



भारतीय विमानपत्तन प्राधिकरण

AIRPORTS AUTHORITY OF INDIA

देवी अहिल्याबाई होलकर विमानपत्तन, इंदौर-452 005

(आई.एस.ओ.9001:2015 आई.एस.ओ.14001: 2015 एवं आई.एस.ओ. 45001:2018 प्रमाणित विमानतल)

DEVI AHILYA BAI HOLKAR AIRPORT, INDORE-452 005

(ISO 9001:2015, ISO 14001: 2015 & ISO 45001: 2018 Certified Airport)

संदर्भ संख्या : भाविप्रा/इंदौर/अभि.-वि/कार्य आदेश-24/2023-24 / 130-46 दिनांक : 07/03/2024
Ref. No.: AAI/ID/ENGG(E)/WO-24/2023-24 Date: 07/03/2024

प्रति,

मेसर्स रास कान्स्ट्रक्टर एण्ड इंजीनियर्स,
3rd फ्लोर, 302/ए-14, देविका चेम्बर आरडीसी,
राजनगर, गाजियाबाद उत्तर प्रदेश - 201001

M/s RASS CONTRACTORS & ENGINEERS,
3rd Floor, 302/A-14, Devika Chamber RDC,
Rajnagar, Ghaziabad Uttar Pradesh-201001

कार्य का नाम:- रि-कॉन्फिगरेशन ऑफ इन्टीग्रेटेड टर्मिनल बिल्डिंग एण्ड रिनोवेशन ऑफ ओल्ड टर्मिनल
बिल्डिंग एट दे.अ.बा.हो. विमानतल, इन्दौर।

उपशीर्ष :- औगमेन्टेशन ऑफ पावर सप्लाई सिस्टम फॉर ओल्ड टर्मिनल बिल्डिंग।

Name of Work: - Reconfiguration of Integrated Terminal Building & Renovation of Old Terminal Building at D.A.B.H. Airport, Indore.

Subhead: - Augmentation of Power Supply System for Old Terminal Building.

संदर्भ :- 1) आपकी दिनांक 14/01/2024 को खोली गई ई-निविदा 2024_AAI_181347_1

Your E-Tender No.2024_AAI_181347_1 Opened on dated 14/01/2024

प्रिय महोदय / Dear Sir,

- उपरोक्त कार्य हेतु आपका टेण्डर, अध्यक्ष, भारतीय विमानपत्तन प्राधिकरण की ओर से, आपके द्वारा बताये गये मद मुल्यों पर आपकी टेण्डर राशि कुल लागत ₹ 3,59,54,900/- (रुपये तीन करोड़ उनसठ लाख, चौवन हजार, नौ सौ मात्र जी.एस.टी. रहित) है, जो कि टेण्डर की अनुमानित लागत राशि ₹ 4,09,11,000/- जी.एस.टी. रहित से 12.11 % कम है, पर स्वीकृत किया जाता है।

Your Tender for the work mentioned above is hereby accepted on behalf of the Chairman, Airports Authority of India at the item rates quoted by you totaling to ₹ 3,59,54,900/- (Rupees Three Crore Fifty-Nine Lakh Fifty Four Thousand Nine Hundred Only Excluding GST) which is 12.11% below the Estimated cost put to tender of ₹ 4,09,11,000/- Excluding GST.

- सहायक महाप्रबंधक (अभि.-विद्युत)-I, भाविप्रा, दे.अ.बा.हो. विमानतल, इन्दौर कार्य के प्रभारी अभियंता होंगे। आपसे निवेदन है कि आप आपकी ओर से एक विश्वसनीय प्रतिनिधि प्रतिनियुक्त करें जो कि करारनामों पर हस्ताक्षर करने के लिए अधिकृत हो तथा वह दिनांक 22.03.2024 तक सहायक महाप्रबंधक (अभि.-विद्युत)-I, भाविप्रा, दे.अ.बा.हो. विमानतल, इन्दौर के कार्यालय में उपस्थित हो तथा करारनामों को पूरा करें। ठेके का करारनामा रुपये 100/- के नॉन ज्युडिशियल स्टेम्प पेपर पर निष्पादित किया जाएगा, तथा स्टेम्प पेपर का खर्च आपके द्वारा उठाया जाएगा।

Continued on page No. ...02

देवी अहिल्याबाई होलकर विमानतल इन्दौर दूरभाष - 0731-2626609

DEVI AHILYA BAI HOLKAR AIRPORT INDORE PHONE 0731-2626609



भारतीय विमानपत्तन प्राधिकरण

AIRPORTS AUTHORITY OF INDIA

देवी अहिल्याबाई होलकर विमानपत्तन, इंदौर-452 005

(आई.एस.ओ.9001:2015 आई.एस.ओ.14001: 2015 एवं आई.एस.ओ. 45001:2018 प्रमाणित विमानतल)

DEVI AHILYA BAI HOLKAR AIRPORT, INDORE-452 005

(ISO 9001:2015, ISO 14001: 2015 & ISO 45001: 2018 Certified Airport)

-02-

The Assistant General Manager (Engg.-Elect.)-I, AAI, DABH Airport, Indore shall be the Engineer-In-Charge of the work. You are requested to depute your accredited representative empowered to sign the contract Agreement on your behalf, to attend the office of the Assistant General Manager (Engg.-Elect.)-I, AAI, DABH Airport, Indore by 22.03.2024 to sign and complete the agreement. The contract agreement shall be executed on a non-judicial stamp paper of Rs. 100/- and the cost shall be borne by you.

3. कृपया ₹ 35,95,490.00 (रुपये पैंतीस लाख पंचान्वे हजार चार सौ नब्बे मात्र) प्रतिभूति जमा के रूप में यह पत्र के जारी करने की तारीख से 10 दिन के अंदर जमा कीजिए, अन्यथा यह राशि ठेका दस्तावेज के जीसीसी के पृष्ठ क्र.16 के Clause '1A' की शर्त के अनुसार काटी जाएगी।

Please deposit ₹ 35,95,490.00 (Rupees Thirty-Five Lakh Ninety-Five Thousand Four Hundred Ninety Only) towards security deposit within 10 days from the date of issue of this letter, failing which the same will be deducted as per condition of Clause '1A' on page no. 16 of GCC of the contract document.

4. आपसे निवेदन है कि आप केन्द्रीय और राज्य सरकारों के 1970 के अधिनियम अनुबंध श्रम नियम (नियमन तथा उन्मुलन) तथा 1971 के केन्द्रीय नियम अनुबंध श्रम नियम (नियमन तथा उन्मुलन) एवं केन्द्र तथा राज्य सरकार के न्यूनतम वेतन अधिनियम और नियमों का अनुपालन करें।

You are requested to comply with the provisions of Contract Labour (Regulation & Abolition) Act of 1970 and Contract Labour (Regulation & Abolition) Central rules 1971 and Minimum Wages Act & Rules thereof Central and State Government.

