



गेल (इंडिया) लिमिटेड

(भारत सरकार का उपक्रम - महारत्न कंपनी)

GAIL (India) Limited

(A Govt. of India Undertaking - A Maharatna Company)

गेल जुबली टॉवर,
बी - 35 एवं 36, सेक्टर - 1, नौएडा - 201301
जिला गौतम बुद्ध नगर (यू.पी.), इंडिया

GAIL JUBILEE TOWER,
B - 35 & 36, SECTOR - 1, NOIDA - 201301
DISTT GAUTAM BUDH NAGAR (UP), INDIA

फोन/PHONE : +91-120-2446400, 4862400

फैक्स/FAX : +91-011-26185941

LETTER OF ACCEPTANCE

To
TECHNISYS ENGINEERING
PRIVATE LIMITED.,
GURUKUL INDRAPRASTH ANANGPUR
ROAD
1ST FLOOR, PLOT NO.239,
GURUKUL INDRAPRASTH ANANGPUR
ROAD
SECTOR- 37

LOA No. : GAIL/CHN/22/132/5300037930/C&P/ELEC/NIC

Dated : 12.12.2022

RFQ No. & Date : 3300095405 Dt. 01.12.2022

Your offer/Qtn.No.: .

Qtn. Dt. : 14.11.2022

E Tender No.: NIL

Vendor Type : MSE-SMALL-OT

Vendor GSTN No : 06AACCT8886E1ZZ

Kind Attn : Ms. Subhra Majumder

Name of Work : SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF 11 KV GRID POWER STATION FOR GAIL, CHHAINSA COMPRESSOR STATION.

Dear Sir/Madam

With reference to your Offer against our RFQ and all subsequent correspondences (if any) till date and in continuation of our Fax/Letter of Intent (if any) we are pleased to award the subject works highlighting the following salient features:

Scope of Work : Scope of work under this contract shall be as detailed in enclosed document.

Price Basis:

ITEM	1	PART-A(ELECTRICAL&CIVIL)	INR	18,113,528.64
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Abnormally High Rated Items :

Applicable for Tender SOR Sr. No- 6,7,8,13,14,15,16,18,25,26,27,36,39,52,61,74,76,77,88,90,92,93,97,100

Duration of Contract/Completion Schedule :

THE PARTY HAS TO COMPLETE SUPPLY, INSTALLATION AND COMMISSIONING IN ALL ASPECTS OF TOTAL SYSTEM IN FIVE (05) MONTHS FROM THE DATE OF ISSUE OF LOI I.E. 07.12.2022 UPTO 06.05.2023

Performance Bank Guarantee:

Total CPBG value applicable for this contract is Rs.4,60,513.00/- and valid upto 06.08.2024

CPBG shall be valid upto 3 months beyond total contract period and DLP (12 months).

पंजीकृत कार्यालय :

गेल भवन, 16 भीकाएजी कामा प्लेस

नई दिल्ली-110066, इंडिया

REGD. OFFICE :

GAIL BHAWAN, 16 BHIKAJI CAMA PLACE

NEW DELHI-110066, INDIA

सीआईएन/CIN

L40200DL1984GOI018976

Page: 1 of 19
Website : www.gailonline.com

Contract Agreement:

YOU ARE REQUESTED TO SIGN AN CONTRACT AGREEMENT WITH GAIL [IN A NON JUDICIAL STAMP PAPER OF APPROPRIATE VALUE] WITHIN 30 DAYS OF NOTIFICATION OF AWARD. THE DETAILED MATTER OF CONTRACT AGREEMENT SHALL BE AS PER PROFORMA FOR CONTRACT AGREEMENT PROVIDED IN GCC.

Payment Terms:

AS PER TENDER DOCUMENT SCC CLAUSE NO.4 AS REPRODUCED BELOW:-

(A) 60 % of payment shall be released against RA bills, within 15 days of bill submission. Details may be referred in SCC.

(B) 30 % of the payment shall be released after successful Installation, charging and commissioning of System.

(C) 10 % amount shall be released after completion of all post commissioning activities [like document submission etc.]

1. General arrangement drawing of the panels - 3 copies
2. Schematic Circuit diagram (power and control circuits) with bill of material # 3 copies
3. Manufacturers test certificate for all routine tests-2copies
4. Manufacturers test certificate for relays-2copies
5. Operation, maintenance and parts catalogue- 3copies
6. Test report for all brought out items-2copies
7. Final as built drawings.

Paying Authority:

CM [Finance & Accounts]
GAIL (India) Limited,
Chhainsa Compressor Station
Vill: Chhainsa, Tehsil: Ballabhgarh
Faridabad-121004 (Haryana)
HVJ EXTN-869-11928
E-mail: vkkhanna@gail.co.in
GST NO: 06AAACG1209J1Z0

PAN Particulars:

GAIL (India) Ltd PAN No. AAACG1209J

"As per CBDT Notification No. 95/2015 dated 30.12.2015, mentioning of PAN no. is mandatory for procurement of goods / services/works/consultancy services exceeding Rs. 2 Lacs per transaction.

Accordingly, supplier/ contractor/ service provider/ consultant should mention their PAN no. in their invoice/ bill for any transaction exceeding Rs. 2 lakhs. As provided in the notification, in case supplier/ contractor/ service provider/ consultant do not have PAN no., they have to submit declaration in Form 60 along with invoice/ bill for each transaction. Payment of supplier/ contractor / service provider/ consultant shall be processed only after fulfilment of above requirement".

GSTN Details :

Please note that our state/plant wise GSTN details as below for invoicing and other purpose.

NG Transmission - Chainsa (3026) 06AAACG1209J1Z0

Your Bank Details :

Please note that details of your bank account in our system are as under. You are requested to verify the same

Your Bank Details :

Please note that details of your bank account in our system are as under. You are requested to verify the same and intimate discrepancies, if any

and intimate discrepancies, if any

Account No. - 085705000372

Bank Name - ICICI BANK LIMITED

IFSC Code - ICIC0000857

Price Reduction Schedule:

AS PER GCC-WORKS CLAUSE-27 AS REPRODUCED BELOW:

Time is the essence of the CONTRACT. In case the CONTRACTOR fails to complete the WORK within the stipulated period, then, unless such failure is due to Force Majeure as defined in Clause 26 here above or due to EMPLOYER's defaults, the Total Contract price shall be reduced by ½ % of the total Contract Price per complete week of delay or part thereof subject to a maximum of 5 % of the Total Contract Price, by way of reduction in price for delay and not as penalty. The said amount will be recovered from amount due to the Contractor/ Contractor's Contract Performance Security payable on demand.

The decision of the ENGINEER-IN-CHARGE in regard to applicability of Price Reduction Schedule shall be final and binding on the CONTRACTOR.

Defect Liability Period:

AS PER TENDER DOCUMENT SCC CLAUSE NO.11 AS REPRODUCED BELOW:-

The defect liability period for the contract will be 12 months from the date of completion of the total contract. Decision of Engineer In-Charge in this regard will be final & binding to the Contractor.

Contract Document:

FOLLOWING DOCUMENTS SHALL CONSTITUTE THE CONTRACT:

- (a) THIS DETAILED LETTER OF ACCEPTANCE [LOA].
- (b) RFQ / TENDER DOCUMENT NO. GAIL/NOIDA/C&P/CHN/22-23/132
- (c) Contract Agreement on non judicial stamp paper

All other stipulations made by contractor in its offer/correspondence exchanged shall be treated as null & void and deemed to have been unconditionally withdrawn by contractor in favour of provisions of the contract documents.

