



भारतीय विमानपत्तन प्राधिकरण AIRPORTS AUTHORITY OF INDIA

No. AAI/CIA/AMED-VII/LTP-ADMIN/2020-21/A-22

Date: 14.10.2020.

M/s. Shanti Enterprises Elect. Pvt. Ltd,
No. 37, Josier Street,
Chennai - 600 034.

Sub: Replacement of cooling towers of DG, Transformers, DG Sets, LT Panels, Supply & laying of HT cables, LT cables for Substations and Fire Station etc., at Chennai Airport.

SH: Replacement of Transformer, DG Sets and LT Panels at Admin Power House/ Remote Bay Power House/ Residential Colony Power House.

Ref: Tender ID: 2020_AAI_54965_1.
Tender Ref. No.: AAI/CHE/AMED-VII/2020/03.

Dear Sir (s),

1. Your E-tender for the above mentioned work is hereby accepted on behalf of the Chairman, Airports Authority of India, at the item rates quoted by you totaling to **Rs. 3,06,90,180/-** (Rupees Three Crores Six Lakhs Ninety Thousand One Hundred and Eighty Only) which is 23.21% below the Justified Cost of **Rs. 3,99,64,632/-** (Rupees Three Crores Ninety Nine Lakhs Sixty Four Thousand Six Hundred and Thirty Two Only) which is inclusive of all the taxes, duties and levies etc., except GST which will be paid extra as applicable.
2. Jt. General Manager (Engg-Elect)-I, AMED, Operational Office, Airports Authority of India, Chennai Airport, Chennai - 600 016 shall be the Engineer-In-Charge of the work. You are requested to attend to the office of Jt. General Manager (Engg-Elect)-I, AMED, AAI, Chennai Airport by **23.10.2020** to sign and complete the contract agreement. The contract agreement shall be executed on a non-judicial stamp paper of value Rs.100/- (Rupees One Hundred only) and the cost of the stamp paper shall be borne by you.
3. The Earnest Money amount of **Rs. 7,99,300/-** (Rupees Seven Lakhs Ninety Nine Thousand and Three Hundred Only) received along with your E-tender will be treated and converted as part of Security Deposit as per Clause 1A of General Conditions of Contract. Please deposit the balance amount of **Rs. 22,69,718/-** (Rupees Twenty Two Lakhs Sixty Nine Thousand Seven Hundred and Eighteen Only) towards balance Security Deposit within 10 days from the date of issue of this letter, failing which, the same will be deducted as per Clause 1A of General Conditions of Contract.
4. You are also directed to contact the Jt. General Manager (Engg-Elect)-I, Airport Maintenance Electrical Division, Operational Office, Airports Authority of India, Chennai Airport or his Authorised representative immediately for the execution of the above work.



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AIRPORTS AUTHORITY OF INDIA

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5. You are requested to comply with the provision of Contract Labour Regulation and Abolition) Act 1970 and Contract Labour (Regulation and Abolition) Central Rules 1971 and Minimum Wages Act and Rules thereof Central and State Governments.
6. Please note that the time allowed for carrying out the work shall be **05 (Five) Months** which shall be reckoned from the 10th day of issue of this letter.
7. Any further correspondence in connection with the contract should normally be addressed to the Engineer-In-Charge.
8. 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.

Yours faithfully,

(G.N.D.Kennedy)
Joint General Manager (Engg - Elect)-I,
For and on behalf of the Chairman,
Airports Authority of India.

Encl: Schedule of Quantity (14 Pages)

AIRPORTS AUTHORITY OF INDIA
CHENNAI INTERNATIONAL AIRPORT
CHENNAI - 600 016

Schedule

NAME OF WORK: Replacement of cooling towers of DG, Transformers, DG Sets, LT Panels supply & laying of HT cables, LT cables for Substations and Fire station etc at Chennai Airport. **SH:** Replacement of Transformer, DG Sets and LT Panels at Admin Power House/Remote Bay Power House/Residential Colony Power House.

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
1	SH-I: SUPPLY of SUB-STATION EQUIPMENT				
1.01	Fabrication and supply of cubical type LT Panel - tested design as per IEC 61439-1 & 2 suitable for 415 V, 3 Phase, 4 wire 50 Hz AC supply, made out of 1.6 mm thick CRCA sheet steel/GI Sheet for frame work and covers, 3 mm thick for gland plates, dust tight, vermin proof, totally enclosed, Form 4b compartmentalised design, floor mounting, free standing, extensible on both sides i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 4000 Amps capacity FP Aluminium bus bars of high conductivity, DMC/SMC bus bar supports with short circuit withstand capacity of 50 KA for 1Sec., 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 copper earth bar of size 50 mm x 5 mm at the rear with 2 nos earth stud, solid connections from main bus bars to switch gears with required size of Aluminium bus bars and control wiring with 2.5 Sq.mm. FRLS PVC insulated copper conductor cable, cable alleys, cable gland plates in two half and suitable for indoor operation, complete with all accessories, interconnection, earthing, alignment with the bus ducts etc., as required and comprising of following switch gears: (Non Essential Panel at Admin Power House)				
1.02	Incoming				
1.03	Two No. 3200 A, 50KA (Ics=Icu), Four Pole, EDO type Moulded case design ACB as INCOMER conforming to IEC 60947-2:2003 as ammended up-to- date with LCD display, inbuilt Metering, Overcurrent, Short circuit & Earth fault Protection with variable current & time delay setting, Instantaneous protection, current demand & phase to neutral voltage on display, % loading of each phases on LED/LCD bar graphs, with Microprocessor Based Releases and provided with separate suitable rated Cast Resin CTs with Digital Multifunction Meter having RS 485 port, shunt trip coil 220 V AC, Auxiliary power unit, LED Phase Indication Lamps alongwith 2 Amps control MCBs as backup protection, Breaker ON/OFF/TRIP/Spring Charge LED indicating lights alongwith control MCBs as per standard practice, Mechanical/ Electrical Interlocking arrangement between the incomers & bus coupler alongwith interlocking relays, mechanical lock & keys etc. i/c Control MCBs, control terminals & wirings as required.				
1.04	Outgoing:-				
1.05	a) Four No. 1250 A, 50KA (Ics=Icu), Four Pole, EDO type moulded case design ACB as OUTGOING conforming to IEC 60947-2:2003 as ammended up-to- date with LCD display, inbuilt Metering, Overcurrent, Short circuit & Earth fault Protection with variable current & time delay setting, Instantaneous protection, current demand & phase to neutral voltage on display, % loading of each phases on LED/LCD bar graphs, with Microprocessor Based Releases and provided with separate suitable rated Cast Resin CTs with Digital Multifunction Meter having RS 485 port, shunt trip coil 220 V AC, Auxiliary power unit, Breaker ON/ OFF/ TRIP/ Spring Charge LED indicating lights alongwith control MCBs as per standard practice etc. i/c Control MCBs, control terminals & wirings etc. as required.				
1.06	b) Two No. 1000 A, 50KA (Ics=Icu), Four Pole, EDO type moulded case design ACB as OUTGOING conforming to IEC 60947-2:2003 as ammended up-to- date with LCD display, inbuilt Metering, Overcurrent, Short circuit & Earth fault Protection with variable current & time delay setting, Instantaneous protection, current demand & phase to neutral voltage on display, % loading of each phases on LED/LCD bar graphs, with Microprocessor Based Releases and provided with separate suitable rated Cast Resin CTs with Digital Multifunction Meter having RS 485 port, shunt trip coil 220 V AC, Auxiliary power unit, Breaker ON/ OFF/ TRIP/ Spring Charge LED indicating lights alongwith control MCBs as per standard practice etc. i/c Control MCBs, control terminals & wirings etc. as required.				