5. आपको निर्देश दिया जाता है कि आप तुरंत प्रबंधक (अभि.-विद्युत), भाविप्रा, दे.अ.बा.हो. विमानतल, इन्दौर से मिलें वह आपको साईट सौंपने की व्यवस्था करेंगे। कृपया नोट कर लें कि काम करने का अनुमानित समय 05 (पांच) माह है जो कि इस पत्र के जारी करने के 10 दिन बाद से गिना जाएगा।

You are also directed to contact Manager (Engg-E), AAI, DABH Airport Indore immediately who will arrange to hand over the site to you. Please note that the time allowed for carrying out the work is 05 (Five) Months which shall be reckoned from the 10th day after issue of this Letter.

Continued on page No.03

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6. इस ठेके के संबंध में आगे कोई भी पत्राचार सहायक महाप्रबंधक (अभि.-विद्युत)-I, भा.वि.प्रा., दे.अ.बा. हो. विमानतल, इन्दौर म.प्र.-452005 के पते पर या ई-मेल rrbagre@aai.aero पर किया जाए।

Any further correspondence in connection with this contract should normally be addressed to Assistant General Manager (Engg. -E)-I, AAI, D.A.B.H. Airport, Indore, M.P.- 452005 Or email-id rrbagre@aai.aero.

7. उपरोक्त संदर्भित सभी पत्र इस ठेके का भाग होंगे।

All letters referred above shall form part of contract.

8. ठेका दस्तावेज की शर्तों के अनुसार त्रुटि दायित्व अवधि 12 (बारह) माह होगी।

The Defects Liability Period will be 12 (Twelve) Months as per terms of Contract.

9. कृपया पावती भेजें एवं आपकी स्वीकृति के प्रतीक के रूप में इस कार्य आदेश की डुप्लीकेट प्रति पर हस्ताक्षर कर अधोहस्ताक्षरी को पुनः भेजने का कष्ट करें।

Please acknowledge the receipt and return the duplicate copy of this letter enclosed herewith after signing it to the undersigned as a token of acceptance.

10. यदि अंग्रेजी और हिंदी पाठ में कोई अंतर पाया जाता है तो अंग्रेजी विवरण सही माना जायेगा।

If there is any discrepancy between English and Hindi, then meaning derived in English will be given precedence.

धन्यवाद / **Thanking You,**

संलग्न / **Enclosure: 1) Schedule 'A' – 14 Pages.**

भवदीय / **Yours Faithfully,**



सहायक महाप्रबंधक (अभि.विद्युत)-I,

Assistant General Manager (Engg-Elect)-I

भा.वि.प्रा. इन्दौर विमानतल, इन्दौर

AAI, DABH AIRPORT, INDORE

कृते तथा ओर से, अध्यक्ष

For and on behalf of Chairman

भारतीय विमानपत्तन प्राधिकरण

Airports Authority of India



SCHEDULE OF QUANTITY

Name of Work :-Reconfiguration of Integrated Terminal Building & Renovation of Old Terminal Building at D.A.B.H. Airport, Indore. SH:
Augmentation of Power Supply System for Old Terminal Building.

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
1	SITC of Distribution Transformer.				
1.1	Supply Installation Testing Commissioning of "33/0.433 KV Distribution Transformer rating of 1000 KVA, Outdoor type ,3 phase ,50 HZ, Oil filled ONAN, Copper Wound core type ,step down ,Delta/Star ,Dyn-11 with on load tap changer. The transformer shall be designed and manufactured as per IS 2026-1977 and efficiency as per BIS 1180 efficiency Level I and latest ECBC with upto date Amendments and shall be as per technical specifications available in this tender document complete as required.	2	Nos	2500000	5000000.00
2	33 KV HIGH VOLTAGE PANEL				
2.01	Supply, Installation, Testing & Commissioning of indoor type (IP 4X) floor mounted metal clad, 33KV Switch Board VCB panel with 06 Nos. VCBs , totally enclosed & fully interlocked, truck mounting, horizontal draw out, horizontal isolation type vacuum breaker as per IS / IEC 62271- 100 (2007) for breakers & 200 (2003),for panels / IS3247 as amended up to date, having capacities as mentioned below, free standing extensible on both sides, single break, trip free mechanism, motorised charged and auto/ manually closing breaker suitable for use on (33KV), 3 Phase,50Hz A.C. supply with short circuit fault level of 1500 MVA , complete with self contained short time current 26.3 kA for 3 sec, Internal Arc Test for AFLR 26.3 kA for 1 sec at individual compartments i.e busbar, VCB, and cable compartment, rack in and rack out mechanism, air insulated but encapsulated copper bus bars capacity meeting fault level current, DC power pack, breaker featured with mechanical ON / OFF indicator with hand trip device, Breaker control TNC switch and all accessories such as shunt trip coil, and auxiliary switch of 4NO+4NC, motorised and manually operated spring assisted closing mechanism, emergency trip push button, interconnections, space heaters, earthing, etc. and equipped with following switchgears and accessories, connections suitable for cable upto 3C x 185 sqmm XLPE cable of (33KV) grade (cable entry from bottom), Separate earthing switch shall be provided for Cable earthing. The earthing truck shall be so designed that it is impossible to earth alive cable terminations suitable for 3C x185 sq.mm. XLPE (33KV) cable.				
	33 KV HIGH VOLTAGE PANEL AT OTB A. Incomer 2 Nos. each consisting of following: 1 No. of 800 Amp, 33KV, 3 Ph, 3P VCB 1 No - Multifunction Meter with accuracy class 0.5 LED display of I, V, Hz, Active, Reactive, Apparent Power & Energy, Power factor, %THD, Maximum demand load, (complying with IEC61557-12) with RS 485 & Ethernet port and protection MCB and required accessories to complete the system 3 No. Cast resin drawout type PTs 33KV / 3 / 110 3, class 0.5,100 VA burden including HT HRC fuse on 33KV Side and MCBs on secondary side protection. 3 No. Cast resin insulated Dual core 3 CTs 30 / 5-5A of 15VA burden and accuracy Class -0.5 for metering and class 5P10 for protection. Aux. relays for Anti Pumping & indication. Trip Circuit supervision relay, Master Trip Circuit Relay 1 No. Micro processor based over current, short circuit 50,50 N & earth fault numerical IDMT relay with having RS 485 modbus communication facility consisting 3 element for over current relay and one earth fault capable of storing last 10 trip history. 1 No. Over & under voltage protection relay, 1 No. Over & under frequency relay 1 No. Alarm annunciator with minimum 8 windows and buzzer, ACK, rest, test push button for transformer faults and electrical faults in respective window.				