FOI Reference/Regularization:

FOA No.:GAIL/NOIDA/C&P/CHN/22-23/132,DATED:07.12.2022

Engineer-In-Charge:

SH.PK AGARWAL,DGM[O&M] GAIL (INDIA) LTD,CHHAINSA SHALL BE THE EIC OF THE AWARDED WORK. YOU ARE REQUESTED TO CONTACT HIM FOR THE EXECUTION OF THE AWARDED WORK ON EMAIL-ID: pk.agarwal@gail.co.in

Other Contractual Stipulations:

TOTAL ESTIMATED ORDER VALUE OF THE AWARDED JOB WORKS OUT TO BE RS.1,53,50,448.00/- (RUPEES ONE CRORE FIFTY THREE LACS FIFTY THOUSAND FOUR HUNDRED FOURTY EIGHT ONLY) EXCLUSIVE OF GST AND RS.1,81,13,528.64/-(RUPEES ONE CRORE EIGHTY ONE LACS THIRTEEN THOUSAND FIVE HUNDRED TWENTY EIGHT AND SIXTY FOUR PAISA ONLY) INCLUSIVE OF GST@18%.THE ORDER VALUE SHALL REMAIN VALID TILL COMPLETION OF THE JOB / CONTRACT PERIOD. STATUTORY VARIATION IF ANY IN GST DURING CONTRACT PERIOD SHALL BE REIMBURSED BY GAIL AT ACTUALS AGAINST SUBMISSION OF DOCUMENTARY PROOF/EVIDENCE.

ALL THE OTHER TERMS AND CONDITIONS SHALL BE AS PER RFQ/TENDER DOCUMENTS, WHICH SHALL FORM THE PART OF THIS ORDER. HOWEVER THE OVER-RIDING PRIORITY SHALL BE AS PER GCC CLAUSE NO. 1.2.1.

Warranties / Guarantees:

AS PER TENDER DOCUMENT SCC CLAUSE NO.11 AS REPRODUCED BELOW:-

The supplier shall warrant that everything to be furnished hereunder shall be free from all defects and faults in material, workmanship and manufacture and shall be of the highest grade and consistent with the established and generally accepted standards of the materials of the type offered and in full conformity with the specifications drawings or samples, if any, and shall if operable, operate, properly. This warranty shall survive inspection of payment for and acceptance of the goods but shall expire 12 months from the date of commissioning and handing over.

Extended Stay Compensation:

General Conditions of Contract:

Shall be in accordance with enclosed Tender document.

Special Conditions of Contract:

Shall be in accordance with Section-V of enclosed Tender document

Enclosures :

1. COMPLETE TENDER DOCUMENT
2. FORMAT OF CONTRACT AGREEMENT
3. SIGNED INTEGRITY PACT

This order is being issued in triplicate. Two copies of the order duly signed, stamped and dated on each page, may be returned within 3 days from date of receipt of the order to the undersigned..

For & on behalf of
GAIL (India) Ltd.

(Authorized Signatory)

NAME :
DESIGNATION :

**ASHISH
GOEL**

Digitally signed by ASHISH GOEL
DN: c=IN, o=GAIL India Limited,
ou=Contracts & Procurement,
2.5.4.20=51174c4fd6e2143d2c936681
20ea9262e50a69f884ea0ad17277574c
d9a491ca, postalCode=201301,
st=Uttar Pradesh,
serialNumber=bc3e63f5fcbef4fe738b7
bca709ecee15ba8f852ffe2d64724476
df44e6e7b00, cn=ASHISH GOEL
Date: 2022.12.20 11:11:21 +05'30'

CONTRACTOR'S ACCEPTANCE:

PLACE : SIGNATURE :

DATE :
NAME :
DESIGNATION :
SEAL :

NOTE: Each page of this order including its annexure should be signed and stamped by the contractor before returning to GAIL (India) Ltd..

SCHEDULE OF RATES

Item : 1 - PART-A(ELECTRICAL&CIVIL)
Plant : 3026 - NG Transmission - Chainsa- Haryana (HR)

S.No.	Short Description	Qty.	UOM	Rate	Amount	AHR *
20	1. SITC of 1600KVA PSS	1	EA	6,562,500.00	6,562,500.00	

Supply, Installation, Testing and Commissioning of 1600KVA Packaged Substation (PSS):

Acceptable Make - ABB/ Siemens/ Schneider

A. TECHNICAL DETAILS

MV System Nominal Voltage - 11KV
Transformer Power Rating - 1600KVA
LV System & Panel - 433V
Reference Standard - IEC 62271-202
Degree of Protection - MV & LV Compartment: IP-54 and Transformer Compartment: IP-34

B. Enclosure Construction

Enclosure & Material Thick - 2 mm thick painted GI
Type of Ventilation - Natural
Temperature Class - K10
Base Type - 4mm Thick Hot Dip Galvanized CRCA
Door & Locking Arrangement - Access of MV & LV Compartment with double door arrangement & padlocking arrangement. Access to Transformer compartment side covers is through MV/LV Compartment or through doors
Enclosure Paint Shade - RAL 1001-Cream
Earth Bus Bar - 50 X6 Sq mm (GI/Copper)

C. TYPE TEST AS PER IEC-62271-202

Test of internal Arc - 20 KA/1 Sec
Test of Ingress Protection MV & LV Compartment - IP-54
Test of Ingress Protection of Transformer - IP-34
Test of Temperature Rise - OIL/Winding (40/45 Deg)
Test of Mechanical stress - After Impact IK-10 (Energy of 20 Joules) IP-3 X Left Transformer & IP-4X for the part LT & MT, the doors remain functional at the hinge plate on handle
Test of rated Peak & rated short circuit withstand current of earthing conductor - 12.5 KA for 1 sec. -31.5 KA peak -single phase

D. BILL OF MATERIAL FOR 1600 KVA PSS

HT SWITCH GEAR - 11kV 630Amps 21KA/3 sec. Non-Extensible Ring Main Unit Compact switchgear consisting of 1 nos. fixed manual operated Vacuum Circuit Breaker Module in SF6 insulated stainless steel enclosure with series trip, self-powered microprocessor based numerical over current and earth fault relay protection. HT RMU shall preferably have site replaceable bushings to have very less downtime in the event of bushing breakage and restoration can be done immediately without sending the RMU to OEM Works. Interconnection between HT Switchgear and primary of transformer shall be done through 1C x 3R x 120 sq.mm Aluminum XLPE cable. - 1 No., Vacuum Interrupter, RMU, LT panel and CSS shall be of same make to ensure life cycle optimization. Microprocessor based IDMT Relay for Circuit Breakers - Self Powered along with series trip coil. Capacitive voltage indication fixed type system with LED.SF6 Gas pressure indicator. Padlocking facility. Protection CT shall be minimum 100/1A, 2.5VA, 5P10. - 3 nos. All modules of the RMU shall be suitable for cable termination of 3C x 300 sq.mm Al XLPE Cable, incoming cable termination is included within the scope of work - 1 Set

TRANSFORMER - 1600 KVA 11KV/433V DYN-11 Oil type, hermetically sealed energy efficiency level-2 transformer (BEE Star Rated-1) with corrugated wall, without conservator, type of design & Top Bushings for HT & LT with tapping + 5% to # 15% in equal steps of 1.25% and tap changing by means of ON LOAD &

Item : 1 - PART-A(ELECTRICAL&CIVIL)
Plant : 3026 - NG Transmission - Chainsa- Haryana (HR)