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
1.07	c) Eight Nos. 630 A, 50KA (Ics=Icu), Four Pole, EDO type moulded case design ACB as OUTGOING conforming to IEC 60947-2:2003 as ammended up-to- date with LCD display, inbuilt Metering, Overcurrent, Short circuit & Earth fault Protection with variable current & time delay setting, Instantaneous protection, current demand & phase to neutral voltage on display, % loading of each phases on LED/LCD bar graphs, with Microprocessor Based Releases and provided with separate suitable rated Cast Resin CTs with Digital Multifunction Meter having RS 485 port, shunt trip coil 220 V AC, Auxilary power unit, Breaker ON/ OFF/ TRIP/ Spring Charge LED indicating lights alongwith control MCBs as per standard practice etc. i/c Control MCBs, control terminals & wirings etc. as required.				
1.08	d) Six Nos. 400 A, 36 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED indication lamp along with control MCBs as per Standard practice etc. as required.				
1.09	e) Six Nos. 250 A, 36 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED indication lamp along with control MCBs as per Standard practice etc. as required.				
1.1	f) Four Nos. 100 A, 36 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED Indication lamp along with control MCBs as per Standard practice etc. as required.				
1.11	Bus Couplers:-				
1.12	One No 3200 Amps each Four Pole horizontal drawout EDO type Modular Air circuit breaker of fault breaking capacity 50 KA (Ics=Icu) fitted with in built metering, interlocked door, automatic safety shutter, Mechanical ON/OFF and service/test/isolation position indicators and frame earthing contact, conforming to IEC 60947-2:2003 as ammended up-to-date, Breaker ON/ OFF/ TRIP/ Spring Charge LED indicating lights alongwith control MCBs as per standard practice including suitable size Adopter Chamber in the first part to attach with the second part etc., as required.				
1.13	Busbar:				
1.14	One Set of FP Aluminium Bus Bars of minimum of 4000 A Capacity with heat shrinkable coloured sleeves and i/c DMC/SMC bus bar cross section supports & their spacing etc. for meeting fault level of 50 KA for 1 Sec with adequate size aluminium busbar for interconnection of incomer and outgoing switchgears and 50x5mm coper earth strip etc, as required.				
1.15	Interlocking : Electrical through advance contacts in ACB's (Incommer & Bus coupler) and mechanical interlocking should be to ensure that only one supply is available at a time on each section of bus and to eliminate any possibility of accidently approaching two supply at one bus section.				
1.16	All as above 1.01 to 1.15	1.00	Job	51,03,000.00	51,03,000.00
2	Fabrication and supply of cubical type LT Panel - tested design as per IEC 61439-1 & 2 suitable for 415 V, 3 Phase, 4 wire 50 Hz AC supply, made out of 1.6 mm thick CRCA sheet steel/GI Sheet for frame work and covers, 3 mm thick for gland plates, dust tight, vermin proof, totally enclosed, Form 4b compartmentalised design , floor mounting, free standing, extensible on both sides i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 1200 Amps capacity FP Aluminium bus bars of high conductivity, DMC/SMC bus bar supports with short circuit withstand capacity of 50 KA for 1Sec., bottom base channel of MS section not less than 100 mm x50 mm x 5 mm thick, fabrication shall be done in transportable sections, entire panel shall have a common copper earth bar of size 50mm x 5 mm at the rear with 2 nos earth stud, solid connections from main bus bars to switch gears with required size of Aluminium bus bars and control wiring with 2.5 Sq.mm. FRLS PVC insulated copper conductor cable, cable alleys, cable gland plates in two half and suitable for indoor operation, complete with all accessories, interconnection, earthing, alignment with the bus ducts etc., as required and comprising of following switch gears: (Essential Panel at Admin Power House)				