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
	B. Busbar 800 Amps TP, 36KV Copper Bus bar with heat shrinkable insulated sleeves with cast epoxy insulator to withstand full short circuit currents upto 26.3 kA for 1second C. BUS COUPLER 800 Amps, 33KV horizontal draw out type VCB with motorized spring charge mechanism, T/N/C switch and required safety switchgears complete. 1 Set of LED indication lamp protected by MCB for ON & OFF and spring charge of breaker complete Electrical inter locking with both incomers & bus coupler D. Outgoings 03 Nos each consisting of following; 01 No. 800 Amp, 33KV VCB horizontal draw out type VCB with motorized spring charge mechanism, T/N/C switch and required safety switchgears complete Aux. relays for Anti Pumping & indication. Trip Circuit supervision relay, Master Trip Circuit Relay 1 No. Micro processor based over current, short circuit 50,50 N & earth fault numerical IDMT relay with having RS 485 modbus communication facility consisting 3 element for over current relay and one earth fault capable of storing last 10 trip history. 1 No - Multifunction Meter with LED display of I, V, Hz, Active, Reactive, Apparent Power & Energy, Power factor, % THD, Maximum demand, (complying with IEC61557-12) with RS 485 & Ethernet port and protection MCB and required accessories to complete the system. 3 No. Cast resin insulated Dual core 3 CTs 30/5-5A of 15VA burden and accuracy Class -0.5 for metering and class 5P10 for protection. 1 No. Auxiliary relays for transformer faults WTI with alarm, trip and hooter, 1 No. Alarm annunciator with minimum 8 windows and buzzer, ACK, reset, test push button for transformer faults and electrical faults in respective window. E. All I/C & O/G Breaker have following Accessories & indication 6A MCB for spring charge, DC Control Supply healthy & fails, Surge Arrestor of type 1, 33KV grade shall be provided for all phases of each incomer AC Supply control ON/OFF Switch, Circuit breaker failure Alarm indication, VCB spring charge indication, LED Illumination lamp ON / OFF with limit Switch, T-N-C (Trip, Neutral, Close) breaker control switch with indication arrangement. All control wiring with protection & test terminal block as required. Emergency trip push button, 2A MCB for lamp, 60 watts space heater with thermostat, 16 Amp MCB for space heater and plug point, 6/16 Amps 5 Pin with piano type switch socket outlet.				
	Supply, fixing, testing and commissioning of automatic linear pneumatic tube Detection based Clean agent System for Electrical Panels (Linear Pnuematic Heat Detection tube Panel Protection System), consisting of the Mentioned compenents. Suitable capacity, Direct Low Pressure (DLP) Assembly with automatic valve, push in connector for tube, Clean agent, mounting bracket, End of Line adopter and low pressure switch for monitoring system activation. i) Linear Pneumatic Heat detection tube with all necessary & supports ii) Master Control Unit for controlling each system, complete with pressure switches, buzzers and electronic hooters, including all necessary accessories+ electrical wiring to make each entire system functional.	1	job	4100000.00	4100000.00

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
2.02	EXTENSION OF EXISTING 33 KV HIGH VOLTAGE INDOOR PANEL AT NEW POWER HOUSE. Extension of existing 33 KV indoor type HT panel by Supplying, Installing, Configuring, Testing & Commissioning of indoor type (IP 4X) floor mounted metal clad, 33KV Switch Board VCB panel with 02 Nos. VCBs, totally enclosed & fully interlocked, truck mounting, horizontal draw out, horizontal isolation type vacuum breaker as per IS / IEC 62271- 100 (2007) for breakers & 200 (2003) for panels / IS3247 as amended up to date, having capacities as mentioned below, free standing extensible on one side, single break, trip free mechanism, motorised charged and auto/ manually closing breaker suitable for use on 33KV , 3 Phase, 50Hz A.C. supply with short circuit fault level of 1500 MVA, complete with self contained short time current 26.3 kA for 3 sec, Internal Arc Test for AFLR 26.3 kA for 1 sec at individual compartments i.e busbar, VCB, and cable compartment, rack in and rack out mechanism, air insulated but encapsulated copper bus bars capacity meeting fault level current , DC power pack, breaker featured with mechanical ON / OFF indicator with hand trip device, Breaker control TNC switch and all accessories such as shunt trip coil, and auxiliary switch of 4NO+4NC, motorised and manually operated spring assisted closing mechanism, emergency trip push button, interconnections, space heaters, earthing, etc. and equipped with following switchgears and accessories, connections suitable for cable upto 3C x 185 sqmm XLPE cable of (33KV) grade (cable entry from bottom), Separate earthing switch shall be provided for Cable earthing .The earthing truck shall be so designed that it is impossible to earth a live. cable terminations suitable for 3C x 185 sq.mm. XLPE (33KV) cable. A. Busbar 1250 Amps TP, 36KV Copper Bus bar with heat shrinkable insulated sleeves with cast epoxy insulator to withstand full short circuit currents upto 26.3 kA for 1second. Busbar of size 2//50x10mm(Double Run),VCB Module and integration of the panel with existing 33 KV VCB panel with all controls, protection indication, other accessories & fitting. B. Outgoings 02 Nos each consisting of following; 01 No. 800 Amp, 33KV VCB horizontal draw out type VCB with motorized spring charge mechanism, T/N/C switch and required safety switchgears complete Aux. relays for Anti Pumping & indication. Trip Circuit supervision relay, Master Trip Circuit Relay 1 No. Micro processor based over current, short circuit 50,50 N & earth fault numerical IDMT relay with having RS 485 modbus communication facility consisting 3 element for over current relay and one earth fault capable of storing last 10 trip history. 1 No - Multifunction Meter with LED display of I, V, Hz, Active, Reactive , Apparent Power & Energy, Power factor, % THD , Maximum demand, (complying with IEC61557-12) with RS 485 & Ethernet port and protection MCB and required accessories to complete the system. 3 No. Cast resin insulated Dual core 3 CTs 30/5-5A of 15VA burden and accuracy Class -0.5 for metering and class 5P10 for protection. 1 No. Auxiliary relays for transformer faults WTI with alarm, trip and hooter, 1 No. Alarm annunciator with minimum 8 windows and buzzer, ACK, reset, test push button for transformer faults and electrical faults in respective window. C. All I/C & O/G Breaker have following Accessories & indication 6A MCB for spring charge, DC Control Supply healthy & fails, Surge Arrestor of type 1, 33KV grade shall be provided for all phases of each incomer, AC Supply control ON/OFF Switch, Circuit breaker failure Alarm indication, VCB spring charge indication, LED Illumination lamp ON / OFF with limit Switch, T-N-C (Trip, Neutral, Close) breaker control switch with indication arrangement. All control wiring with protection & test terminal block as required. Emergency trip push button, 2A MCB for lamp, 60 watts space heater with thermostat, 16 Amp MCB for space heater and plug point, 6/16 Amps 5 Pin with piano type switch socket outlet. Supply, fixing, testing and commissioning of automatic linear pneumatic tube Detection based Clean agent System for Electrical Panels (Linear Pneumatic Heat Detection tube Panel Protection System), consisting of the Mentioned components. Suitable capacity , Direct Low Pressure (DLP) Assembly with automatic valve, push in connector for tube, Clean agent, mounting bracket, End of Lineadopter and low pressure switch for monitoring system activation. i) Linear Pneumatic Heat detection tube with all necessary & supports ii) Master Control Unit for controlling each system, complete with pressure switches, buzzers and electronic hooters, including all necessary accessories + electrical wiring to make each entire system functional.	1	job	2250000.00	2250000.00