S.No.	Short Description	Qty.	UOM	Rate	Amount	AHR *
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standard accessories as per the relevant NEC and IS Codes. Temp Rise - Oil/Winding 40/45 Deg cel. Losses (As per IS-1180 amended up to date) Max Losses @ 50% Load: 3970 W and Max Losses @ 100% Load 11300 W and Impedance of 6.25% (Subject to IS Tolerance (as per IS1180-2014). The transformer shall be confirming to IS: 2026 and IS: 1180(part-I). Amended up to date. The OEM should have successfully conducted short circuit test same or higher rating of transformer as per IS-1180 amended up to date. One No. Winding Temperature Indicator with Alarm and trip Contact

OUT DOOR ENCLOSURE - Outdoor type encloser of 1.5 mm (For non-load bearing members) & 2.0 mm (For load bearing members) thickness having modular construction of Galvanized Sheet Steel in suitable design for better heat dissipation and providing robust construction. The Enclosure shall have IP54 degree of protection for HT & LT switchgear compartment & IP 23 degree of protection for transformer compartment. The enclosure exterior shall be painted with epoxy based powder paint (color RAL 7032). Each compartment will be provided with the door and pad locking arrangement. The design of the enclosure should be type tested for suitably handling any arcing inside the compartment for providing better safety to the operator. The compartment illumination lamp with door operated switch shall be provided for each compartment.

LT PANEL - LVS PANEL 2500 AMPS 4 pole Aluminum BUSBAR (100% FOR PHASES AND 100% FOR NEUTRAL) - CURRENT DENSITY OF Aluminum as 1 A/sq.mm. ; LT panel made up of 1.5/2 mm thick CRCA sheet (Make: Siemens/Schneider/ABB)

INCOMER FROM TRANSFORMER & OUTGOING CABLE - 2500 A, 4 P, 50 KA, Manual draw out type microprocessor based release ACB with overload ,short circuit & earth Fault protection. LT Metering CT 2500 /5 A, Burden 10 VA, Accuracy class 1.0. RYB ON OFF Trip indication, Multi Meter Class 1.0

HT METERING - Metering CT Ratio 150/1-1, 2.5 VA, CL1.0, Resin Cast Fixed Type PT with 11 KV/R3/110 V/R3/ 100 VA with HT Fuse. Multi-Function, CL1.0

CONTROL SUPPLY - PSS should have inbuilt DC control supply for the controlling of HT and LT panel.

30	2. Termination OF HT CABLE					
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Note : SITC for all Items shall be done as per specifications, Data sheet, Drawings, Scope of work, guidelines of CEA rule and Instructions of Engineer In-Charge(EIC) and details as mentioned above.

40	2.1 End Termination of 11 KV HT Cable	1	M	7,500.00	7,500.00	
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Supplying and making for Indoor end termination for with brass compression gland and aluminium lugs for following size of XLPE insulated and FRLS PVC sheathed aluminium conductor cable of 11 KV grade as required. 3C X 300 Sq.mm Al "Ar" Cable.

130	3.S&L OF LV CABLES,TERMINATIONS & CABLES					
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Note : SITC for all Items shall be done as per specifications, Data sheet, Drawings, Scope of work, guidelines of CEA rule and Instructions of Engineer In-Charge(EIC) and details as mentioned above.

140	3.1 SUPPLY & LAYING OF ALUMINIUM CABLE					
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150	3.1.1 Supply3.5C x 300 sq.mm.Al. Ar.	1,000	M	1,681.00	1,681,000.00	
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Supply,design, Transportation & handling of 1.1 KV grade XLPE insulated, PVC sheathed armoured FRLS aluminium conductor cable of 3.5C X 300 Sqmm size conforming of IS:7098.

160	3.1.2 Laying3.5C x 300 sq.mm.Al. Ar.	800	M	375.00	300,000.00	
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XLPE FRLS

Laying of one number additional XLPE insulated, PVC sheathed FRLS power cable of 1.1 KV grade of following size direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required

Item : 1 - PART-A(ELECTRICAL&CIVIL)
Plant : 3026 - NG Transmission - Chainsa- Haryana (HR)

S.No.	Short Description	Qty.	UOM	Rate	Amount	AHR *
170	3.1.3 laying 3.5C x 300 sq.mm.Al. Ar.	200	M	225.00	45,000.00	

XLPE FRL

Laying of one number XLPE insulated, PVC sheathed FRLS power cable of 1.1 KV grade of 3.5C X 300 sqmm size in the existing RCC/ HUME/ METAL pipe as required.

200	3.2 CABLE TERMINATION OF Aluminium Cab :					
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CABLE TERMINATION OF Aluminium Cable

210	3.2.1 supply 3.5C x 300 sqmm.Al. Ar.	16	EA	5,000.00	80,000.00	
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Supply, Installation, testing and commissioning of Cable end Termination of following sizes 1.1kV grade LT XLPE insulated, FRLS grade PVC sheathed, stranded Aluminum conductor, Armoured/ Unarmoured cables as per IS:7098 part-I including cost of tinned copper, heavy duty crimping lugs, double compression glands (including gland earthing), insulation tape and all necessary material to complete the termination.

220	4.1 SUPPLY & LAYING OF COPPER CABLES					
230	4.1.1 supply 3.0C x 6.0 sq.mm.Cu. Ar.	300	M	278.00	83,400.00	

XLPE FRL

Supply, design,Transportation & handling of 1.1 KV grade XLPE insulated, PVC sheathed armoured FRLS Copper conductor cable of following size conforming of IS:7098.

240	4.1.2 supply 4.0C x 10 sq.mm. Cu. Ar.	20	M	571.00	11,420.00	
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Supply, design, Transportation & handling of 1.1 KV grade XLPE insulated, PVC sheathed armored FRLS Copper conductor cable of following size conforming of IS: 7098.

250	4.1.3 supply 4.0C x 16 sq.mm. Cu. Ar.	20	M	829.00	16,580.00	
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XLPE FRL

Supply, design, Transportation & handling of 1.1 KV grade XLPE insulated, PVC sheathed armored FRLS Copper conductor cable of following size conforming of IS:7098.

260	4.1.4 Supply of 4.0C X 35sqmm Cu Ar FRLS	300	M	1,785.00	535,500.00	
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XLPE FRL

Supply, design, Transportation & handling of 1.1 KV grade XLPE insulated, PVC sheathed armored FRLS Copper conductor cable of following size conforming of IS:7098.

270	4.1.5 Cable laying upto 35sqmm	150	M	188.00	28,200.00	
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Laying of one number additional XLPE insulated PVC sheathed FRLS Cu insulated, conductor power cable of 1.1 KV grade of following size direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning,protective covering and refilling the trench etc as required.

280	4.1.6 Cable laying upto 35sqmm	50	M	63.00	3,150.00	
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Laying of one number XLPE insulated, PVC sheathed FRLS Cu power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.

290	4.2 CABLE TERMINATION :					
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Supply, design,Transportation & handling of 1.1 KV grade XLPE insulated, PVC sheathed armoured FRLS Copper conductor cable of following size conforming of IS:7098.

300	4.2.1 termination 3.0C x 6.0 sq.mm. Cu.	6	EA	535.00	3,210.00	
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Supply, Installation, Testing and Commissioning of Cable end Termination of following sizes 1.1kV grade LT XLPE

Item : 1 - PART-A(ELECTRICAL&CIVIL)
Plant : 3026 - NG Transmission - Chainsa- Haryana (HR)

S.No.	Short Description	Qty.	UOM	Rate	Amount	AHR *
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insulated, FRLS grade PVC sheathed, stranded Copper conductor, Armoured/ Unarmoured cables as per IS:7098 part- including cost of tinned copper, heavy duty crimping lugs, double compression glands (including gland earthing), insulation tape and all necessary material to complete the termination.