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
2.01	Incoming:				
2.02	Two No. 1000 A, 50KA (Ics=Icu), Four Pole, EDO type Moulded case design ACB as INCOMER conforming to IEC 60947-2:2003 as ammended up-to- date with LCD display, inbuilt Metering, Overcurrent, Short circuit & Earth fault Protection with variable current & time delay setting, Instantaneous protection, current demand & phase to neutral voltage on display, % loading of each phases on LED/LCD bar graphs, with Microprocessor Based Releases and provided with separate suitable rated Cast Resin CTs with Digital Multifunction Meter having RS 485 port, shunt trip coil 220 V AC, auxiliary power unit, LED Phase Indication Lamps, Circuit alongwith 2 Amps control MCBs as backup protection, breaker ON/OFF/TRIP/Spring Charge LED indicating lights alongwith control MCBs as per standard practice, Mechanical/ Electrical Interlocking arrangement between the incomers & bus coupler alongwith interlocking relays, mechanical lock & keys etc. i/c Control MCBs, control terminals & wirings as required.				
2.03	Outgoing:-				
2.04	a) Eight Nos. 400 A, 50 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED indication lamp along with control MCBs as per Standard practice etc. as required.				
2.05	b) Six Nos. 250 A, 36 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED indication lamp along with control MCBs as per Standard practice etc. as required.				
2.06	c) Eight Nos. 100 A, 36 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED indication lamp along with control MCBs as per Standard practice etc. as required.				
2.07	d) Two Nos. of Three Phase Surge Protection Device (SPD) having 100KA 10/350 micro seconds neutral to earth, 50 KA 10/350 micro sec line to neutral, with limiting voltage less than 1.5 KV shall be connected on the mains power entry point at the incomers & shall be of modular type.				
2.08	Bus Couplers:-				
2.09	One No 1000 Amps each Four Pole horizontal drawout EDO type Modular Air circuit breaker of fault breaking capacity 50 KA (Ics=Icu) fitted with in built metering, interlocked door, automatic safety shutter, mechanical ON/OFF and service/test/isolation position indicators and frame earthing contact, conforming to IEC 60947-2:2003 as ammended up-to-date, Breaker ON/ OFF/ TRIP/ Spring Charge LED indicating lights alongwith control MCBs as per standard practice including suitable size Adopter Chamber in the first part to attach with the second part etc., as required.				
2.10	Busbar:				
2.11	a) One Set of FP Aluminium Bus Bars of minimum of 1200 A Capacity with heat shrinkable coloured sleeves and i/c DMC/SMC bus bar cross section supports & their spacing etc. for meeting fault level of 50 KA for 1 Sec with adequate size aluminium busbar for interconnection of incomer and outgoing switchgears and 50x5mm coper earth strip etc, as required.				
2.12	b) Interlocking : Electrical through advance contacts in ACB's (incommer & Bus coupler) and mechanical interlocking should be to ensure that only one supply is available at a time on each section of bus and to eliminate any possibility of accidently approaching two supply at one bus section.				
2.13	All as above 2.01 to 2.12	1.00	Job	15,07,180.00	15,07,180.00

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
3.00	Fabrication and supply of cubical type LT Panel - tested design as per IEC 61439-1 & 2 suitable for 415 V, 3 Phase, 4 wire 50 Hz AC supply, made out of 1.6 mm thick CRCA sheet steel/GI Sheet for frame work and covers, 3 mm thick for gland plates, dust tight, vermin proof, totally enclosed, Form 4b compartmentalised design, floor mounting, free standing, extensible on both sides i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 1600 Amps capacity FP Aluminium bus bars of high conductivity, DMC/SMC bus bar supports with short circuit withstand capacity of 50 KA for 1Sec., 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 copper earth bar of size 50mm x 5 mm at the rear with 2 nos earth stud, solid connections from main bus bars to switch gears with required size of Aluminium bus bars and control wiring with 2.5 Sq.mm. FRLS PVC insulated copper conductor cable, cable alleys, cable gland plates in two half and suitable for indoor operation, complete with all accessories, interconnection, earthing, alignment with the bus ducts etc., as required and comprising of following switch gears: (METRO AC Panel)				
3.01	Incoming:				
3.02	Two No. 1250 A 50KA (Ics=Icu), Four Pole, EDO type moulded case design ACB as INCOMER conforming to IEC 60947-2:2003 as ammended up-to- date with LCD display, inbuilt Metering, Overcurrent, Short circuit & Earth fault Protection with variable current & time delay setting, Instantaneous protection, current demand & phase to neutral voltage on display, % loading of each phases on LED/LCD bar graphs, with Microprocessor Based Releases and provided with separate suitable rated Cast Resin CTs with Digital Multifunction Meter having RS 485 port, shunt trip coil 220 V AC, auxiliary power unit, LED Phase Indication Lamps, Circuit alongwith 2 Amps control MCBs as backup protection, breaker ON/OFF/TRIP/Spring Charge LED indicating lights alongwith control MCBs as per standard practice, Mechanical/ Electrical Interlocking arrangement between the Incomers & bus coupler alongwith interlocking relays lock & keys etc. i/c Control MCBs, control terminals & wirings as required.				
3.03	Outgoing:-				
3.04	a) Two no 630 A, 50 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED indication lamp along with control MCBs as per Standard practice etc. as required.				
3.05	b) Four Nos. 400 A, 36 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED indication lamp along with control MCBs as per Standard practice etc. as required.				
3.06	c) Two nos. 250 A, 36 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED indication lamp along with control MCBs as per Standard practice etc. as required.				
3.07	d) Six nos. 100 A, 36 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED indication lamp along with control MCBs as per Standard practice etc. as required.				
3.08	Bus Couplers:-				
3.09	One No 1250 Amps each Four Pole horizontal drawout EDO type Modular Air circuit breaker of fault breaking capacity 50 KA (Ics=Icu) fitted with in built metering, interlocked door, automatic safety shutter, mechanical ON/OFF and service/ test/ isolation position indicators and frame earthing contact, conforming to IEC 60947-2:2003 as ammended up-to- date, Breaker ON/ OFF/ TRIP/ Spring Charge LED indicating lights alongwith control MCBs as per standard practice including suitable size Adopter Chamber in the first part to attach with the second part etc., as required.				
3.10	Busbar:				