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
3	LT Panels Supply, Installation, Testing and Commissioning of cubicle type LT panel, as per 61439-1 & 61439-2, suitable for 415V+/-10%, 3 Phase, 4 wire 50 Hz AC supply system, fabricated in compartmentalized 4b bolted modular design IP 42 from CRCA sheet steel of 2 mm thick for frame work and covers, 3 mm thick for gland, plates i/c cleaning & finishing complete with 9 tank process for powder coating in approved shade, having TPN Aluminium alloy bus bars for high conductivity, SMC bus bar supports, with short circuit withstand capacity of 50 KA for 1 sec & Internal arc withstand of 50kA for 0.3 second, bottom base channel of MS section not less than 100 mm x 50 mm x 5 mm thick, fabrication shall be done in transportable sections, entire panel shall have a common GI earth bar of size 50 mm x 6 mm at the rear with 2 Nos. earth stud, solid / flexible connections from main bus bar to switchgears and from switchgear output to cable termination in cable alley with required size of AL conductors / bus bars and control wiring with 2.5 sqmm PVC insulated copper conductor cable (FRLS), cable alleys, cable gland plates in two half, i/c providing following switchgears / accessories as per specifications.				
3.01	M.V. PANEL Incomer-I & II 04 Nos ACB 2000 A, 50 kA, 4 Pole, Microprocessor release Horizontal drawout type of fault breaking capacity 50KA (Ics=Icu=Icw) Electrical Draw Out Motorised operated, fitted with interlocked door, automatic safety shutters, mechanical ON/OFF and service/ test/isolated position indicators and frame earthing contact, conforming to IS-13947-2 1993 as amended up-to-date complete with Independent Electrical & manual spring closing mechanism, Microprocessor release (EMI & EMC certified) for over current, earth fault & short circuit protection, Shunt trip coil 24V D.C / 220V A.C, Breaker Control Switch - 16A, Test terminal block set, circuits as per standard practice, auxiliary contactors with contacts (minimum 4NO+4NC) for positive interlocking of the breakers, necessary interlocking with PLC auto controls with all protection i/e Earth fault, Under/Over Voltage, Under/Over Frequency, Current Unbalance, etc. and Real-time on-line display of measurements, Current : phase / neutral / earth, average, max, % loading, Voltage : Phase, Line and with communication port facility etc. Each Incomer shall have following items :- i) Intelligent multi function digital meter to read V,A,kVA, KW, kVAR, PF, Hz etc with communication facility (RS485 port) and LED display with required Nos CTs, 2000/5, 15 VA, class 0.5 and control circuit wiring with 2 Amp MCB for controlling % THD and individual order Harmonics upto 15th order. ii) 1 Set of Indication Lamps, LED type, R,Y,B Phase indicating lamp with 2 Amp MCB for controlling. iii) 1 Set of Indication Lamps, LED type for breaker 'ON', 'OFF', 'TRIP' & spring charged lamps with 2 Amp MCB for controlling. iv) Digital Voltmeter of suitable range (to measure 0-500V), for 3 phase 4 wire operation with LED display and in built-in-selector switch control with 2 Amp MCB. v) Digital Ammeter of suitable range with for 3 phase 4 wire operation with LED display and in built-in-selector switch control with 2 Amp MCB & suitable rating CT. Buscoupler 01 Nos. 2000 A, 50 kA, 4 Pole, (EDO) Air Circuit Breaker Horizontal drawout type of fault breaking capacity 50KA (Ics=Icu =Icw upto 433V) Electrical Draw Out Motorised operated, Independent Electrical / manual spring closing mechanism fitted with interlocked door, automatic safety shutters, mechanical ON/OFF and service/ test/isolated position indicators and frame earthing contact, conforming to IS-13947-2 1993 as amended up-to-date complete with necessary Auxiliary contact & MCB as per Drawing/specification. Buscoupler shall have - i) Phase Indication Lamps, LED type, for RYB with 2 Amp control MCB. ii) Breaker 'ON', 'OFF', & spring charged LED lamps with 2 Amp MCB for controlling. iii) Electrical & Mechanical Interlocking between both incomers & Buscoupler Busbars 4P aluminium bus bars of 2500 A capacity with heat shrinkable coloured sleeves incl. SMC bus bars supports at required intervals complete for cross section, size supports & their spacing etc. for withstanding fault level of 50 KA for 1 sec.				

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
	Outgoings 16 Nos. MCCB, 400A, 4P, 35 kA with adjustable setting, microprocessor release with O/L, S/C & inbuilt E/F protection. 10 Nos. MCCB, 250A, 4P, 35 kA with adjustable setting, microprocessor release with O/L, S/C & inbuilt E/F protection. 6 Nos. 160A 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =35 KA) with inbuilt O/L & S/C protection. 6 Nos. 100 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =35 KA) with inbuilt O/L & S/C protection. 4 Nos. 63 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =35 KA) with inbuilt O/L & S/C protection. Each outgoing shall have- I) Phase Indication Lamps, LED type, for RYB with 2 Amp control MCB. II) On/Off LED indication lamp with 2 Amp control MCB. III) Necessary spreader terminals, rotary handle, suitable for mounting arrangement.	1	job	2850000.00	2850000.00
3.02	Switch Room 01 Incomer 2 Nos. MCCB, 400A, 4P, 35 kA with adjustable setting, microprocessor release with O/L, S/C & inbuilt E/F protection, fitted with interlocked door, automatic safety shutters, mechanical ON/OFF and service/ test/isolated position indicators and frame earthing contact, conforming to IS-13947-2 1993 as amended up-to-date complete with Independent Electrical & manual spring closing mechanism, Microprocessor release (EMI & EMC certified) for over current, earth fault & short circuit protection, Shunt trip coil 24V D.C / 220V A.C, Breaker Control Switch - 16A, Test terminal block set, circuits as per standard practice, auxiliary contactors with contacts (minimum 4NO+4NC) for positive interlocking of the breakers, necessary interlocking with PLC auto controls with all protection i/e Earth fault, Under/Over Voltage, Under/Over Frequency, Current Unbalance, etc. and Real-time on-line display of measurements, Current : phase / neutral / earth, average, max, % loading, Voltage : Phase, Line and with communication port facility etc. Each Incomer shall have following Items :- i) Intelligent multi function digital meter to read V,A,kVA, KW, kVAR, PF, Hz etc with communication facility (RS485 port) and LED display with required Nos CTs, 400/5, 15 VA, class 1.0 and control circuit wiring with 2 Amp MCB for controlling % THD and individual order Harmonics upto 15th order. ii) 1 Set of Indication Lamps, LED type, R,Y,B Phase indicating lamp with 2 Amp MCB for controlling. iii) 1 Set of Indication Lamps, LED type for breaker 'ON', 'OFF', 'TRIP' & spring charged lamps with 2 Amp MCB for controlling. iv) Digital Voltmeter of suitable range (to measure 0-500V), for 3 phase 4 wire operation with LED display and in built-in-selector switch control with 2 Amp MCB. v) Digital Ammeter of suitable range with for 3 phase 4 wire operation with LED display and in built-in-selector switch control with 2 Amp MCB & suitable rating CT.				
	Buscoupler 01 Nos. 400 A, 35 kA, 4 Pole, microprocessor release with O/L, S/C & inbuilt E/F protection with interlocked door, automatic safety shutters, mechanical ON/OFF and service/ test/isolated position indicators and frame earthing contact, conforming to IS-13947-2 1993 as amended up-to-date complete with necessary Auxillary contact & MCB as per Drawing/specification. Buscoupler shall have - i) Phase Indication Lamps, LED type, for RYB with 2 Amp control MCB. ii) Breaker 'ON', 'OFF', & spring charged LED lamps with 2 Amp MCB for controlling. iii) Electrical & Mechanical Interlocking between both incomers & Buscoupler.				