310	4.2.2 termination 4.0C x 10 sq.mm. Cu.	2	EA	603.00	1,206.00	
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Supply, Installation, Testing and Commissioning of Cable end Termination of following sizes 1.1kV grade LT XLPE insulated, FRLS grade PVC sheathed, stranded Copper conductor, Armoured/ Unarmoured cables as per IS:7098 part-I including cost of tinned copper, heavy duty crimping lugs, double compression glands (including gland earthing), insulation tape and all necessary material to complete the termination.

320	4.2.3 termination 4.0C x 16 sq.mm. Cu.	2	EA	631.00	1,262.00	
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Supply, Installation, Testing and Commissioning of Cable end Termination of following sizes 1.1kV grade LT XLPE insulated, FRLS grade PVC sheathed, stranded Copper conductor, Armoured/ Unarmoured cables as per IS:7098 part-I including cost of tinned copper, heavy duty crimping lugs, double compression glands (including gland earthing), insulation tape and all necessary material to complete the termination.

330	4.2.4 termination 3.0C x 2.5 sq.mm. Cu.	12	EA	509.00	6,108.00	
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Supply, Installation, Testing and Commissioning of Cable end Termination of following sizes 1.1kV grade LT XLPE insulated, FRLS grade PVC sheathed, stranded Copper conductor, Armoured/ Unarmoured cables as per IS:7098 part-I including cost of tinned copper, heavy duty crimping lugs, double compression glands (including gland earthing), insulation tape and all necessary material to complete the termination.

340	4.3 SUPPLY & LAYING OF CU CONTROL CABLE					
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350	4.3.1 supply 2.0C x 2.5 sq.mm.Cu. Ar.	100	M	114.00	11,400.00	
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XLPE FRL

Supplying, Transportation & handling of 1.1 KV grade XLPE/PVC insulated, PVC sheathed armoured FRLS Copper conductor control cable of following size conforming of IS:7098/1554.

360	4.3.2 supply 4.0C x 2.5 sq.mm.Cu. Ar.	50	M	186.00	9,300.00	
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XLPE FRL

Supplying, Transportation & handling of 1.1 KV grade XLPE/PVC insulated, PVC sheathed armoured FRLS Copper conductor control cable of following size conforming of IS:7098/1554.

370	4.3.3 supply 6.0C x 2.5 sq.mm.Cu. Ar.	50	M	262.00	13,100.00	
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XLPE FRL

Supplying, Transportation & handling of 1.1 KV grade XLPE/PVC insulated, PVC sheathed armoured FRLS Copper conductor control cable of following size conforming of IS:7098/1554.

380	4.3.4 laying Cables upto 35 Sq.mm	50	M	63.00	3,150.00	
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Laying of one number XLPE insulated, PVC sheathed FRLS Cu conductor control cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.

390	4.3.5 laying Cables upto 35 Sq.mm	100	M	63.00	6,300.00	
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Laying of one number XLPE insulated, PVC sheathed FRLS Cu conductor control cable of 1.1 KV grade of following size in the existing Cable Tray.

Item : 1 - PART-A(ELECTRICAL&CIVIL)
Plant : 3026 - NG Transmission - Chainsa- Haryana (HR)

S.No.	Short Description	Qty.	UOM	Rate	Amount	AHR *
400	4.4 CABLE TERMINATION					
410	4.4.1 termination 2.0C x 2.5 sq.mm.Cu.	20	EA	321.00	6,420.00	

XLPE

Cable end Termination of following sizes 1.1kV grade LT XLPE insulated, FRLS grade PVC sheathed, stranded Copper conductor Control cable, Armoured/ Unarmoured cables as per IS:7098 part-I including cost of tinned copper, heavy duty crimping lugs, double compression glands (including gland earthing), insulation tape and all necessary material to complete the termination.

420	4.4.2 termination 4.0C x 2.5 sq.mm.Cu.	2	EA	321.00	642.00	
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XLPE

Cable end Termination of following sizes 1.1kV grade LT XLPE insulated, FRLS grade PVC sheathed, stranded Copper conductor Control cable, Armored/Unarmored cables as per IS:7098 part-I including cost of tinned copper, heavy duty crimping lugs, double compression glands (including gland earthing), Insulation tape and all necessary material to complete the termination.

430	4.4.3 termination 6.0C x 2.5 sq.mm.Cu.	2	EA	321.00	642.00	
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XLPE

Cable end Termination of following sizes 1.1kV grade LT XLPE insulated, FRLS grade PVC sheathed, stranded Copper
"conductor Control cable, Armoured/Unarmoured cables as per IS:7098 part-I including cost of tinned copper, heavy duty crimping lugs, double compression glands (including gland earthing), insulation tape and all necessary material to complete the termination."

440	4.5 Supply and fixing cable route marker	10	EA	295.00	2,950.00	
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Supplying and fixing cable route marker for 1.1 KV LT Cable with 10 cm X 10 cm X 5 mm thick G.I. plate with inscription there on, bolted /welded to 35 mm X 35 mm X 6 mm angle iron, 60 cm long and fixing the same in ground as required.

450	4.6 PERFORATED CABLE TRAY :					
460	4.6.1 Tray 600mm tray, 2mm thick 50mm	20	M	1,512.00	30,240.00	

Supply, fabrication and installation of GI perforated type cable trays including suitable structural steel support complete with all bends, tees, elbows, reducers etc. of various width in two tier/ three/ five tier fashion either on one side of the wall or on two sides of the wall or at other places and paint afterward if required. (All bends & tees shall be of factory built in of same make as that of tray).

470	4.6.2 Tray 450mm tray, 2mm thick 50mm	40	M	1,242.00	49,680.00	
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Supply, fabrication and installation of GI perforated type cable trays including suitable structural steel support complete with all bends, tees, elbows, reducers etc. of various width in two tier/ three/ five tier fashion either on one side of the wall or on two sides of the wall or at other places and paint afterward if required. (All bends & tees shall be of factory built in of same make as that of tray).

480	4.7 CABLE TRAY SUPPORTS					
490	Supply, fabrication, erection of structu	100	KG	131.00	13,100.00	

Supply, fabrication, erection of structure steel for fixing cable trays including 1 coat of primer and two coat of painting as approved.

500	5.0 EARTHINGS :					
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"Note : SITC for all Items shall be done as per specifications, Data sheet, Drawings, Scope of work, guidelines of CEA rule and Instructions of Engineer In- Charge(EIC) and details as mentioned above."

Item : 1 - PART-A(ELECTRICAL&CIVIL)
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S.No.	Short Description	Qty.	UOM	Rate	Amount	AHR *
510	5.1 EARTH ELECTRODE :					

Note : SITC for all Items shall be done as per specifications, Data sheet, Drawings, Scope of work, guidelines of CEA rule and Instructions of Engineer In-Charge(EIC) and details as mentioned above.

520	5.1.1 Supply&Installatn of 600X600mm	2	EA	9,931.00	19,862.00	
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Supply and Installation of 600mm X 600mm X 6 mm G.I Plate vertically for earthing with its top at least 3 metres below ground level complete with 20mm dia G.I pipe and funnel for watering and one earthing lead of two no G.I wire in 15 mm dia G.I pipe including 30 cm square C.I frame with hinged cover masonry housing alternate layers of charcoal / coke and salt atleast 150mm thick alround etc. as per directions of Engineer in charge complete in all respects(as per IS : 3043).

