.25 **Total Civil & Services** 18,08,625.00 Κ Total (J+K) 4,97,95,654.04 Sub Total (L+M) N 4,97,95,654.04 0 Total GST @ 18% of (N) 89,63,217.73 01 Total CESS @ 1% of (N) 4,97,956.54 Р Gross Total Material +Services (N+O+O1) for 33 KV Pin Points 5,92,56,828.30 **Gross Total Summary** 62,02,836.61 Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 2 Gross Total Material +Services (N+O+O1) for 33 KV DP With Isolator 31,35,067.98 3 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle 39,18,510.61 14,44,989.14 4 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle 5 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points 5,92,56,828.30 Gross Total Material +Services 7,39,58,232.65 Q R Inspection Fee of Over Head Line (HT) - Rs.1500 up to 1 km. 1,500.00 s Inspection Fee of Over Head Line (HT) - Rs. 750/ Additional Km 14,250.00 Т Inspection Fee of Drawing Checking and Approval 750.00 U Gross Total Material, Services and Inspection Fees (Q+R+S+T) 7,39,74,732.65

BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU							
Supply Portion							
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)		
1	Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories						
а	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	700				
b	Length of 33kV 1C, 630sqmm cable (HDD)	Mtr.	300				
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	3000	1,495.47	44,86,410.00		
1.2	Supply of Straight throU/Gh jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set	6	11,900.00	71,400.00		
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	6	6,350.00	38,100.00		
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set		6,100.00	-		
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	2052.00	357.60	7,33,795.20		
2	Supply of 33kV RMU						
а	No. of 33kV 3Way RMU (LLV+M)	nos.					
b	No. of 33kV 4Way RMU (LLVV+M)	nos.					
С	No. of 33kV 3Way RMU (LLV)	nos.					
d	No. of 33kV 4Way RMU (LLVV)	nos.					
е	No. of 33kV 3Way RMU (LLL)	nos.					
f	No. of 33kV 4Way RMU (LLLL)	nos.					
2.1	Supply of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M) (CT Ratio to be mentioned)	Nos.	0	22,93,723.00	-		
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M) (CT Ratio to be mentioned)	Nos.	0	31,74,874.00	-		
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-		
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	23,35,264.00	-		
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	-		
2.6	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS)	Nos.	0	19,59,421.00	-		
3	Earthing						
3.1	Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for equipment, structure etc.)	kg	0.00	97.50	-		
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	0	1,365.00	-		
4	FRTU for RMU SCADA Automation						
а	No. of FRTU	nos.	0				
4.1	Pre-Wired FRTU Panel with FRTU	No.	0	1,21,744.00	-		
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	0	1,00,000.00	-		
4.3	Networking Accessories	No.	0	72.00	-		
4.4	CMR with Mounting Base for Digital Inputs	Nos.	0	650.00	-		

	Annexure-15							
BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU								
4.5	Interposing Relay for Digital Output	Nos.	0	467.94	-			
4.6	Battery Charger	Nos.	0	15,385.00	-			
4.7	Battery	Nos.	0	8,333.00	-			
4.8	4G Modem cum Router	Nos.	0	18,500.00	-			
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	0	204.87	-			
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	0	305.58	-			
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	0	275.23	-			
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	0	165.25	-			
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	0	150.00	-			
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	0.0	148.43	-			
4.15	Armored CAT6 SFTP Cable	Mtr.	0	45.87	-			
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	0	89.45	-			
4.17	Multi Function Meter	Nos.	0	18,651.00	-			
	Sub Total (Supply Portion) (in	Rs.)			53,29,705.20			
	Erection Portion	on						
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)			
1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare							
1.1	Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by <b>open trench method</b> .	Mtr.	2100	94.50	1,98,450.00			
1.2	Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits	Set	6	2,400.00	14,400.00			
1.3	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	6	2,081.70	12,490.20			
1.4	Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	0	2,081.70	-			
1.5	Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr.	900	2,300.00	20,70,000.00			
1.6	Laying of <b>110mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open trench.	Mtr.	2052.00	300.00	6,15,600.00			
2	Erection, Commissioning, Wiring and Testing of 33kV RMU							
2.1	Erection of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M)	Nos.	0	15,000.00	-			
2.2	Erection of RMU 33KV 4WAY 630A WITH METERING UNIT	Nos.	0	15,000.00	-			
2.2		1103.		' I				
2.2	(LLVV+M)  Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-			
	(LLVV+M)		0		-			

#### Annexure-15 BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) 2.5 8.000.00 Nos. Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) 0 8.000.00 2.6 Nos. (LLLL) FRTU and OFC for RMU SCADA Automation 3 Services of FRTU Panel, Communication and Other 3.1 EΑ 0.0 16,000.00 Supplied System Sub Total (Erection Portion) (in Rs.) 29,10,940.20 **Civil Portion** SI. Rate Amount **Description of items** Unit Quantity No. (in Rs.) (in Rs.) Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-684 1.1 Mtr Route Length 1.1.a Earth work excavation of soil Cum 574.56 700.00 4,02,192.00 1.1.b Earth work excavation of hard rock Cum 246.24 1,720.00 4,23,532.80 1.2 Back filling with excavated soil outside and above the trench Cum 820.8 202.00 1,65,801.60 Damage of asphalt/tar road and other utilities and 342 1.3 reconstructing to bring to its original shape after laying of Mtr 2,643.67 9,04,135.36 cable in open trench (1mtr. width) Civil works for Prefabricated RCC foundation with supply of all materials 2.1 Prefabricated RCC foundation of 33kV RMU Nos. 0 23,145.30 Supply of GI Fencing with Gate around each RMU sqmtr 0 3,600.00 Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation , soil treatment with bentonide powder, calculation of earth Set 0 3.700.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe. Supply and erection of GI Pipe of dia. 150mm, Class-B 5 48 70,243.20 Mtr 1,463.40 (8Mtr.) Supply and Erection of Cable Route Marker along the cable 6 33 Nos. 1,012.00 33,396.00 route at an interval of 30mtrs with civil works Sub Total (Civil Portion) (in Rs.) 19,99,300.96 **Sub Total (Supply Portion)** 53,29,705.20 Stock, Storage & Insurance @ 3 % of A 1,59,891.16 С Sub Total (A+B) 54,89,596.36 D Contingency @ 3 % of C 1,64,687.89 Tools & Plants Charges @ 2% of C (considered for earthing items) Ε F Transportation @ 7.5% of C 4,11,719.73 G Erection Charges @ 10% of earthing items Н Total (C+D+E+F+G) 60,66,003.97 Sub Total (Erection Portion + Civil Portion) 49,10,241.16 Total Cost (H+I) 1,09,76,245.13 L Total Estimated Capital Cost i.e. (J+K) 1,09,76,245.13 М GST @ 18% of L 19,75,724.12

### Annexure-15 BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU CESS @ 1% of L 10,97,624.51 M1 Ν Grand Total (L+M) 1,40,49,593.76 Inspection Fee of UG Line (HT) - Rs. 3000/ km. 3,000.00 Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km Inspection Fee of RMU - Rs. 1500/ RMU R Inspection Fee of Drawing Checking and Approval 750.00 S Gross Total Material, Services and Inspection Fees (N+O+P+Q+R) 1,40,53,343.76

#### Annexure-15 BoQ and Estimate for 33 KV 4 Pole using WPB GI Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) with Isolator and LA No. of 33 KV 4-Pole with Isolator MATERIALS FOR 33 KV 4-P With Isolator Total Total Description of Materials Unit **Unit Rate** Quantity Nο Amount WPB(GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 1,37,288.00 4 Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 8 no's channel required =( 2 KG 76.00 328.864 24,993.66 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 24 no's required = (24x2.36x0.280) 15.8592 3 KG 97.50 1,546.27 Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's KG 76.00 184.212 14,000.11 channel required =( 2x7.14x4.3)/ Isolator Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 8 no's 5 KG 76.00 245.616 18,666.82 channel required =( 8x7.14x4.3) 50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 8 nos angle required = 6 KG 76.00 177.372 13,480.27 (8\*4 5\*4 927) Isolator Operating Down Pipe Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 7 KG 76.00 17.136 1,302.34 0.8 Mtr., 1 no channel required =( 1x7.14x0.8)/ Isolator Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 no angle required = 8 KG 76.00 5 238 398.09 (1\*4.5\*0.388)/ Isolator Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 no angle required = KG 76.00 4.59 348.84 (1\*4.5\*0.340)/ Isolator Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's KG 76.00 28.68 2,179.68 channel required =( 2x9.56x0.5)/ Isolator 11 Danger Plate, 2 no's. No. 104.00 2 208.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = 12 KG 97.50 0.6018 58.68 (2x0.59x0.510) Gi Pipe Earthing 40mm. 3 Mtr. Long No. 1,365.00 3 4,095.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh KG 97.50 62.54 6,097.65 formation and 5 mtr. For raising) 104.00 GI barbed wire anticlimbing device 3 Kg. Per support, 4 no's qty. required =(4x3kg) 1,248.00 Kg 12 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 16 no's = KG 97.50 4.8144 469 40 16 (16x0.59x0.510) Lightning Arrester(30KV,10KA) (Station Class,class-2) EΑ 13,455.00 9 1,21,095.00 33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with Set 66,000.00 3 1,98,000.00 PI(Polymer) 19 33KV pin insulator polymer No. 624.00 6 3,744.00 11,700.00 20 H W fitting(B&S)90KN,4 Bolt 650.00 18 No. Disc insulator (B&S) 90 KN polymer No. 1,495.00 18 26,910.00 PG Clamp for 232 sq.mm AAA conductor NO. 1,495.00 24 35,880.00 30.9 23 232 sq.mm AAA conductor Mtr 203.45 6.286.61 GI Nut , Bolt & Washer of different sizes K.g. 101.40 45 4,563.00 286.00 25 Black Paint Ltr 286.00 1 Yellow Colour Paint for Background 26 Ltr 216.00 432.00 Total Cost of materials 6,35,277.41 Α В Stock, Storage & Insurance i.e 3% of A 19,058.32 С Sub Total (A+B) 6,54,335.74 D Contigency @ 3% of C 19.630.07 Ε Tools & Plants @ 2% of C 13,002.36 F Transportation @ 7.5% of C 49,075.18 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 7,070.33 Н Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/GI Pole/PSC pole) 50,871.12 Erection Charges @ 20% of PSC pole- Not to be used for 33kv Sum of (C to I) 7,93,984.80 J Civil & Services SI. Total Total Description of Materials Unit **Unit Rate** Nο Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr 6,500.00 Cu.mtr 2.2 14,300.00 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr 6,500.00 0.45 2,925.00 Cu.mtr Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth No. 3,700.00 3 11,100.00 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe **Total Civil & Services** 28,325.00 Total (J+K) 8,22,309.80 L Sub Total (L+M) Ν 8,22,309.80 Total GST @ 18% of (N) 0 1,48,015.76 01 Total CESS @ 1% of (O1) 8,223.10 Ρ Gross Total Material +Services (N+O+O1) for 33 KV 4-P With Isolator 9,78,548.67

#### Annexure-15 Construction of 2 nos. 'PC+6' EHT Tower for River crossing (Span Length- 300 Mtr.) No. of Span 2 Supply of Material for Construction of 'PC+6' EHT Tower Total **Total Amount** SI.No. Unit **Unit Rate** Description Quantity Cost of G.I PC +6 TYPE Tower super structure (Main + Extention 1 +Stub + Template) PC Tower (5.346 MT per Tower) MT 90,000.00 21.384 19,24,560.00 i) +6 Mtr Extention (2.246 MT per Tower) МТ 90,000.00 8.984 8,08,560.00 ii) Stub & Cleats (0.610 MT per Tower) MT 90,001.00 2.440 2,19,602.44 iii) Template (0.888 MT per Tower) MT 8,696.01 3.552 30,888.22 iv) 2 **Nut Bolts** i) PC Tower (0.336 MT per Tower) MT 1,19,078.23 1.344 1,60,041.14 0.444 ii) +6 Mtr Extention (0.111 MT per Tower) MT 1,19,078.23 52,870.74 3 **Conductor and Accessories** i 232 Sq.mm. Conductor (AAAC) Km 2,03,450.00 3.708 7,54,392.60 Earth wire 7/1.5, 300 meter + Tower earthing $(50 \times 4) = 500$ Mtr. 43,317.74 1.000 43,317.74 ii Km 4,498.00 48 iii Double tension Hardware Fittings Set 2,15,904.00 iν Disc insulator (B&S)120 KN polymer Nos 1,872.00 96 1,79,712.00 Earth wire tension fittings Set 675.31 8 5,402.45 v Vibration damper for earth wire 539.78 8 4,318.22 νi Nos Vibration damper for coductor 48 27,199.19 vii Nos 566.65 4 Copper flexible bond 490.71 1,962.83 viii Nos Phase Plate (R,Y,B) Set 245.35 24 5,888.48 ix Tower Number Plate Nos 243.02 4 972.07 Х Circuit Plate Nos 269.89 8 2,159.11 χi χij 40 mm Dia. 3Mtr. long G.I Earthing device Nos 1,365.00 8 10,920.00 400 97.50 39,000.00 GI Flat 50 x 6 mm kg Xiii Danger Board 104.00 8 832.00 χiv Nos Bird Guard Nos 429.95 48 20.637.73 χV 422 χvi Anticlimbing Device kg 104.00 43,929.60 Loop Connector 490.71 24 11,776.97 xvii Nos **Total Cost of materials** 45,64,847.53 Α В Stock, Storage & Insurance @ 3 % of A 1,36,945.43 C Sub Total (A+B) 47,01,792.96 D Contingency @ 3 % of C 1,41,053.79 Tools & Plants Charges @ 2% (considered for earthing items) Ε 803.40 F Transportation @ 7.5% of C 3,52,634.47 Erection Charges @ 10% of earthing items G 4,017.00 Total (C+D+E+F+G) Н 52,00,301.62 **Erection Portion** Total Unit SI.No. Description Rate Amount Quantity Cost of G.I PC +6 TYPE Tower super structure (Main + Extention +Stub + Template) PC Tower (5.346 MT per Tower) MT 11,000.00 21.384 2,35,224.00 i) ii) +6 Mtr Extention (2.246 MT per Tower) MT 11,000.00 8.984 98,824.00 Stub & Cleats (0.610 MT per Tower) 11,000.00 2.440 26,840.00 iii) MT Template (0.888 MT per Tower) 11,000.00 3.552 39,072.00 iv) MT 2 **Nut Bolts** 14,784.00 i) PC Tower (0.336 MT per Tower) ΜT 11,000.00 1.344 11,000.00 4,884.00 +6 Mtr Extention (0.111 MT per Tower) MT 0.444 ii) **Conductor and Accessories** 3 i 232 Sq.mm. Conductor (AAAC) Km 52,155.14 3.708 1,93,391.27

	Annexure-15				
Constr	uction of 2 nos. 'PC+6' EHT Tower for River crossing (Span Length	1- 300 M	tr.)		
ii	Earth wire 7/1.5, 300 meter + Tower earthing (50 x 4) = 500Mtr.	Km	13,038.79	1.000	13,038.79
iii	Double tension Hardware Fittings	Set	325.97	48	15,646.54
iv	Disc insulator (B&S)120 KN polymer	Nos	325.97	96	31,293.09
V	Earth wire tension fittings	Set	325.97	8	2,607.76
vi	Vibration damper for earth wire	Nos	325.97	8	2,607.76
vii	Vibration damper for coductor	Nos	325.97	48	15,646.54
viii	Copper flexible bond	Nos	325.97	4	1,303.88
ix	Phase Plate (R,Y,B)	Set	325.97	24	7,823.27
Х	Tower Number Plate	Nos	195.58	4	782.33
xi	Circuit Plate	Nos	325.97	8	2,607.76
xii	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.	3,700.00	8	29,600.00
xiii	Danger Board	Nos	52.00	8	416.00
xiv	Bird Guard	Nos	65.19	48	3,129.31
ΧV	Anticlimbing Device	kg	19.56	422	8,261.37
xvi	Loop Connector	Nos	325.97	24	7,823.27
ı	Total Cost of Erection				7,55,606.94
	Civil Portion				
SI.No.	Description	Unit	Rate	Total Quantity	Amount
1	be done in layers of 500mm sprinkling of water and compaction thereafter and disposed of excess quantity of excavated soil at suitable place after back filling), & if required for filling the foundation, borrowed earth/murrum/sand shall be brought for filling and compaction, including supply of sand, all T&P, labour as required.				
1.1	Soft and loose soil	СИМ	176.86	200	35,372.00
2	Boring for under reemed cast in situ piling with bentonite showing for stabilisation of bore:- Pile diameter (1000 MM) and approximate length of the bore is 25 Mtrs BY DMC method as per approved drawing.	Mtr. length	5,836.14	400	23,34,456.00
3	Supply of all materials like cement, steel, all coarse aggregates, fine aggregates and making pile foundations of the required Tower foundation, including supply of all materials, labours and T&P as per specification in the RCC :1:1:2 (Grade M-25.) (with cost of cement and without steel)	Cum	8,015.00	314	25,17,351.20
4	Steel of different size(as per design) with cutting, bending, binding in position of M.S.Rod for reinforcement of foundation concret of pile of towers including supply of binding wire. (With supply of steel rod (TATA/RINL/SAIL make))	МТ	61,968.00	27	16,85,529.60
5	Supply and putting of MS liner of 6mm thickness and 1000mm dia as per approved drawing and as per instruction of engineer in charge.	МТ	61,968.00	59	36,43,718.40
6	Pile riser, cap, tie-beam with RCC: 1:1.5:3 (Grade M-20), including supply of all materials like Cement, coarse and fine aggregates, shuttering and supply of labours, de-watering, proper curing of the foundations/concrete and T&P in line with the Specification and as per direction of Engineer in Charge. (with cost of cement and without steel)	Cum	7,107.12	280	19,89,993.60
7	Steel of different size(as per design) with cutting, bending, binding in position of M.S.Rod for reinforcement of foundation concret of pile riser, cap and tie beam including supply of binding wire. (With supply of steel rod (TATA/RINL/SAIL make))	МТ	61,968.00	22	13,63,296.00

	Annexure-15 Construction of 2 nos. 'PC+6' EHT Tower for River crossing (Span Length- 300 Mtr.)						
Constr							
8	Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm), fine aggregates, cement in tower foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge.(With Cement)	Cum	4,978.76	20	99,575.20		
9	Shoring And Shuttering required in wet or special locations with supply of all materials, T&P and Labour.(Required for riser works above ground level)	Sq.Mt	341.92	400	1,36,768.00		
J	Total Cost of Civil Work				1,38,06,060.00		
K	Total Cost of Erection, Foundation and Civil Works (I+J)						
L	Total Cost (H+K)						
N	Total Estimated Capital Cost (L+M)						
0	GST @ 18% of N						
O1	O1 CSS @ 1% of N						
P Total (N+O)					2,35,16,743.00		

#### Annexure-15 Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator). 3 No. of Bus isolator requirement No. of VCB Requirement Total Total Unit Rate Description of Materials Unit Quantity Amount No. T-1 GI Column(7.25 mtr long, consisting of 2 Nos of 150X76X6.5 mm 26 600 00 26,600.00 Nos 1 channel) for 33kV incoming line, Nominal Unit Wt - 0.35 MT T-2 GI Column (7.25mtr long, consisting of 2 Nos 175X75X6 mm channel) for Nos. 31,920.00 1 31,920.00 33kV incoming line -1 no, Nominal Unit Wt - 0.42 MT T-1A GI Column (for 33 kv Bus) (6 mtr long, consisting of 2 Nos of Nos 23,560.00 2 47,120.00 150X76X6.5 mm channel jointed by plates) Nominal Unit Wt - 0.31 MT T-2A GI Column (for 33 kv Bus) (6 mtr long, consisting of 2 Nos 175X75X6 2 28,120.00 56,240.00 Nos mm channel jointed by plates) Nominal Unit Wt - 0.37 MT G-3 GI Beam(5.05mtr long, consisting of 2 Nos 150X75 X5.7mm) for 33kV 15,200.00 15,200.00 incoming line - (2 nos. Beam- one for Surge Arrester and other for Isolator, Nos. 1 Nominal Unit Wt - 0.2 MT) G-2 GI Beam (6.1 mtr long, consisting of 2 Nos 125X65 X5.3 mm channel 13,300.00 4 53,200.00 Nos jointed by plates) for 33kV Bus Stringing , Nominal Unit Wt - 0.175 MT) Equipment Structures (GI) For 33 KV Isolator (Unit Wt of Equipment 7 KG 76.00 990 75,240.00 Structures per set - 0.33 MT) Equipment Structures (GI) For 33 KV Vacuum Circuit Breaker (Unit Wt of KG 8 76 00 200 15,200.00 Equipment Structures per set - 0.2 MT) GI Column for 33 KV CT (Unit Wt of Equipment Structures per set - 0.285 KG 76.00 285 21,660.00 GI Spikes with cone and GI (2 nos) base plate 10mm (50x3000 mm GI pipe) Nos. 3,641.92 4 14,567.67 (Unit Wt=0.035 MT) GI Pipe Earthing 40mm. 3 Mtr. Long 1,365.00 10,920.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr. For Isolator/VCB, 10 metre KG 188.8 18,408.00 97.50 mesh formation )= 20x2.36 KM 2,74,300.00 27,430.00 13 400 sq.mm ACSR for 33kV side jumpering and Bus Formation etc. 0.1 33 kV 1250 AMP Double break (Turn & twist center rotating) isolator with Set 1,31,157.00 3 3,93,471.00 14 earth switch with PI(Polymer) 33KV Outdoor VCB-1600A, with indoor CR panel without PT, with outdoor CT (CTR- 600-300-150/1-1A, 15VA, STC 25KA/3sec, class: 0.5, 5P10) for feeder EΑ 7,02,000.00 1 7,02,000.00 33KV.Single Phase PT(33KV/ V3 / 110V/ V3) (Oil cooled ) CLASS 0.5 / 3P, EΑ 33,046.00 3 99,138.00 with O/P burden of 100VA Lightning Arrester(30KV,10KA) (Station Class,class-2) EΑ 13.455.00 12 1,61,460.00 17 Control Cable 10Core x 2.5 mm<sup>2</sup> Mtr 429.00 150 64,350.00 78,585.00 Control Cable 16Core x 2.5 mm<sup>2</sup> 523.90 150 145.60 50 7,280.00 Mtr Control Cable 4Core x 2.5 mm<sup>2</sup> 21 Control Cable 7Core x 2.5 mm<sup>2</sup> Mtr 236.60 50 11,830.00 18 22 Disc insulator (B&S) 90 KN polymer 1,495.00 26,910.00 No. 650.00 18 11.700.00 23 H W fitting(B&S) 90KN,4 Bolt Nο 8 bolted (M-12) "T" clamp ACSR Zebra run & 232 mm2 drop Nο 1 404 00 25,272.00 PG Clamp for 232 sq.mm AAA conductor NO. 1.495.00 48 71.760.00 25 26 GI Nut, Bolt & Washer of different sizes (13.718 Kg each Strcutures) K.g. 101 40 54.872 5.564.02 Black Paint Ltr 286.00 4 1,144.00 27 286.00 Yellow Colour Paint for Background 2,288.00 **Total Cost of materials** 20,76,457.69 В Stock, Storage & Insurance i.e 3% of A 62,293.73 С Sub Total (A+B) 21,38,751.42 Contigency @ 3% of C 64,162.54 Tools & Plants @ 2% of C 42,775.03 Ε F Transportation @ 7.5% of C 1,60,406.36 G Erection Charges @ 5% on Trf/Breaker/Joist 36,153.00 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole/GI Earthing) Н 1,40,444.38

#### Annexure-15 Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator). Erection Charges @ 20% of PSC pole- Not to be used for 33kv Sum of (C to I) 25,82,692.74 J Civil & Services Total Total SI. Description of Materials Unit **Unit Rate** No. Quantity Amount **VCB Foundation** BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil Cum 482 00 7.28 3 508 96 Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & 200.00 4.00 800.00 Cum compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Supplying and filling in plinth with river sand under floors, including watering, 1020.00 0.34 Cum 348.08 ramming, consolidating and dressing complete. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 5130.00 0.46 2,334.15 Cum Cement :3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal Providing and laving in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and 6500 00 283 18,362.50 Cum reinforcement - All work up to plinth level : 1:1.5:3 (1 cement : 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form 13.25 301.00 3.988.25 for all heights: Foundations, footings, bases of columns, etc. for mass Sqm Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated Kg 109.00 140.00 15,260.00 bars of grade Fe-500D or more. 0.00 CT & PT Foundation BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil Cum 482.00 7.97 3,840.94 works Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & Cum 200.00 4.50 900.00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Supplying and filling in plinth with river sand under floors, including watering, Cum 900.00 0.36 326.70 ramming, consolidating and dressing complete. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cum 5130.00 0.361,862.19 Cement :3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and Cum 6500.00 2.36 15,356.25 reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form 14.94 for all heights: Foundations, footings, bases of columns, etc. for mass Sqm 301.00 4,496.94 Steel reinforcement for R.C.C. work including straightening, cutting, bending, 109.00 placing in position and binding all complete: Thermo-Mechanically Treated 122 43 13,344.87 Kg bars of grade Fe-500D or more. Column as per Drawing Schedule-0.00 Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & Cum 482.00 51.31 24,731.30 machinery for excavation of cable trench & other civil works Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & Cum 200 00 24 00 4,800.00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 5130.00 2.10 10.773.00 Cum Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and Cum 6500.00 14.18 92,137.50 reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).