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
3.11	One Set of FP Aluminium Bus Bars of minimum of 1600 A Capacity with heat shrinkable coloured sleeves and i/c DMC/SMC bus bar cross section supports & their spacing etc. for meeting fault level of 50 KA for 1 Sec with adequate size aluminium busbar for interconnection of incomer and outgoing switchgears and 50x5mm copper earth strip etc, as required.				
3.12	Interlocking: Electrical through advance contacts in ACB's (incomer & Bus coupler) and mechanical interlocking should be to ensure that only one supply is available at a time on each section of bus and to eliminate any possibility of accidentally approaching two supply at one bus section.				
3.13	All as above 3.01 to 3.12	1.00	Job	12,07,955.00	12,07,955.00
4.00	Fabrication and supply of cubical type LT Panel - tested design as per IEC 61439-1 & 2 suitable for 415 V, 3 Phase, 4 wire 50 Hz AC supply, made out of 1.6 mm thick CRCA sheet steel/GI Sheet for frame work and covers, 3 mm thick for gland plates, dust tight, vermin proof, totally enclosed, Form 4b compartmentalised design, floor mounting, free standing, extensible on both sides i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 1600 Amps capacity FP Aluminium bus bars of high conductivity, DMC/SMC bus bar supports with short circuit withstand capacity of 50 KA for 1Sec., 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 copper earth bar of size 50mm x 5 mm at the rear with 2 nos earth stud, solid connections from main bus bars to switch gears with required size of Aluminium bus bars and control wiring with 2.5 Sq.mm. FRLS PVC insulated copper conductor cable, cable alleys, cable gland plates in two half and suitable for indoor operation, complete with all accessories, interconnection, earthing, alignment with the bus ducts etc., as required and comprising of following switch gears: (SR AC Panel)				
4.01	Incoming:-				
4.02	Two No. 1250 A, 50KA (Ics=Icu), Four Pole, EDO type moulded case design ACB as INCOMER conforming to IEC 60947-2:2003 as ammended up-to- date with LCD display, inbuilt Metering, Overcurrent, Short circuit & Earth fault Protection with variable current & time delay setting, Instantaneous protection, current demand & phase to neutral voltage on display, % loading of each phases on LED/LCD bar graphs, with Microprocessor Based Releases and provided with separate suitable rated Cast Resin CTs with Digital Multifunction Meter having RS 485 port, shunt trip coil 220 V AC, auxiliary power unit, LED Phase Indication Lamps, Circuit alongwith 2 Amps control MCBs as backup protection, breaker ON/OFF/TRIP/Spring Charge LED indicating lights alongwith control MCBs as per standard practice, Mechanical/ Electrical Interlocking arrangement between the incomers & bus coupler alongwith interlocking relays lock & keys etc. i/c Control MCBs, control terminals & wirings as required.				
4.03	Outgoing:-				
4.04	a) Four Nos. 400 A, 36 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED indication lamp along with control MCBs as per Standard practice etc. as required.				
4.05	b) Two nos. 250 A, 36 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED indication lamp along with control MCBs as per Standard practice etc. as required.				
4.06	c) Six nos. 100 A, 36 KA, Four Pole MCCB (Ics=Icu) with inbuilt O/L and S/C fault Protection with microprocessor based release and provided with three nos. Cast resin of suitable rating CTs with digital Multifunction Meter having RS 485 port, ON/OFF/TRIP LED indication lamp along with control MCBs as per Standard practice etc. as required.				
4.07	Bus Couplers:-				

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
4.08	One No 1250 Amps each Four Pole horizontal drawout EDO type Modular Air circuit breaker of fault breaking capacity 50 KA (Ics=Icu) fitted with in built metering, interlocked door, automatic safety shutter, mechanical ON/OFF and service/test/isolation position indicators and frame earthing contact, conforming to IEC 60947-2:2003 as ammended up-to-date, Breaker ON/ OFF/ TRIP/ Spring Charge LED indicating lights alongwith control MCBs as per standard practice including suitable size Adopter Chamber etc., as required.				
4.09	Busbar:				
4.10	One Set of FP Aluminium Bus Bars of minimum of 1600 A Capacity with heat shrinkable coloured sleeves and i/c DMC/SMC bus bar cross section supports & their spacing etc. for meeting fault level of 50 KA for 1 Sec with adequate size aluminium busbar for interconnection of incomer and outgoing switchgears and 50x5mm coper earth strip etc, as required.				
4.11	Interlocking: Electrical through advance contacts in ACB's (incommer & Bus coupler) and mechanical interlocking should be to ensure that only one supply is available at a time on each section of busand to eliminateany possibility of accidently approaching two supply at one bus section.				
4.12	All as above 4.01 to 4.11	1.00	Job	8,61,720.00	8,61,720.00
5.00	Design and Supply of 400 KVAR, 14 stage (4x12.5 KVAR + 6x25 KVAR + 4x50 KVAR) Contactor switched Detuned APFC capacitor panel with suitable 14 stage APFC relay including fabrication, with 440 volt 7% detuned reactor unit and 480 volts suitable rating capacitor to get desired filtered output with main incomer as MCCB of rating 630 Amps 50 KA, 4P with inbuilt O/C, S/C and E/F Protection with Microprocessor Based Releases and provided with suitable rating Resin Cast CTs with Digital Multifunction Meter with RS 485 port, ON/OFF/TRIP LED Indication Lamps and LED Phase Indication Lamps with control MCBs and suitable rating MCCBS as outgoings with microprossor based release, ON/OFF/TRIP LED Indication Lamps with control MCBs as per standard practice and suitable size enclosure made out of 1.6 mm thick CRCA sheet steel/ GI Sheet for frame work and covers, 3 mm thick for gland plates, dust tight, vermin proof, totally enclosed with necessary mounting assembly and accessories as per Specification. (Detuned APFC Panel)	2.00	Job	6,12,490.00	12,24,980.00
6.00	Supply of 320 KVA Prime Duty DG Set comprising of following: (DG Set at Remote Bay PH)				
6.01	01 No. Alternator of suitable for generating 320 KVA, 415 V, 3 Phase, 50 Hz, 0.8 PF, 1500 RPM, Self Ventilated, Self Regulated and Self Excited with Brushless Type conforming to IS 4722 as specified and as required.				
6.02	01 No. Multi Cylinder, 4 Stroke, Turbo Charged Diesel Engine developing not less than 399 HP at 1500 RPM suitable for above Alternator and Complete with all accessories such as Base Frame, AVM Pads, Battery [2 Nos. of 12 Volts, 25 Plates 180 AH], All Types of Filters, Coupling, Starter, Residential Silencer, Lightning arrestor spike, Automatic Electronic Speed Governing Mechanism, Control Panel, Compact Radiator etc. and conforming to relevant IS with up to date amendments as specified and as required.				
6.03	1 No. Fuel Tank of Capacity not less than 990 Ltrs., Complete with connecting Pipes, Valves, Fuel Level Indicators etc., as specified and as required.				
6.04	Customised Compact Modular Type Tested Acoustic Enclosure suitable for the above DG Set to limit the Noise Level to 75 dB (A) at a distance of 1 Mtr., from the Enclosure, made out of CRCA sheet of 1.6 mm thickness for the Outside Cover and Doors and for Inside Cover with 0.8 mm thick perforated CRCA Sheet, Louvers of thickness 1.6 mm CRCA Sheet for Fresh Air and Hot Air, Powder coated after Seven Tank Process, Neoprene Rubber Gasket and heavy duty SS locks with SS Hinges,				
6.05	Acoustic Lining made up of high quality rock wool/glass wool/mineral wool of density 64Kg/M3 with Aluminum Cladding, Base Frame of suitable Size Channel, provision to accommodate Batteries, and Support for Silencers, provided with 2 Nos. LED Fittings and Switches and Enclosure High Temperature Safety Device etc., as required.				