530	5.1.2 Supply&Installatn of 600X600mm Cu	2	EA	17,482.00	34,964.00	
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Supply and Installation of 600mm X 600mm X 3 mm copper Plate vertically for earthing with its top at least 3 metres below ground level complete with 20mm dia G.I pipe and funnel for watering and one earthing lead of 2 nos. copper wire in 15 mm dia G.I pipe including 30 cm square C.I frame with hinged cover masonry housing alternate layers of charcoal / coke and salt atleast 150mm thick all-round etc. as per directions of Engineer in charge complete in all respects(as per IS : 3043)

540	5.1.3 Supply&Installatn of 65mm dia 3mtr	6	EA	9,294.00	55,764.00	
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x 3

Supply and Installation of 65 mm dia x 3.0 metres long G.I Pipe vertically for earthing having 12mm dia. Holes spaced 75mm apart drilled up to 2 metre from the bottom complete with earthing lead of G.I wire in G.I Pipe, including 30 cm square C.I box with hinged cover masonry enclosure, funnel at top, alternate layers of charcoal / coke and salt at least 150mm thick alround etc. as per directions of Engineer in charge complete in all respects (as per IS : 3043).

550	5.2 GI EARTHING					
560	5.2.1 Supply and fixing of 65 mm x 8 mm	200	M	571.00	114,200.00	

Thick

Supply and fixing of following GI wires & tapes on existing tray/ trench/ ground/PVC pipe/ walls including all necessary fixing accessories and effecting connections with copper riveting/ welding etc. as approved:

570	5.2.2 Supply and fixing of 32 mm x 6 mm	20	M	271.00	5,420.00	
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Thick

Supply and fixing of following GI wires & tapes on existing tray/ trench/ ground/PVC pipe/ walls including all necessary fixing accessories and effecting connections with copper riveting/ welding etc. as approved:

580	5.2.3 Supply and fixing of 25 mm x 3 mm	50	M	153.00	7,650.00	
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Thick

Supply and fixing of following GI wires & tapes on existing tray/ trench/ ground/PVC pipe/ walls including all necessary fixing accessories and effecting connections with copper riveting/ welding etc. as approved:

590	5.2.4 Supply and fixing of 8 SWG bare GI	200	M	30.00	6,000.00	
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wire

Supply and fixing of following GI wires & tapes on existing tray/ trench/ ground/PVC pipe/ walls including all necessary fixing accessories and effecting connections with copper riveting/ welding etc. as approved:

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S.No.	Short Description	Qty.	UOM	Rate	Amount	AHR *
600	5.3 COPPER EARTHING					

Supply and fixing of following Copper wires & tapes on existing tray/ trench/ground/ PVC pipe/ walls including all necessary fixing accessories and effecting connections with copper riveting/ welding etc. as approved. All copper joints shall be tinned:

610	5.3.1 Supply and fixing of 50 mm x 6 mm	50	M	3,022.00	151,100.00	
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thick

Supply and fixing of following Copper wires & tapes on existing tray/ trench/ground/ PVC pipe/ walls including all necessary fixing accessories and effecting connections with copper riveting/ welding etc. as approved. All copper joints shall be tinned:

620	5.3.2 Supply and fixing of 8 SWG bare Cu	50	M	293.00	14,650.00	
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wire

Supply and fixing of following Copper wires & tapes on existing tray/ trench/ground/ PVC pipe/ walls including all necessary fixing accessories and effecting connections with copper riveting/ welding etc. as approved. All copper joints shall be tinned:

630	5.4 SINGLE CORE COPPER ARMOURED Eart					
640	5.4.1 Supply & laying of 1C x 2.5sq.mm p	20	M	134.00	2,680.00	

Supply & laying of 1.1kV grade PVC insulated, sheathed stranded copper conductor armoured cable (IS:1554) in existing PVC pipes/ on existing cable trays etc. including terminations:

650	5.4.2 Supply & laying of 1C x 4.0 sq.mm	20	M	206.00	4,120.00	
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Supply & laying of 1.1kV grade PVC insulated, sheathed stranded copper conductor armoured cable (IS:1554) in existing PVC pipes/ on existing cable trays etc. including terminations:

660	5.5 SINGLE CORE COPPER UNARMoured CAB					
670	5.5.1 Supply and laying of 1C x 2.5sq.mm	100	M	71.00	7,100.00	

Supply and laying of 1.1kV grade PVC insulated, unsheathed, stranded copper conductor unarmoured cable (IS:694) in existing PVC pipes/ on existing cable trays etc. including terminations:

680	5.5.2 Supply and laying of 1C x 4.0 sq.m	50	M	88.00	4,400.00	
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Supply and laying of 1.1kV grade PVC insulated, unsheathed, stranded copper conductor unarmoured cable (IS:694) in existing PVC pipes/ on existing cable trays etc. including terminations:

690	5.5.3 Supply and laying of 1C x 6.0 sq.m	10	M	111.00	1,110.00	
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Supply and laying of 1.1kV grade PVC insulated, unsheathed, stranded copper conductor unarmoured cable (IS:694) in existing PVC pipes/ on existing cable trays etc. including terminations:

700	6.0 Lighting Protection					
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Note : SITC for all Items shall be done as per specifications, Data sheet, Drawings, Scope of work, guidelines of CEA rule

and Instructions of Engineer In-Charge(EIC) and details as mentioned below.

710	6.1 Supply and Fixing of Vertical Air Te	1	EA	7,438.00	7,438.00	
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Supply and Fixing of Vertical Air Termination final rod comprising of 300mm long x 25mm dia, copper rod with one pointed prong and 100mm dia x 3mm thick base plate etc. complete in all respects

720	6.2 Providing and fixing GI tape 20mm x	50	M	72.00	3,600.00	
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S.No.	Short Description	Qty.	UOM	Rate	Amount	AHR *
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Providing and fixing GI tape 20mm x 3 mm thick on parapet or surface of wall complete with Fixing arrangement for lightning conductor complete as required. (For horizontal run)

730	6.3 Providing and fixing GI tape 20mm x	20	M	72.00	1,440.00	
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Providing and fixing GI tape 20mm x 3 mm thick on parapet or surface of wall complete with fixing arrangement for lightning conductor complete as required. (For vertical run)

740	6.4 Providing and fixing B-class 50mm di	15	M	1,413.00	21,195.00	
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Providing and fixing B-class 50mm dia GI pipe (nominal) complete with GI fittings including trenching and refilling etc.(for road crossing).

750	6.5 Supply and Installation of 65 mm dia	2	EA	8,982.00	17,964.00	
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Supply and Installation of 65 mm dia x 3.0 metres long G.I Pipe vertically for earthing having 12mm dia. Holes spaced 75mm apart drilled up to 2 metre from the bottom complete with earthing lead of G.I wire in G.I Pipe,including 30 cm square C.I box with hinged cover masonry enclosure, funnel at top, alternate layers of charcoal / coke and salt atleast 150mm thick alround etc. as per directions of Engineer in charge complete in all respects(as per IS : 3043).