	Annexure-15						
Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator).							
5	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	89.64	26,981.64		
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	734.58	80,069.22		
D	Isolator						
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	14.18	6,832.35		
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	6.00	1,200.00		
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.85	4,363.07		
4	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	8.55	55,575.00		
5	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	44.82	13,490.82		
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	367.29	40,034.61		
7	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.	3700.00	8	29,600.00		
K	K Total Civil & Services						
L Total (J+K)					30,58,011.06		
N	N Sub Total (L+M)						
0	Total GST @ 18% of (N)				5,50,441.99		
Р	Total Cess @ 1% of (N)				30,580.11		
Q	Gross Total Material +Services (N+O+P)				36,39,033.16		

		Annexure-16						
	TP (	CENTRAL ODISHA DISTRIBUTION LIMITED						
Name of the	Name of the Division :- Paradeep							
Name of the	Sub-Division : -	Tirtol	Tirtol					
Name of the	Section : -	Tirtol						
Name of the	Work :-	33kV New Line from Tirtol Grid (33kV Proposed Kanakpur	r Feeder)					
Scope of work:-			Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 10Ckm. Construction of 01 no 33kV outdoor line bay at 33/11kV Kanakpur PSS					
Names of Sc	chemes: -	TPCODL CAPEX	TPCODL CAPEX					
		ABSTRACT OF ESTIMATE						
SI. No.	Part	Description	Amount					
1	А	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 10Ckm.	₹ 3,56,13,221.93					
2 B		Construction of 01 no 33kV outdoor line bay at 33/11kV Kanakpur PSS	₹ 36,39,033.16					
		Total Amount	₹ 3,92,52,255.09					
		Total Amount (In Cr)	₹ 3.93					
Total estima	ted cost is Rs.3.93 C	rore.	•					

33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP No. of 33 KV DP required Without Isolator 8 (Ref. Drawing No.- TPCODL-HVD-0004) MATERIALS FOR 33 KV DP Without Isolator Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 16 5,49,152.00 Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =( 2 37,781.12 KG 76 00 497 12 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280) KG 97.50 31.7184 3,092.54 Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's KG 76.00 559,776 42,542.98 channel required =( 5x7.14x1.96) 50x50x6mm.GI Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = KG 76.00 494.208 37.559.81 (4\*4.5\*3.432) 104.00 1,664.00 6 Danger Plate, 2 no's. No 16 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = KG 97.50 4.8144 469.40 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair) Pair 162.50 16 2,600.00 9 H.T. Stay set (Complete) Set 1,365.00 16 21,840.00 10 H.T. Stay Insulator Type-C (2 No's.) 2,080.00 No 65.00 32 97.50 240 7/8 SWG Stay Wire 15kg /stay K.g. 23.400.00 12 Gi Pipe Earthing 40mm. 3 Mtr. Long No 1,365.00 8 10,920.00 50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 9 204 00 13 KG 97 50 94 4 14 GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 48 4,992.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = 1,877.62 KG 97.50 19.2576 (8x0.59x0.510) 16 33KV pin insulator polymer No. 624.00 14,976.00 24 17 H W fitting(B&S) 90KN,4 Bolt No. 650.00 48 31,200.00 Disc insulator (B&S) 90 KN polymer 1,495.00 48 71,760.00 18 No 71,760.00 19 PG Clamp for 232 sq.mm AAA conductor 48 NO 1.495.00 20 GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator) K.g. 101.40 98.088 9,946.12 21 Black Paint Ltr 286.00 2,288.00 8 Yellow Colour Paint for Background 16 Ltr 216.00 3.456.00 Α **Total Cost of materials** 9,54,561.59 В Stock, Storage & Insurance i.e 3% of A 28,636.85 С Sub Total (A+B) 9,83,198.44 D Contigency @ 3% of C 29,495.95 Ε Tools & Plants @ 2% of C 18,410.66 F Transportation @ 7.5% of C 73,739.88 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 28.281.33 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/GI Pipe/PSC pole) Н 35,490.67 Erection Charges @ 20% of PSC pole- Not to be used for 33kv 1 J Sum of (C to I) 11,68,616.94 Civil & Services SI. Total Total Description of Materials Unit Unit Rate No. Quantity Amount Fixing of 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, including excvation, supply of 0.5 Cum No. 2.250.00 16 36.000.00 cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) 2 Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 8.8 57,200.00 3 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6.500.00 1.8 11.700.00 Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth 3,700.00 29,600.00 No. 8 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe Κ **Total Civil & Services** 1,34,500.00 L Total (J+K) 13,03,116.94 Ν Sub Total (L+M) 13,03,116.94 Total GST @ 18% of (N 2,34,561.05 0 Total CESS @ 1% of (N) 01 13,031.17 Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 15,50,709.15 Р No. of 33 KV DP required With Isolator 2 (Ref. Drawing No.- TPCODL-TCE-0001) MATERIALS FOR 33 KV DP With Isolator

33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP

			1	1 1		
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	4	1,37,288.00	
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 2x9.56x4.3)	KG	76.00	164.432	12,496.83	
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	7.9296	773.14	
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	76.00	61.404	4,666.70	
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	76.00	122.808	9,333.41	
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	76.00	245.616	18,666.82	
7	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	76.00	177.372	13,480.27	
8	lsolator 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	76.00	11.424	868.22	
9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	76.00	3.492	265.39	
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	76.00	3.06	232.56	
11	Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's	KG	76.00	19.12	1,453.12	
12	channel required =( 2x9.56x0.5)  Danger Plate, 2 no's.	No.	104.00	4	416.00	
13	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's =	KG	97.50	1.2036	117.35	
	(2x0.59x0.510) H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's gty. required ( 1 Pair)	Pair	162.50	4	650.00	
15	H.T. Stay set (Complete )	Set	1,365.00	4	5,460.00	
16	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	8	520.00	
17	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	60	5,850.00	
18	Gi Pipe Earthing 40mm. 3 Mtr. Long 50x6mm GI Flat for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh	No.	1,365.00	4	5,460.00	
19	formation and 2.5 mtr. For raising)= 24x2.36	KG	97.50	113.28	11,044.80	
20	GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's =	Kg	104.00	12	1,248.00	
21	(8x0.59x0.510) [Lightning Arrester(30KV,10KA) (Station Class,class-2)	KG EA	97.50 13,455.00	4.8144 6	469.40 80,730.00	
23	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with	Set	66,000.00	2	1,32,000.00	
	PI(Polymer) 33KV pin insulator polymer	No.	624.00	6	3,744.00	
25	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	12	7,800.00	
26	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	12	17,940.00	
27	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	12	17,940.00	
	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator) Black Paint	K.g. Ltr	101.40 286.00	44.3 2	4,492.02 572.00	
30	Yellow Colour Paint for Background	Ltr	216.00	4	864.00	
A	V		Total Cost o	<u> </u>	4,96,842.04	
В	Stock,		& Insurance		14,905.26	
c				otal (A+B)	5,11,747.30	
			Contigency	<u> </u>	15,352.42	
E		Τι	ools & Plants	_	9,865.38	
F			nsportation @		38,381.05	
G	Erection Charges @				7,070.33	
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol				35,186.25	
<del></del>	Erection Charges @ 20% of P		<u> </u>	<u>' '</u>		
J				of (C to I)	6,17,602.73	
	Civil & Services					
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	4	9,000.00	
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	2.2	14,300.00	
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.45	2,925.00	
4	Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth esistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe.					
к	K Total Civil & Services					
L	L Total (J+K)					
				. '	6,58,627.73	

#### Annexure-16 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP Ν Sub Total (L+M) 6.58.627.73 0 Total GST @ 18% of (N) 1,18,552.99 Total CESS @ 1% of (N) 01 6.586.28 Р Gross Total Material +Services (N+O+O1) for 33 KV DP With Isolator 7,83,766.99 No. of 33 KV Cut Point with 180 Degree Angle 15 (Ref. Drawing No.-) MATERIALS FOR 33 KV Cut Point with 180 Degree Angle SI. Total Total Description of Materials Unit Unit Rate No. Quantity Amount 13 Mtr. Long H-Pole(GI) No 56,735.71 15 8,51,035.71 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of 37,054.56 2 K.g. 76.00 487.56 Channel = (2x 9.56x1.7)3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280) K.g. 97.50 79.296 7.731.36 Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 K.g. 76.00 87.7608 6,669.82 No's of Channel = (2x 9.56x0.306) 104.00 1,560.00 Danger Plate, 1 no's No. 15 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = KG 97.50 4.5135 440.07 (1x0.59x0.510) GI barbed wire anticlimbing device 3 Kg. Per support 104.00 4,680.00 45 Kg Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97 50 18 054 1,760.27 (4x0.59x0.510) 33KV pin insulator polymer No. 624.00 45 28,080.00 10 H W fitting(B&S)90KN,4 Bolt No. 650.00 90 58.500.00 11 Disc insulator (B&S)90 KN polymer No 1,495.00 90 1,34,550.00 Earthing of Support (Coil Type) EΑ 215.80 15 3,237.00 13 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing 97.50 3.93 383.18 K.g. PG Clamp for 232 sq.mm AAA conductor NO 1,495.00 90 1,34,550.00 15 GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point) 73.185 K.g. 101.40 7.420.96 16 Black Paint Ltr 286.00 15 4,290.00 Yellow Colour Paint for Background 216.00 30 6,480.00 17 Ltr **Total Cost of materials** 12,88,422.92 Α В Stock, Storage & Insurance i.e 3% of A 38,652.69 С Sub Total (A+B) 13,27,075.61 Contigency @ 3% of C 39,812.27 D Ε Tools & Plants @ 2% of C 26,541.51 Transportation @ 7.5% of C 99,530.67 F Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole G 43,828.34 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) 45,050.88 Н Erection Charges @ 20% of PSC pole- Not to be used for 33kv Sum of (C to I) J 15,81,839.28 Civil & Services Total Total Description of Materials Unit Unit Rate Quantity No. Amount 1 Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 8.25 53.625.00 2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 1.6875 10,968.75 κ **Total Civil & Services** 64,593.75 Total (J+K) 16,46,433.03 L Sub Total (L+M) Ν 16,46,433.03 0 Total GST @ 18% of (N) 2,96,357.95 Total CESS @ 1% of (N) 01 16,464.33 P Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle 19,59,255.31 No. of 33 KV Cut Point with 90 Degree Angle 5 (Ref. Drawing No.-) MATERIALS FOR 33 KV Cut Point with 90 Degree Angle Total Total Description of Materials Unit Unit Rate No. Quantity Amount 13 Mtr. Long H-Pole(GI) 56,735.71 2,83,678.57 No Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of 76.00 325.04 24,703.04 K.g. 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280) K.g. 97.50 52.864 5.154.24 Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 K.g. 76.00 58.5072 4,446.55 No's of Channel = (4x 9.56x0.306)

Danger Plate, 1 no's.

104.00

5

No.

520.00

#### Annexure-16 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = 97.50 1.5045 146.69 GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 15 1,560.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97.50 6.018 586.76 (4x0.59x0.510) 12,480.00 No. 624.00 33KV pin insulator polymer (4 No's each 90 Deg. Cut point) 20 No. 10 H W fitting(B&S)90KN,4 Bolt 650.00 30 19,500.00 Disc insulator (B&S)90 KN polymer No. 1,495.00 30 44,850.00 12 Earthing of Support (Coil Type) No. 215.80 1,079.00 13 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing 1.31 K.g. 97.50 127.73 44,850.00 14 PG Clamp for 232 sq.mm AAA conductor NO 1,495.00 30 15 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) Pair 162.50 5 812.50 16 H.T. Stay set (Complete ) Set 1,365.00 5 6,825.00 17 H.T. Stay Insulator Type-C (2 No's.) No. 65.00 325.00 7/8 SWG Stay Wire 15kg /stay 7,312.50 18 97.50 75 K.g 19 GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point) 56.55 5,734.17 K.g. 101.40 20 Black Paint Ltr 286.00 5 1,430.00 Yellow Colour Paint for Background Ltr 216.00 10 2,160.00 **Total Cost of materials** 4,68,281.74 Stock, Storage & Insurance i.e 3% of A В 14,048.45 Sub Total (A+B) С 4,82,330.19 D Contigency @ 3% of C 14,469.91 Ε Tools & Plants @ 2% of C 9,331.94 F Transportation @ 7.5% of C 36,174.76 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 14,609.45 G Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) Н 17,440.80 Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 5,74,357.05 Civil & Services SI. Total Total Description of Materials Unit Unit Rate No. Quantity Amount 1 Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr 17,875.00 Cu.mtr 6,500.00 2.75 2 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 0.56 3,656.25 Fixing of 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, including excvation, supply of 0.5 Cum 11,250.00 No. 2,250.00 5 cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) **Total Civil & Services** Κ 32,781.25 Total (J+K) L 6,07,138.30 Sub Total (L+M) Ν 6,07,138.30 0 Total GST @ 18% of (N) 1,09,284.89 Total CESS @ 1% of (N) 01 6,071.38 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle Р 7,22,494.57 33 Kv Line Length In KM with 40 Mtr. Span 10 (Ref. Drawing No.-) MATERIALS FOR 33 KV Pin Points Total Total Description of Materials Unit **Unit Rate** Quantity Amount

			l .		
1	13 Mtr. Long H-Pole(GI)	No	56,735.71	220	1,24,81,857.14
2	33 KV V cross Arm (GI) 22Kg each	No.	2,340.00	220	5,14,800.00
3	Top bracket 100x50x6mm Gl channel ( 300mm each)	No.	195.00	220	42,900.00
4	Danger Plate, 1 no's.	No.	104.00	220	22,880.00
5	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	66.20	6,454.31
6	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	660.00	68,640.00
7	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	264.79	25,817.22
8	33KV pin insulator polymer	No.	624.00	660	4,11,840.00
9	Earthing of Support ( Coil Type )	No.	215.80	220	47,476.00
10	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	57.64	5,619.90
11	GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	K.g.	101.40	319.00	32,346.60
	232 sq.mm AAA conductor	Mtr.	203.45	30900.00	62,86,605.00
	Crimping type Midspan Compression Joint for 232sq.mm AAA conductor	EA	842.95	30	25,288.38
14	Black Paint	Ltr	286.00	220.0	62,920.00
15	Yellow Colour Paint for Background	Ltr	216.00	440.0	95,040.00
Α			Total Cost o	f materials	2,01,30,484.55
В	Stock,	Storage	& Insurance	i.e 3% of A	6,03,914.54
С			Sub T	otal (A+B)	2,07,34,399.08

#### Annexure-16 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP Contigency @ 3% of C 6,22,031.97 Tools & Plants @ 2% of C 4,14,687.98 Ε F Transportation @ 7.5% of C 15,55,079.93 Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 6,42,815.64 G Н Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) 7,87,808.62 1 Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 2,47,56,823.24 Civil & Services Total Total Unit Rate Description of Materials Unit No. Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr 7,86,500.00 Cu.mtr 6,500.00 121.00 2 Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr Cu.mtr 6.500.00 24.75 1,60,875.00 Κ **Total Civil & Services** 9,47,375.00 L Total (J+K) 2,57,04,198.24 Sub Total (L+M) Ν 2,57,04,198.24 0 Total GST @ 18% of (N) 46,26,755.68 Total CESS @ 1% of (N) 01 2,57,041.98 Р Gross Total Material +Services (N+O+O1) for 33 KV Pin Points 3,05,87,995.90 **Gross Total Summary** Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator 15,50,709.15 2 Gross Total Material +Services (N+O+O1) for 33 KV DP With Isolator 7,83,766.99 3 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle 19,59,255.31 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle 4 7,22,494.57 Gross Total Material +Services (N+O+O1) for 33 KV Pin Points 5 3,05,87,995.90 Q **Gross Total Material +Services** 3,56,04,221.93 R Inspection Fee of Over Head Line (HT) - Rs.1500 up to 1 km 1,500.00 S Inspection Fee of Over Head Line (HT) - Rs. 750/ Additional Km 6,750.00 Т Inspection Fee of Drawing Checking and Approval 750.00

Gross Total Material, Services and Inspection Fees (Q+R+S+T)

3,56,13,221.93

U

Cons	Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator).							
	No. of Bus isolator requirement							
SI.	No. of VCB Requirement			1 Total	Total			
No.	Description of Materials	Unit	Unit Rate	Quantity	Amount			
1	T-1 GI Column(7.25 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel) for 33kV incoming line, Nominal Unit Wt - 0.35 MT	Nos.	26,600.00	1	26,600.00			
2	T-2 GI Column (7.25mtr long, consisting of 2 Nos 175X75X6 mm channel) for 33kV incoming line -1 no, Nominal Unit Wt - 0.42 MT	Nos.	31,920.00	1	31,920.00			
3	T-1A GI Column ( for 33 kv Bus) ( 6 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel jointed by plates) Nominal Unit Wt - 0.31 MT	Nos.	23,560.00	2	47,120.00			
4	T-2A GI Column ( for 33 kv Bus) (6 mtr long, consisting of 2 Nos 175X75X6 mm channel jointed by plates) Nominal Unit Wt - 0.37 MT	Nos.	28,120.00	2	56,240.00			
5	G-3 GI Beam(5.05mtr long, consisting of 2 Nos 150X75 X5.7mm) for 33kV incoming line - (2 nos. Beam- one for Surge Arrester and other for Isolator, Nominal Unit Wt - 0.2 MT)	Nos.	15,200.00	1	15,200.00			
6	G-2 GI Beam (6.1 mtr long, consisting of 2 Nos 125X65 X5.3 mm channel jointed by plates) for 33kV Bus Stringing , Nominal Unit Wt - 0.175 MT)	Nos.	13,300.00	4	53,200.00			
7	Equipment Structures (GI) For 33 KV Isolator (Unit Wt of Equipment Structures per set - 0.33 MT)	KG	76.00	990	75,240.00			
8	Equipment Structures (GI) For 33 KV Vacuum Circuit Breaker (Unit Wt of Equipment Structures per set - 0.2 MT)	KG	76.00	200	15,200.00			
9	GI Column for 33 KV CT (Unit Wt of Equipment Structures per set - 0.285 MT)	KG	76.00	285	21,660.00			
10	GI Spikes with cone and GI ( 2 nos) base plate 10mm (50x3000 mm GI pipe) (Unit Wt=0.035 MT)	Nos.	3,641.92	4	14,567.67			
11	GI Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	8	10,920.00			
12	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr. For Isolator/VCB , 10 metre mesh formation )= 20x2.36	KG	97.50	188.8	18,408.00			
13	400 sq.mm ACSR for 33kV side jumpering and Bus Formation etc.	KM	2,74,300.00	0.1	27,430.00			
14	33 kV 1250 AMP Double break (Turn & twist center rotating) isolator with earth switch with PI(Polymer)	Set	1,31,157.00	3	3,93,471.00			
15	33KV Outdoor VCB-1600A, with indoor CR panel without PT, with outdoor CT (CTR- 600-300-150/1-1A, 15VA, STC 25KA/3sec, class: 0.5, 5P10) for feeder protection	EA	7,02,000.00	1	7,02,000.00			
16	33KV.Single Phase PT(33KV/ V3 / 110V/ V3) (Oil cooled ) CLASS 0.5 / 3P, with O/P burden of 100VA	EA	33,046.00	3	99,138.00			
17	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	12	1,61,460.00			
18	Control Cable 10Core x 2.5 mm <sup>2</sup>	Mtr	429.00	150	64,350.00			
19	Control Cable 16Core x 2.5 mm <sup>2</sup>	Mtr	523.90	150	78,585.00			
20	Control Cable 4Core x 2.5 mm <sup>2</sup>	Mtr	145.60	50	7,280.00			
21	Control Cable 7Core x 2.5 mm <sup>2</sup>	Mtr	236.60	50	11,830.00			
22	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	18	26,910.00			
23	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	18	11,700.00			
24	8 bolted (M-12) "T" clamp ACSR Zebra run & 232 mm2 drop	No.	1,404.00	18	25,272.00			
25	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	48	71,760.00			
26	GI Nut , Bolt & Washer of different sizes (13.718 Kg each Strcutures)	K.g.	101.40	54.872	5,564.02			
27	Black Paint	Ltr	286.00	4	1,144.00			
28	Yellow Colour Paint for Background	Ltr	286.00	8	2,288.00			
Α			Total Cost o		20,76,457.69			
В	Stoc	k, Stora	ge & Insurance		62,293.73			
С				otal (A+B)	21,38,751.42			
D			Contigency	@ 3% of C	64,162.54			

	Annexure-16							
Cons	struction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB	and 2 is	olator).					
E	E Tools & Plants @ 2% of C							
F	Transportation @ 7.5% of C							
G	Erection Charges @ 5% on Trf/Breaker/Joist							
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/	/HT stay	set/PSC pole/	GI Earthing)	1,40,444.38			
I	Erection Charges @ 20% of	PSC po	le- Not to be us	sed for 33kv	-			
J			Sur	n of (C to I)	25,82,692.74			
	<u>Civil &amp; Services</u>							
SI.	Description of Materials	Unit	Unit Rate	Total	Total Amount			
No.	VCB Foundation			Quantity	Amount			
- 11	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris							
1	using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	7.28	3,508.96			
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	4.00	800.00			
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	1020.00	0.34	348.08			
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.46	2,334.15			
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	2.83	18,362.50			
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	13.25	3,988.25			
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	140.00	15,260.00			
В	CT & PT Foundation			0.00	-			
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	7.97	3,840.94			
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	4.50	900.00			
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	900.00	0.36	326.70			
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.36	1,862.19			
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	2.36	15,356.25			
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	14.94	4,496.94			
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	122.43	13,344.87			
С	Column as per Drawing Schedule-			0.00	-			
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools &	Cum	482.00	51.31	24,731.30			
2	machinery for excavation of cable trench & other civil works  Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by	Cum	200.00	24.00	4,800.00			