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
6.06	Exhaust gas piping for above DG of suitable dia.welded black MS, B class pipe confirming to IS:3589 cut to required lengths and installed with necessary bends, supports and clamps, bellows anti vibration mountings, insulation of exhaust system with mineral wool/Rockwool, 50 mm thick wire mesh & aluminium cladding etc., as required as per specifications.				
6.07	MS class 'C' pipe of suitable dia.between fuel tank and diesel engine with Complete valves, level indications & accessories as required as per specifications.				
6.08	G.S.S square/rectangular ducting for dissipation of hot air to outside for above DG made out of 1.25 mm thick ,to be fabricated complete with gaskets, elbows, splitters, vanes, supports, etc. as per specifications to meet site requirement as required.				
6.09	ALL AS ABOVE 6.00 To 6.08	2.00	Job	18,10,200.00	36,20,400.00
7.00	Supply of 500 KVA Prime Duty DG Set comprising of following: (DG Set at Admin Power House)				
7.01	01 No. Alternator of suitable for generating 500 KVA 415 V, 3 Phase, 50 Hz, 0.8 PF, 1500 RPM, Self Ventilated, Self Regulated and Self Excited with Brushless Type conforming to IS 4722 as specified and as required.				
7.02	01 No. Multi Cylinder, 4 Stroke, Turbo Charged Diesel Engine developing not less than 587 HP at 1500 RPM suitable for above Alternator and Complete with all accessories such as Base Frame, AVM Pads, Battery [2 Nos. of 12 Volts, 25 Plates 180 AH], All Types of Filters, Coupling, Starter, Residential Silencer, Lightning arrestor spike, Automatic Electronic Speed Governing Mechanism,Control Panel, Compact Radiator etc. and conforming to relevant IS with up to date amendments as specified and as required.				
7.03	1 No. Fuel Tank of Capacity not less than 990 Ltrs., Complete with connecting Pipes, Valves, Fuel Level Indicators etc., as specified and as required.				
7.04	Customised Compact Modular Type Tested Acoustic Enclosure suitable for the above DG Set to limit the Noise Level to 75 dB (A) at a distance of 1 Mtr., from the Enclosure, made out of CRCA sheet of 1.6 mm thickness for the Outside Cover and Doors and for Inside Cover with 0.8 mm thick perforated CRCA Sheet, Louvers of thickness 1.6 mm CRCA Sheet for Fresh Air and Hot Air, Powder coated after Seven Tank Process, Neoprene Rubber Gasket and heavy duty SS locks with SS Hinges.				
7.05	Acoustic Lining made up of high quality rock wool/glass wool/ mineral wool of density 64Kg/M3 with Aluminum Cladding, Base Frame of suitable Size Channel, provision to accommodate Batteries, and Support for Silencers, provided with 2 Nos. LED Fittings and Switches and Enclosure High Temperature Safety Device etc., as required.				
7.06	Exhaust gas piping for above DG of suitable dia.welded black MS, B class pipe confirming to IS:3589 cut to required lengths and installed with necessary bends, supports and clamps, bellows anti vibration mountings, insulation of exhaust system with mineral wool/Rockwool, 50 mm thick wire mesh & aluminium cladding etc., as required as per specifications.				
7.07	MS class 'C' pipe of suitable dia.between fuel tank and diesel engine with Complete valves, level indications & accessories as required as per specifications.				
7.08	G.S.S square/rectangular ducting for dissipation of hot air to outside for above DG made out of 1.25 mm thick ,to be fabricated complete with gaskets, elbows, splitters, vanes, supports, etc. as per specifications to meet site requirement as required.				
7.09	ALL AS ABOVE 7.00 To 7.08	2.00	Job	25,58,850.00	51,17,700.00