760	7. MV PANELS					
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Design, Manufacturing, Assembly, Wiring, Supply, Installation, testing and commissioning of following Totally Type Tested, extensible cubicle type indoor mounting, fixed type, dead front, fully compartmentalized with hinged lockable detachable front & back openable, dust and vermin proof, IP-54 Degree of Protection, form 3b, floor mounting sheet steel clad switchboard fabricated out of 2 mm thick CRCA powder coated sheet steel suitable for use at 415 volts 3 phase 4 wire 50 cycle system and to withstand asymmetrical fault level as specified in the BOQ. Panels shall be fabricated in easily transportable sections, length, height, depth etc to match with site condition. NOTES FOR PANELS/ SWITCH BOARDS The switchboard and the associated equipment including switchgear, control gear, bus bars, bus bar supports assemblies, door hinge, door lock etc shall be identical in mechanical construction to the LV switchboards which had been type tested. Hinges provided shall not be visible from front. For shrouding of the live parts use of PVC/ SRBP/ Hylem Sheets is not allowed.The switchboard shall have provision to accommodate all cables from the top and Bottom as required. The height of panels should not be more than 2400 mm.Bus bar shall be high conductivity (99%), ETP - Electrical grade copper or 50-55% Aluminium as specified in BOQ. Bus bar shall be designed on 45 deg. Ambient temperature and limit of temperature rise shall be 35 deg. Over and above Ambient temperature. The material of bus bar support shall be SMC.Suitable aluminium earth bus to be provided throughout the length of each switchboard.Bus bars shall be with heat shrinkable PVC sleeves. All switch gear (MCB's, MCCB's, MPCB's, contactors & O/L relays etc.) shall be of same make i.e. mixing of different makes in one panel shall not be permissible.

Panels with copper bus bars shall be of tinned copper.

Only cast resin CT's to be used.Phase indication lamps and ON/ OFF Indication lamp shall be LED type and shall be controlled/ protected by suitable control fuses or required fault with stand capacity (KA rating of switch board) MPCB's/ MCB's. NOTES FOR MCCB's:

MCCB's shall be with Ics= Icu rating.

MCCB's shall be with Extended rotary handles.

MCCB's upto 250Amp shall be with thermal - magnetic releases & beyond 250Amp shall be with microprocessor based releases.

The MCCB rating given in BOQ is not final. Exact MCCB's rating & fault with stand capacity to be calculated by the electrical contractor based on the feeder load, nature of load & fault current.

NOTES FOR MCB's & DB's:

MCB's shall be of minimum 10kA fault with stand capacity. Use 'B' curve MCB's for lighting & small power circuits, 'C' curve for motor duty i.e. for pumps, AC motors, AHU motors, window and split AC's etc. & 'D'curve for UPS DB's i.e. for computers/ PC's circuit. Main incomer & outgoing circuit MCB's shall be selected accordingly i.e. Type B, C & D. Contractor to select the MCB's accordingly as per the nature of the circuit/ load.

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Each DB shall have separate neutral links of rating not less than 100A for each phase. The main incoming neutral link shall be in addition to three outgoing neutral links and shall be of 125A. All internal inter connecting wiring with in the DB's shall be PVC insulated flexible copper conductor wires of adequate capacity as per the current rating. DP ELCB's shall be used for each phase. Inside each DB, a DB chart is to be fixed.

800	7.1 EXTENSION of (071-PMCC-301) panel	1	EA	2,119,250.00	2,119,250.00	
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Extension of existing 071-PMCC-301 panel.

The retrofitting of Incomer, Buscoupler & 1 no. outgoing panel with existing 071-PMCC-301 panel with matching physical dimensions, power and control supply busbar.

Incomer:

1 no. of 3200 amp rating motor operated spring charging FP ACB (EDO) LSIG Protection for 1600 KVA Transformer set incoming, horizontal drawout type. The breakers shall be provided with following:-

Metering and Indications:

1 sets of multi-function meter with RS 485 port ,Class-I accuracy & 3200/5A rating CT,s with protection relay(87,87T,51,51N,86,64R,50,50N,27,59)

Shunt trip release - 1 no.

Differential relay - 1 No

Surge Arrester -Type-A ,2 sets of RYB phase indicating lamps with 4A, SP, MCB , backup protection with VSS and Voltmeter.

ON, OFF, TRIP and TNC.ON/OFF Relay Space Heater with thermostat 6-window annunciation panel with audio and visual indicator.

Over current & earth fault 2 windows. Spare 4 windows. Bus Bars:

1 Sets, Electrolytic high conductivity Aluminum three phase and 100% neutral bus bars rated at 3200 amps, insulated with heat shrinkable colored PVC sleeves & clip on shrouds for joints. The current density of Bus-Bars shall not be more than 0.8 Amps/ sq. mm.

Bus Coupler:

1 no. of 3200 amp rating motor operated spring charging FP ACB (EDO) LSIG Protection for 1600 KVA Transformer set incoming, horizontal draw out type. The breakers shall be provided with following:-

Metering and Indications. ON, OFF, TRIP and TNC. Space Heater with thermostat

Outgoings:

1 No. 1600 amp TP MDO ACB, 50 KA, with O/L, S/C and E/F Protection. - 1 No.

Note: Incomers and Buscouplers of the panel shall be electrically and mechanically interlocked with the existing incomers of the GEGs and DG.

Extended panel on Control Room Building, as described above shall be complete with a ll interconnections, risers, internal wiring, labels, terminal blocks etc. complete as required.

810	7.2 Sync Panel for DEG and Main Grid	1	EA	907,313.00	907,313.00	
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Synchronising Panel for DEG and Main Grid Power with interlocking

Scope of Work including Design, manufacturing, testing, supply, installation and commissioning of Synchronizing panel for synchronizing DEG and Main Grid Power. This includes Panel, Numerical Synchronizing Relay, PLC, Indication light, Auto/manual selector Switch, Neutral Link, CT, PT, MCB, Relays, hardware accessories and wirings etc. Panel to be completed in all aspects.

820	7.3 SUPPLY OF600 KVAR CAPACITOR BANK	1	EA	1,246,850.00	1,246,850.00	
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Scope of work covers Design, manufacturing, testing, supply, installation and commissioning of detuned Real time power factor control(RTPFC) panel with thyristor switching of 600 KVAR expandable upto 750 KVAR including all protection/Structure and suitable interconnecting material.It includes integration of proposed APFC

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S.No.	Short Description	Qty.	UOM	Rate	Amount	AHR *
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system with the existing system, cable supply, laying & termination etc. The total job shall be covered under performance warranty for a period of Two years from the date of final completion. Along with the technical offer vendor has to provide schematic block diagram of the system with brief description of operation.

A) Scope may briefly consists as below:

Capacity - 440V, 600 KVAR RTPFC expandable upto 750KVAR required

Capacitor Bank - 25KVAR X 3, 50KVAR X 3, 75 KVAR X 5

No. of stages (minimum) - 11 (current) + 2 (future expansion)

Provision to be provided for installing 75KVAR X 2 capacitor bank in future

Incomer - 1600A TP MDO ACB M/P based protection against O/L, S/C, & E/F Required

De-tuning - 7%

Over Voltage Factor - 10%

APFC Controller with following features -

- LCD display
- In-built logging of data internally at periodic time interval
- RS-485 communication port
- Inbuilt protection functions for underloading, overcurrent, over voltage, under voltage, harmonics, over temperature
- PF control modes for Grid / DG
- Ability to carry out health check of individual steps automatically and isolate the de-rated capacitor banks from circuit.
- Transistor output suitable for fast switching TSM.