Allibrate 10							
Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator).							
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	2.10	10,773.00		
4	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	14.18	92,137.50		
5	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	89.64	26,981.64		
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	734.58	80,069.22		
D	Isolator						
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	14.18	6,832.35		
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	6.00	1,200.00		
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.85	4,363.07		
4	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	8.55	55,575.00		
5	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	44.82	13,490.82		
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	367.29	40,034.61		
7	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.	3700.00	8	29,600.00		
K							
L				Total (J+K)	30,58,011.06		
N			Sub 1	Γotal (L+M)	30,58,011.06		
0			Total GST @	18% of (N)	5,50,441.99		
Р			Total Cess @	0 1% of (N)	30,580.11		
Q	Gross	Total Ma	terial +Service	es (N+O+P)	36,39,033.16		

		Annexure-17				
	TF	CENTRAL ODISHA DISTRIBUTION LIMITED				
Name of	f the Division :-	SED				
Name o	f the Sub-Division : -	NISCHINTKOILI				
Name of the Section : -		ORIKANTA				
Name of	f the Work :-	33kV New Line from Bahugram Grid (33kV Proposed Nischintak	oili Feeder)			
Scope of work:-		Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor11Ckm. Construction for 1 no. of 33kV Outdoor Bay at Nischintkoili PSS. Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable- 1Ckm. Construction of 2 nos. 'PC+6' EHT Tower for river crossing (300mtr. span)				
Names (	of Schemes: -	TPCODL CAPEX				
		ABSTRACT OF ESTIMATE				
SI. No.	Part	Description	Amount (In Cr.)			
1	A	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor 11Ckm.	₹ 4,09,23,600.97			
2	В	Construction for 1 no. of 33kV Outdoor Bay at Nischintkoili PSS.	₹ 36,39,033.16			
3	С	Construction of 33kV U/G Line with 3R, 1CX630sqmm Cable-1Ckm.	₹ 1,40,53,343.76			
4	D	Construction of 2 nos. 'PC+6' EHT Tower for river crossing (300mtr. span)	₹ 1,17,58,371.00			
		Total Amount	₹ 7,03,74,348.90			
		Total Amount (In Cr)	₹ 7.04			

33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP

No. of 33 KV DP required Without Isolator (Ref. Drawing No.- TPCODL-HVD-0004) <u>MATERIALS FOR 33 KV DP Without Isolator</u>

17

SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	34	11,66,948.00		
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =( 2x9.56x3.25)	76.00	1056.38	80,284.88			
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	67.4016	6,571.66		
4	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's channel required =( 5x7.14x1.96)	KG	76.00	1189.524	90,403.82		
5	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = (4*4.5*3.432)	KG	76.00	1050.192	79,814.59		
6	Danger Plate, 2 no's.	No.	104.00	34	3,536.00		
	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	10.2306	997.48		
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) H.T. Stay set (Complete )	Pair Set	162.50 1,365.00	34 34	5,525.00 46,410.00		
	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	68	4,420.00		
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	510	49,725.00		
12	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	17	23,205.00		
13	50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 5x2.36	KG	97.50	200.6	19,558.50		
14	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	102	10,608.00		
15	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)	KG	97.50	40.9224	3,989.93		
16	33KV pin insulator polymer	No.	624.00	51	31,824.00		
	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	102	66,300.00		
18 19	Disc insulator (B&S) 90 KN polymer PG Clamp for 232 sq.mm AAA conductor	No. NO.	1,495.00 1,495.00	102 102	1,52,490.00 1,52,490.00		
20	GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator)	K.g.	101.40	208.437	21,135.51		
21	Black Paint	Ltr	286.00	17	4,862.00		
22	Yellow Colour Paint for Background	Ltr	216.00	34	7,344.00		
Α	<u> </u>		Total Cost	-	20,28,443.38		
В	Stoc	k, Storag	je & Insurance		60,853.30		
С			Sub <sup>-</sup>	Γotal (A+B)	20,89,296.68		
D							
Е	Tools & Plants @ 2% of C						
F		Tr	ansportation (	@ 7.5% of C	39,122.66 1,56,697.25		
G	Erection Charges (		•		60,097.82		
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F				75,417.67		
1	Erection Charges @ 20% of		<u> </u>		-		
J			Sui	m of (C to I)	24,83,310.99		
	<u>Civil &amp; Services</u>						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	34	76,500.00		
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	18.7	1,21,550.00		
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	3.825	24,862.50		
4	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.	3,700.00	17	62,900.00		
К			Total Civil	& Services	2,85,812.50		
L				Total (J+K)	27,69,123.49		
N			Sub	Total (L+M)	27,69,123.49		
0			Total GST @	) 18% of (N)	4,98,442.23		
01			Total CESS	@ 1% of (N)	27,691.23		
Р	Gross Total Material +Services (N+O+C	01) for 33	KV DP With	out Isolator	32,95,256.95		

	Annexure-17				
	33kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poin	ts and C	ut-Points & 1	13 Mtr WPB P	ole for DP
	No. of 33 KV DP required With Isolator (Ref. Drawing No TPCODL-TCE-0001)			5	
	MATERIALS FOR 33 KV DP With Isolator				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	10	3,43,220.00
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 2x9.56x4.3)	KG	76.00	411.08	31,242.08
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	19.824	1,932.84
4	Insulator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 1 no's channel	KG	76.00	153.51	11,666.76
	required =( 1x7.14x4.3) Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel	VC.	76.00	207.02	00 000 50
5	required =( 2x7.14x4.3)  Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's channel	KG	76.00	307.02	23,333.52
6	required =( 4x7.14x4.3)	KG	76.00	614.04	46,667.04
7	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	76.00	443.43	33,700.68
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	76.00	28.56	2,170.56
9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	76.00	8.73	663.48
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	76.00	7.65	581.40
11	Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel	KG	76.00	47.8	3,632.80
12	required =( 2x9.56x0.5)  Danger Plate, 2 no's.	No.	104.00	10	1,040.00
13	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	3.009	293.38
14	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	10	1,625.00
15	H.T. Stay set (Complete ) H.T. Stay Insulator Type-C (2 No's.)	Set	1,365.00 65.00		13,650.00 1,300.00
16 17	7/8 SWG Stay Wire 15kg /stay	No. K.g.	97.50		14,625.00
18	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00		13,650.00
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	97.50	283.2	27,612.00
20	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	30	3,120.00
21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's =	KG	97.50	12.036	1,173.51
22	(8x0.59x0.510) Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	15	2,01,825.00
23	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with	Set	66,000.00		3,30,000.00
24	PI(Polymer)		624.00		9.360.00
25	33KV pin insulator polymer H W fitting(B&S) 90KN,4 Bolt	No.	650.00		19,500.00
26	Disc insulator (B&S) 90 KN polymer	No.	1,495.00		44,850.00
27	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00		44,850.00
28	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	101.40		11,230.05
29	Black Paint	Ltr	286.00		1,430.00
30	Yellow Colour Paint for Background	Ltr	216.00		2,160.00
Α				of materials	12,42,105.10
В	Stoc	k, Storaç	je & Insuranc	e i.e 3% of A	37,263.15
С				Total (A+B)	12,79,368.25
D				y @ 3% of C	38,381.05
E F			Tools & Plants		24,663.46 95,952.62
G	Erection Charges (			_	17,675.83
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F				87,965.62
ı	Erection Charges @ 20% of	PSC pol	e- Not to be u	sed for 33kv	-
J	Civil 9 Santiage		Su	m of (C to I)	15,44,006.82
	<u>Civil &amp; Services</u>	I			
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
	Fixing of 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, including excyation, supply of 0.5Cum cement				

SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	10	22,500.00
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	5.5	35,750.00
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	1.125	7,312.50

	Annexure-17				
	33kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poin	ts and C	Cut-Points & 1	3 Mtr WPB P	ole for DP
4	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.	3,700.00	10	37,000.00
к		ı	Total Civil	& Services	1,02,562.50
L				Total (J+K)	16,46,569.32
N			Sub	Total (L+M)	16,46,569.32
0				0 18% of (N)	2,96,382.48
01			Total CESS	`	16,465.69
P	Gross Total Material +Services (N+0	0+04) fo		- ' '	*
	Gross rotal material + Services (N+V	1	I 33 KV DP V	VILII ISOIALOI	19,59,417.49
	No. of 33 KV Cut Point with 180 Degree Angle				
	(Ref. Drawing No)			8	
	MATERIALS FOR 33 KV Cut Point with 180 Degree Angl	<u>e</u>	ı		
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	13 Mtr. Long H-Pole(GI)	No	56,735.71	8	4,53,885.71
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of	K.g.	76.00	260.032	19,762.43
3	Channel = (2x 9.56x1.7) Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280)	K.g.	97.50	42.2912	4,123.39
4	Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 No's	K.g.	76.00	46.80576	3,557.24
5	of Channel = (2x 9.56x0.306)  Danger Plate, 1 no's.	No.	104.00	8	832.00
	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	2.4072	234.70
7	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	24	2,496.00
8	Back Clamp for anticlimbing device 3 kg. Fet support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	9.6288	938.81
9	33KV pin insulator polymer	No.	624.00	24	14,976.00
10 11	H W fitting(B&S)90KN,4 Bolt Disc insulator (B&S)90 KN polymer	No.	650.00 1,495.00	48 48	31,200.00 71,760.00
12	Earthing of Support ( Coil Type )	EA.	215.80	8	1,726.40
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	2.096	204.36
	PG Clamp for 232 sq.mm AAA conductor GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point)	NO. K.g.	1,495.00 101.40	48 39.032	71,760.00 3,957.84
16	Black Paint	Ltr	286.00	8	2,288.00
17	Yellow Colour Paint for Background	Ltr	216.00	of materials	3,456.00
A B	Stor	k Storac	ge & Insurance		<b>6,87,158.89</b> 20,614.77
C	Sioc	ik, Oloraç		Total (A+B)	7,07,773.66
D				y @ 3% of C	21,233.21
E			Tools & Plants		14,155.47
F		Tr	ransportation (	@ 7.5% of C	53,083.02
G	Erection Charges (	@ 5% on	Trf/Breaker/V	VPB/ H-Pole	23,375.11
Н	Erection Charges @ 10% of C (except Trf/Breaker/W	PB/ H-P	ole/HT stay se	et/PSC pole)	24,027.14
Ι	Erection Charges @ 20% of	PSC pol			-
J	0:::10 0-:::::		Su	m of (C to I)	8,43,647.62
SI. No.	<u>Civil &amp; Services</u> Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	4.4	28,600.00
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.9	5,850.00
к			Total Civil	& Services	34,450.00
L				Total (J+K)	8,78,097.62
N			Sub	Total (L+M)	8,78,097.62
0			Total GST @	· '	1,58,057.57
01			Total CESS		8,780.98
Р	Gross Total Material +Services (N+O+O1) for 33 KV	Cut Poir	nt with 180 De	egree Angle	10,44,936.16
	No. of 33 KV Cut Point with 90 Degree Angle			14	
	(Ref. Drawing No)  MATERIALS FOR 33 KV Cut Point with 90 Degree Angle			14	

#### Annexure-17 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP SI. Total Total Description of Materials Unit **Unit Rate** Quantity No. Amount 56,735.71 13 Mtr. Long H-Pole(GI) 7,94,300.00 No 14 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of 69,168.51 76.00 910.112 K.g. Channel = (4x 9.56x1.7) 3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280) K.g. 97.50 148.0192 14,431.87 Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's 4 K.g. 76.00 163.82016 12,450.33 of Channel = (4x 9.56x0.306)5 No. 104.00 14 1,456.00 Danger Plate, 1 no's 97.50 6 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) KG 4.2126 410.73 GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 42 4,368.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = 97.50 16.8504 KG 1,642.91 (4x0.59x0.510) 624.00 34,944.00 33KV pin insulator polymer (4 No's each 90 Deg. Cut point) No. 56 84 10 H W fitting(B&S)90KN,4 Bolt No. 650.00 54,600.00 11 Disc insulator (B&S)90 KN polymer No. 1.495.00 84 1.25.580.00 Earthing of Support (Coil Type) No. 215.80 14 3,021.20 13 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing K.g. 97.50 3.668 357.63 1,25,580.00 14 PG Clamp for 232 sq.mm AAA conductor NO 1.495.00 84 15 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair) Pair 162.50 14 2,275.00 16 H.T. Stay set (Complete ) Set 1,365.00 14 19,110.00 17 H.T. Stay Insulator Type-C (2 No's.) 65.00 910.00 No. 14 18 7/8 SWG Stay Wire 15kg /stay K.g. 97.50 210 20,475.00 158.34 19 GI Nut, Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point) 101.40 16,055.68 K.g. 4,004.00 20 Black Paint Ltr 286.00 14 21 Yellow Colour Paint for Background I tr 216.00 6.048.00 **Total Cost of materials** Α 13,11,188.86 В Stock, Storage & Insurance i.e 3% of A 39,335.67 С Sub Total (A+B) 13,50,524.53 D Contigency @ 3% of C 40,515.74 Е Tools & Plants @ 2% of C 26,129.43 F Transportation @ 7.5% of C 1,01,289.34 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 40,906.45 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) 48,834.24 Н Erection Charges @ 20% of PSC pole- Not to be used for 33kv ı J Sum of (C to I) 16,08,199.73 Civil & Services SI. Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 7.70 50,050.00 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mtr 6,500.00 1.58 10,237.50 Fixing of 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, including excvation, supply of 0.5Cum cement No. 2,250.00 14 31,500.00 concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) Total Civil & Services Κ 91,787.50 Total (J+K) 16,99,987.23 L N Sub Total (L+M) 16,99,987.23 0 Total GST @ 18% of (N) 3,05,997.70 01 Total CESS @ 1% of (N) 16 999 87 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle Р 20,22,984.80 33 Kv Line Length In KM with 40 Mtr. Span 11 (Ref. Drawing No.-) **MATERIALS FOR 33 KV Pin Points** SI. Total Total Description of Materials Unit **Unit Rate** Quantity No. Amount 1,31,05,950.00 13 Mtr. Long H-Pole(GI) No 56.735.71 231 33 KV V cross Arm (GI) 22Kg each No. 2,340.00 231 5,40,540.00 3 Top bracket 100x50x6mm GI channel ( 300mm each) No. 195.00 231 45,045.00 Danger Plate, 1 no's No. 104.00 231 24.024.00 Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) KG 97.50 69.51 6,777.02

	Annexure-17						
	33kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poin	ts and C	Cut-Points & 1	3 Mtr WPB F	Pole for DP		
6	GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 693.00						
7	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	278.03	27,108.08		
8	33KV pin insulator polymer	No.	624.00	693	4,32,432.00		
	Earthing of Support ( Coil Type )	No.	215.80	231	49,849.80		
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	K.g. K.g.	97.50 101.40	60.52 334.95	5,900.90 33,963.93		
12	232 sq.mm AAA conductor	Mtr.	203.45		69,15,265.50		
13	Crimping type Midspan Compression Joint for 232sq.mm AAA conductor	EA	842.95	33	27,817.22		
	Black Paint	Ltr	286.00	231.0	66,066.00		
15	Yellow Colour Paint for Background	Ltr	216.00	462.0	99,792.00		
Α				of materials	2,14,52,603.44		
В	Stoc	ck, Stora	ge & Insurance	e i.e 3% of A	6,43,578.10		
С				Total (A+B)	2,20,96,181.55		
D				y @ 3% of C	6,62,885.45		
E			Tools & Plants		4,41,923.63		
F			ransportation (		16,57,213.62		
G	Erection Charges (				6,74,956.43		
Н	Erection Charges @ 10% of C (except Trf/Breaker/W	/PB/ H-P	ole/HT stay se	et/PSC pole)	8,59,705.30		
1	Erection Charges @ 20% of PSC pole- Not to be used for 33kv						
J	J Sum of (C to I)						
	<u>Civil &amp; Services</u>						
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	127.05	8,25,825.00		
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	25.99	1,68,918.75		
Κ			Total Civil	& Services	9,94,743.75		
L				Total (J+K)	2,73,87,609.72		
N			Sub	Total (L+M)	2,73,87,609.72		
0			Total GST @	0 18% of (N)	49,29,769.75		
01			Total CESS	@ 1% of (N)	2,73,876.10		
Р	Gross Total Material +Service	s (N+O+	·O1) for 33 K\	/ Pin Points	3,25,91,255.57		
	Gross Total Summary						
1	Gross Total Material +Services (N+O-	+O1) for	33 KV DP Wit	hout Isolator	32,95,256.95		
2	Gross Total Material +Services (N	+0+01)1	for 33 KV DP	With Isolator	19,59,417.49		
3							
4							
5	Gross Total Material +Service	ces (N+O	)+O1) for 33 K	V Pin Points	3,25,91,255.57		
Q		Gross	Total Materia	al +Services	4,09,13,850.97		
R	Inspection Fee of Over Head Line (HT) - Rs.1500 up to 1 km.				1,500.00		
S	Inspection Fee of Over Head	Line (HT	) - Rs. 750/ A	dditional Km	7,500.00		
Т	Inspection Fee	of Drawi	ng Checking a	ind Approval	750.00		
U	Gross Total Material, Services	and Ins	pection Fees	(Q+R+S+T)	4,09,23,600.97		

# BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

## Supply Portion

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories				
а	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	700		
b	Length of 33kV 1C, 630sqmm cable (HDD)	Mtr.	300		
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	3000	1,495.47	44,86,410.00
1.2	Supply of Straight throU/Gh jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set	6	11,900.00	71,400.00
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	6	6,350.00	38,100.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set		6,100.00	-
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	2052.00	357.60	7,33,795.20
2	Supply of 33kV RMU	Ī	Г	T	
	No. of 33kV 3Way RMU (LLV+M)	noc			
a b	No. of 33kV 4Way RMU (LLVV+M)	nos.			
	- '	nos.			
С	No. of 33kV 3Way RMU (LLV)	nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.			
e f	No. of 33kV 3Way RMU (LLL)	nos.			
	No. of 33kV 4Way RMU (LLLL) Supply of RMU 33KV 3WAY 630A WITH METERING UNIT	nos.			
2.1	(LLV+M) (CT Ratio to be mentioned)	Nos.	0	22,93,723.00	-
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M) (CT Ratio to be mentioned)	Nos.	0	31,74,874.00	-
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	23,35,264.00	-
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	-
2.6	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	19,59,421.00	-
3	Earthing				
3.1	Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for equipment, structure etc.)	kg	0.00	97.50	-
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	0	1,365.00	-
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	0		
4.1	Pre-Wired FRTU Panel with FRTU	No.	0	1,21,744.00	-
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	0	1,00,000.00	-

	, amendio ii				
	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along with	33kV RMU	
4.3	Networking Accessories	No.	0	72.00	-
4.4	CMR with Mounting Base for Digital Inputs	Nos.	0	650.00	-
4.5	Interposing Relay for Digital Output	Nos.	0	467.94	-
4.6	Battery Charger	Nos.	0	15,385.00	-
4.7	Battery	Nos.	0	8,333.00	-
4.8	4G Modem cum Router	Nos.	0	18,500.00	-
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	0	204.87	-
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	0	305.58	-
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	0	275.23	-
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	0	165.25	-
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	0	150.00	-
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	0.0	148.43	-
4.15	Armored CAT6 SFTP Cable	Mtr.	0	45.87	-
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	0	89.45	-
4.17	Multi Function Meter	Nos.	0	18,651.00	-
	Sub Total (Supply Portion) (in  Erection Portion				53,29,705.20
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare				
1.1	Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by <b>open trench method</b> .	Mtr.	2100	94.50	1,98,450.00
1.2	Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits	Set	6	2,400.00	14,400.00
1.3	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	6	2,081.70	12,490.20
1.4	Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	0	2,081.70	-
1.5	Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr.	900	2,300.00	20,70,000.00
1.6	Laying of <b>110mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open trench.	Mtr.	2052.00	300.00	6,15,600.00
2	Erection, Commissioning, Wiring and Testing of 33kV RMU				
2.1	Erection of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M)	Nos.	0	15,000.00	-

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	BoQ and Estimate for 33kV, 1C 630sqmm U/G	6 Cable	along with	33kV RMU				
2.2	Erection of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M)	Nos.	0	15,000.00	-			
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-			
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	0	8,000.00	-			
2.5	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	8,000.00	-			
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	8,000.00	-			
3	FRTU and OFC for RMU SCADA Automation							
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	0.0	16,000.00	-			
	Sub Total (Erection Portion) (in	Rs.)			29,10,940.20			
Civil Po	prtion							
	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)			
1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench							
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	684					
1.1.a	Earth work excavation of <b>soil</b>	Cum	574.56	700.00	4,02,192.00			
1.1.b	Earth work excavation of <b>hard rock</b>	Cum	246.24	1,720.00	4,23,532.80			
1.2	Back filling with excavated soil outside and above the trench	Cum	820.8	202.00	1,65,801.60			
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	342	2,643.67	9,04,135.36			
2	Civil works for Prefabricated RCC foundation with supply of all materials							
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	0	23,145.30	-			
3	Supply of GI Fencing with Gate around each <b>RMU</b>	sqmtr	0	3,600.00	-			
4	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.	Set	0	3,700.00	-			
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	48	1,463.40	70,243.20			
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	33	1,012.00	33,396.00			
	Sub Total (Civil Portion) (in R	s.)			19,99,300.96			
Α	A Sub Total (Supply Portion)							
В	Stock, Storage & Insurance @ 3 % of A				<b>53,29,705.20</b> 1,59,891.16			
С	Sub Total (A+B)				54,89,596.36			
D	Contingency @ 3 % of C				1,64,687.89			
Е	E Tools & Plants Charges @ 2% of C (considered for earthing items)							

	BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU	
F	Transportation @ 7.5% of C	4,11,719.73
G	Erection Charges @ 10% of earthing items	-
Н	Total (C+D+E+F+G)	60,66,003.97
I	Sub Total (Erection Portion + Civil Portion)	49,10,241.16
J	Total Cost (H+I)	1,09,76,245.13
L	Total Estimated Capital Cost i.e. (J+K)	1,09,76,245.13
М	GST @ 18% of L	19,75,724.12
M1	CESS @ 1% of L	10,97,624.51
N	Grand Total (L+M)	1,40,49,593.76
0	Inspection Fee of UG Line (HT) - Rs. 3000/ km.	3,000.00
Р	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km	
Q	Inspection Fee of RMU - Rs. 1500/ RMU	
R	Inspection Fee of Drawing Checking and Approval	750.00
S	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)	1,40,53,343.76