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
	Busbar 4P aluminium bus bars of 600 A capacity with heat shrinkable coloured sleeves incl. SMC bus bars supports at required intervals complete for cross section, size supports & their spacing etc. for withstanding fault level of 50 KA for 1 sec. Outgoings 2 Nos. MCCB, 250A, 4P, 35 kA with adjustable setting, microprocessor release with O/L, S/C & inbuilt E/F protection. 02 Nos. 160A 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =35 KA) with inbuilt O/L & S/C protection. 06 Nos. 100 A 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =35 KA) with inbuilt O/L & S/C protection. 10 Nos. 63A 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =35 KA) with inbuilt O/L & S/C protection. Each outgoing shall have- I) Phase Indication Lamps, LED type, for RYB with 2 Amp control MCB. II) On/Off LED indication lamp with 2 Amp control MCB. III) Necessary spreader terminals, rotary handle, suitable for mounting arrangement.	1	job	850000.00	850000.00
3.03	Switch Room 02 Incomer 2 Nos. MCCB, 250A, 4P, 35 kA with adjustable setting, microprocessor release with O/L, S/C & inbuilt E/F protection, fitted with interlocked door, automatic safety shutters, mechanical ON/OFF and service/ test/isolated position indicators and frame earthing contact, conforming to IS-13947-2 1993 as amended up-to-date complete with Independent Electrical & manual spring closing mechanism, Microprocessor release (EMI & EMC certified) for over current, earth fault & short circuit protection, Shunt trip coil 24V D.C / 220V A.C, Breaker Control Switch - 16A, Test terminal block set, circuits as per standard practice, auxiliary contactors with contacts (minimum 4NO+4NC) for positive interlocking of the breakers, necessary interlocking with PLC auto controls with all protection i/e Earth fault, Under/Over Voltage, Under/Over Frequency, Current Unbalance, etc. and Real-time on-line display of measurements, Current : phase / neutral / earth, average, max, % loading, Voltage : Phase, Line and with communication port facility etc. Each Incomer shall have following Items :- i) Intelligent multi function digital meter to read V,A,kVA, KW, kVAR, PF, Hz etc with communication facility (RS485 port) and LED display with required Nos CTs, 250/5, 15 VA, class 1.0 and control circuit wiring with 2 Amp MCB for controlling % THD and individual order Harmonics upto 15th order. ii) 1 Set of Indication Lamps, LED type, R,Y,B Phase indicating lamp with 2 Amp MCB for controlling. iii) 1 Set of Indication Lamps, LED type for breaker 'ON', 'OFF', 'TRIP' & spring charged lamps with 2 Amp MCB for controlling. iv) Digital Voltmeter of suitable range (to measure 0-500V), for 3 phase 4 wire operation with LED display and in built-in-selector switch control with 2 Amp MCB. v) Digital Ammeter of suitable range with for 3 phase 4 wire operation with LED display and in built-in-selector switch control with 2 Amp MCB & suitable rating CT. Buscoupler 01 Nos. 250 A, 35 kA, 4 Pole, microprocessor release with O/L, S/C & inbuilt E/F protection with interlocked door, automatic safety shutters, mechanical ON/OFF and service/ test/isolated position indicators and frame earthing contact, conforming to IS-13947-2 1993 as amended up-to-date complete with necessary Auxiliary contact & MCB as per Drawing/specification. Buscoupler shall have - i) Phase Indication Lamps, LED type, for RYB with 2 Amp control MCB. ii) Breaker 'ON', 'OFF', & spring charged LED lamps with 2 Amp MCB for controlling. iii) Electrical & Mechanical Interlocking between both incomers & Buscoupler.				

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
	Busbars 4P aluminium bus bars of 300 A capacity with heat shrinkable coloured sleeves incl. SMC bus bars supports at required intervals complete for cross section, size supports & their spacing etc. for withstanding fault level of 50 KA for 1 sec. Outgoings 04 Nos. 100 A 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =25 KA) with inbuilt O/L & S/C protection. 10 Nos. 63A 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =25 KA) with inbuilt O/L & S/C protection. Each outgoing shall have- I) Phase Indication Lamps, LED type, for RYB with 2 Amp control MCB. II) On/Off LED indication lamp with 2 Amp control MCB. III) Necessary spreader terminals, rotary handle, suitable for mounting arrangement.	1	job	650000.00	650000.00
3.04	Switch Room 03 Incomer 2 Nos. MCCB, 400A, 4P, 35 kA with adjustable setting, microprocessor release with O/L, S/C & inbuilt E/F protection. fitted with interlocked door, automatic safety shutters, mechanical ON/OFF and service/ test/isolated position indicators and frame earthing contact, conforming to IS-13947-2 1993 as amended up-to-date complete with Independent Electrical & manual spring closing mechanism, Microprocessor release (EMI & EMC certified) for over current, earth fault & short circuit protection, Shunt trip coil 24V D.C / 220V A.C, Breaker Control Switch - 16A, Test terminal block set, circuits as per standard practice, auxiliary contactors with contacts (minimum 4NO+4NC) for positive interlocking of the breakers, necessary interlocking with PLC auto controls with all protection i/e Earth fault, Under/Over Voltage, Under/Over Frequency, Current Unbalance, etc. and Real-time on-line display of measurements, Current : phase / neutral / earth, average, max, % loading, Voltage : Phase, Line and with communication port facility etc. Each Incomer shall have following items :- i) Intelligent multi function digital meter to read V, A, kVA, KW, kVAR, PF, Hz etc with communication facility (RS485 port) and LED display with required Nos CTs, 400/5, 15 VA, class 1.0 and control circuit wiring with 2 Amp MCB for controlling % THD and individual order Harmonics upto 15th order. ii) 1 Set of Indication Lamps, LED type, R, Y, B Phase indicating lamp with 2 Amp MCB for controlling. iii) 1 Set of Indication Lamps, LED type for breaker 'ON', 'OFF', 'TRIP' & spring charged lamps with 2 Amp MCB for controlling. iv) Digital Voltmeter of suitable range (to measure 0-500V), for 3 phase 4 wire operation with LED display and in built-in-selector switch control with 2 Amp MCB. v) Digital Ammeter of suitable range with for 3 phase 4 wire operation with LED display and in built-in-selector switch control with 2 Amp MCB & suitable rating CT.				
	Buscoupler 01 Nos. 400 A, 35 kA, 4 Pole, microprocessor release with O/L, S/C & inbuilt E/F protection with interlocked door, automatic safety shutters, mechanical ON/OFF and service/ test/isolated position indicators and frame earthing contact, conforming to IS-13947-2 1993 as amended up-to-date complete with necessary Auxiliary contact & MCB as per Drawing/specification. Buscoupler shall have - i) Phase Indication Lamps, LED type, for RYB with 2 Amp control MCB. ii) Breaker 'ON', 'OFF', & spring charged LED lamps with 2 Amp MCB for controlling. iii) Electrical & Mechanical Interlocking between both incomers & Buscoupler.				