Operation - Auto and Manual both

Capacitor - Super Heavy Duty Cylindrical Oil Impregnated MPP Self-Healing Box Power Capacitor with overpressure disconnecter rated at 525 VAC

Reactor - Heavy Duty Copper (CU) wound De-tuned Harmonic Block Reactors (7%, 189 Hz) with Bus bar type terminals, Class H insulation and thermal cut off NC switch

Switching - Thyristor Based

Discharge Device - The capacitors shall be discharged using Hi-speed discharge resistors mounted on external heat sink

Bank Protection - Each bank shall be protected using Semiconductor Fuses and shall have TP Isolator of suitable rating

Enclosure - The Non-Compartmental Enclosure shall be fabricated using 2mm thick CRCA sheet duly powder coated. Gland plate shall be fabricated using 3 mm thick CRCA Sheet

Cooling - Forced cooling with heavy duty thermostat operated fans

B) Technical Standards

1.0 Switchgear IEC 60947

2.0 Capacitor IEC 60931

3.0 Reactor IEC 60076

4.0 Active Compensation Panel IEC 61439

5.0 Passive Compensation Panel IEC 61439

C) Different Type of Factory Test

- a. Efficiency Test
- b. High Voltage Test
- c. Ripple Voltage Test
- d. Leakage Current Test
- e. Temperature rise Test
- f. All function Test

830	8. SAFETY DEVICES :					
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Note : SITC for all Items shall be done as per specifications, Data sheet, Drawings, Scope of work, guidelines of CEA rule

and Instructions of Engineer In-Charge(EIC) and details as mentioned above.

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Item : 1 - PART-A(ELECTRICAL&CIVIL)
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S.No.	Short Description	Qty.	UOM	Rate	Amount	AHR *
840	8.1 Providing and fixing M.V. danger	2	EA	861.00	1,722.00	

Providing and fixing M.V. danger notice plate of 200mmx150mm made of mild steel, atleast 2mm thick and vitreous enameled white on both sides and with inscription single red colour on front side as required.

850	8.2 Providing and fixing H.V. danger not	2	EA	1,028.00	2,056.00	
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Providing and fixing H.V. danger notice plate of 250mmx200mm made of mildsteel, atleast 2mm thick and vitreous enamelled white on both sides and with inscription single red colour on front side as required.

860	8.3 Supply and fixing of ABC type	4	EA	8,000.00	32,000.00	
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Supply and fixing of ABC type fire extinguisher 6.0 kg capacity (ISI marked IS : 15683 & TAC approved) complete with initial charge and wall bracket, along with supply of all materials and labour for proper completion of work.

870	8.4 Supply and fixing of fire bucket	2	SET	8,056.00	16,112.00	
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Supply and fixing of fire bucket round bottom made of G I sheet 9 liters 10.4 EL-SA-1004 bucket, G.9-11 capacity duly painted as per fire brigade design, supported on hanging bracket chained and locked, initially filled with fine river sand, water as per directions of Engineer in - charge(each set consists of 4 Nos. of Bucket).

880	8.5 Supply and fixing of shock treatment	2	EA	2,639.00	5,278.00	
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Supply and fixing of shock treatment chart (prescribed under I.E rules) duly framed with glass and supported from back with hard board or soft board with supply of all materials labour T&P for proper completion of work.

890	8.6Supply and laying of 1000mm(L) x 1000	6	EA	1,944.00	11,664.00	
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Supply and laying of 1000mm(L) x 1000mm(W) x 3.0 mm thick chequered rubber matting of tested quality to withstand 33 KV dielectric strength.

900	8.7 Supply and laying of 1000mm(L)x1000	50	EA	1,722.00	86,100.00	
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"Supply and laying of 1000mm(L) x 1000mm(W) x 2.0 mm thick chequered rubber matting of tested quality to withstand 1.1 KV dielectric strength."

910	8.8 Supply of Rubber Gloves of 11 KV grad	2	PAA	1,211.00	2,422.00	
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Supply of Rubber Gloves of 11 KV grade as per IS 4770-68.

920	8.9 Supply of Rubber Gloves of 1.1 KV gra	2	PAA	962.00	1,924.00	
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Supply of Rubber Gloves of 1.1 KV grade as per IS 4770-68.

950	9.0 CIVIL WORKS :					
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Note : SITC for all Items shall be done as per specifications, Data sheet, Drawings, Scope of work, guidelines of CEA rule and Instructions of Engineer In-Charge(EIC) and details as mentioned above.

960	9.1 EARTH WORK IN FOUNDATION :					
970	9.1.1 Earth work in Excavation	50.000	M3	500.00	25,000.00	

ALL TYPES Earth work in Excavation below ground level for all kinds of works in of soil as classified in specification for a depth upto 1.5m including removal of vegetation, shrubs and debris, cutting and dressing of sides in slopes, levelling, grading and ramming of bottoms, dewatering of accumulated water from any source and keeping the surface dry for subsequent works and disposal or stacking of excavated material within a lead of 100m, as directed including providing temporary supports to existing service lines like water pipes sewage

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pipes ,electric overhead and underground cables etc. all complete.

980	9.1.2 Backfilling after execution of	20.000	M3	363.00	7,260.00	
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Backfilling after execution of the WORK to proper grade and level with selected materials from available excavated soil from spoil heaps, including re-excavating the deposited soil excavated earlier, breaking clods, laying at all depths and heights in layers of thickness not exceeding 15 cm. watering, rolling and ramming by methods/ mechanical compactors to 90% laboratory maximum dry density, dressing, trimming etc. in foundations, plinths, trenches, pits etc. all complete.

990	9.2 PLAIN & REINFORCED CEMENT CONCRETE					
1000	9.2.1 Providing & laying CEMENT	10.000	M3	6,250.00	62,500.00	

Providing laying CEMENT CONCRETE below upto plinth level in foundations, drains, fillings, non-suspended floors, pavements & ramps or any other works etc. including shuttering, tamping, ramming, vibrating, curing, shuttering etc. all as specified in any shape, position, thickness and finishing the top surface rough or smooth as specified and directed all complete for concrete of nominal mix 1:4:8 by volume (1 Cement: 4 Coarse Sand: 8 Crushed Stone Aggregates/Gravels with 40mm and down size graded crushed stone aggregates.

1010	9.2.2 Providing and laying reinforce	20.000	M3	12,500.00	250,000.00	
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Providing and laying REINFORCED CEMENT CONCRETE OF M-25 GRADE with 20mm and down size graded crushed stone aggregates/gravel in SUBSTRUCTURE of all types e.g. foundations, footings, raft, beams, slabs, pile caps, retaining walls, jambs, counterforts, buttresses, trenches, manholes, pipe encasement, catch pits, drains, RCC pits, equipment/machine foundations, pedestals, pipe sleepers, columns, plinth beams, suspended floors, beams, staircases, landings, steps, brackets etc. (including single pour concreting upto 250m3), including cost of admixtures if used, providing pockets, openings, recesses, chamfering etc., wherever required, vibrating, tamping, curing and rendering if required to give a smooth and even surface etc. all complete (excluding the Cost of Reinforcement and Shuttering) for all depths below and up to shape etc. as plinth level in any shape, position and thickness etc. all complete specified, shown and directed.

1050	9.3 REINFORCEMENT					
1060	9.3.1 Supplying and placing in position	0.500	MT	137,500.00	68,750.00	

Supplying and placing in position HIGH STRENGTH DEFORMED STEEL BARS REINFORCEMENT (conforming to IS:1786, Grade Fe 415), for R.C.C. work including transporting the Steel, straightening, cleaning, decoiling, cutting, bending to required shapes and lengths as per details, binding with contractor's own 16 SWG black soft annealed binding wire at every intersection, supplying and placing with proper cover blocks, supports, chairs, overlaps, welding, spacers, fanhooks etc. for all heights and depths etc. all complete as directed.