#### Annexure-17 Construction of 2 nos. 'PC+6' EHT Tower for River crossing (Span Length- 300 Mtr.) No. of Span 1 Supply of Material for Construction of 'PC+6' EHT Tower Total SI.No. Description Unit **Unit Rate Total Amount** Quantity Cost of G.I PC +6 TYPE Tower super structure (Main + Extention 1 +Stub + Template) 90,000.00 PC Tower (5.346 MT per Tower) МТ 10.692 9,62,280.00 i) +6 Mtr Extention (2.246 MT per Tower) MT 90,000.00 4.492 4,04,280.00 ii) 1.220 Stub & Cleats (0.610 MT per Tower) MT 90,001.00 1,09,801.22 iii) 8,696.01 iv) Template (0.888 MT per Tower) MT 1.776 15,444.11 2 **Nut Bolts** PC Tower (0.336 MT per Tower) MT 1,19,078.23 0.672 80,020.57 i) ii) +6 Mtr Extention (0.111 MT per Tower) MT 1,19,078.23 0.222 26,435.37 3 **Conductor and Accessories** 2,03,450.00 1.854 3,77,196.30 232 Sq.mm. Conductor (AAAC) Km Earth wire 7/1.5, 300 meter + Tower earthing (50 x 4) = 500Mtr. 43,317.74 0.500 21,658.87 ii Km 4,498.00 24 1,07,952.00 iii Double tension Hardware Fittings Set Disc insulator (B&S)120 KN polymer 1,872.00 48 89,856.00 iv Nos Earth wire tension fittings Set 675.31 4 2,701.23 4 Vibration damper for earth wire Nos 539.78 2,159.11 ٧i Vibration damper for coductor Nos 566.65 24 13,599.59 vii viii Copper flexible bond Nos 490.71 2 981.41 ix Phase Plate (R,Y,B) Set 245.35 12 2,944.24 **Tower Number Plate** Nos 243.02 2 486.03 Х Circuit Plate 269.89 1,079.56 Nos 4 4 5,460.00 40 mm Dia. 3Mtr. long G.I Earthing device Nos 1,365.00 Χij 200 19.500.00 xiii GI Flat 50 x 6 mm kg 97.50 Danger Board 104.00 4 416.00 xiv Nos 429.95 24 10,318.87 Bird Guard Nos ΧV xvi Anticlimbing Device kg 104.00 211 21,964.80 490.71 12 5,888.48 Loop Connector Nos χvii **Total Cost of materials** 22,82,423.77 Α В Stock, Storage & Insurance @ 3 % of A 68,472.71 С Sub Total (A+B) 23,50,896.48 Contingency @ 3 % of C 70,526.89 D Ε Tools & Plants Charges @ 2% (considered for earthing items) 401.70 Transportation @ 7.5% of C F 1,76,317.24 Erection Charges @ 10% of earthing items G 2,008.50 Total (C+D+E+F+G) 26.00.150.81 н **Erection Portion** Total SI.No. Description Unit Rate Amount Quantity Cost of G.I PC +6 TYPE Tower super structure (Main + Extention 1 +Stub + Template) 11,000.00 PC Tower (5.346 MT per Tower) MT 10.692 i) 1,17,612.00 ii) +6 Mtr Extention (2.246 MT per Tower) MT 11,000.00 4.492 49,412.00 11,000.00 1.220 13,420.00 Stub & Cleats (0.610 MT per Tower) MT iii) 11,000.00 iv) Template (0.888 MT per Tower) MT 1.776 19,536.00 2 **Nut Bolts** MT 11,000.00 0.672 7,392.00 i) PC Tower (0.336 MT per Tower) ii) +6 Mtr Extention (0.111 MT per Tower) MT 11,000.00 0.222 2,442.00 3 **Conductor and Accessories** 232 Sq.mm. Conductor (AAAC) 1.854 96,695.64 Km 52,155.14 Earth wire 7/1.5, 300 meter + Tower earthing $(50 \times 4) = 500$ Mtr. 13.038.79 0.500 6,519.39 ii Km

	Annexure-17				
Constru	uction of 2 nos. 'PC+6' EHT Tower for River crossing (Span Length- 30	0 Mtr.)			
iii	Double tension Hardware Fittings	Set	325.97	24	7,823.27
iv	Disc insulator (B&S)120 KN polymer	Nos	325.97	48	15,646.54
٧	Earth wire tension fittings	Set	325.97	4	1,303.88
vi	Vibration damper for earth wire	Nos	325.97	4	1,303.88
vii	Vibration damper for coductor	Nos	325.97	24	7,823.27
viii	Copper flexible bond	Nos	325.97	2	651.94
ix	Phase Plate (R,Y,B)	Set	325.97	12	3,911.64
Х	Tower Number Plate	Nos	195.58	2	391.16
хi	Circuit Plate	Nos	325.97	4	1,303.88
xii	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.	3,700.00	4	14,800.00
xiii	Danger Board	Nos	52.00	4	208.00
xiv	Bird Guard	Nos	65.19	24	1,564.65
XV	Anticlimbing Device	kg	19.56	211	4,130.69
xvi	Loop Connector	Nos	325.97	12	3,911.64
ı	Total Cost of Erection				3,77,803.47
	Civil Portion				
SI.No.	Description	Unit	Rate	Total Quantity	Amount
1	Excavation in all type 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 soil at suitable place after back filling), & if required for filling the foundation, borrowed earth/murrum/sand shall be brought for filling and compaction, including supply of sand, all T&P, labour as required.				
1.1	Soft and loose soil	СИМ	176.86	100	17,686.00
2	Boring for under reemed cast in situ piling with bentonite showing for stabilisation of bore:- Pile diameter (1000 MM) and approximate length of the bore is 25 Mtrs BY DMC method as per approved drawing.	Mtr. length	5,836.14	200	11,67,228.00
3	Supply of all materials like cement, steel, all coarse aggregates, fine aggregates and making pile foundations of the required Tower foundation, including supply of all materials,labours and T&P as per specification in the RCC :1:1:2 (Grade M-25.) (with cost of cement and without steel)	Cum	8,015.00	157	12,58,675.60
4	Steel of different size(as per design) with cutting, bending, binding in position of M.S.Rod for reinforcement of foundation concret of pile of towers including supply of binding wire. (With supply of steel rod (TATA/RINL/SAIL make))	MT	61,968.00	14	8,42,764.80
5	Supply and putting of MS liner of 6mm thickness and 1000mm dia as per approved drawing and as per instruction of engineer in charge.	МТ	61,968.00	29	18,21,859.20
6	Pile riser, cap, tie-beam with RCC: 1:1.5:3 (Grade M-20), including supply of all materials like Cement, coarse and fine aggregates,shuttering and supply of labours, de-watering,proper curing of the foundations/concrete and T&P in line with the Specification and as per direction of Engineer in Charge. (with cost of cement and without steel)	Cum	7,107.12	140	9,94,996.80
7	Steel of different size(as per design) with cutting, bending, binding in position of M.S.Rod for reinforcement of foundation concret of pile riser, cap and tie beam including supply of binding wire. (With supply of steel rod (TATA/RINL/SAIL make))	МТ	61,968.00	11	6,81,648.00

	Annexure-17								
Constru	Construction of 2 nos. 'PC+6' EHT Tower for River crossing (Span Length- 300 Mtr.)								
8	Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm), fine aggregates, cement in tower foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge.(With Cement)	Cum	4,978.76	10	49,787.60				
9	Shoring And Shuttering required in wet or special locations with supply of all materials, T&P and Labour.(Required for riser works above ground level)	Sq.Mtr	341.92	200	68,384.00				
J	Total Cost of Civil Work				69,03,030.00				
K	Total Cost of Erection, F	oundat	ion and Civil W	orks (I+J)	72,80,833.47				
L	Total Cost (H+K)								
N	То	tal Esti	mated Capital (	Cost (L+M)	98,80,984.28				
0			GST @	2) 18% of N	17,78,577.17				
01		·	CSS	@ 1% of N	98,809.84				
Р			Т	otal (N+O)	1,17,58,371.00				

### Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 3 isolator).

No. of Bus isolator requirement 3								
	No. of VCB Requirement			1				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
1	T-1 GI Column(7.25 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel) for 33kV incoming line, Nominal Unit Wt - 0.35 MT	Nos.	26,600.00	1	26,600.00			
	T-2 GI Column (7.25mtr long, consisting of 2 Nos 175X75X6 mm channel) for 33kV incoming line -1 no, Nominal Unit Wt - 0.42 MT	Nos.	31,920.00	1	31,920.00			
	T-1A GI Column ( for 33 kv Bus) ( 6 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel jointed by plates) Nominal Unit Wt - 0.31 MT	Nos.	23,560.00	2	47,120.00			
	T-2A GI Column ( for 33 kv Bus) (6 mtr long, consisting of 2 Nos 175X75X6 mm channel jointed by plates) Nominal Unit Wt - 0.37 MT	Nos.	28,120.00	2	56,240.00			
	G-3 GI Beam(5.05mtr long, consisting of 2 Nos 150X75 X5.7mm) for 33kV incoming line - (2 nos. Beam- one for Surge Arrester and other for Isolator, Nominal Unit Wt - 0.2 MT)	Nos.	15,200.00	1	15,200.00			
	G-2 GI Beam (6.1 mtr long, consisting of 2 Nos 125X65 X5.3 mm channel jointed by plates) for 33kV Bus Stringing , Nominal Unit Wt - 0.175 MT)	Nos.	13,300.00	4	53,200.00			
7	Equipment Structures (GI) For 33 KV Isolator (Unit Wt of Equipment Structures per set - 0.33 MT)	KG	76.00	990	75,240.00			
8	Equipment Structures (GI) For 33 KV Vacuum Circuit Breaker (Unit Wt of Equipment Structures per set - 0.2 MT)	KG	76.00	200	15,200.00			
9	GI Column for 33 KV CT (Unit Wt of Equipment Structures per set - 0.285 MT)	KG	76.00	285	21,660.00			
10	GI Spikes with cone and GI ( 2 nos) base plate 10mm (50x3000 mm GI pipe) (Unit Wt=0.035 MT)	Nos.	3,641.92	4	14,567.67			
	GI Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	8	10,920.00			
	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr. For Isolator/VCB , 10 metre mesh formation )= 20x2.36	KG	97.50	188.8	18,408.00			
13	400 sq.mm ACSR for 33kV side jumpering and Bus Formation etc.	KM	2,74,300.00	0.1	27,430.00			
	33 kV 1250 AMP Double break (Turn & twist center rotating) isolator with earth switch with PI(Polymer)	Set	1,31,157.00	3	3,93,471.00			
	33KV Outdoor VCB-1600A, with indoor CR panel without PT, with outdoor CT (CTR- 600-300-150/1-1A, 15VA, STC 25KA/3sec, class: 0.5, 5P10) for feeder protection	EA	7,02,000.00	1	7,02,000.00			
76	33KV.Single Phase PT(33KV/ V3 / 110V/ V3) (Oil cooled ) CLASS 0.5 / 3P, with O/P burden of 100VA	EA	33,046.00	3	99,138.00			
	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	12	1,61,460.00			
	Control Cable 10Core x 2.5 mm <sup>2</sup>	Mtr	429.00	150	64,350.00			
	Control Cable 16Core x 2.5 mm <sup>2</sup>	Mtr	523.90	150	78,585.00			
20	Control Cable 4Core x 2.5 mm <sup>2</sup>	Mtr	145.60	50	7,280.00			
21	Control Cable 7Core x 2.5 mm <sup>2</sup>	Mtr	236.60	50	11,830.00			
	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	18	26,910.00			
	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	18	11,700.00			
24	8 bolted (M-12) "T" clamp ACSR Zebra run & 232 mm2 drop	No.	1,404.00	18	25,272.00			
25	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	48	71,760.00			
26	GI Nut , Bolt & Washer of different sizes (13.718 Kg each Strcutures)	K.g.	101.40	54.872	5,564.02			
27	Black Paint	Ltr	286.00	4	1,144.00			
28	Yellow Colour Paint for Background	Ltr	286.00	8	2,288.00			
A Total Cost of materials								
В	St	ock, Stor	age & Insurance	i.e 3% of A	62,293.73			
С			Sub 1	otal (A+B)	21,38,751.42			
D				√ @ 3% of C	64,162.54			
Е			Tools & Plants	@ 2% of C	42,775.03			

	Annexure-17							
Cons	truction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and	3 isolat	or).					
F			Transportation (	@ 7.5% of C	1,60,406.36			
G	Erection		s @ 5% on Trf/E		36,153.00			
Н	H Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole/GI Earthing							
ı	I Erection Charges @ 20% of PSC pole- Not to be used for 33k							
J			Su	m of (C to I)	25,82,692.74			
	<u>Civil &amp; Services</u>							
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
A	VCB Foundation							
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	7.28	3,508.96			
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	4.00	800.00			
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	1020.00	0.34	348.08			
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.46	2,334.15			
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	2.83	18,362.50			
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	13.25	3,988.25			
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	140.00	15,260.00			
В	CT & PT Foundation			0.00	-			
1	BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	7.97	3,840.94			
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	4.50	900.00			
3	Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	900.00	0.36	326.70			
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.36	1,862.19			
5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	2.36	15,356.25			
6	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	14.94	4,496.94			
7	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	122.43	13,344.87			
С	Column as per Drawing Schedule-			0.00	-			
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	51.31	24,731.30			
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	24.00	4,800.00			

#### Annexure-17 Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 3 isolator). Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 Cum 5130.00 2.10 10,773.00 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size). Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work Cum 6500.00 14.18 92,137.50 up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for 26,981.64 301.00 89.64 Sqm all heights: Foundations, footings, bases of columns, etc. for mass concrete. Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars 109.00 734.58 80.069.22 Kg of grade Fe-500D or more. D **Isolator** Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & 14.18 1 Cum 482.00 6,832.35 machinery for excavation of cable trench & other civil works Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & Cum 200.00 6.00 1,200.00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 5130.00 0.85 Cum 4,363.07 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size). Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work Cum 6500.00 8.55 55,575.00 up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for Sqm 301.00 44.82 13,490.82 all heights: Foundations, footings, bases of columns, etc. for mass concrete. Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars Kg 109.00 367.29 40,034.61 of grade Fe-500D or more. Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth 3700.00 8 29.600.00 No. resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe Κ **Total Civil & Services** 4,75,318.33 Total (J+K) 30,58,011.06 L Ν Sub Total (L+M) 30,58,011.06 0 Total GST @ 18% of (N) 5,50,441.99 Total Cess @ 1% of (N) Ρ 30,580.11 Gross Total Material +Services (N+O+P) Q 36,39,033.16

		Annexure-18	
	TF	CENTRAL ODISHA DISTRIBUTION LIMITED	
Name o	f the Division :-	NIMAPADA ELECTRIC DIVISION	
Name o	f the Sub-Division : -	KAKATPUR	
Name o	f the Section : -	Gada Amarprasad	
Name o	f the Work :-	33kV line from Bangurigaon PSS to Kakatpur PSS.	
Scope o	of work:-	Construction for 1no. of 33kV Outdoor Bay at Bangurigaon PSS 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conduct Construction of 2 nos. 'PC+6' EHT Tower for river crossing (30/33kV U/G cable with 3R, 1CX630sqmm Cable- 2Ckm and 1 no Kakatpur PSS for 33kV incomer line.	or- 10Ckm. 0mtr. span). Laying of
Names (	of Schemes: -	TPCODL CAPEX	
		ABSTRACT OF ESTIMATE	
SI. No.	Part	Description	Amount
1	А	Construction for 1no. of 33kV Outdoor Bay at Bangurigaon PSS.	₹ 36,39,033.16
2	В	Construction of 33kV O/H Line using 13mtr H-Pole & 232sqmm AAAC conductor- 10Ckm.	₹ 3,72,83,334.44
3	С	Construction of 2 nos. 'PC+6' EHT Tower for river crossing (300mtr. span).	₹ 1,17,58,371.00
4	D	Laying of 33kV U/G cable with 3R, 1CX630sqmm Cable-2Ckm and 1 no. 33kV 4W RMU at Kakatpur PSS for 33kV incomer line.	₹ 3,20,35,117.72
		Total Amount	₹ 8,47,15,856.33
		Total Amount (In Cr)	₹ 8.47

	Annexure-18					
	33kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poin	ts and C	ut-Points & 1	13 Mtr WPB P	ole for DP	
	No. of 33 KV DP required Without Isolator (Ref. Drawing No TPCODL-HVD-0004)			15		
	MATERIALS FOR 33 KV DP Without Isolator					
SI. No.	Description of Materials	Unit	Unit Rate	Total Amount		
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	30	10,29,660.00	
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =(	KG	76.00	932.1	70,839.60	
3	2x9.56x3.25) Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	59.472	5,798.52	
4	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's	KG	76.00	1049.58	79,768.08	
<u> </u>	channel required = (5x7.14x1.96)	I NO	70.00	1049.50	79,700.00	
5	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = (4*4.5*3.432)	KG	76.00	926.64	70,424.64	
6	Danger Plate, 2 no's.	No.	104.00	30	3,120.00	
7	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	9.027	880.13	
8	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	30	4,875.00	
9	H.T. Stay set (Complete )	Set	1,365.00	30	40,950.00	
10	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	60	3,900.00	
11	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50		43,875.00	
12	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	15	20,475.00	
13	50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 5x2.36	KG	97.50	177	17,257.50	
14	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	90	9,360.00	
15	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's =	KG	97.50	36.108	3,520.53	
16	(8x0.59x0.510)  33KV pin insulator polymer	No.	624.00	45	28,080.00	
	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	90	58,500.00	
	Disc insulator (B&S) 90 KN polymer	No.	1,495.00		1,34,550.00	
19	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	90	1,34,550.00	
20	GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator)	K.g.	101.40		18,648.98	
21	Black Paint Yellow Colour Paint for Background	Ltr Ltr	286.00 216.00	15 30	4,290.00 6,480.00	
_	Yellow Colour Paint for Background	Lu		of materials		
Α_					17,89,802.98	
В	B Stock, Storage & Insurance i.e 3% of A					
ـــَـــا	C Sub Total (A+B)					
С		,,, o.to. ag	<u></u>		53,694.09 <b>18,43,497.07</b>	
		, 0.0.0.0	Sub			
С			Sub	<b>Total (A+B)</b> y @ 3% of C	18,43,497.07	
C D			Sub Contigenc Tools & Plants	Total (A+B) y @ 3% of C s @ 2% of C	<b>18,43,497.07</b> 55,304.91 34,520.00	
C D E	Footier Observed	Tr	Sub Contigenc Tools & Plants ansportation (	Total (A+B) y @ 3% of C s @ 2% of C @ 7.5% of C	18,43,497.07 55,304.91 34,520.00 1,38,262.28	
C D E F G	Erection Charges (	Tr @ 5% on	Sub Contigence Tools & Plants ansportation (	Total (A+B) y @ 3% of C s @ 2% of C @ 7.5% of C VPB/ H-Pole	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49	
C D E	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F	Tr @ 5% on	Sub Contigence Tools & Plants ansportation (	Total (A+B) y @ 3% of C s @ 2% of C @ 7.5% of C VPB/ H-Pole	18,43,497.07 55,304.91 34,520.00 1,38,262.28	
C D E F G		Tr @ 5% on Pole/HT s	Sub Contigence Tools & Plants ansportation ( Trf/Breaker/V ttay set/GI Pip	Total (A+B) y @ 3% of C s @ 2% of C @ 7.5% of C VPB/ H-Pole e/PSC pole)	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49	
C D E F	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F	Tr @ 5% on Pole/HT s	Contigency Tools & Plants ansportation ( Trf/Breaker/V tay set/GI Pip e- Not to be u	Total (A+B) y @ 3% of C s @ 2% of C @ 7.5% of C VPB/ H-Pole e/PSC pole)	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49	
C D E F G H	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F	Tr @ 5% on Pole/HT s	Contigency Tools & Plants ansportation ( Trf/Breaker/V tay set/GI Pip e- Not to be u	y @ 3% of C s @ 2% of C @ 7.5% of C VPB/ H-Pole e/PSC pole) sed for 33kv	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49 66,545.00	
C D E F G H I	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F Erection Charges @ 20% of	Tr @ 5% on Pole/HT s	Contigency Tools & Plants ansportation ( Trf/Breaker/V tay set/GI Pip e- Not to be u	y @ 3% of C s @ 2% of C @ 7.5% of C VPB/ H-Pole e/PSC pole) sed for 33kv	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49 66,545.00	
C D E F G H I J	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F Erection Charges @ 20% of  Civil & Services	Tr @ 5% on Pole/HT s PSC pol	Contigency Tools & Plants ansportation ( Trf/Breaker/V tay set/GI Pip e- Not to be u	Total (A+B) y @ 3% of C s @ 2% of C @ 7.5% of C VPB/ H-Pole e/PSC pole) sed for 33kv m of (C to I)	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49 66,545.00 - 21,91,156.75	
C D E F G H I J SI. No.	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F Erection Charges @ 20% of  Civil & Services  Description of Materials  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and	Tr @ 5% on Pole/HT s PSC pol	Contigency Tools & Plants ansportation ( Trf/Breaker/V tay set/GI Pip e- Not to be u Su Unit Rate	Total (A+B) y @ 3% of C s @ 2% of C @ 7.5% of C VPB/ H-Pole e/PSC pole) sed for 33kv m of (C to I)  Total Quantity	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49 66,545.00 - 21,91,156.75 Total Amount	
C D E F G H I J SI. No.	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F  Erection Charges @ 20% of  Civil & Services  Description of Materials  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	Tr @ 5% on Pole/HT s	Contigency Tools & Plants ansportation ( Trf/Breaker/V tay set/GI Pip e- Not to be u Su Unit Rate	Total (A+B) y @ 3% of C s @ 2% of C @ 7.5% of C VPB/ H-Pole e/PSC pole) sed for 33kv m of (C to I)  Total Quantity  30	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49 66,545.00 - 21,91,156.75 Total Amount	
C D E F G G H I J SI. No. 1	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F Erection Charges @ 20% of  Civil & Services  Description of Materials  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Tr @ 5% on Pole/HT s PSC pol  Unit  No.	Contigency Tools & Plants ansportation ( Trf/Breaker/V tay set/GI Pip e- Not to be u Su Unit Rate 2,250.00 6,500.00	Total (A+B) y @ 3% of C s @ 2% of C @ 7.5% of C VPB/ H-Pole e/PSC pole) sed for 33kv m of (C to I)  Total Quantity  30  16.5	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49 66,545.00 - 21,91,156.75 Total Amount 67,500.00	
C D E F G H I J SI. No. 1 2 3	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F Erection Charges @ 20% of Civil & Services  Civil & Services  Description of Materials  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Tr @ 5% on Pole/HT s PSC pol  Unit  No.  Cu.mtr  Cu.mtr	Contigency Tools & Plants ansportation ( Trf/Breaker/V tay set/GI Pip e- Not to be u Su Unit Rate  2,250.00  6,500.00  6,500.00  3,700.00	Total (A+B)  y @ 3% of C  s @ 2% of C  @ 7.5% of C  VPB/ H-Pole  e/PSC pole)  sed for 33kv  m of (C to I)  Total Quantity  30  16.5  3.375	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49 66,545.00 - 21,91,156.75  Total Amount  67,500.00  1,07,250.00 21,937.50	
C D E F G H I J SI. No. 1 2 3 4 K	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F Erection Charges @ 20% of Civil & Services  Civil & Services  Description of Materials  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Tr @ 5% on Pole/HT s PSC pol  Unit  No.  Cu.mtr  Cu.mtr	Contigency Tools & Plants ansportation ( Trf/Breaker/V tay set/GI Pip e- Not to be u Su Unit Rate  2,250.00  6,500.00  6,500.00  3,700.00	Total (A+B)  y @ 3% of C  s @ 2% of C  @ 7.5% of C  VPB/ H-Pole  e/PSC pole)  sed for 33kv  m of (C to I)   Total Quantity  30  16.5  3.375  15	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49 66,545.00 - 21,91,156.75  Total Amount 67,500.00 21,937.50 55,500.00 2,52,187.50	
C D E F G H I J SI. No. 1 2 3 4 K L L	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F Erection Charges @ 20% of Civil & Services  Civil & Services  Description of Materials  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Tr @ 5% on Pole/HT s PSC pol  Unit  No.  Cu.mtr  Cu.mtr	Sub Contigency Tools & Plants ansportation ( Trf/Breaker/V tay set/GI Pip e- Not to be u Su Unit Rate 2,250.00 6,500.00 6,500.00 Total Civil	Total (A+B) y @ 3% of C s @ 2% of C @ 7.5% of C VPB/ H-Pole e/PSC pole) sed for 33kv m of (C to I)  Total Quantity  30  16.5 3.375  15  I & Services Total (J+K)	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49 66,545.00 - 21,91,156.75  Total Amount  67,500.00 21,937.50 55,500.00 24,43,344.25	
C D E F G H I J J SI. No. 1 2 3 4 K	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F Erection Charges @ 20% of Civil & Services  Civil & Services  Description of Materials  Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)  Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  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	Tr @ 5% on Pole/HT s PSC pol  Unit  No.  Cu.mtr  Cu.mtr	Sub Contigency Tools & Plants ansportation ( Trf/Breaker/V tay set/GI Pip e- Not to be u Su Unit Rate 2,250.00 6,500.00 3,700.00 Total Civil	Total (A+B)  y @ 3% of C  s @ 2% of C  @ 7.5% of C  VPB/ H-Pole  e/PSC pole)  sed for 33kv  m of (C to I)   Total Quantity  30  16.5  3.375  15	18,43,497.07 55,304.91 34,520.00 1,38,262.28 53,027.49 66,545.00 - 21,91,156.75  Total Amount 67,500.00 21,937.50 55,500.00 2,52,187.50	