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
8.00	Fabrication and supply of cubical type LT Panel - tested design as per IEC 61439-1 & 2 suitable for 415 V, 3 Phase, 4 wire 50 Hz AC supply, made out of 1.6 mm thick CRCA sheet steel/ GI Sheet for frame work and covers, 3 mm thick for gland plates, dust tight, vermin proof, totally enclosed, Form 4b compartmentalised design, floor mounting, free standing, extensible on both sides i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 1000 Amps capacity FP Aluminium bus bars of high conductivity, DMC/SMC bus bar supports with short circuit withstand capacity of 50 KA for 1Sec., bottom base channel of MS section not less than 100 mm x50 mm x 5 mm thick, fabrication shall be done in transportable sections, entire panel shall have a common copper earth bar of size 50mm x 5 mm at the rear with 2 nos earth stud, solid connections from main bus bars to switch gears with required size of Aluminium bus bars and control wiring with 2.5 Sq.mm. FRLS PVC insulated copper conductor cable, cable alleys, cable gland plates in two half and suitable for indoor operation, complete with all accessories, interconnection, earthing, alignment with the bus ducts etc., as required and comprising of following switch gears: (AMF LT Panel at Remote Bay Power house)				
8.01	One No. 800 A, 50KA (Ics=Icu), Four Pole, EDO type moulded case design ACB as EB supply, conforming to IEC 60947-2:2003 as ammended up-to- date with LCD display, inbuilt Metering, Overcurrent, Short circuit & Earth fault Protection with variable current & time delay setting, Instantaneous protection, current demand & phase to neutral voltage on display, % loading of each phases on LED/LCD bar graphs, with Microprocessor Based Releases and provided with suitable rated Cast Resin CTs and Digital Multifunction Meter having RS 485 port, shunt trip coil 220 V AC, LED Phase Indication Lamps alongwith 2 Amps control MCBs as backup protection, Breaker ON/OFF/TRIP/Spring Charge LED indicating lamps alongwith control MCBs as per standard practice, Electrical Interlocking arrangement between the EB & DG Incomers alongwith interlocking relays etc. i/c Control MCBs, control terminals & wirings as required.				
8.02	One No. 800 A, 50KA (Ics=Icu), Four Pole, EDO type moulded case design ACB as DG supply, conforming to IEC 60947-2:2003 as ammended up-to- date with LCD display, inbuilt Metering, Overcurrent, Short circuit & Earth fault Protection with variable current & time delay setting, Instantaneous protection, current demand & phase to neutral voltage on display, % loading of each phases on LED/LCD bar graphs, with Microprocessor Based Releases and provided with suitable rated Cast Resin CTs and Digital Multifunction Meter having RS 485 port, shunt trip coil 220 V AC, LED Phase Indication Lamps alongwith 2 Amps control MCBs as backup protection, breaker ON/OFF/TRIP/Spring Charge LED indicating lamps alongwith control MCBs as per standard practice, Electrical Interlocking arrangement between the EB & DG Incomers alongwith interlocking relays etc. i/c Control MCBs, control terminals & wirings as required.				
8.03	Two Nos. 800 A, 4P On Load Change Over Switch each one for above ACBs for Bye-pass arrangement with bus bar/link arrangements and LED lamps indicating position of Change Over Switch (AMF/BYPASS/OFF)				
8.04	24 V Battery Charger/ Trickle/ OFF/ Boost for charging capacity of 24 Volts lead acid battery (2 Nos each of 12 volts, 25 plates 180 AH etc. complete as required.				
8.05	One No. Display Temperature Scanner for BTd and RTD				
8.06	One Set of Timers and contactors/AMF Relay for Start with condition to take the load with in 15 Sec. in 3 Attempts/ Stop/ Delay time of DG Set with Selector Switch for Time Delay, Contactors for Auto/ Manual/ Interlock/Time Delay and Engine protection PCB & accessories etc. as required.				
8.07	One Set of Selector Switches for Auto/Manual/Test/Off Operation etc.				
8.08	One set of LVM.				
8.09	One Set of Push button for Start/Stop/Reset etc.				
8.10	One Set of LED Display for Performance of DG Set				
8.11	One Hooter to alarm the abnormality of DG Set and Annunciation Windows for Performance and Operation of DG Set etc.				
8.12	One Set of 1000 Amps Al. Bus Bar for 3 Phases and Neutral				
8.13	All accessories such as fuses, auxiliary contactors, auxiliary switches, etc. as required.				
8.14	All as above (8.0 to 8.13)	2.00	Job	7,82,135.00	15,64,270.00