1070	9.4 STRUCTURAL STEEL WORKS :					
1080	9.4.1 Supplying, transporting, storing,	0.200	MT	137,500.00	27,500.00	

Supplying, transporting, storing, fabricating in position and testing/examining bolted and/or welded STRUCTURAL STEEL WORKS at all levels and locations including all built-up sections/compound sections made out of rolled sections and/or plates/bent plates in trusses, purlins, wind ties, wind girders, columns, portals, racks, frameworks, crane gantries, surge girders, bracings, floor beams, lifting beams, monorails, platforms, staircases (excluding chequered plates and gratings), ladders, stoppers, brackets, side runners, sag rods, supports for equipment and technological accessories and process piping, hand railings, posts, conveyor galleries, trestles, towers, masts, junction houses etc., cutting to required size, straightening/bending if required, edge preparation, cleaning, preheating, bolting/welding of joints, (including sealing the joints of box sections with continuous welding), finishing edges by grinding, fixing in line and level with temporary staging & bracing and removal of the same after erection, grouting with Ordinary Grout or premix free flow Nonshrink Grout as specified, including preparation and submission of detailed fabrication drawings and applying primer

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S.No.	Short Description	Qty.	UOM	Rate	Amount	AHR *
1090	9.5 MISCELLANEOUS STEEL WORKS :					
1100	9.5.1 Supplying, transporting, storing,	0.250	MT	137,500.00	34,375.00	

Supplying, transporting, storing, fabricating and fixing in position M.S. METAL INSERT (with lugs) of any shape made out of flats, plates, rolled sections, pipes etc. providing necessary templates, staging, cutting, straightening, if required, bolting, welding as required and embedding in position on both Plain and Reinforced Cement concrete members inclusive of adjusting shuttering & reinforcement/any other fixture, welding where necessary, tying and holding to correct level, line and position, any auxiliary dummy structures to support the heavy inserts, painting exposed surfaces with a coat of Red Oxide Zinc Chromate Primer etc. all complete for all depths and heights as specified and directed.

1110	9.5.2 Supplying, fabricating and erecti	0.100	MT	137,500.00	13,750.00	
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Supplying, fabricating and erecting in position at all levels and locations bolted, clamped and/or welded GRATING (fabricated as per standards) made out of M.S.flats/M.S. flats with M.S. rounds in walkways, platforms, stair treads etc. including cutting to required size, shape, making holes, notches, openings of required size, nosing, straightening if required, making the edges smooth, removing the burrs, fabricating clamps, fixing, welding, preparation and submission of fabrication drawings and preparing the surfaces for painting, surface cleaning, wire brushing, removal of mill scale, dust, rust, oil or grease and applying one shop coat of Red Oxide Zinc Chromate Primer after fabrication etc. all complete as specified and directed

1120	9.6 BRICK MASONRY :					
1130	9.6.1 Providing and layingBRICK MASONRY	30.000	M3	4,000.00	120,000.00	

Providing and laying BRICK MASONRY WITH BRICKS OF CLASS 7.5 in cement mortar 1:6 (1 Cement : 6 Sand) in one or more brick thickness and in any shape (excluding circular/curved brick masonry) at all depths and heights including the cost of materials, labour, scaffolding/ staging, sampling & testing, soaking of bricks, cutting and laying of bricks, providing recesses, making openings of any shape & size, finishing the joints flush below ground level and raking out the joints above ground level, sealing the gap between masonry and soffit of beam/slab, embedding the fittings & fixtures, curing, etc. all complete as per specifications.

1140	9.6.2 Plastering of Walls	10	M2	563.00	5,630.00	
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Plastering of Walls Ordinary plain cement plaster Average 18mm thick 1:4 (1 cement : 4 sand).

1160	9.7 FENCING & GATE					
1180	9.7.1Supplying, fabricating and fixing	50	M	1,000.00	50,000.00	

Providing and fixing concertina coil fencing with pinched tape concertina coil 600 mm dia 10 metre openable length (total length90 m),having 50 nos round per 6 metre length ,upto 3 m hight of wall with existing angle iron "Y" shaped placed 2.4 m or 3.00 m apart and with 9 horizontal R.B.T reinforced barbed wire, stud tied with G.I staples and G.I clips t0 retain horizontal , including necessary bolts or G.I barbed wire tied to angle iron ,all complete as per direction of Engineer in charge , with reinforced barbed tape (R.B.T) /Spring core (2.5mm thick)wire of high tensile strenght of 165 kg/sq.mm with tape (0.52 mm thick)and weight 43.478 gm/metre (cost of M.S angle ,C.C blocks shall be paid separately)

1220	9.8 SAND FILLING AND BRICK WORK :					
1230	9.8.1 Supplying and filling approved S	25.000	M3	375.00	9,375.00	

Supplying and filling approved SAND of specified quality under floors, in foundations, plinths, tank foundations etc. for all depths and heights including cost of sand, royalties, transportation to site for all leads and lifts, including loading, unloading, spreading in layers of loose thickness not exceeding 150 mm, watering, ramming, compacting with mechanical compactors and/or other equipment to the specified levels to achieve 85% relative density as per IS:2720

Part XIV, including preparation of subgrade to the required slope, providing testing apparatus and testing the degree of consolidation all complete as per drawings, specifications and direction of

Item : 1 - PART-A(ELECTRICAL&CIVIL)
Plant : 3026 - NG Transmission - Chainsa- Haryana (HR)

S.No.	Short Description	Qty.	UOM	Rate	Amount	AHR *
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Engineer-in-charge. The rates shall be inclusive of the cost of all labour, material, equipment's etc. all complete.

1240	9.8.2Demolition of existing Brick work	5.000	M3	12,500.00	62,500.00	
1250	10 NO OBJECTION CERTIFICATE(NOC)					

Note : Below work shall be as per statutory requirement and Instructions of Engineer In-Charge(EIC) and details as mentioned above.

1260	10.1 Taking no objection certiifcate	1	LS	187,500.00	187,500.00	
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Taking No Objection Certificate for proposed Electrical Installation from Electrical Inspector and / or any statutory compliances etc. Also Coordination/Liasioning with SEB/Power supply Co. for drawing 11kV grid power from SEB/Power supply Co. 2-pole structure to proposed substation as required.

Work Order Item 00001 Basic Item Value : INR 15,350,448.00
(RUPEE FIFTEEN MILLION THREE HUNDRED FIFTY THOUSAND FOUR HUNDRED FORTY-EIGHT ONLY)
Item Specific Conditions :
Total Tax = 2,763,080.64
18 % IGST - Cenvatable-(IX)
Total item value including taxes & duties : INR 18,113,528.64

Total estimated contract value excluding all tax and duties : 15,350,448.00
(RUPEES ONE CRORE FIFTY-THREE LAC FIFTY THOUSAND FOUR HUNDRED FORTY-EIGHT ONLY)

Total estimated contract value inluding all tax and duties : 18,113,528.64
(RUPEES ONE CRORE EIGHTY-ONE LAC THIRTEEN THOUSAND FIVE HUNDRED TWENTY-EIGHT & PAISE SIXTY-FOUR ONLY)

*Service items marked YY under AHR column are AHR items. Any service item marked #Y or Y# confirmation is required from authorized dealing officer who shall be final authority regarding AHR declaration. However, service items marked #Y or Y# shall be treated as AHR unless confirmed Non-AHR by dealing officer.

Signature Not Verified

Digitally signed by ASHISH GOEL
Date: 2024.03.07 14:08:35 IST
Location: eProcurement System for
Central PSUs