Total CESS @ 1% of (N)

Gross Total Material +Services (N+O+O1) for 33 KV DP Without Isolator

24,433.44

29,07,579.66

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	Annexure-18				
	33kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Point	ts and C	ut-Points & 1	3 Mtr WPB P	ole for DP
	No. of 33 KV DP required With Isolator (Ref. Drawing No TPCODL-TCE-0001)			5	
	MATERIALS FOR 33 KV DP With Isolator				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	10	3,43,220.00
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 2x9.56x4.3)	KG	76.00	411.08	31,242.08
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	19.824	1,932.84
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	76.00	153.51	11,666.76
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	76.00	307.02	23,333.52
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	76.00	614.04	46,667.04
7	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required = (4*4.5*4.927)	KG	76.00	443.43	33,700.68
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	76.00	28.56	2,170.56
9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	76.00	8.73	663.48
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	76.00	7.65	581.40
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	76.00	47.8	3,632.80
12	Danger Plate, 2 no's.	No.	104.00	10	1,040.00
	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	3.009	293.38
14	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	10	1,625.00
	H.T. Stay set (Complete )	Set	1,365.00	10	13,650.00
	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	20	1,300.00
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	150	14,625.00
18 19	Gi Pipe Earthing 40mm. 3 Mtr. Long 50x6mm GI Flat for earthing, 2.36kg/ntr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh	No. KG	1,365.00 97.50	10 283.2	13,650.00 27,612.00
20	formation and 2.5 mtr. For raising)= 24x2.36 GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	30	3,120.00
21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = ((8x0.59x0.510)	KG	97.50	12.036	1,173.51
22	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	15	2,01,825.00
23	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with PI(Polymer)	Set	66,000.00	5	3,30,000.00
24	33KV pin insulator polymer	No.	624.00	15	9,360.00
	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	30	19,500.00
26	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	30	44,850.00
27	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	30	44,850.00
28	GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	K.g.	101.40	110.75	11,230.05
29 30	Black Paint Yellow Colour Paint for Background	Ltr Ltr	286.00 216.00	5 10	1,430.00 2,160.00
A	Toloh Oolou Fullicio Buong ouriu	Lu		of materials	12,42,105.10
	Store	k Storac	ge & Insurance		37,263.15
B	Oloc	K, Otoraç			
С				Total (A+B)	12,79,368.25
D			Contigency Tools & Plants	y @ 3% of C	38,381.05 24,663.46
<u>E</u>			ansportation (		95,952.62
	Erection Charges (		•		-
G					17,675.83
<u>H</u>	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-F		<u> </u>	· '	87,965.62
<u> </u>	Erection Charges @ 20% of	LOC bol			45 44 000 00
J	Civil & Services		Su	m of (C to I)	15,44,006.82
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	10	22,500.00
2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	5.5	35,750.00
2	Couning ratio 1:1 5:2 with dimension (500Y500Y450\= 0.1125 Cu mtr	Cumt	6 500 00	1 125	7 210 50

Cu.mtr

6,500.00

1.125

7,312.50

3 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr

	Annexure-18				
	33kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poin	ts and C	ut-Points & 1	3 Mtr WPB P	ole for DP
4	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.	3,700.00	10	37,000.00
к		•	Total Civil	& Services	1,02,562.50
L				Total (J+K)	16,46,569.32
N			Sub	Total (L+M)	16,46,569.32
0			Total GST @	0 18% of (N)	2,96,382.48
01			Total CESS	@ 1% of (N)	16,465.69
P	Gross Total Material +Services (N+C	D+O1) fo	r 33 KV DP W	Vith Isolator	19,59,417.49
		,			,,
	No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No)			8	
	MATERIALS FOR 33 KV Cut Point with 180 Degree Angl	le			
SI.	Description of Materials	Unit	Unit Rate	Total	Total
No.	•			Quantity	Amount
1	13 Mtr. Long H-Pole(GI) Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of	No	56,735.71	8	4,53,885.71
2	Channel = (2x 9.56x1.7)	K.g.	76.00	260.032	19,762.43
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280) Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 No's	K.g.	97.50	42.2912	4,123.39
4	of Channel = (2x 9.56x0.306)	K.g.	76.00	46.80576	3,557.24
5	Danger Plate, 1 no's.	No.	104.00	8	832.00
6	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)	KG	97.50	2.4072	234.70
7	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	24	2,496.00
8	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	9.6288	938.81
9	33KV pin insulator polymer	No.	624.00	24	14,976.00
	H W fitting(B&S)90KN,4 Bolt Disc insulator (B&S)90 KN polymer	No.	650.00 1,495.00	48 48	31,200.00 71,760.00
12	Earthing of Support ( Coil Type )	EA	215.80	8	1,726.40
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	2.096	204.36
14 15	PG Clamp for 232 sq.mm AAA conductor GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point)	NO. K.g.	1,495.00 101.40	48 39.032	71,760.00 3,957.84
16	Black Paint	Ltr	286.00	8	2,288.00
17	Yellow Colour Paint for Background	Ltr	216.00	16 of materials	3,456.00
<u>А</u> В	Stor	k Storac	je & Insurance		<b>6,87,158.89</b> 20,614.77
C		ik, Otorag		Total (A+B)	7,07,773.66
D				y @ 3% of C	21,233.21
Е			Tools & Plants		14,155.47
F		Tr	ansportation (	@ 7.5% of C	53,083.02
G	Erection Charges (				23,375.11
Н	Erection Charges @ 10% of C (except Trf/Breaker/W				24,027.14
<u> </u>	Erection Charges @ 20% of	PSC pol			
	Civil & Services		Su	m of (C to I)	8,43,647.62
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	4.4	28,600.00
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	0.9	5,850.00
к			Total Civil	& Services	34,450.00
L				Total (J+K)	8,78,097.62
N			Sub	Total (L+M)	8,78,097.62
0			Total GST @	) 18% of (N)	1,58,057.57
01			Total CESS		8,780.98
P	Gross Total Material +Services (N+O+O1) for 33 KV	Cut Poir	nt with 180 De	egree Angle	10,44,936.16
	, , ,				, ,
	No. of 33 KV Cut Point with 90 Degree Angle (Ref. Drawing No) <u>MATERIALS FOR 33 KV Cut Point with 90 Degree Angle</u>	9		12	

#### Annexure-18 33kV Line Length with 40 Mtr. Span using 232 SQ.MM. -AAA Conductor 13 Mtr. H-Pole for Pin-Points and Cut-Points & 13 Mtr WPB Pole for DP SI. Total Total **Unit Rate** Description of Materials Unit No. Quantity Amount 13 Mtr. Long H-Pole(GI) No 56,735.71 12 6,80,828.57 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of 2 K.g. 76.00 780.096 59,287.30 Channel = (4x 9.56x1.7)3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280) 97.50 126.8736 12,370.18 K.g. Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 4 No's 4 140.41728 K.g. 76.00 10.671.71 of Channel = (4x 9.56x0.306) 104.00 12 1,248.00 5 Danger Plate, 1 no's No. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) KG 97.50 3.6108 352.05 GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 36 3,744.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = KG 97.50 14.4432 1,408.21 (4x0.59x0.510) 33KV pin insulator polymer (4 No's each 90 Deg. Cut point) No. 624.00 48 29,952.00 10 H W fitting(B&S)90KN,4 Bolt 650.00 72 46,800.00 No. 11 Disc insulator (B&S)90 KN polymer No. 1.495.00 72 1,07,640.00 Earthing of Support (Coil Type) 215.80 12 2,589.60 No. 13 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing 97.50 3.144 306.54 K.a 1,495.00 1,07,640.00 14 PG Clamp for 232 sq.mm AAA conductor NO 72 H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair) 162.50 12 1,950.00 Pair 16 H.T. Stay set (Complete ) Set 1,365.00 12 16,380.00 17 H.T. Stay Insulator Type-C (2 No's.) No. 65.00 12 780.00 7/8 SWG Stay Wire 15kg /stay 97.50 180 17,550.00 K.g. 19 Gl Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point) K.g. 101.40 135.72 13,762.01 20 Black Paint Ltr 286.00 3,432.00 12 21 Yellow Colour Paint for Background Ltr 216.00 5,184.00 **Total Cost of materials** Α 11,23,876.17 В Stock, Storage & Insurance i.e 3% of A 33,716.29 С Sub Total (A+B) 11,57,592.45 D 34,727.77 Contigency @ 3% of C Ε Tools & Plants @ 2% of C 22,396.65 F Transportation @ 7.5% of C 86,819.43 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 35,062.67 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) Н 41,857.92 Erection Charges @ 20% of PSC pole- Not to be used for 33kv ı Sum of (C to I) J 13,78,456.91 Civil & Services SI. Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 42,900.00 1 6.60 Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr Cu.mti 6,500.00 1.35 8,775.00 Fixing of 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, including excyation, supply of 0.5Cum cement No. 2,250.00 12 27,000.00 concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.) Total Civil & Services 78.675.00 Κ Total (J+K) 14,57,131.91 L Sub Total (L+M) Ν 14,57,131.91 Total GST @ 18% of (N) 0 2,62,283.74 01 Total CESS @ 1% of (N) 14,571.32 Р Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 90 Degree Angle 17,33,986.97 33 Kv Line Length In KM with 40 Mtr. Span 10 (Ref. Drawing No.-) MATERIALS FOR 33 KV Pin Points SI. Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount 1,19,14,500.00 13 Mtr. Long H-Pole(GI) No 56,735.71 210 33 KV V cross Arm (GI) 22Kg each No. 2,340.00 210 4,91,400.00

3 Top bracket 100x50x6mm GI channel (300mm each)

Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)

4 Danger Plate, 1 no's.

210

210

63.19

40.950.00

21,840.00

6.160.93

195.00

104.00

97.50

No.

No.

KG

	Annexure-18				
	33kV Line Length with 40 Mtr. Span using 232 SQ.MMAAA Conductor 13 Mtr. H-Pole for Pin-Poin	ts and C	ut-Points & 1	3 Mtr WPB F	Pole for DP
6	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	630.00	65,520.00
7	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	252.76	24,643.71
8	33KV pin insulator polymer	No.	624.00	630	3,93,120.00
9	Earthing of Support ( Coil Type )	No.	215.80	210	45,318.00
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	55.02	5,364.45
11	GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point) 232 sq.mm AAA conductor	K.g.	101.40	304.50 30900.00	30,876.30
12 13	Crimping type Midspan Compression Joint for 232 sq.mm AAA conductor	Mtr. EA	203.45 842.95	30900.00	62,86,605.00 25,288.38
14	Black Paint	Ltr	286.00	210.0	60,060.00
15	Yellow Colour Paint for Background	Ltr	216.00	420.0	90,720.00
Α			Total Cost	of materials	1,95,02,366.77
В	Stoc	k, Storag	je & Insurance	e i.e 3% of A	5,85,071.00
С				Total (A+B)	2,00,87,437.77
D				y @ 3% of C	6,02,623.13
E			Tools & Plants		4,01,748.76
F					
			ansportation (		15,06,557.83
G	Erection Charges (				6,13,596.75
Н	Erection Charges @ 10% of C (except Trf/Breaker/W	PB/ H-P	ole/HT stay se	et/PSC pole)	7,81,550.28
I	Erection Charges @ 20% of	PSC pol	e- Not to be u	sed for 33kv	-
J			Su	m of (C to I)	2,39,93,514.52
	<u>Civil &amp; Services</u>			•	
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	115.50	7,50,750.00
1 2	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr  Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr Cu.mtr	6,500.00 6,500.00	115.50 23.63	7,50,750.00 1,53,562.50
			6,500.00		
2			6,500.00	23.63	1,53,562.50
2 <b>K</b>			6,500.00 Total Civil	23.63 & Services	1,53,562.50 9,04,312.50
2 K L N			6,500.00 Total Civil	23.63 & Services Total (J+K) Total (L+M)	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02
2 K L N O			6,500.00  Total Civil  Sub  Total GST @	23.63 & Services Total (J+K) Total (L+M)  2 18% of (N)	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02 44,81,608.86
2 K L N O O1	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00  Total Civil  Sub  Total GST @  Total CESS	23.63 & Services Total (J+K) Total (L+M)  18% of (N)  1% of (N)	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02 44,81,608.86 2,48,978.27
2 <b>K L N</b> O		Cu.mtr	6,500.00  Total Civil  Sub  Total GST @  Total CESS	23.63 & Services Total (J+K) Total (L+M)  18% of (N)  1% of (N)	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02 44,81,608.86
2 K L N O O1	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Gross Total Material +Service	Cu.mtr	6,500.00  Total Civil  Sub  Total GST @  Total CESS	23.63 & Services Total (J+K) Total (L+M)  18% of (N)  1% of (N)	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02 44,81,608.86 2,48,978.27
2 K L N O O1 P	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Gross Total Material +Service  Gross Total Summary	Cu.mtr	6,500.00  Total Civil  Sub  Total GST @  Total CESS  O1) for 33 KV	23.63 & Services Total (J+K) Total (L+M) @ 18% of (N) @ 1% of (N) / Pin Points	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02 44,81,608.86 2,48,978.27 2,96,28,414.15
2 K L N O O1	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Gross Total Material +Service	Cu.mtr	6,500.00  Total Civil  Sub  Total GST @  Total CESS  O1) for 33 KV	23.63 & Services Total (J+K) Total (L+M) @ 18% of (N) @ 1% of (N) / Pin Points	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02 44,81,608.86 2,48,978.27 2,96,28,414.15
2 K L N O O1 P	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Gross Total Material +Service  Gross Total Summary	Cu.mtr s (N+O+	6,500.00  Total Civil  Sub  Total GST @  Total CESS  O1) for 33 KV	23.63 & Services Total (J+K) Total (L+M)  ② 18% of (N)  ② 1% of (N)  / Pin Points	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02 44,81,608.86 2,48,978.27
2 K L N O O1 P	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Gross Total Material +Service  Gross Total Summary  Gross Total Material +Services (N+O+	S (N+O+	6,500.00  Total Civil  Sub  Total GST @  Total CESS  O1) for 33 KV  B3 KV DP Withor 33 KV DP Withor 33 KV	23.63 & Services Total (J+K) Total (L+M)  ② 18% of (N)  ② 1% of (N) / Pin Points hout Isolator // With Isolator	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02 44,81,608.86 2,48,978.27 2,96,28,414.15
2 K L N O O1 P 1 2	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Gross Total Material +Service  Gross Total Summary  Gross Total Material +Services (N+O+O+O-Gross Total Material +Services (N+O+O+O-Gross Total Material +Services (N+O+O-Gross Total Material +Services (N+O-Gross Total Material +Services (N-O-Gross Total Material +Servic	S (N+O+ -O1) for 3 -O+O1) f	6,500.00  Total Civil  Sub  Total GST @  Total CESS O1) for 33 KV  33 KV DP With or 33 KV DP With int with 180 D	23.63 & Services Total (J+K) Total (L+M) @ 18% of (N) @ 1% of (N) / Pin Points hout Isolator With Isolator egree Angle	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02 44,81,608.86 2,48,978.27 2,96,28,414.15 29,07,579.66 19,59,417.49
2 K L N O O1 P 1 2 3	Couping ratio 1:1.5:3 with dimension ( 500X500X450)= 0.1125 Cu mtr  Gross Total Material +Service  Gross Total Summary  Gross Total Material +Services (N+O+Gross Total Material +Services (N+O+Gross Total Material +Services (N+O+O1) for 33 K	S (N+O+	6,500.00  Total Civil  Sub  Total GST @  Total CESS  O1) for 33 KV  B3 KV DP With  or 33 KV DP Viint with 180 D  oint with 90 D	23.63 & Services Total (J+K) Total (L+M) @ 18% of (N) @ 1% of (N) / Pin Points hout Isolator // With Isolator egree Angle egree Angle	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02 44,81,608.86 2,48,978.27 2,96,28,414.15 29,07,579.66 19,59,417.49 10,44,936.16
2 K L N O O1 P 1 2 3 4	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Service  Gross Total Summary  Gross Total Material +Services (N+O+O-O-C)	s (N+O+ -O1) for 3 -O+O1) f V Cut Po KV Cut P ees (N+O	6,500.00  Total Civil  Sub  Total GST @  Total CESS  O1) for 33 KV  B3 KV DP With  or 33 KV DP Viint with 180 D  oint with 90 D	23.63 & Services Total (J+K) Total (L+M) @ 18% of (N) @ 1% of (N) / Pin Points hout Isolator With Isolator egree Angle egree Angle V Pin Points	1,53,562.50 9,04,312.50 2,48,97,827.02 44,81,608.86 2,48,978.27 2,96,28,414.15  29,07,579.66 19,59,417.49 10,44,936.16 17,33,986.97
2 K L N O O1 P 1 2 3 4 5	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Service  Gross Total Summary  Gross Total Material +Services (N+O+O-O-C)	s (N+O+ -O1) for 3 -O+O1) f V Cut Po V Cut Poes (N+O Gross	6,500.00  Total Civil  Sub  Total GST @  Total CESS  O1) for 33 KV  B3 KV DP Wittor 33 KV DV Wittor 34 KV DV W	23.63 & Services Total (J+K) Total (L+M) @ 18% of (N) @ 1% of (N) / Pin Points hout Isolator With Isolator egree Angle egree Angle v Pin Points II +Services	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02 44,81,608.86 2,48,978.27 2,96,28,414.15  29,07,579.66 19,59,417.49 10,44,936.16 17,33,986.97 2,96,28,414.15
2 K L N O O1 P 1 2 3 4 5 Q	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Service  Gross Total Summary  Gross Total Material +Services (N+O+O+O+O+O+O+O+O+O+O+O+O+O+O+O+O+O+O+O	s (N+O+ -O1) for 3 -O+O1) for 3	6,500.00  Total Civil  Sub  Total GST @  Total CESS O1) for 33 KV  33 KV DP With or 33 KV DP With or 33 KV DP With or 34 KV DP With or 35 KV DP With or 36 KV DP With or 37 KV DP With or 38 KV D	23.63 & Services Total (J+K) Total (L+M) @ 18% of (N) @ 1% of (N) / Pin Points hout Isolator With Isolator egree Angle egree Angle ty Pin Points II + Services up to 1 km.	1,53,562.50 9,04,312.50 2,48,97,827.02 44,81,608.86 2,48,978.27 2,96,28,414.15  29,07,579.66 19,59,417.49 10,44,936.16 17,33,986.97 2,96,28,414.15 3,72,74,334.44
2 K L N O O1 P 1 2 3 4 4 5 Q R	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Service  Gross Total Summary  Gross Total Material +Services (N+O+O  Gross Total Material +Services (N+O+O  Gross Total Material +Services (N+O+O1) for 33 K  Gross Total Material +Services (N+O+O1) for 33 K  Gross Total Material +Services (N+O+O1) for 33 K  Gross Total Material +Services (N+O+O1) for 35 K	S (N+O+O+O1) for 3 to 40 Cut Po CV Cut Poes (N+OGross ad Line (HT	G,500.00  Total Civil  Sub  Total GST @  Total CESS O1) for 33 KV  33 KV DP With or 34 KV DP With or 35 KV DP With or 35 KV DP With or 35 KV DP With or 36 KV DP With or 37 KV DP With or 37 KV DP With or 38 KV D	23.63 & Services Total (J+K) Total (L+M) @ 18% of (N) @ 1% of (N) / Pin Points  hout Isolator With Isolator egree Angle egree Angle V Pin Points II +Services D up to 1 km. dditional Km	1,53,562.50 9,04,312.50 2,48,97,827.02 44,81,608.86 2,48,978.27 2,96,28,414.15  29,07,579.66 19,59,417.49 10,44,936.16 17,33,986.97 2,96,28,414.15 3,72,74,334.44 1,500.00
2 K L N O O 1 P P 1 2 3 4 4 5 Q R S	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Gross Total Material +Service  Gross Total Summary  Gross Total Material +Services (N+O+O-Gross Total Material +Services (N+O+Gross Total Material +Services (N+O+O-1) for 33 K  Gross Total Material +Services (N+O+O1) for 33 K  Gross Total Material +Services (N+O+O1) for 33 K  Gross Total Material +Services (N+O+O1) for 35 K	s (N+O+ -O1) for 3 -O+O1) f V Cut Po KV Cut Poes (N+O Gross ad Line (HT of Drawir	G,500.00  Total Civil  Sub  Total GST @  Total CESS  O1) for 33 KV  B3 KV DP With  Total St V DP With  Total With 180 D  Total Materia  Total Materia  Total Materia  Total CESS  Total Materia  Total Materia  Total CESS  Total Materia  Total Materia  Total CESS  Total Materia	23.63 & Services Total (J+K) Total (L+M) @ 18% of (N) @ 1% of (N) / Pin Points  thout Isolator With Isolator egree Angle egree Angle egree Angle v Pin Points Il +Services of up to 1 km. dditional Km and Approval	1,53,562.50 9,04,312.50 2,48,97,827.02 2,48,97,827.02 44,81,608.86 2,48,978.27 2,96,28,414.15  29,07,579.66 19,59,417.49 10,44,936.16 17,33,986.97 2,96,28,414.15 3,72,74,334.44 1,500.00 6,750.00

# BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

## Supply Portion

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories				
a	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	1500		
<u> </u>	Length of 33kV 1C, 630sqmm cable (HDD)	Mtr.	500		
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	6000	1,495.47	89,72,820.00
1.2	Supply of Straight throU/Gh jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set	9	11,900.00	1,07,100.00
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	15	6,350.00	95,250.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	6	6,100.00	36,600.00
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	4380.00	357.60	15,66,288.00
2	Supply of 33kV RMU				
а	No. of 33kV 3Way RMU (LLV+M)	nos.			
ь	No. of 33kV 4Way RMU (LLVV+M)	nos.			
С	No. of 33kV 3Way RMU (LLV)	nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.	1		
e	No. of 33kV 3Way RMU (LLL)	nos.			
f	No. of 33kV 4Way RMU (LLLL)	nos.			
2.1	Supply of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M) (CT Ratio to be mentioned)	Nos.	0	22,93,723.00	-
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M) (CT Ratio to be mentioned)	Nos.	0	31,74,874.00	-
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	1	23,35,264.00	23,35,264.00
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	-
2.6	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	19,59,421.00	-
3	Earthing Earthing Conductor: 50X6 mm (2.4kg./mtr.) GI Flat for				
3.1	equipment, structure etc.)	kg	13.20	97.50	1,287.00
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	2	1,365.00	2,730.00
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	1		
4.1	Pre-Wired FRTU Panel with FRTU	No.	1	1,21,744.00	1,21,744.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	1	1,00,000.00	1,00,000.00