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
9.00	Fabrication and supply of cubical type LT Panel - tested design as per IEC 61439-1 & 2 suitable for 415 V, 3 Phase, 4 wire 50 Hz AC supply, made out of 1.6 mm thick CRCA sheet steel/ GI Sheet for frame work and covers, 3 mm thick for gland plates, dust tight, vermin proof, totally enclosed, Form 4b compartmentalised design, floor mounting, free standing, extensible on both sides i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 1200 Amps capacity FP Aluminium bus bars of high conductivity, DMC/SMC bus bar supports with short circuit withstand capacity of 50 KA for 1Sec., bottom base channel of MS section not less than 100 mm x50 mm x 5 mm thick, fabrication shall be done in transportable sections, entire panel shall have a common copper earth bar of size 50mm x 5 mm at the rear with 2 nos earth stud, solid connections from main bus bars to switch gears with required size of Aluminium bus bars and control wiring with 2.5 Sq.mm. FRLS PVC insulated copper conductor cable, cable alleys, cable gland plates in two half and suitable for indoor operation, complete with all accessories, interconnection, earthing, alignment with the bus ducts etc., as required and comprising of following switch gears: (AMF LT Panel at Admin Power house)				
9.01	One No. 1000 A, 50KA (Ics=Icu), Four Pole, EDO type Moulded case design ACB as as EB supply, conforming to IEC 60947-2:2003 as ammended up-to- date with LCD display, inbuilt Metering, Overcurrent, Short circuit & Earth fault Protection with variable current & time delay setting, Instantaneous protection, current demand & phase to neutral voltage on display, % loading of each phases on LED/LCD bar graphs, with Microprocessor Based Releases and provided with suitable rated Cast Resin CTs and Digital Multifunction Meter having RS 485 port, shunt trip coil 220 V AC, LED Phase Indication Lamps alongwith 2 Amps control MCBs as backup protection, breaker ON/OFF/TRIP LED indicating lights alongwith control MCBs as per standard practice, Electrical Interlocking arrangement between the EB & DG Incomers alongwith interlocking relays etc. i/c Control MCBs, control terminals & wirings as required.				
9.02	One No. 1000 A, 50KA (Ics=Icu), Four Pole, EDO type Moulded case design ACB as DG supply, conforming to IEC 60947-2:2003 as ammended up-to- date with LCD display, inbuilt Metering, Overcurrent, Short circuit & Earth fault Protection with variable current & time delay setting, Instantaneous protection, current demand & phase to neutral voltage on display, % loading of each phases on LED/LCD bar graphs, with Microprocessor Based Releases and provided with suitable rated Cast Resin CTs and Digital Multifunction Meter having RS 485 port, shunt trip coil 220 V AC, LED Phase Indication Lamps alongwith 2 Amps control MCBs as backup protection, breaker ON/OFF/TRIP LED indicating lights alongwith control MCBs as per standard practice, Electrical Interlocking arrangement between the EB & DG Incomers alongwith interlocking relays etc. i/c Control MCBs, control terminals & wirings as required.				
9.03	Two Nos. 1000 A, 4P On Load Change Over Switch each one for above ACBs for Bye-pass arrangement with bus bar/link arrangements and LED Lamps indicating position of Switch [AMF/BYPASS/OFF]				
9.04	24 V Battery Charger/ Trickle/ OFF/ Boost for charging capacity of 24 Volts lead acid battery (2 Nos each of 12 volts, 25 plates 180 AH etc. complete as required.				
9.05	One No. Display Temperatue Scanner for BTd and RTD				
9.06	One Set of Timers and contactors/AMF Relay for Start with condition to take the load with in 15 Sec. in 3 Attempts/ Stop/ Delay time of DG Set with Selector Switch for Time Delay, Contactors for Auto/ Manual/ Interlock/Time Delay and Engine protection PCB & Accessories etc. as required.				
9.07	One Set of Selector Switches for Auto/Manual/Test/Off Operation etc.				
9.08	One set of LVM.				
9.09	One Set of Push button for Start/Stop/Reset etc.				
9.10	One Set of 3 LED Display for Performance of DG Set				
9.11	One Hooter to alarm the abnormality of DG Set and Annunciation Windows for Performance and Operation of DG Set etc.				
9.12	One Set of 1200 Amps Al. Bus Bar for 3 Phases and Neutral				
9.13	All accessories such as fuses, auxilliary contactors, auxilliary switches, etc. as required.				
9.14	All as above (9.0 to 9.13)	2.00	Job	5,43,065.00	10,86,130.00

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
10.00	Supply of 4000 Amps, 65 KA for 1 sec, Indoor IP 54 Sandwich Type Bus Trunking complying to IEC 61439-1 & 6 for providing incoming supply to Non Essential LT Panel including fabrication, for use on 3 Phase 4 Wire, 415 Volts, 50 Hz AC supply with metal clad enclosure made of 1.6 mm thick GI Sheet duly powder coated in convenient sections complete with 4 Nos. of Aluminium Bus Bars with Class F Insulation, necessary joints, elbow joints & expansion joints and bends, adopter box and Copper Flexible for Joints, with integral earth, suspenders, angle iron bracket, fasteners, connecting to earthing system etc., as required. Note : Bus Trunking Shall be measured along the length of enclosure of Straigh Run/Bend/Phase Cross Over/ End Flange. The aluminum strips which will go inside L.T Panels & end termination boxes of transformers shall not be taken in to measurement of bus trunking quantity.				
10.01	Straight Run Bus Duct	40.00	Mtrs.	29,110.00	11,64,400.00
10.02	90 Degree Bend	10.00	Mtrs.	34,605.00	3,46,050.00
10.03	Phase Cross Over	2.50	Mtrs.	41,720.00	1,04,300.00
10.04	End Flange	2.00	Mtrs.	52,590.00	1,05,180.00
10.05	Adopter Box	4.00	Nos.	8,505.00	34,020.00
10.06	Copper Flexibles for End Termination	4.00	Set	66,000.00	2,64,000.00
11.00	Supply of 1250 Amps, 50 KA for 1 sec, Indoor IP 54 Sandwich Type Bus Trunking complying to IEC 61439-1 & 6 including fabrication, for use on 3 Phase 4 Wire, 415 Volts, 50 Hz AC supply with metal clad enclosure made of 1.6 mm thick GI Sheet duly powder coated in convenient sections complete with 4 Nos. of Aluminium Bus Bars with Class F Insulation, necessary joints, elbow joints & expansion joints and bends, adopter box and Copper Flexible for Joints, with integral earth, suspenders, angle iron bracket, fasteners, connecting to earthing system etc., as required. Note : Bus Trunking Shall be measured along the length of enclosure of Straigh Run/Bend/Phase Cross Over/ End Flange. The aluminum strips which will go inside L.T Panels & end termination boxes of transformers shall not be taken in to measurement of bus trunking quantity.				
11.01	Straight Run Bus Duct	20.00	Mtrs.	9,975.00	1,99,500.00
11.02	90 Degree Bend	4.00	Mtrs.	11,760.00	47,040.00
11.03	Phase Cross Over	2.00	Mtrs.	17,720.00	35,440.00
11.04	End Flange	2.00	Mtrs.	7,090.00	14,180.00
11.05	Adopter Box	4.00	Nos.	3,780.00	15,120.00
11.06	Copper Flexibles for End Termination	4.00	Set	22,000.00	88,000.00
12.00	11 KV HT Panels : (Residential Colony Power House)				
12.01	Supply of indoor type floor mounted metal clad, 11KV Switch Board VCB panel with 02 Nos. VCBs, totally enclosed & fully interlocked, truck mounting, horizontal drawout, horizontal isolation type vacuum breaker as per IS/IEC 62271-1 (2007) & 200 (2003), as amended up to date and additional specifications, 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 11 KV, 3 Phase, 50Hz A.C. supply with short circuit fault level of 350 MVA, complete with self contained short time current for 25KA for 3 sec, Internal Arc Test for AFLR 25ka for 100ms, Electrically and Mechanically interlocked, rack in and rack out mechanism, air insulated but encapsulated copper bus bars capacity meeting fault level current, breaker featured with mechanical ON/ OFF indicator with hand trip device, and all accessories such as shunt trip coil, 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 240 sqmm XLPE cable of 11KV grade (cable entry from bottom), All major sub components (Switchgear, Relays & vacuum Interrupters) shall be of same make. (Note:HT Panel Shall be supplied from the Manufacturer Only)				
12.02	1. a) Incoming-1 No. of 800Amp VCB				
12.03	b) 1 No. - Multifunction Meter with 7 LED display of I ; V; Hz; Active, Reactive , Apparent Power & Energy; Power factor; % unbalance of current & voltage; calculated neutral current; % TDH, individual harmonics up to 15th level (complying with IEC61557-12) and protection Fuse / MCB for HT metering upto 12 KV on incomer. along with required necessary accessories MFM accuracy class 0.5 (as per IEC 62053-21), with RS 485 comm. port, other technical details as per tender specifications				