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
	Busbars 4P aluminium bus bars of 600 A capacity with heat shrinkable coloured sleeves incl. SMC bus bars supports at required intervals complete for cross section, size supports & their spacing etc. for withstanding fault level of 50 KA for 1 sec. Outgoings 2 Nos. MCCB, 250A, 4P, 35 kA with adjustable setting, microprocessor release with O/L, S/C & inbuilt E/F protection. 02Nos. 160A 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =25 KA) with inbuilt O/L & S/C protection. 06 Nos. 100 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =25 KA) with inbuilt O/L & S/C protection. 08 Nos. 63 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =25 KA) with inbuilt O/L & S/C protection. Each outgoing shall have- 1) Phase Indication Lamps, LED type, for RYB with 2 Amp control MCB. 2) On/Off LED indication lamp with 2 Amp control MCB. 3) Necessary spreader terminals, rotary handle, suitable for mounting arrangement.	1	job	650000.00	650000.00
3.05	CCR PANEL Incomer-I & II 2 Nos. 400A, 4P MCCB, Microprocessor based release (Ics = Icu = 35kA) with inbuilt O/L, S/C & E/F protection as per specification. Each incomer shall have i) 1 Set of ON/ OFF/TRIP Indicating LED Lamps With 2 Amp MCB For MCCB ii) Phase Indication Lamps, LED type, for RYB with 2 Amp control MCB iii) Electrical & Mechanical Interlocking between both incomers & Buscoupler iv) Digital Voltmeter of suitable range (to measure 0-500V), for 3 phase 4 wire operation with LED display and in built-in-selector switch control with 2 Amp MCB. v) Digital Ammeter of suitable range with for 3 phase 4 wire operation with LED display and in built-in-selector switch control with 2 Amp MCB & suitable rating CT. vi) Necessary spreader terminals, rotary handle, suitable for mounting arrangement. Buscoupler 1 Nos. 400A 4P MCCB, Microprocessor based release (Ics = Icu = 35kA) with inbuilt O/L, S/C & E/F protection as per specification and has following items:- i) 1 Set of ON/ OFF/TRIP Indicating LED Lamps With 2 Amp MCB For MCCB ii) Phase Indication Lamps, LED type, for RYB with 2 Amp control MCB iii) Electrical & Mechanical Interlocking between both incomers & Buscoupler iv) Necessary spreader terminals, rotary handle, suitable for mounting arrangement.	2	JOB	950000.00	1900000.00

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
	Busbars 4P aluminium bus bars of 600A capacity with heat shrinkable coloured sleeves incl. SMC bus bars supports at required intervals complete for cross section, size supports & their spacing etc. for withstanding fault level of 35 KA for 1 sec. Outgoings 4 Nos. 250A 4P MCCB, 35 kA with adjustable setting, microprocessor release with O/L, S/C & inbuilt E/F protection. 4Nos. 160A 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =35 KA) with inbuilt O/L & S/C protection. 6Nos. 100A 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =35 KA) with inbuilt O/L & S/C protection. 2Nos. 63A 4P MCCB with built in thermal magnetic release with adjustable thermal setting (Ics = Icu =35 KA) with inbuilt O/L & S/C protection. Each outgoing shall have- 1) Phase Indication Lamps, LED type, for RYB with 2 Amp control MCB. 2) On/Off LED indication lamp with 2 Amp control MCB. 3) Necessary spreader terminals, rotary handle, suitable for mounting arrangement.				
3.06	D.G SYNCHRONISING PANEL. Design, manufacture Supply, Installation, Testing and Commissioning of D.G Synchronising cum PCC Panel with AMF for 3 nos. DG Sets (2 nos. x 750 KVA and 1 no. x 500 KVA), load sharing & power distribution facilities, cubicle type, made of 2 mm thick sheet steel, totally enclosed, IP 4X, free standing, floor mounting, dust and vermin proof, indoor, compartmentalised, powder coated painting suitable for operation on 3 Phase and neutral, 415v, 50 Hz AC supply from D.G Sets (individual or in sync. & parallel load sharing mode as per load requirements) & Mains power with Al. busbars extensible on both sides, interconnections including supply & installation of following items/components (but not limited to) and as per Technical specification & site requirement complete as required: DG INCOMER- 1 & 2 1250 A TP EDO ACB (50kA) with built-in Microprocessor Based Release for (O/C, S/C, E/F Protection) with RS485 communication port facility, closing coil, Under Voltage Release - 2 No. 800 A Neutral isolation contactor -2 Nos., Shunt release -2 No., Breaker Control Switch with (T-N-C) -2 No., Auto/Manual Selector Switch -2 Nos., Auxiliary Contactor 2NO+2NC - 4 Nos. Intelligent multi function digital meter to read V,A,kVA, KW, kVAR, PF, Hz etc with communication facility (RS485 port), THD and Individual order harmonics upto 31st Order, Cl.-1.0, 96x96sq.mm., Flush Mounted - 2 No. Digital energy meter with RS-485 comm. Port CL1.0 -2 No. CTs 1250/5A, Class-0.5, 15VA for Metering (Resin Cast) -6 No. CTs 1250/5A, Class-PS, 15VA for Metering (Resin Cast) -8 No. Single Phase Preventer - 2 No. Phase Reversal Relay (Phase Sequence Relay) - 2 No. 3 Phase, 4 Wire Under & Over Voltage Relay (Auto / Manual Reset, Trip Time & Power ON Delay 1-10 Sec.) OV/UV - Adjustable - 2 No. Restricted Earth Fault Relay -2 No. Indicating lamps - R/Y/B/ON/OFF/TRIP/Spring Charged - 14 No. 2A SP Control MCB (10kA), C-Curve -16 No., SPD - Class B - 2 No., 63A TP MPCB -2 No.				