	Annexure-18						
BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU							
4.3	Networking Accessories	No.	1	72.00	72.00		
4.4	CMR with Mounting Base for Digital Inputs	Nos.	32	650.00	20,800.00		
4.5	Interposing Relay for Digital Output	Nos.	16	467.94	7,487.04		
4.6	Battery Charger	Nos.	1	15,385.00	15,385.00		
4.7	Battery	Nos.	1	8,333.00	8,333.00		
4.8	4G Modem cum Router	Nos.	1	18,500.00	18,500.00		
4.9	Instrumentation Cable 12 C X 0.5 mm2, Armored cable for Status and Indications	Mtr.	40	204.87	8,194.80		
4.10	Instrumentation Cable 7 C X 1.5 mm2, Armored for Control Output	Mtr.	40	305.58	12,223.20		
4.11	Twisted Pair Shielded & Over all shielded Instrumentation Cable	Mtr.	40	275.23	11,009.20		
4.12	4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	20	165.25	3,305.00		
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	10	150.00	1,500.00		
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	20.0	148.43	2,968.60		
4.15	Armored CAT6 SFTP Cable	Mtr.	20	45.87	917.40		
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	20	89.45	1,789.00		
4.17	Multi Function Meter	Nos.	2	18,651.00	37,302.00		
	Sub Total (Supply Portion) (in	Rs.)			1,34,88,869.24		
	Erection Portion	n					
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)		
1	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare						
1.1	Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by <b>open trench method</b> .	Mtr.	4500	94.50	4,25,250.00		
1.2	Erection of <b>Straight through jointing kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits	Set	9	2,400.00	21,600.00		
	1						
1.3	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set	15	2,081.70	31,225.50		
1.3	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits	Set Set	15 6	2,081.70 2,081.70	31,225.50 12,490.20		
	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.						
1.4	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE	Set	6	2,081.70	12,490.20		
1.4	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of <b>110mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open	Set Mtr.	6 1500	2,081.70	12,490.20		
1.4	Erection of <b>Outdoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of <b>Indoor termination kits</b> Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by <b>HDD method with</b> HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of <b>110mm dia</b> PE 80-PN8, <b>HDPE pipe</b> inside open trench.	Set Mtr.	6 1500	2,081.70	12,490.20		

	Alliexule-10						
BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU							
2.2	Erection of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M)	Nos.	0	15,000.00	-		
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-		
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	1	8,000.00	8,000.00		
2.5	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	8,000.00	-		
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	8,000.00	-		
3	FRTU and OFC for RMU SCADA Automation						
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	1.0	16,000.00	16,000.00		
	Sub Total (Erection Portion) (in	Rs.)	· · · · · · · · · · · · · · · · · · ·		52,78,565.70		
Civil Po	 ortion						
SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)		
1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench						
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	1460				
1.1.a	Earth work excavation of <b>soil</b>	Cum	1226.4	700.00	8,58,480.00		
1.1.b	Earth work excavation of hard rock	Cum	525.6	1,720.00	9,04,032.00		
1.2	Back filling with excavated soil outside and above the trench	Cum	1752	202.00	3,53,904.00		
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	730	2,643.67	19,29,879.56		
2	Civil works for Prefabricated RCC foundation with supply of all materials						
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	1	23,145.30	23,145.30		
3	Supply of GI Fencing with Gate around each RMU	sqmtr	20	3,600.00	72,000.00		
4	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.	Set	2	3,700.00	7,400.00		
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	120	1,463.40	1,75,608.00		
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	67	1,012.00	67,804.00		
	43,92,252.86						
Α	1,34,88,869.24						
В	Sub Total (Supply Portion)  Stock, Storage & Insurance @ 3 % of A						
С	C Sub Total (A+B)						
D	D Contingency @ 3 % of C						
E Tools & Plants Charges @ 2% of C (considered for earthing items)					26.51		

	1	
	BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33	kV RMU
F	Transportation @ 7.5% of C	10,42,015.15
G	Erection Charges @ 10% of earthing items	132.56
Н	Total (C+D+E+F+G)	1,53,52,515.60
I	Sub Total (Erection Portion + Civil Portion)	96,70,818.56
J	Total Cost (H+I)	2,50,23,334.16
L	Total Estimated Capital Cost i.e. (J+K)	2,50,23,334.16
М	GST @ 18% of L	45,04,200.15
M1	CESS @ 1% of L	25,02,333.42
N	Grand Total (L+M)	3,20,29,867.72
0	Inspection Fee of UG Line (HT) - Rs. 3000/ km.	3,000.00
Р	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km	
Q	Inspection Fee of RMU - Rs. 1500/ RMU	1,500.00
R	Inspection Fee of Drawing Checking and Approval	750.00
S	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)	3,20,35,117.72

	No. of Span			1			
	Supply of Material for Construction of 'F	C+6' EH	Tower				
SI. No.	Description	Unit	Unit Rate	Total Quantity	Total Amount		
1	Cost of G.I PC +6 TYPE Tower super structure (Main + Extention +Stub + Template)						
i)	PC Tower (5.346 MT per Tower)	MT	90,000.00	10.692	9,62,280.00		
ii)	+6 Mtr Extention (2.246 MT per Tower)	MT	90,000.00	4.492	4,04,280.00		
iii)	Stub & Cleats (0.610 MT per Tower)	MT	90,001.00	1.220	1,09,801.22		
iv)	Template (0.888 MT per Tower)	MT	8,696.01	1.776	15,444.11		
2	Nut Bolts				-		
i)	PC Tower (0.336 MT per Tower)	MT	1,19,078.23	0.672	80,020.57		
ii)	+6 Mtr Extention (0.111 MT per Tower)	MT	1,19,078.23	0.222	26,435.37		
3	Conductor and Accessories						
i	232 Sq.mm. Conductor (AAAC)	Km	2,03,450.00	1.854	3,77,196.30		
ii	Earth wire 7/1.5, 300 meter + Tower earthing $(50 \times 4) = 500$ Mtr.	Km	43,317.74	0.500	21,658.87		
iii	Double tension Hardware Fittings	Set	4,498.00	24	1,07,952.00		
iv	Disc insulator (B&S)120 KN polymer	Nos	1,872.00	48	89,856.00		
٧	Earth wire tension fittings	Set	675.31	4	2,701.23		
νi	Vibration damper for earth wire	Nos	539.78	4	2,159.11		
vii	Vibration damper for coductor	Nos	566.65	24	13,599.59		
viii	Copper flexible bond	Nos	490.71	2	981.41		
ix	Phase Plate (R,Y,B)	Set	245.35	12	2,944.24		
Х	Tower Number Plate	Nos	243.02	2	486.03		
хi	Circuit Plate	Nos	269.89	4	1,079.56		
xii	40 mm Dia. 3Mtr. long G.I Earthing device	Nos	1,365.00	4	5,460.00		
xiii	GI Flat 50 x 6 mm	kg	97.50	200	19,500.00		
xiv	Danger Board	Nos	104.00	4	416.00		
XV	Bird Guard	Nos	429.95	24	10,318.87		
xvi	Anticlimbing Device	kg	104.00	211	21,964.80		
xvii	Loop Connector	Nos	490.71	12	5,888.48		
Α	Total Cost of materials				22,82,423.77		
В	Stock, Storage & Insurance @ 3 % of A	Α			68,472.71		
С	Sub Total (A+B)				23,50,896.48		
D	Contingency @ 3 % of C				70,526.89 401.70		
Е	Tools & Plants Charges @ 2% (considered for earthing items)						
F	Transportation @ 7.5% of C				1,76,317.24		
G	Erection Charges @ 10% of earthing ite	ns			2,008.50		
Н	Total (C+D+E+F+G)				26,00,150.81		
	Erection Portion	1		I			
SI.No	Description	Unit	Rate	Total Quantity	Amount		
1	Cost of G.I PC +6 TYPE Tower super structure (Main + Extention +Stub + Template)						
i)	PC Tower (5.346 MT per Tower)	MT	11,000.00	10.692	1,17,612.00		
ii)	+6 Mtr Extention (2.246 MT per Tower)	MT	11,000.00	4.492	49,412.00		
iii)	Stub & Cleats (0.610 MT per Tower)	MT	11,000.00	1.220	13,420.00		
iv)	Template (0.888 MT per Tower)	MT	11,000.00	1.776	19,536.00		
2	Nut Bolts				-		
i)	PC Tower (0.336 MT per Tower)	МТ	11,000.00	0.672	7,392.00		
ii)	+6 Mtr Extention (0.111 MT per Tower)	MT	11,000.00	0.222	2,442.00		
3	Conductor and Accessories		, , , , , , , , , , , , , , , , , , , ,		-		
i	232 Sq.mm. Conductor (AAAC)	Km	52,155.14	1.854	96,695.64		
ii	Earth wire 7/1.5, 300 meter + Tower earthing $(50 \times 4) = 500$ Mtr.	Km	13,038.79	0.500	6,519.39		

#### **Annexure-18** Construction of 2 nos. 'PC+6' EHT Tower for River crossing (Span Length- 300 Mtr.) Double tension Hardware Fittings Set 325.97 24 7,823.27 Disc insulator (B&S)120 KN polymer 325.97 iν Nos 48 15,646.54 325.97 Earth wire tension fittings Set 4 1,303.88 V 1,303.88 Vibration damper for earth wire Nos 325.97 4 325.97 7,823.27 Vibration damper for coductor 24 vii Nos viii Copper flexible bond Nos 325.97 2 651.94 Phase Plate (R,Y,B) 12 ix Set 325.97 3,911.64 Tower Number Plate 195.58 2 391.16 Nos х Circuit Plate Nos 325.97 4 1,303.88 χi 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 Nο 3,700.00 4 14,800.00 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe . Danger Board Nos 52.00 4 208.00 xiii Bird Guard Nos 65.19 24 1,564.65 xiv 19.56 4,130.69 Anticlimbing Device 211 kg 3,911.64 Loop Connector 325.97 12 χvi Nos 3,77,803.47 Т **Total Cost of Erection Civil Portion** SI.No Total Description Unit Rate **Amount** Quantity Excavation in all type 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 soil at suitable place after back filling), & if required for filling the foundation, borrowed earth/murrum/sand shall be brought for filling and compaction, including supply of sand, all T&P, labour as required. 1.1 Soft and loose soil CUM 176.86 100 17,686.00 Boring for under reemed cast in situ piling with bentonite showing for Mtr. 2 stabilisation of bore:- Pile diameter (1000 MM) and approximate length of 5,836.14 200 11,67,228.00 length the bore is 25 Mtrs BY DMC method as per approved drawing. Supply of all materials like cement, steel, all coarse aggregates, fine aggregates and making pile foundations of the required Tower 3 foundation, including supply of all materials, labours and T&P as per Cum 8,015.00 157 12,58,675.60 specification in the RCC :1:1:2 (Grade M-25.) (with cost of cement and Steel of different size(as per design) with cutting, bending, binding in position of M.S.Rod for reinforcement of foundation concret of pile of MT 61.968.00 8,42,764.80 14 towers including supply of binding wire. (With supply of steel rod (TATA/RINL/SAIL make)) Supply and putting of MS liner of 6mm thickness and 1000mm dia as per MT 61,968.00 29 18,21,859.20 approved drawing and as per instruction of engineer in charge. Pile riser, cap, tie-beam with RCC: 1:1.5:3 (Grade M-20), including supply of all materials like Cement, coarse and fine aggregates, shuttering and supply of labours, de-watering, proper curing of the Cum 7,107.12 140 9,94,996.80 foundations/concrete and T&P in line with the Specification and as per direction of Engineer in Charge. (with cost of cement and without steel) Steel of different size(as per design) with cutting, bending, binding in position of M.S.Rod for reinforcement of foundation concret of pile riser, 7 MT 61,968.00 11 6,81,648.00 cap and tie beam including supply of binding wire. (With supply of steel

rod (TATA/RINL/SAIL make))

#### Annexure-18 Construction of 2 nos. 'PC+6' EHT Tower for River crossing (Span Length- 300 Mtr.) Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm), fine aggregates, cement in tower foundation as blind layer inclusive of labour charges for concrete mixing & curing. This 4,978.76 10 49,787.60 Cum includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge.(With Cement) Shoring And Shuttering required in wet or special locations with supply of all materials, T&P and Labour.(Required for riser works above ground 200 Sq.Mtr 341.92 68,384.00 level) **Total Cost of Civil Work** J 69,03,030.00 Total Cost of Erection, Foundation and Civil Works (I+J) Κ 72,80,833.47 L Total Cost (H+K) 98,80,984.28 **Total Estimated Capital Cost (L+M)** 98,80,984.28 Ν GST @ 18% of N 0 17,78,577.17 CSS @ 1% of N 01 98,809.84 Ρ Total (N+O) 1,17,58,371.00

# Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator).

	No. of Bus isolator requirement			3	
	No. of VCB Requirement				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	T-1 GI Column(7.25 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel) for 33kV incoming line, Nominal Unit Wt - 0.35 MT	Nos.	26,600.00	1	26,600.00
2	T-2 GI Column (7.25mtr long, consisting of 2 Nos 175X75X6 mm channel) for 33kV incoming line -1 no, Nominal Unit Wt - 0.42 MT	Nos.	31,920.00	1	31,920.00
3	T-1A GI Column ( for 33 kv Bus) ( 6 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel jointed by plates) Nominal Unit Wt - 0.31 MT	Nos.	23,560.00	2	47,120.00
4	T-2A GI Column ( for 33 kv Bus) (6 mtr long, consisting of 2 Nos 175X75X6 mm channel jointed by plates) Nominal Unit Wt - 0.37 MT	Nos.	28,120.00	2	56,240.00
5	G-3 GI Beam(5.05mtr long, consisting of 2 Nos 150X75 X5.7mm) for 33kV incoming line - (2 nos. Beam- one for Surge Arrester and other for Isolator, Nominal Unit Wt - 0.2 MT)	Nos.	15,200.00	1	15,200.00
6	G-2 GI Beam (6.1 mtr long, consisting of 2 Nos 125X65 X5.3 mm channel jointed by plates) for 33kV Bus Stringing , Nominal Unit Wt - 0.175 MT)	Nos.	13,300.00	4	53,200.00
7	Equipment Structures (GI) For 33 KV Isolator (Unit Wt of Equipment Structures per set - 0.33 MT)	KG	76.00	990	75,240.00
8	Equipment Structures (GI) For 33 KV Vacuum Circuit Breaker (Unit Wt of Equipment Structures per set - 0.2 MT)	KG	76.00	200	15,200.00
9	GI Column for 33 KV CT (Unit Wt of Equipment Structures per set - 0.285 MT)	KG	76.00	285	21,660.00
10	GI Spikes with cone and GI ( 2 nos) base plate 10mm (50x3000 mm GI pipe) (Unit Wt=0.035 MT)	Nos.	3,641.92	4	14,567.67
11	GI Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	8	10,920.00
12	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr. For Isolator/VCB , 10 metre mesh formation )= 20x2.36	KG	97.50	188.8	18,408.00
13	400 sq.mm ACSR for 33kV side jumpering and Bus Formation etc.	KM	2,74,300.00	0.1	27,430.00
14	33 kV 1250 AMP Double break (Turn & twist center rotating) isolator with earth switch with PI(Polymer)	Set	1,31,157.00	3	3,93,471.00
15	33KV Outdoor VCB-1600A, with indoor CR panel without PT, with outdoor CT (CTR- 600-300-150/1-1A, 15VA, STC 25KA/3sec, class: 0.5, 5P10) for feeder protection	EA	7,02,000.00	1	7,02,000.00
16	33KV.Single Phase PT(33KV/ V3 / 110V/ V3) (Oil cooled ) CLASS 0.5 / 3P, with O/P burden of 100VA	EA	33,046.00	3	99,138.00
17	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	12	1,61,460.00
18	Control Cable 10Core x 2.5 mm <sup>2</sup>	Mtr	429.00	150	64,350.00
19	Control Cable 16Core x 2.5 mm <sup>2</sup>	Mtr	523.90	150	78,585.00
20	Control Cable 4Core x 2.5 mm <sup>2</sup>	Mtr	145.60	50	7,280.00
21	Control Cable 7Core x 2.5 mm <sup>2</sup>	Mtr	236.60	50	11,830.00
22	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	18	26,910.00
23	H W fitting(B&S) 90KN,4 Bolt 8 bolted (M-12) "T" clamp ACSR Zebra run & 232 mm2 drop	No.	650.00 1,404.00	18	11,700.00 25,272.00
24 25	PG Clamp for 232 sq.mm AAA conductor	No.	1,404.00	18 48	71,760.00
26	GI Nut , Bolt & Washer of different sizes (13.718 Kg each Strcutures)	K.g.	101.40	54.872	5,564.02
27	Black Paint	Ltr	286.00	4	1,144.00
28	Yellow Colour Paint for Background	Ltr	286.00	8	2,288.00
A	Total Cost of materials				
В	Stock, Storage & Insurance i.e 3% of A				<b>20,76,457.69</b> 62,293.73
С					21,38,751.42
D					

#### Annexure-18 Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator). Ε Tools & Plants @ 2% of C 42,775.03 F Transportation @ 7.5% of C 1,60,406.36 G Erection Charges @ 5% on Trf/Breaker/Joist 36,153.00 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole/GI Earthing) Н 1,40,444.38 Erection Charges @ 20% of PSC pole- Not to be used for 33kv 1 Sum of (C to I) J 25,82,692.74 Civil & Services SI. Total Total **Unit Rate** Description of Materials Unit No. Quantity Amount **VCB Foundation** Α BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using Cum 482.00 7.28 3.508.96 necessary tools & machinery for excavation of cable trench & other civil works Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & Cum 200.00 4.00 800.00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Supplying and filling in plinth with river sand under floors, including watering, 3 Cum 1020.00 0.34 348.08 ramming, consolidating and dressing complete. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 2,334.15 5130.00 0.46 Cum coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size). Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work Cum 6500.00 2.83 18.362.50 up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for 301.00 13.25 3,988.25 Sqm all heights: Foundations, footings, bases of columns, etc. for mass concrete. Steel reinforcement for R.C.C. work including straightening, cutting, bending, 7 placing in position and binding all complete: Thermo-Mechanically Treated bars 109.00 140.00 15,260.00 Kg of grade Fe-500D or more. В **CT & PT Foundation** 0.00 BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using 482.00 1 Cum 7.97 3,840.94 necessary tools & machinery for excavation of cable trench & other civil works Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & Cum 200.00 4.50 900.00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Supplying and filling in plinth with river sand under floors, including watering, Cum 900.00 0.36 326.70 ramming, consolidating and dressing complete. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 Cum 5130.00 0.36 1.862.19 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size). Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work 6500.00 2.36 Cum 15,356.25 up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for 301.00 14 94 4.496.94 Sqm all heights: Foundations, footings, bases of columns, etc. for mass concrete. Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars 109.00 122.43 13,344.87 Kg of grade Fe-500D or more. С 0.00 Column as per Drawing Schedule-Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & 482.00 Cum 51.31 24,731.30 machinery for excavation of cable trench & other civil works

#### Annexure-18 Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator). Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & 200.00 Cum 24.00 4,800.00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 Cum 5130.00 2.10 10,773.00 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size). Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work 6500.00 92,137.50 Cum 14.18 up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for 301.00 26,981.64 5 Sqm 89.64 all heights: Foundations, footings, bases of columns, etc. for mass concrete. Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars 109.00 734.58 80,069.22 Kg of grade Fe-500D or more. D **Isolator** Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & 482 00 14.18 6.832.35 1 Cum machinery for excavation of cable trench & other civil works Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & 2 200.00 Cum 6.00 1,200.00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement: 3 Cum 5130.00 0.85 4,363.07 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size). Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work Cum 6500.00 8.55 55,575.00 up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for Sqm 301.00 44.82 13,490.82 all heights: Foundations, footings, bases of columns, etc. for mass concrete. Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars 109.00 367.29 40,034.61 Kg of grade Fe-500D or more. Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth 3700.00 29.600.00 8 No. resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe Κ **Total Civil & Services** 4.75.318.33 L Total (J+K) 30,58,011.06 Ν Sub Total (L+M) 30.58.011.06 Total GST @ 18% of (N) 5,50,441.99 0 Р Total Cess @ 1% of (N) 30.580.11

Gross Total Material +Services (N+O+P)

36,39,033.16

Q

		Annexure-19			
	TF	CENTRAL ODISHA DISTRIBUTION LIMITED			
Name of	the Division :-	AnED			
Name of the Sub-Division : - ANGUL					
Name of	the Section : -	BANTALA			
Name of	the Work :-	33kV Line from Khajuriakata GSS to Phulpada PSS.			
Scope of	work:-	Construction for 1 no. of 33kV Outdoor Bay at Pada PSS. Cons 33kV Outdoor Bay at Phulapada PSS. Construction of 33kV O/k WPB Pole & 241qmm AAAC covered conductor- 16Ckm. Laying with 3R, 1CX630sqmm Cable- 4Ckm along with 1no. 33kV 4W	H Line using 13mtr g of 33kV U/G Line		
Names o	f Schemes: -	TPCODL CAPEX			
		ABSTRACT OF ESTIMATE			
SI. No.	Part	Description	Amount (In Cr.)		
1	А	Construction for 1 no. of 33kV Outdoor Bay at Pada PSS.	₹ 36,39,033.16		
2	В	Construction for 1 no. of 33kV Outdoor Bay at Phulapada PSS.	₹ 36,39,033.16		
3	С	Construction of 33kV O/H Line using 13mtr WPB Pole & 241qmm AAAC covered conductor- 16Ckm.	₹ 6,18,05,273.46		
4	D	Laying of 33kV U/G Line with 3R, 1CX630sqmm Cable- 4Ckm along with 1no. 33kV 4W RMU at Pada PSS.	₹ 5,99,56,848.08		
		Total Amount	₹ 12,90,40,187.86		
<u> </u>		Total Amount (In Cr)	₹ 12.90		