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
	DG INCOMER-3 630A TP EDO ACB (50kA) with built-in Microprocessor Based Release for (O/C, S/C, E/F Protection) (and with RS485 communication port facility, closing coil, Under Voltage Release - 1 No. 400 A Neutral isolation contactor -1 Nos., Shunt release -1 No., Breaker Control Switch with (T-N-C) -1 No., Auto/Manual Selector Switch -1 Nos., Auxiliary Contactor 2NO+2NC - 2 Nos. Intelligent multi function digital meter to read V,A,kVA, KW, kVAR, PF, Hz etc with communication facility (RS485 port), THD and Individual order harmonics upto 31st Order, CI.-1.0, 96x96sq.mm., Flush Mounted - 1 No. Digital energy meter with RS-485 comm. Port CL1.0 -1 No. CTs 630/5A, Class-0.5, 15VA for Metering (Resin Cast) -3 No. CTs 630/5A, Class-PS, 15VA for Metering (Resin Cast) -4 No. Single Phase Preventer - 1 No. Phase Reversal Relay (Phase Sequence Relay) - 1 No. 3 Phase, 4 Wire Under & Over Voltage Relay (Auto / Manual Reset, Trip Time & Power ON Delay 1-10 Sec.) OV/UV - Adjustable - 1 No. Restricted Earth Fault Relay -1 No. Indicating lamps - R/Y/B/ON/OFF/TRIP/Spring Charged - 7 No. 2A SP Control MCB (10kA), C-Curve -8 No., SPD - Class B - 1 No., 63A TP MPCB -1 No. BUSCOUPLER 2000A FP EDO ACB (50kA) WITHOUT PROTECTION RELEASE, with Under Voltage Release - 1 No., Breaker Control Switch with (T-N-C) - 1 No., Auto/Manual Selector Switch - 1 No., Auxiliary Contactor 2NO+2NC - 2 No., Indicating lamps - ON/OFF/TRIP - 3 No., 2A SP Control MCB (10kA), C-Curve - 7 No. BUSBAR Common bus, main outgoing Bus bars of 2500 Amps, TPN, Aluminium Busbars.				
	INTERLOCKING Micro PLC Interlocking among incomers from D.G.Sets (3 Nos), Mains power (2 No.) and 1no. Bus Coupler - 1 Set as required. OUTGOINGS 2000 A TP EDO ACB (50kA) with built-in Microprocessor Based Release for (O/C, S/C, E/F Protection) with RS485 communication port facility - 2 No. Shunt release -2 No., Breaker Control Switch with (T-N-C) -2 No., Auto/Manual Selector Switch -2 Nos., Auxiliary Contactor 2NO+2NC - 4 Nos.Digital Ammeter with built-in selector switch CL 0.5 -2 No.CTs 2000/5A, Class-0.5, 15VA for Metering (Resin Cast) -6 No. Indicating lamps - ON/OFF/TRIP - 6 No. 2A SP Control MCB (10kA), C-Curve -14 No. AUTO SYNCHRONISING FOR 3 NOS. DG SETS:- Genset Controller - 3 Set, MICROPLC FOR LOAD MANAGEMENT - 3 Set, DG Set Selector Switch - 1 No., Communication cabling for CAN protocol - as required. Instrumentation cabling - as required.Voltage monitoring devices, Manual/PLC/ Selector Switch - 1 No., 12-Window Annunciator - 3 No., Mimic diagram-1 Set, Engine Cranking relay - 6 No., Battery Charger with Ammeter & Voltmeter - 3 Set, Power Supply 24V DC - 3 No., UPS 1KVA - 1 No., Aux. Relays - 1 Set, Indicating lamps - 1 Set, Push Button - 1 Set, Hooter - 3 No., Control MCB - 1 Set. The complete panel shall be of TTA TYPE & comply to IEC : 61439 & shall be complete in all respect for sync. operation, load sharing, load management, AMF operation & control of 2 X 750 KVA + 1X 500 KVA D.G Sets & power distribution provisions as per technical specification & site requirements etc as required.	1	job	2250000.00	2250000.00

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
3.07	Hybrid Panel 200 KVAR (Automatic Power Factor Correction & Harmonic Filters) Design, fabrication, assembly, wiring, supply, erection, testing and commissioning of Hybrid Solution consisting of APFC Panel and AHF, to achieve 0.99 Lag and THDI / THD Voltage within IEEE 519 limits. The Hybrid panel should have an incomer of 400 Amps, 4 Pole, Horizontal draw out type ACB of fault breaking capacity 50KA (Ics=Icu=Icw=50KA for 1 secs at 440V). The Hybrid Panel should be certified as per IS16636 and IEC 61921. The capacitor bank shall comprise of capacitor units rated at 525 volt, 14% de tuning reactors, PF controllers, circuit breakers etc. The AHF should be 3 Phase, 4 Wire System. The switching device of the active compensation system shall be 3 / 2 level IGBT based. The active compensation system should filter harmonics from 2nd to 51st individual harmonic order and shall be selectable for the entire range. The active compensation system should also have feature to improve PF correction. The active compensation system should have a Multi master and Master Slave operation. The active compensation system shall have Auto de- rating feature if ambient temperature exceeds 50 Deg C. Response time shall be 100 micro Sec or less. The reactor shall be fitted with a temperature sensitive switch to trip circuits in case of high operating temperature (Panel shall be of Form 3b compartmentalization). The Passive section shall be microprocessor or integrated DSP controller based for Active and Passive section and shall be able to sense the reactive current requirement of the network and shall switch ON / OFF the required stages of a capacitor bank. The Capacitor Bank shall be of type tested design as IS 16636.				
	The heavy duty capacitor units shall be rated at 525 V. The capacitor and reactor combination represents a series resonant circuit. The circuit should be tuned such that the series resonant frequency should be below the lowest harmonic order expected to be present in the electrical network. If the lowest harmonic order expected to be present in the electrical network is likely to the 150Hz (3rd order harmonics) then the series de-tuning reactors should be of 135Hz (2.7 tuning order) with a relative impedance 14%. The Hybrid Solution should comprise of Active filter i.e. 200 A and Passive i.e. kVAR. Incomer of Hybrid Panel should be 400 A, 35kA, 4 Pole MCCB. -The Active harmonic filter should have a 250 Amp MCCB. The 14% de-tuned capacitor bank with capacitor duty contactor suitable for following step ratings: 2 nos. x 50 KVAR + 2 nos. x 25 KVAR + 5 nos. x 10 KVAR 50 KVAR- 02 No. MCCB, 100 Amps, TP, (Ics = Icu = 35 KA) with thermal magnetic release. 25 KVAR - 02 No. MCCB, 63 Amps, TP, (Ics = Icu = 35 KA) with thermal magnetic release 10 KVAR - 05 No. MCB, 25 Amps, TP. - The de-tuned capacitor bank should have Integrated DSP controller which shall control both the capacitors as well as Active Filter. Heavy duty Capacitor shall be as per MPP low loss as per standards. - Each stage of the capacitor bank should have suitable rating fuse protection. - The Solution should have surge arrestors and over temperature protection. The system should be with compatible with Grid Power OR D.G. Power Supply. The capacitor banks should be of type tested design and temperature rise test report of the capacitor bank performed at an independent laboratory should be submitted along with the offer. The Hybrid Solution described as above complete in all respect as per specification enclosed, up to the entire satisfaction of engineer In Charge. Switchgears shall be as per followings and as per specifications. LED indication lamps for RYB, breaker ON/ OFF/ TRIP with 2Amp control MCBs Set of Digital flush type calibrated Intelligent multifunction meters (with communication port) , class - 0.5 accuracy , showing V, A, PF, Hz, KW, KWH, KVAR , Total harmonic distortion with 3 Nos. cast resin current transformers of dual core CT's of 400 / 5 Amp ratio, 15 VA Class 0.5 metering.				
	Bus Bar 400 Amps with heat shrinkable coloured sleeves having 50% neutral bus as that of phase i/c DMC / SMC bus bars supports at required intervals complete as required. Set of Digital flush type calibrated Intelligent multifunction meters (with communication port) , class - 0.5 accuracy , showing V, A, PF, Hz, KW, KWH, KVAR , Total harmonic distortion with 3 Nos. cast resin current transformers of dual core CT's of 400 / 5 Amp ratio, 15 VA Class 0.5 metering.	2	job	1250000.00	2500000.00
3.08	SITC of following rating Aluminum Sandwich type Busduct suitable for indoor & outdoor application (IP-55 & 66 respectively) including supports, bends, adaptor boxes, flexible connections and other accessories as per site requirement complete as required.				