	33kV Line Length using 241 SQ.MMAAA Conducto	or			
	No. of 33 KV DP required Without Isolator			26	
	(Ref. Drawing No TPCODL-HVD-0004)			20	
_	MATERIALS FOR 33 KV DP Without Isolator				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	52	17,84,744.00
2	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 3.25 mtr., 2 no's channel required =( 2x9.56x3.25)	KG	76.00	1615.64	1,22,788.64
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	103.0848	10,050.77
4	Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 1.96 Mtr., 5 no's channel required = (5x7.14x1.96)	KG	76.00	1819.272	1,38,264.67
5	50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 3.432 mtr., 4 nos angle required = (4*4.5*3.432)	KG	76.00	1606.176	1,22,069.38
6	Danger Plate, 2 no's.	No.	104.00	52	5,408.00
7	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	15.6468	1,525.56
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	52	8,450.00
	H.T. Stay set (Complete ) H.T. Stay Insulator Type-C (2 No's.)	Set No.	1,365.00 65.00	52 104	70,980.00 6.760.00
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	780	76,050.00
12	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	26	35,490.00
	50x6mm GI Flat for earthing, 2.36kg/mtr., (2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 5x2.36	KG	97.50	306.8	29,913.00
	GI barbed wire anticlimbing device 3 Kg. Per support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's =	Kg	104.00	156	16,224.00
15	(8x0.59x0.510)	KG	97.50	62.5872	6,102.25
	33KV pin insulator polymer	No.	624.00	78	48,672.00
-	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	78	25,818.00
18 19	IPC for 241 sq.mm AAA conductor (For covered conductor)  Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole)	No. Set	915.00 332.00	156 104	1,42,740.00 34,528.00
20	H W fitting(B&S)90KN,4 Bolt	No.	650.00	156	1,01,400.00
	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	156	2,33,220.00
	GI Nut , Bolt & Washer of different sizes (12.261 Kg each DP without Isolator)	K.g.	101.40	318.786	32,324.90
	Black Paint	Ltr	286.00	26	7,436.00
24	Yellow Colour Paint for Background	Ltr	216.00	52 of materials	11,232.00
<b>А</b> В	St	ock, Stora	age & Insuran		<b>30,72,191.17</b> 92,165.74
С			Sub	Total (A+B)	31,64,356.91
D			Contigen	cy @ 3% of C	94,930.71
Е			Tools & Plan	ts @ 2% of C	59,213.90
F		٦	ransportation	@ 7.5% of C	2,37,326.77
G	Erection Charges	s @ 5% o	n Trf/Breaker/	WPB/ H-Pole	91,914.32
Н	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H				1,12,240.87
<u> </u>	Erection Charges @ 20% o	of PSC po			-
J	Oivil 8 Oamilaa		Sı	um of (C to I)	37,59,983.47
<u> </u>	<u>Civil &amp; Services</u>				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	52	1,17,000.00
	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	28.6	1,85,900.00
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr  Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including	Cu.mtr	6,500.00	5.85	38,025.00
4	excavation, soil treatment with bentonide powder, calculation of earthing treatment with bentonide powder, calculation of earth resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe.	No.	3,700.00	26	96,200.00
K			Total Civ	il & Services	4,37,125.00
L				Total (J+K)	41,97,108.47
N			Sub	Total (L+M)	41,97,108.47
0			Total GST	@ 18% of (N)	7,55,479.52
01			Total GST	@ 1% of (N)	41,971.08
Р	Gross Total Material +Services (N+O-	+O1) for 3	33 KV DP Wit	hout Isolator	49,94,559.08

	33kV Line Length using 241 SQ.MMAAA Conducto	or						
	No. of 33 KV DP required With Isolator (Ref. Drawing No TPCODL-TCE-0001)			6				
	MATERIALS FOR 33 KV DP With Isolator							
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	12	4,11,864.00			
	Top Channel 100X50X6mm, 9.56 KG/Mtr., each channel length 4.3 mtr., 2 no's channel required =( 2x9.56x4.3)	KG	76.00	493.296	37,490.50			
	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	97.50	23.7888	2,319.41			
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	76.00	184.212	14,000.11			
5	Isolator Support Cahnnel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 2 no's channel required =( 2x7.14x4.3)  Double Pole Belting Channel 75X40X 4.8mm., 7.14KG/Mtr., each channel length 4.3 Mtr., 4 no's channel	KG	76.00	368.424	28,000.22			
ь	required = (4x7.14x4.3)  50x50x6mm.Gl Bracing Angle, 4.5Kg./mtr., each angle length 4.927 mtr., 4 nos angle required =	KG	76.00	736.848	56,000.45			
7	(4*4.5*4.927)	KG	76.00	532.116	40,440.82			
	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	76.00	34.272	2,604.67			
9	Down Pipe Diagonal Support Angle, 4.5Kg./mtr., each angle length 0.388mtr., 1 nos angle required = (1*4.5*0.388)	KG	76.00	10.476	796.18			
10	Down Pipe Base Support Angle, 4.5Kg./mtr., each angle length 0.34mtr., 1 nos angle required = (1*4.5*0.340)	KG	76.00	9.18	697.68			
11	Isolator Support Side Cahnnel 100X50X6mm, 9.56 KG/Mtr., each channel length 0.5 mtr., 2 no's channel required =( 2x9.56x0.5)  Danger Plate, 2 no's.	KG No.	76.00 104.00	57.36 12	4,359.36 1,248.00			
	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 2 no's = (2x0.59x0.510)	KG	97.50	3.6108	352.05			
14	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	12	1,950.00			
	H.T. Stay set (Complete )	Set	1,365.00	12	16,380.00			
	H.T. Stay Insulator Type-C (2 No's.) 7/8 SWG Stay Wire 15kg /stay	No. K.g.	65.00 97.50	24 180	1,560.00 17,550.00			
	Gi Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	12	16,380.00			
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	97.50	339.84	33,134.40			
20	GI barbed wire anticlimbing device 3 Kg. Per support	Kg	104.00	36	3,744.00			
21	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 8 no's = (8x0.59x0.510)  Lightning Arrester(30KV,10KA) (Station Class,class-2)	KG EA	97.50 13,455.00	14.4432 18	1,408.21 2,42,190.00			
23	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with	Set	66,000.00	6	3,96,000.00			
	PI(Polymer) 33KV pin insulator polymer	No.	624.00	18	11,232.00			
	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	18	5,958.00			
	IPC for 241 sq.mm AAA conductor (For covered conductor)	No.	915.00	36	32,940.00			
27	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	Set	332.00	24	7,968.00			
_	H W fitting(B&S)90KN,4 Bolt	No.	650.00		23,400.00			
	Disc insulator (B&S) 90 KN polymer GI Nut , Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	No. K.g.	1,495.00 101.40	36 132.9	53,820.00 13,476.06			
	Black Paint	Ltr	286.00	6	1,716.00			
32	Yellow Colour Paint for Background	Ltr	216.00		2,592.00			
Α				t of materials	14,83,572.12			
В	Sto	ock, Stor	age & Insuran		44,507.16			
С				Total (A+B)	15,28,079.28			
D				cy @ 3% of C	45,842.38			
E		-		ts @ 2% of C	29,452.89			
F			Transportation	<u> </u>	1,14,605.95			
G	Erection Charges				21,211.00			
H -	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H Erection Charges @ 20% o			· '	1,04,842.48			
J	2100101 0141900 @ 2070	, , oo p		um of (C to I)	18,44,033.97			
Ť	<u>Civil &amp; Services</u>			(= 101)	.0,,000.01			
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	12	27,000.00			
	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	6.6	42,900.00			
3	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	1.35	8,775.00			

#### Annexure-19 33kV Line Length using 241 SQ.MM. -AAA Conductor Construction Earthing chamber including installation of earthing pipe. Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth 3,700.00 44,400.00 No. 12 resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat Total Civil & Services Κ 1,23,075.00 L Total (J+K) 19,67,108.97 N Sub Total (L+M) 19,67,108.97 Total GST @ 18% of (N) 0 3,54,079.61 Total GST @ 1% of (N) 01 19,671.09 Gross Total Material +Services (N+O+01) for 33 KV DP With Isolator Р 23,40,859.68 No. of 33 KV Cut Point with 180 Degree Angle (Ref. Drawing No.- TPCODL-HVD-0002) 20 MATERIALS FOR 33 KV Cut Point with 180 Degree Angle SI. Total Total Description of Materials Unit Unit Rate No. Quantity Amount WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.) No 34,322.00 20 6,86,440.00 Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 2 No's of 650.08 49,406.08 2 K.g. 76.00 Channel = (2x 9.56x1.7)3 Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 8 no's required = (8x2.36x0.280) K.g. 97.50 105.728 10,308.48 Straight Cross Arm Top Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 0.306 Mtr., 2 No's 117.0144 K.g. 76.00 8.893.09 of Channel = (2x 9.56x0.306) 5 No. 104.00 20 2,080.00 Danger Plate, 1 no's. Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510) KG 97.50 6.018 586.76 GI barbed wire anticlimbing device 3 Kg. Per support Kg 104.00 60 6,240.00 Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = 8 KG 97.50 24.072 2,347.02 (4x0.59x0.510) 9 No. 624.00 60 37,440.00 33KV pin insulator polymer 19.860.00 10 Non Metallic Ties 33KV (For covered conductor) No 331.00 60 11 IPC for 241 sq.mm AAA conductor (For covered conductor) No. 915.00 120 1.09.800.00 12 Spike (GI) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole) Set 332.00 40 13,280.00 650.00 78.000.00 13 H W fitting(B&S)90KN,4 Bolt 120 Nο Disc insulator (B&S)90 KN polymer No. 1,495.00 120 1,79,400.00 Earthing of Support (Coil Type) EΑ 215.80 20 4.316.00 K.g. 16 No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr.- 2 Mtr. For connecting pole with Coil earthing 97.50 5.24 510.90 GI Nut , Bolt & Washer of different sizes (4.879 Kg each 180 deg. Cut point) 97.58 9,894.61 K.g. 101.40 18 Black Paint Ltr 286.00 20 5,720.00 19 Yellow Colour Paint for Background Ltr 216.00 40 8,640.00 **Total Cost of materials** 12,33,162.94 Α В Stock, Storage & Insurance i.e 3% of A 36,994.89 С Sub Total (A+B) 12,70,157.83 D Contigency @ 3% of C 38,104.73 Tools & Plants @ 2% of C F 25,403.16 F Transportation @ 7.5% of C 95,261.84 G Erection Charges @ 5% on Trf/Breaker/WPB/ H-Pole 35,351.66 Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole) Н 56,312.46 Erection Charges @ 20% of PSC pole- Not to be used for 33kv J Sum of (C to I) 15,20,591.68 Civil & Services SI. Total Total Description of Materials Unit **Unit Rate** No. Quantity Amount Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr Cu.mtr 6,500.00 11 71,500.00 Cu.mtr Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr 6,500.00 14,625.00 **Total Civil & Services** 86,125.00 Total (J+K) 16,06,716.68 Ν Sub Total (L+M) 16,06,716.68 Total GST @ 18% of (N) 0 2,89,209.00 Total GST @ 1% of (N) 01 16.067.17 Gross Total Material +Services (N+O+O1) for 33 KV Cut Point with 180 Degree Angle Ρ 19,11,992.85 No. of 33 KV Cut Point with 90 Degree Angle 12 (Ref. Drawing No.- TPCODL-HVD-0003) MATERIALS FOR 33 KV Cut Point with 90 Degree Angle SI Total Total Description of Materials Unit **Unit Rate** Quantity Amount

	33kV Line Length using 241 SQ.MMAAA Conduct	or			
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	12	4,11,864.00
2	Straight Cross Arm Channel 100 x 50 x 6 mm, 9.56 KG/mtr, each channel length 1.7 Mtr., 4 No's of Channel = (4x 9.56x1.7)	K.g.	76.00	780.096	59,287.30
3	Fish Plate 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 16 no's required = (16x2.36x0.280)	K.g.	97.50	126.8736	12,370.18
4	Straight Cross Arm Top Channel $100 \times 50 \times 6$ mm, $9.56$ KG/mtr, each channel length $0.306$ Mtr., $4$ No's of Channel = $(4 \times 9.56 \times 0.306)$	K.g.	76.00	140.41728	10,671.71
5	Danger Plate, 1 no's.	No.	104.00	12	1,248.00
6 7	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  GI barbed wire anticlimbing device 3 Kg. Per support	KG	97.50 104.00	3.6108 36	352.05 3,744.00
8	Back Clamp for anticlimbing device 3 kg. Fel support  Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	Kg KG	97.50	14.4432	1,408.21
9	33KV pin insulator polymer (4 No's each 90 Deg. Cut point)	No.	624.00	48	29,952.00
	H W fitting(B&S)90KN,4 Bolt	No.	650.00	72	46,800.00
	Disc insulator (B&S)90 KN polymer	No.	1,495.00	72	1,07,640.00
	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	48	15,888.00
13 14	IPC for 241 sq.mm AAA conductor (For covered conductor)  Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	No. Set	915.00 332.00	72 24	65,880.00 7,968.00
15	Earthing of Support ( Coil Type )	No.	215.80	12	2,589.60
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing	K.g.	97.50	3.144	306.54
	H.T. Stay clamp, 50x8 mm. flat, 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required ( 1 Pair)	Pair	162.50	12	1,950.00
18	H.T. Stay set (Complete )	Set	1,365.00	12	16,380.00
19	H.T. Stay Insulator Type-C (2 No's.)	No.	65.00	12	780.00
	7/8 SWG Stay Wire 15kg /stay	K.g.	97.50	180	17,550.00
21	GI Nut , Bolt & Washer of different sizes (11.31 Kg each 90 deg. Cut point) Black Paint	K.g. Ltr	101.40 286.00	135.72 12	13,762.01 3,432.00
23	Yellow Colour Paint for Background	Ltr	216.00	24	5,184.00
A	Total Colour Familion Buongiouna		-	t of materials	8,37,007.60
В	Stoc	k. Storac	ge & Insuranc		25,110.23
С		,		Total (A+B)	8,62,117.83
D				cy @ 3% of C	25,863.53
					•
Е				nts @ 2% of C	16,487.16
F			Transportation		64,658.84
G	Erection Charge:				21,211.00
Н	Erection Charges @ 10% of C (except Trf/Breaker	/WPB/ H-	Pole/HT stay s	set/PSC pole)	40,013.81
1	Erection Charges @ 20% of	of PSC p	ole- Not to be	used for 33kv	-
J	Civil & Services		s	um of (C to I)	10,30,352.17
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr		6.60	42,900.00
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	1.35	8,775.00
3	Fixing of 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, including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material (Excavation of earth will be done of size 500X500X1500 mm.)	No.	2,250.00	12	27,000.00
ĸ			Total Civ	il & Services	78,675.00
L				Total (J+K)	11,09,027.17
N				b Total (L+M)	11,09,027.17
0				@ 18% of (N)	1,99,624.89
01				「@ 1% of (N)	11,090.27
Р	Gross Total Material +Services (N+O+O1) for 33	KV Cut P	oint with 90 [	Degree Angle	13,19,742.33
	33 Kv Line Length In KM with 40 Mtr. Span Ref. Drawing No TPCODL-HVD-0001)			16	
SI.	MATERIALS FOR 33 KV Pin Points	11.22	11-25 5	Total	Total
No.	Description of Materials	Unit	Unit Rate	Quantity	Amount
1	WPB (GI) Pole 160x152 (13Mtr. Long, 30.44KG/Mtr.)	No	34,322.00	336	1,15,32,192.00
3	33 KV V cross Arm (GI) 22Kg each Top bracket 100x50x6mm GI channel ( 2kg each)	No.	2,340.00 195.00	336 336	7,86,240.00 65,520.00
4	Danger Plate, 1 no's.	No.	195.00	336	34,944.00
		1		1 1	,
	   Back Clamp for danger Plate 25X3 mm, flat, 0.59Kg/Mtr, Flat of 0.510mtr length 1 nots = /1v0.50v0.510\	KG	97.50	101 10	0 857 48
	Back Clamp for danger Plate 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 1 no's = (1x0.59x0.510)  Gl barbed wire anticlimbing device 3 Kg. Per support	KG Kg	97.50 104.00	101.10 1008.00	9,857.48

	Annexure-19					
	33kV Line Length using 241 SQ.MMAAA Conduct	or				
7	Back Clamp for anticlimbing device 25X3 mm. flat, 0.59Kg/Mtr. Flat of 0.510mtr length 4 no's = (4x0.59x0.510)	KG	97.50	404.41	39,429.94	
	33KV pin insulator polymer	No.	624.00	1008	6,28,992.00	
	Non Metallic Ties 33KV (For covered conductor)	No.	331.00	1008	3,33,648.00	
	Earthing of Support ( Coil Type )	No.	215.80	336	72,508.80	
	No-8 GI wire (Dia 4.6mm) 0.131 KG/ Mtr 2 Mtr. For connecting pole with Coil earthing GI Nut , Bolt & Washer of different sizes (1.45 Kg/ Pin Point)	K.g.	97.50	88.03 487.20	8,583.12	
12	Spike (GI ) (using 50x6mm Flat welded with 8 mm square bar) ( 2 Nos of spike per Set in each Pole )	K.g. Set	101.40 332.00	672	49,402.08 2,23,104.00	
14	241 sq.mm AAA conductor	Mtr.	386.00	49440.00	1,90,83,840.00	
15	Crimping type Midspan Compression Joint for 241 sq.mm AAA conductor	EA	4,701.00	48	2,25,648.00	
16	Black Paint	Ltr	286.00	336.0	96,096.00	
17	Yellow Colour Paint for Background	Ltr	216.00		1,45,152.00	
Α	_		Total Cost	of materials	3,34,39,989.42	
В	St	tock, Stor	age & Insuran	ce i.e 3% of A	10,03,199.68	
С			Sub	Total (A+B)	3,44,43,189.10	
D			Contigen	cy @ 3% of C	10,33,295.67	
Е						
F						
G	Erection Charge				5,93,907.89	
-	H Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole)					
	I Erection Charges @ 20% of PSC pole- Not to be used for 33kv					
J	Civil & Services		S	um of (C to I)	4,15,98,998.76	
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount	
1	Concreting ratio 1:1.5:3 (500mmX500mmX2200mm) = 0.55Cu.mtr	Cu.mtr	6,500.00	184.80	12,01,200.00	
2	Couping ratio 1:1.5:3 with dimension (500X500X450)= 0.1125 Cu mtr	Cu.mtr	6,500.00	37.80	2,45,700.00	
K			Total Civ	il & Services	14,46,900.00	
L			0	Total (J+K)	4,30,45,898.76	
0				<b>b Total (L+M)</b> @ 18% of (N)	<b>4,30,45,898.76</b> 77,48,261.78	
01				@ 10 % of (N)	4,30,458.99	
P	Gross Total Material +Servi	ces (N+C		• • •	5,12,24,619.53	
	Gross Total Summary					
1	Gross Total Material +Services (N+				49,94,559.08 23,40,859.68	
2						
3	Gross Total Material +Services (N+O+O1) for 33  Gross Total Material +Services (N+O+O1) for 3				19,11,992.85	
5	Gross Total Material +Services (N+O+O1) for 3				13,19,742.33 5,12,24,619.53	
Q	Signaturaterial idei	,	s Total Mater		6,17,91,773.46	
R	Inspection Fee of Over				1,500.00	
S	Inspection Fee of Over Hea	ad Line (F	HT) - Rs. 750/	Additional Km	11,250.00	
Т	<u> </u>		ving Checking		750.00	
U	Gross Total Material, Servic	es and Ir	spection Fee	s (Q+R+S+T)	6,18,05,273.46	

# BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU

## Supply Portion

SI. No.	Description of items	Unit	Quantity	Rate (in Rs.)	Amount (in Rs.)
1	Supply of materials for 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (aloing with 1core spare cable) with accessories				
а	Length of 33kV 1C, 630sqmm cable (open trench)	Mtr.	3000		
b	Length of 33kV 1C, 630sqmm cable (HDD)	Mtr.	1000		
1.1	Supply of 33kV, 1Core, 630sqmm Aluminium, XLPE insulation U/G Cable (SC rating of cable in kA- 59.4kA and SC rating of Armour in kA-20kA)	Mtr.	12000	1,495.47	1,79,45,640.00
1.2	Supply of Straight throU/Gh jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium U/G Cable kits for 1Core	Set	24	11,900.00	2,85,600.00
1.3	Supply of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	18	6,350.00	1,14,300.00
1.4	Supply of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT U/G Cable kits for 1Core	Set	12	6,100.00	73,200.00
1.5	Supply of materials for High Density Polyethelene (HDPE) pipe 110mm diameter, PE 80- PN8 for laying of 33kV U/G cable	Mtr.	8856.00	357.60	31,66,905.60
2	Supply of 33kV RMU				
а	No. of 33kV 3Way RMU (LLV+M)	nos.			
b	No. of 33kV 4Way RMU (LLVV+M)	nos.			
С	No. of 33kV 3Way RMU (LLV)	nos.			
d	No. of 33kV 4Way RMU (LLVV)	nos.	1		
e	No. of 33kV 3Way RMU (LLL)	nos.			
f	No. of 33kV 4Way RMU (LLLL)	nos.			
2.1	Supply of RMU 33KV 3WAY 630A WITH METERING UNIT (LLV+M) (CT Ratio to be mentioned)	Nos.	0	22,93,723.00	-
2.2	Supply of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M) (CT Ratio to be mentioned)	Nos.	0	31,74,874.00	-
2.3	Supply of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	17,87,101.00	-
2.4	Supply of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	1	23,35,264.00	23,35,264.00
2.5	Supply of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	14,46,210.00	-
2.6	Supply of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	19,59,421.00	-
3	Earthing  Earthing Conductor: FOV6 mm (2.4kg /mtr.) Cl Flot for				
3.1	Earthing Conductor: <b>50X6 mm</b> (2.4kg./mtr.) <b>GI Flat</b> for equipment, structure etc.)	kg	13.20	97.50	1,287.00
3.2	Pipe Earthing 40mm. GI Pipe	Nos.	2	1,365.00	2,730.00
4	FRTU for RMU SCADA Automation				
а	No. of FRTU	nos.	1		
4.1	Pre-Wired FRTU Panel with FRTU	No.	1	1,21,744.00	1,21,744.00
4.2	Managed Layer2 Ethernet Switch (FRTU Panel)	No.	1	1,00,000.00	1,00,000.00

	Annexure-19				
	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along with	33kV RMU	
4.3	Networking Accessories	No.	1	72.00	72.00
4.4	CMR with Mounting Base for Digital Inputs	Nos.	32	650.00	20,800.00
4.5	Interposing Relay for Digital Output	Nos.	16	467.94	7,487.04
4.6	Battery Charger	Nos.	1	15,385.00	15,385.00
4.7	Battery	Nos.	1	8,333.00	8,333.00
4.8	4G Modem cum Router	Nos.	1	18,500.00	18,500.00
4.9	Instrumentation Cable	Mtr.	40	204.87	8,194.80
4.10	12 C X 0.5 mm2, Armored cable for Status and Indications Instrumentation Cable	Mtr.	40	305.58	12,223.20
4.11	7 C X 1.5 mm2, Armored for Control Output Twisted Pair Shielded & Over all shielded Instrumentation	Mtr.	40	275.23	11,009.20
4.12	Cable 4 C X 2.5 mm2 Copper cable for extension of CT & PT	Mtr.	20	165.25	3,305.00
4.13	2 C X 4 mm2 Cable for DC Power Supply	Mtr.	10	150.00	1,500.00
4.14	4P X 0.36 mm2, Armored Communication Cable for MFM	Mtr.	20.0	148.43	2,968.60
4.15	Armored CAT6 SFTP Cable	Mtr.	20	45.87	917.40
4.16	Un-Armored CAT6 SFTP Cable	Mtr.	20	89.45	1,789.00
4.17	Multi Function Meter	Nos.	2	18,651.00	37,302.00
	Sub Total (Supply Portion) (in	Rs.)			2,42,96,456.84
	Sub Total (Supply Portion) (in  Erection Portion				2,42,96,456.84
SI. No.			Quantity	Rate (in Rs.)	2,42,96,456.84  Amount (in Rs.)
SI. No.	Erection Portion	on	Quantity		Amount
	Erection Portion  Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.	on	Quantity 9000		Amount
1	Erection Portion  Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil	Unit		(in Rs.)	Amount (in Rs.)
1.1	Erection Portion  Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable	Unit  Mtr.	9000	(in Rs.) 94.50	Amount (in Rs.) 8,50,500.00
1.1	Erection Portion  Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type	Mtr.	9000	94.50 2,400.00	Amount (in Rs.)  8,50,500.00  57,600.00
1.1 1.2 1.3	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.	Mtr. Set	9000	94.50 2,400.00 2,081.70	Amount (in Rs.)  8,50,500.00  57,600.00  37,470.60
1.1 1.2 1.3	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE	Mtr. Set Set	9000 24 18	94.50 2,400.00 2,081.70 2,081.70	Amount (in Rs.)  8,50,500.00  57,600.00  37,470.60  24,980.40
1.1 1.2 1.3 1.4	Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open	Mtr. Set Set Mtr.	9000 24 18 12 3000	94.50 2,400.00 2,081.70 2,300.00	Amount (in Rs.)  8,50,500.00  57,600.00  37,470.60  24,980.40  69,00,000.00
1.1 1.2 1.3 1.4	Erection Portion  Description of items  Erection, Commissioning & Testing of 33kV new line by 3X1Core, 630sqmm, XLPE UG cable with one spare  Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE insulation (extruted type) UG cable (with one single 1core, 630sqmm, XLPE cable as spare) in trefoil formation by open trench method.  Erection of Straight through jointing kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, aluminium UG cable kits  Erection of Outdoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Erection of Indoor termination kits Heat Shrinkable type suitable for 33kV, 1Core, 630sqmm, HT UG cable kits  Installation, Laying, Commissioning & Testing of 33kV, 1Core, 4Runs, 630sqmm, XLPE U/G cable by HDD method with HDPE pipe (110mm dia, PN8 PE80) including suply of HDPE Pipe.  Laying of 110mm dia PE 80-PN8, HDPE pipe inside open trench.	Mtr. Set Set Mtr.	9000 24 18 12 3000	94.50 2,400.00 2,081.70 2,300.00	Amount (in Rs.)  8,50,500.00  57,600.00  37,470.60  24,980.40  69,00,000.00

	Annexure-19				
	BoQ and Estimate for 33kV, 1C 630sqmm U/0	G Cable	along with	33kV RMU	
2.2	Erection of RMU 33KV 4WAY 630A WITH METERING UNIT (LLVV+M)	Nos.	0	15,000.00	-
2.3	Erection of RMU 33KV 3WAY 630A (2ISLTR+ 1BKR) (LLV)	Nos.	0	8,000.00	-
2.4	Erection of RMU 33KV 4WAY 630A (2ISLTR+2 BKR) (LLVV)	Nos.	1	8,000.00	8,000.00
2.5	Erection of RMU 33KV 3WAY 630AMP (3 ISOLATORS) (LLL)	Nos.	0	8,000.00	-
2.6	Erection of RMU 33KV 4WAY 630AMP (4 ISOLATORS) (LLLL)	Nos.	0	8,000.00	-
3	FRTU and OFC for RMU SCADA Automation				
3.1	Services of FRTU Panel, Communication and Other Supplied System	EA	1.0	16,000.00	16,000.00
	Sub Total (Erection Portion) (in	Rs.)			1,05,51,351.00
0: 11 0					
Civil Po	ortion 	l	1	Rate	Amount
SI. No.	Description of items	Unit	Quantity	(in Rs.)	(in Rs.)
1	Civil works with supply of all materials like cement, MS tor rod, brick, coarse & fine aggregates and labour, T&P, etc for UG Cable Trench				
1.1	Earth work excavation of soil (1mtr. width X 1.2mtr. depth)-Route Length	Mtr	2952		
1.1.a	Earth work excavation of <b>soil</b>	Cum	2479.68	700.00	17,35,776.00
1.1.b	Earth work excavation of hard rock	Cum	1062.72	1,720.00	18,27,878.40
1.2	Back filling with excavated soil outside and above the trench	Cum	3542.4	202.00	7,15,564.80
1.3	Damage of asphalt/tar road and other utilities and reconstructing to bring to its original shape after laying of cable in open trench (1mtr. width)	Mtr	1476	2,643.67	39,02,057.85
2	Civil works for Prefabricated RCC foundation with supply of all materials				
2.1	Prefabricated RCC foundation of 33kV RMU	Nos.	1	23,145.30	23,145.30
3	Supply of GI Fencing with Gate around each <b>RMU</b>	sqmtr	20	3,600.00	72,000.00
4	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.	Set	2	3,700.00	7,400.00
5	Supply and erection of GI Pipe of dia. 150mm, Class-B (8Mtr.)	Mtr	144	1,463.40	2,10,729.60
6	Supply and Erection of Cable Route Marker along the cable route at an interval of 30mtrs with civil works	Nos.	133	1,012.00	1,34,596.00
	Sub Total (Civil Portion) (in R	s.)			86,29,147.95
Α	Sub Total (Supply Portion)				2,42,96,456.84
В	Stock, Storage & Insurance @ 3 % of A				7,28,893.71
С	Sub Total (A+B)				2,50,25,350.55
D	Contingency @ 3 % of C				7,50,760.52
Е	Tools & Plants Charges @ 2% of C (considered for earthing iten	ns)			26.51

	Annexure-19						
	BoQ and Estimate for 33kV, 1C 630sqmm U/G Cable along with 33kV RMU						
F	Transportation @ 7.5% of C	18,76,901.29					
G	Erection Charges @ 10% of earthing items	132.56					
Н	Total (C+D+E+F+G)	2,76,53,171.43					
I	Sub Total (Erection Portion + Civil Portion)	1,91,80,498.95					
J	Total Cost (H+I)	4,68,33,670.38					
L	Total Estimated Capital Cost i.e. (J+K)	4,68,33,670.38					
М	GST @ 18% of L	84,30,060.67					
M1	CESS @ 1% of L	46,83,367.04					
N	Grand Total (L+M)	5,99,47,098.08					
0	Inspection Fee of UG Line (HT) - Rs. 3000/ km.	3,000.00					
Р	Inspection Fee of UG Line (HT) - Rs. 1500/ Additional Km	4,500.00					
Q	Inspection Fee of RMU - Rs. 1500/ RMU	1,500.00					
R	Inspection Fee of Drawing Checking and Approval	750.00					
S	Gross Total Material, Services and Inspection Fees (N+O+P+Q+R)	5,99,56,848.08					

# Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator) at Pada

No. of Bus isolator requirement 3							
	No. of VCB Requirement		1				
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	T-1 GI Column(7.25 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel) for 33kV incoming line, Nominal Unit Wt - 0.35 MT	Nos.	26,600.00	1	26,600.00		
2	T-2 GI Column (7.25mtr long, consisting of 2 Nos 175X75X6 mm channel) for 33kV incoming line -1 no, Nominal Unit Wt - 0.42 MT	Nos.	31,920.00	1	31,920.00		
3	T-1A GI Column ( for 33 kv Bus) ( 6 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel jointed by plates) Nominal Unit Wt - 0.31 MT	Nos.	23,560.00	2	47,120.00		
4	T-2A GI Column ( for 33 kv Bus) (6 mtr long, consisting of 2 Nos 175X75X6 mm channel jointed by plates) Nominal Unit Wt - 0.37 MT	Nos.	28,120.00	2	56,240.00		
5	G-3 GI Beam(5.05mtr long, consisting of 2 Nos 150X75 X5.7mm) for 33kV incoming line - (2 nos. Beam- one for Surge Arrester and other for Isolator, Nominal Unit Wt - 0.2 MT)	Nos.	15,200.00	1	15,200.00		
6	G-2 GI Beam (6.1 mtr long, consisting of 2 Nos 125X65 X5.3 mm channel jointed by plates) for 33kV Bus Stringing , Nominal Unit Wt - 0.175 MT)	Nos.	13,300.00	4	53,200.00		
7	Equipment Structures (GI) For 33 KV Isolator (Unit Wt of Equipment Structures per set - 0.33 MT)	KG	76.00	990	75,240.00		
8	Equipment Structures (GI) For 33 KV Vacuum Circuit Breaker (Unit Wt of Equipment Structures per set - 0.2 MT)	KG	76.00	200	15,200.00		
9	GI Column for 33 KV CT (Unit Wt of Equipment Structures per set - 0.285 MT)	KG	76.00	285	21,660.00		
10	GI Spikes with cone and GI ( 2 nos) base plate 10mm (50x3000 mm GI pipe) (Unit Wt=0.035 MT)	Nos.	3,641.92	4	14,567.67		
11	GI Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	8	10,920.00		
12	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr. For Isolator/VCB , 10 metre mesh formation )= 20x2.36	KG	97.50	188.8	18,408.00		
13	400 sq.mm ACSR for 33kV side jumpering and Bus Formation etc.	KM	2,74,300.00	0.1	27,430.00		
14	33 kV 1250 AMP Double break (Turn & twist center rotating) isolator with earth switch with PI(Polymer)	Set	1,31,157.00	3	3,93,471.00		
15	33KV Outdoor VCB-1600A, with indoor CR panel without PT, with outdoor CT (CTR- 600-300-150/1-1A, 15VA, STC 25KA/3sec, class: 0.5, 5P10) for feeder protection	EA	7,02,000.00	1	7,02,000.00		
16	33KV.Single Phase PT(33KV/ V3 / 110V/ V3) (Oil cooled ) CLASS 0.5 / 3P, with O/P burden of 100VA	EA	33,046.00	3	99,138.00		
17	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	12	1,61,460.00		
18	Control Cable 10Core x 2.5 mm <sup>2</sup>	Mtr	429.00	150	64,350.00		
19	Control Cable 16Core x 2.5 mm <sup>2</sup>	Mtr	523.90	150	78,585.00		
20	Control Cable 4Core x 2.5 mm <sup>2</sup>	Mtr	145.60	50	7,280.00		
21	Control Cable 7Core x 2.5 mm <sup>2</sup>	Mtr	236.60	50	11,830.00		
22	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	18	26,910.00		
23	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	18	11,700.00		
24	8 bolted (M-12) "T" clamp ACSR Zebra run & 232 mm2 drop	No.	1,404.00	18	25,272.00		
25	PG Clamp for 232 sq.mm AAA conductor	NO.	1,495.00	48	71,760.00		
26	GI Nut , Bolt & Washer of different sizes (13.718 Kg each Strcutures)	K.g.	101.40	54.872	5,564.02		
27	Black Paint	Ltr	286.00	4	1,144.00		
28	Yellow Colour Paint for Background	Ltr	286.00	8	2,288.00		
Α			Total Cost of	of materials	20,76,457.69		
В	Sto	ock, Stor	age & Insurance	i.e 3% of A	62,293.73		
С			Sub T	otal (A+B)	21,38,751.42		
D			Contigency	@ 3% of C	64,162.54		

#### Annexure-19 Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator) at Pada Tools & Plants @ 2% of C 42,775.03 Ε 1,60,406.36 F Transportation @ 7.5% of C G Erection Charges @ 5% on Trf/Breaker/Joist 36,153.00 Н Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT stay set/PSC pole/GI Earthing) 1,40,444.38 Erection Charges @ 20% of PSC pole- Not to be used for 33kv Sum of (C to I) J 25,82,692.74 Civil & Services SI. Total Total Description of Materials Unit Unit Rate No. Quantity **Amount VCB Foundation** Α BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using 3,508.96 482.00 1 Cum 7 28 necessary tools & machinery for excavation of cable trench & other civil works Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & 800.00 Cum 200 00 4 00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Supplying and filling in plinth with river sand under floors, including watering, 3 Cum 1020.00 0.34 348.08 ramming, consolidating and dressing complete. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 Cum 5130.00 0.46 2,334.15 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size). Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work 6500.00 2.83 18,362.50 Cum up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for Sqm 301.00 13.25 3,988.25 all heights: Foundations, footings, bases of columns, etc. for mass concrete. Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars 109.00 140.00 15,260.00 Kg of grade Fe-500D or more. В **CT & PT Foundation** 0.00 BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using Cum 482.00 7.97 3,840.94 necessary tools & machinery for excavation of cable trench & other civil works Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & Cum 200.00 4.50 900.00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Supplying and filling in plinth with river sand under floors, including watering, 3 900.00 0.36 326.70 Cum ramming, consolidating and dressing complete. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 Cum 5130.00 0.36 1,862.19 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size). Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work Cum 6500.00 2.36 15,356.25 up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for Sqm 301.00 14.94 4,496.94 all heights: Foundations, footings, bases of columns, etc. for mass concrete. Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars 109.00 122.43 13,344.87 Kg of grade Fe-500D or more. С Column as per Drawing Schedule-0.00 Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & 482.00 51.31 Cum 24,731.30 1 machinery for excavation of cable trench & other civil works

#### Annexure-19 Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator) at Pada Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & 200.00 4.800.00 Cum 24.00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement:3 Cum 5130.00 2.10 10.773.00 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size). Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work Cum 6500.00 14.18 92,137.50 up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for 5 Sqm 301.00 89.64 26,981.64 all heights: Foundations, footings, bases of columns, etc. for mass concrete. Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars 109.00 734.58 80.069.22 Kg of grade Fe-500D or more. D Isolator Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & Cum 482.00 14.18 6.832.35 machinery for excavation of cable trench & other civil works Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & Cum 200.00 6.00 1,200.00 compacting each deposited layer by ramming and watering as directed by Engineer-in-charge. Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 Cum 5130.00 0.85 4.363.07 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size). Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work Cum 6500.00 8.55 55.575.00 up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size). Centering and shuttering including strutting, propping etc. and removal of form for 301.00 44.82 13.490.82 Sqm all heights: Foundations, footings, bases of columns, etc. for mass concrete. Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars 109.00 367.29 40,034.61 Kg of grade Fe-500D or more. Construction Earthing chamber including installation of earthing pipe.Making earthing chamber including excavation, soil treatment with bentonide powder, calculation of earth 7 3700.00 8 29,600.00 No. resistance, including Installation of 3Mtr GI Pipe 40mm/50mm including welding of GI flat around pipe **Total Civil & Services** Κ 4,75,318.33 L Total (J+K) 30,58,011.06 Ν Sub Total (L+M) 30,58,011.06 0 Total GST @ 18% of (N) 5.50.441.99 Р Total Cess @ 1% of (N) 30,580.11 Q Gross Total Material +Services (N+O+P) 36,39,033.16

Cons	struction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 N	VCB and	d 2 isolator) at	t Phulpada			
	No. of Bus isolator requirement						
	No. of VCB Requirement		<u> </u>	1			
SI. No.	Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount		
1	T-1 GI Column(7.25 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel) for 33kV incoming line, Nominal Unit Wt - 0.35 MT	Nos.	26,600.00	1	26,600.00		
2	T-2 GI Column (7.25mtr long, consisting of 2 Nos 175X75X6 mm channel) for 33kV incoming line -1 no, Nominal Unit Wt - 0.42 MT	Nos.	31,920.00	1	31,920.00		
3	T-1A GI Column ( for 33 kv Bus) ( 6 mtr long, consisting of 2 Nos of 150X76X6.5 mm channel jointed by plates) Nominal Unit Wt - 0.31 MT	Nos.	23,560.00	2	47,120.00		
4	T-2A GI Column ( for 33 kv Bus) (6 mtr long, consisting of 2 Nos 175X75X6 mm channel jointed by plates) Nominal Unit Wt - 0.37 MT	Nos.	28,120.00	2	56,240.00		
5	G-3 GI Beam(5.05mtr long, consisting of 2 Nos 150X75 X5.7mm) for 33kV incoming line - (2 nos. Beam- one for Surge Arrester and other for Isolator, Nominal Unit Wt - 0.2 MT)	Nos.	15,200.00	1	15,200.00		
6	G-2 GI Beam (6.1 mtr long, consisting of 2 Nos 125X65 X5.3 mm channel jointed by plates) for 33kV Bus Stringing , Nominal Unit Wt - 0.175 MT)	Nos.	13,300.00	4	53,200.00		
7	Equipment Structures (GI) For 33 KV Isolator (Unit Wt of Equipment Structures per set - 0.33 MT)	KG	76.00	990	75,240.00		
8	Equipment Structures (GI) For 33 KV Vacuum Circuit Breaker (Unit Wt of Equipment Structures per set - 0.2 MT)	KG	76.00	200	15,200.00		
9	GI Column for 33 KV CT (Unit Wt of Equipment Structures per set - 0.285 MT)	KG	76.00	285	21,660.00		
10	GI Spikes with cone and GI ( 2 nos) base plate 10mm (50x3000 mm GI pipe) (Unit Wt=0.035 MT)	Nos.	3,641.92	4	14,567.67		
11	GI Pipe Earthing 40mm. 3 Mtr. Long	No.	1,365.00	8	10,920.00		
12	50x6mm GI Flat for earthing, 2.36kg/mtr., (10 Mtr. For Isolator/VCB , 10 metre mesh formation )= 20x2.36	KG	97.50	188.8	18,408.00		
13	400 sq.mm ACSR for 33kV side jumpering and Bus Formation etc.	KM	2,74,300.00	0.1	27,430.00		
14	33 kV 1250 AMP Double break (Turn & twist center rotating) isolator with earth switch with PI(Polymer)	Set	1,31,157.00	3	3,93,471.00		
15	33KV Outdoor VCB-1600A, with indoor CR panel without PT, with outdoor CT (CTR- 600-300-150/1-1A, 15VA, STC 25KA/3sec, class: 0.5, 5P10) for feeder protection	EA	7,02,000.00	1	7,02,000.00		
16	33KV.Single Phase PT(33KV/ V3 / 110V/ V3) (Oil cooled ) CLASS 0.5 / 3P, with O/P burden of 100VA	EA	33,046.00	3	99,138.00		
17	Lightning Arrester(30KV,10KA) (Station Class,class-2)	EA	13,455.00	12	1,61,460.00		
18	Control Cable 10Core x 2.5 mm <sup>2</sup>	Mtr	429.00	150	64,350.00		
19	Control Cable 16Core x 2.5 mm <sup>2</sup>	Mtr	523.90	150	78,585.00		
20	Control Cable 4Core x 2.5 mm <sup>2</sup>	Mtr	145.60	50	7,280.00		
21	Control Cable 7Core x 2.5 mm <sup>2</sup>	Mtr	236.60	50	11,830.00		
22	Disc insulator (B&S) 90 KN polymer	No.	1,495.00	18	26,910.00		
23	H W fitting(B&S) 90KN,4 Bolt	No.	650.00	18	11,700.00		
24	8 bolted (M-12) "T" clamp ACSR Zebra run & 232 mm2 drop PG Clamp for 232 sq.mm AAA conductor	No.	1,404.00	18	25,272.00 71,760.00		
25	GI Nut , Bolt & Washer of different sizes (13.718 Kg each Strcutures)	NO.	1,495.00	48 54.872	· · · · · · · · · · · · · · · · · · ·		
26 27	Black Paint	K.g.	101.40 286.00	34.872	5,564.02 1,144.00		
28	Yellow Colour Paint for Background	Ltr	286.00	8	2,288.00		
A	-	-	Total Cost of		20,76,457.69		
В	St	ock, Stor	age & Insurance		62,293.73		
c		· · · · · ·		Total (A+B)	21,38,751.42		
D				@ 3% of C	64,162.54		

E Tools & Plants @ 2% of							
Transportation @ 7.5% of C							
Erection	Charges	s @ 5% on Trf/E	Breaker/Joist	36,153.0			
Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol	e/HT sta	y set/PSC pole/	GI Earthing)	1,40,444.3			
I Erection Charges @ 20% of PSC pole- Not to be used for 33l							
Sum of (C to I							
<u>Civil &amp; Services</u>							
Description of Materials	Unit	Unit Rate	Total Quantity	Total Amount			
VCB Foundation							
BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	7.28	3,508.9			
Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	4.00	800.0			
Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	1020.00	0.34	348.0			
Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.46	2,334.1			
Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	2.83	18,362.5			
Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	13.25	3,988.2			
Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	140.00	15,260.0			
CT & PT Foundation			0.00				
BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	7.97	3,840.9			
Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	4.50	900.0			
Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	900.00	0.36	326.7			
Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.36	1,862.1			
Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	2.36	15,356.2			
Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	14.94	4,496.9			
Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	122.43	13,344.8			
Column as per Drawing Schedule-			0.00				
Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools &	I		1				
	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pol Erection Charges @ 20% of Civil & Services  Description of Materials  VCB Foundation  BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works  Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.  Supplying and filling in plinth with river sand under floors, including watering, ramming, consolidating and dressing complete.  Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:1:3:6 (1 Cement:3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).  Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1:5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).  Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.  Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.  CT & PT Foundation  BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works  Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.  Supplying and filling in plinth with river sand under floors, including watering, r	Erection Charges @ 10% of C (except Trf/Breaker/WPB/ H-Pole/HT state	Erection Charges @ 10% of C (except Trf/Breaker/WPB/H-Pole/HT stay set/PSC pole/ Erection Charges @ 20% of PSC pole-Not to be use.  Erection Charges @ 20% of PSC pole-Not to be use.  Erection Charges @ 20% of PSC pole-Not to be use.  Erection Charges @ 20% of PSC pole-Not to be use.  Erection Charges @ 20% of PSC pole-Not to be use.  Erection Charges @ 20% of PSC pole-Not to be use.  Evil & Services  Description of Materials  Unit Unit Rate  Cum Unit Rate  Cum 482.00  Elements of coale trench depth upto 2.5 MTR & remove the debris using accessary tools & machinery for excavation of cable trench & other civil works.  Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.  Supplying and filling in plinth with river sand under floors, including watering, consolidating and dressing complete.  Providing and laying in position cerement concrete of specified grade excluding the cost of centering and shuttering. All work up to plinth level: 1:3.6 (1 Cement: 3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).  Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering. Shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5.5 (coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).  Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.  Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-Sol00 or more.  CT& PT Foundation  BA will excavate the cable trench depth upto 2.5 MTR & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works.  Filling available excavated	Description of Materials			

Con	Construction for 1 no. of 33kV Outdoor Bay arrangement Consisting of 1 VCB and 2 isolator) at Phulpada					
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	24.00	4,800.00	
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level: 1:3:6 (1 Cement:3 coarse sand (zone-III): 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	2.10	10,773.00	
4	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	14.18	92,137.50	
5	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	89.64	26,981.64	
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	734.58	80,069.22	
D	Isolator					
1	Excavation (2.15x2.15x1.85mtr) & remove the debris using necessary tools & machinery for excavation of cable trench & other civil works	Cum	482.00	14.18	6,832.35	
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth,consolidating & compacting each deposited layer by ramming and watering as directed by Engineer-in-charge.	Cum	200.00	6.00	1,200.00	
3	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:3:6 (1 Cement :3 coarse sand (zone-III) : 6 graded stone aggregate 40 mm nominal size).	Cum	5130.00	0.85	4,363.07	
4	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level: 1:1.5:3 (1 cement: 1.5 coarse sand (zone-III): 3 graded stone aggregate 20 mm nominal size).	Cum	6500.00	8.55	55,575.00	
5	Centering and shuttering including strutting, propping etc. and removal of form for all heights: Foundations, footings, bases of columns, etc. for mass concrete.	Sqm	301.00	44.82	13,490.82	
6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete: Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	109.00	367.29	40,034.61	
7	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.	3700.00	8	29,600.00	
K		Total Civil & Services			4,75,318.33	
L		Total (J+K)			30,58,011.06	
N	Sub Total (L+M)				30,58,011.06	
0	Total GST @ 18% of (N)			5,50,441.99		
Р	Total Cess @ 1% of (N)				30,580.11	
Q	Gross Total Material +Services (N+O+P)				36,39,033.16	