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
3.081	2500A, 100% Neutral 100 kA 415V TPN Aluminum Sandwich type Busduct IP-55, Indoor, from DG Synchronising Panel to Main MV Panel.	40	RMtr	38,500.00	1540000.00
3.082	1250A, 100% Neutral 100 kA 415V TPN Aluminum Sandwich type Busduct IP -66, Outdoor, from DG Sets toward DG Synchronising Panel.	20	RMtr	28,500.00	570000.00
3.083	1250A, 100% Neutral 100 kA 415V TPN Aluminum Sandwich type Busduct IP-55, Indoor, from DG Sets Synchronising Panel toward DG Sets & From Transformers to Main MV Panel.	100	RMtr	16,500.00	1650000.00
4	Supply and laying of LT Cable				
4.01	Supply of following size 1.1 KV grade multicore aluminium conductor XLPE insulated and PVC sheathed armoured cable as per IS : 7098:1988 (Part 1) with upto date amendment complete as required.				
4.011	4 X 16 sq. mm	300	Mtr	150.00	45000.00
4.012	4 X 35 sq. mm	300	Mtr	240.00	72000.00
4.013	3½ X 70 sq. mm	250	Mtr	385.00	96250.00
4.014	3½ X 185 sq. mm	2500	Mtr	1,095.00	2737500.00
4.02	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc.direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc. , complete as required.				
4.021	63 mm dia (OD-63 mm & ID-51 mm nominal)	500	Mtr	195.00	97500.00
4.03	Supplying and laying of following size DWC HDPE pipe ISI marked along with all accessories like socket, bend, couplers etc. conforming to IS 14930, Part II complete with fitting and cutting, jointing etc.direct in ground (75 cm below ground level) including excavation and refilling the trench but excluding sand cushioning and protective covering etc. , complete as required.				
4.031	120 mm dia (OD-120 mm & ID-103 mm nominal)	300	Mtr	265.00	79500.00
4.04	Supply and Laying of additional 1 no. 63 mm dia OD DWC Pipe along with all accessories like sockets, bends, couplers etc. complete with fitting, cutting and jointing etc. in existing trench (75 cm below ground level) complete as required.	100	Mtr	115.00	11500.00
4.05	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on surface of wall/ culvert etc. as required.				
4.051	Upto 35 sq. mm (clamped with 1mm thick saddle)	100	Mtr	35.00	3500.00
4.052	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	50	Mtr	55.00	2750.00
4.053	Above 95 sq. mm and upto 185 sq. mm. (clamped with 25/40x3mm MS flat clamp)	500	Mtr	65.00	32500.00
4.06	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of following size in the existing RCC/ HUME/ METAL/ HDPE pipe as required.				
4.061	Upto 35 sq. mm	100	Mtr	35.00	3500.00
4.062	Above 35 sq. mm and upto 95 sq. mm	50	Mtr	55.00	2750.00
4.063	Above 95 sq. mm and upto 185 sq. mm	1500	Mtr	65.00	97500.00
4.07	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required.				
4.071	Upto 35 sq. mm	100	Mtr	35.00	3500.00
4.072	Above 35 sq. mm and upto 95 sq. mm	50	Mtr	55.00	2750.00

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
4.073	Above 95 sq. mm and upto 185 sq. mm	300	Mtr	65.00	19500.00
4.08	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
4.081	4 X 16 sq. mm (28mm)	20	Each	250.00	5000.00
4.082	4 X 35 sq. mm (32mm)	4	Each	300.00	1200.00
4.083	3½ X 70 sq. mm (38mm)	4	Each	400.00	1600.00
4.084	3½ X 120 sq. mm (45mm)	8	Each	800.00	6400.00
4.085	3½ X 185 sq. mm (57mm)	26	Each	1,200.00	31200.00
4.09	Supplying and making straight through joint with heat shrinkable kit including ferrules and other jointing materials for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
4.091	3½ X 185 sq. mm	5	Each	6,500.00	32500.00
4.10	Dismantling of the following existing old Electrical panels from old Power house and shifting to AAI dismantle yard/ designated space within the permises by using suitable crane, fork lift and special tools complete as per site requirement as required.				
4.101	MV Essential Panel	1	Nos	5,000.00	5000.00
4.102	MV Non Essential Panel	1	Nos	5,000.00	5000.00
4.103	DG AMF Panel	2	Nos	5,000.00	10000.00
4.104	Capacitor Panel 160 KVAR	1	Nos	5,000.00	5000.00
4.105	HT PANEL (Oil Type) 11 KV	4	Nos	10,000.00	40000.00
4.106	Transformer 750 KVA, 11/0.433 KV or 33KV/11 KV	3	Nos	15,000.00	45000.00
4.107	DG Set 320 KVA	1	Nos	15,000.00	15000.00
5	Supply and laying of HT Cable				
5.01	Supply of 3 Core x 185 Sq. mm., 33 KV grade XLPE insulated & PVC sheathed, armoured, Aluminium conductor cable conforming to IS : 7098:1988 (Part II) with the upto date amendment complete as required.	2200	Mtr	1,950.00	4290000.00
5.02	Supply of 125MM outer dia (PE-100 grade PN 10 rated) HDPE pipe confirming to Indian Standard IS 4984:2016 with latest amendment, complete with all associated accessories like end cap etc as per site requirement complete as required.	700	Mtr	315.00	220500.00
5.03	Laying of 125 MM outer dia (PE-100 grade PN 10 rated) HDPE pipe in ground with depth not less than 1.20 mtr. and as per site requirement through Horizontal Direct Drilling method including jointing, fixing necessary accessories like end plugs, providing suitable size GI pull wire for pulling cables and provision of suitable size manholes with cover as per the requirement of site etc. as required.	1000	Mtr	125.00	125000.00
5.04	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 33 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
5.041	Above 120 sq. mm and upto 400 sq. mm	1100	Mtr	325.00	357500.00
5.05	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 33KV grade of following size in the existing RCC/ HUME/ METAL/ HDPE pipe as required.				
5.051	Above 120 sq. mm and upto 400 sq. mm	1000	Mtr	150.00	150000.00

S.No.	DESCRIPTION OF ITEMS	QTY	Unit	Rate	Amount
5.06	Supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required :				
5.061	3 X 185 sq. mm	10	Set	14,500.00	145000.00
5.07	Supplying and making straight through cable jointing with heat shrinkable jointing kit complete with all accessories including ferrules suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required :				
5.071	3 X 185 sq. mm	3	Set	28,500.00	85500.00
6	Earthing				
6.01	Provision of Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	8	Set	8500.00	68000.00
6.02	Provision of Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	4	Set	16500.00	66000.00
6.03	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	50	Mtr	225.00	11250.00
6.04	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	10	Mtr	925.00	9250.00
6.05	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia medium class G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	20	Mtr	525.00	10500.00
6.06	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia medium class G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.	50	Mtr	1400.00	70000.00
6.07	Providing and fixing earth bus of 50 mm X 5 mm copper strip on surface for connections etc. as required.	40	Mtr	1900.00	76000.00
Total (Excluding GST) =P3					35954900.00

(Rupees Three Crore Fifty Nine Lakh Fifty Four Thousand Nine Hundred Only)

Note : GST Extra, as applicable.

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07/03/2024
Assistant General Manager (E-E)-I
AAI,DABH, Airport, Indore.