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
12.04	c) 1 No. - Ammeter digital type of Class 1, Digital Volt Meter of Class 0.5.				
12.05	d) 1 No. of over current & short circuit 51, 51N & one earth fault element with numerical IDMT relay with shunt trip on 24 volts DC, on RS 485 modbus communication consisting 2 element over current relay and earth fault, Over & under voltage, Over & under frequency, CT & VT supervision facility, min. 250 events & 25 faults recording, with min 5 pre & post disturbance recording and 1 No. of Master trip relays.				
12.06	e) 1 No - set of dual core dual ratio 3 CTs 100/ 50/ 5/ 5A of 15 VA burden and accuracy class - 1.0 for metering and class 5P10 for protection.				
12.07	f) 1 No -11 KV /110 Volts resin cast PT Class 0.5 accuracy and not less than 100 VA burden.				
12.08	2. a) Outgoing for Transformer - 1 No. of 800Amp VCB				
12.09	b) 1 No. - Multifunction Meter with 7 LED display of I ; V; Hz; Active, Reactive, Apparent Power & Energy; Power factor; % unbalance of current & voltage; calculated neutral current ;%TDH, individual harmonics up to 15th level (complying with IEC61557-12) and protection Fuse / MCB for HT metering upto 12 KV on incomer. along with required necessary accessories MFM accuracy class 0.5 (as per IEC 62053-21), with RS 485 comm. port, other technical details as per tender specifications.				
12.10	c) 1 No. - Ammeter digital type of Class 1.				
12.11	d) 1 No. of over current & short circuit 51, 51N & one earth fault element with numerical IDMT relay with shunt trip on 24volts DC, on RS 485 modbus communication consisting 2 element over current relay and earth fault, Over & under voltage, with min 5 pre & post disturbance recording and 3 Nos of Master trip relays.				
12.12	e) 1 No. - set of Auxiliary relays for Oil temperature, winding temperature and Buchholz alarm, trip.				
12.13	f) 1 No. - Set of dual core dual ratio 3 CTs 100/ 50/ 5/ 5 A of 15VA burden and accuracy Class-1 for metering and class 5P10 for protection.				
12.14	All as above (12.01 to 12.13)	1.00	Job	12,31,650.00	12,31,650.00
13.00	Supply of nominal 2.0 mm thick (Width 1 Mtr) PVC synthetic, electric insulated mats conforming to IS 15652-2006 having Dielectric strength of 30 KV, no adverse effect of mineral oil, high insulation resistance (Minimum 1,00,000 M Ω on wet condition with 5 KV meggar) etc., as required.	200.00	Sq. Mtr.	770.00	1,54,000.00
14.00	Supply of nominal 2.5 mm thick (Width 1 Mtr) PVC synthetic, electric insulated mats conforming to IS 15652-2006 having Dielectric strength of 45 KV, no adverse effect of mineral oil, high insulation resistance (Minimum 1,00,000 M Ω on wet condition with 5 KV meggar) etc., as required.	50.00	Sq. Mtr.	935.00	46,750.00
15.00	Supply of Aluminium Conductor, XLPE insulated, PVC sheathed, armoured power cable of 1.1 KV grade of following Sizes conforming to IS 7098 (Part-1) as amended upto date as required.				
15.01	3½ X 300 Sq. mm.	100.00	Mtr.	813.00	81,300.00
				Total of SH - I	₹ 2,52,24,265.00
16.00	SH-II : Installation ,Testing and commissioning				
16.01	Dismantling, Shifting and Transporting of 2500 KVA 11KV/443 V Oil type transformer from Bay 35 SS to Admin Power House including disconnection of control cabling, LT Bus duct, earthing, HT Cable etc, Installation, Testing and Commissioning of same transformer in Admin Power House including provision of 100mm x 50mm x 5mm thick supporting "C" channels for positioning of transformer, performing pre-commissioning test etc. complete as required.	2.00	Job	50,050.00	1,00,100.00
17.00	Installation, Testing and Commissioning of 415V, 4000 Amps Bus bar rating, MV Non-Essential Panel mentioned at SH-I /SOQ Item No. 1 including dismantling of existing LT Panel at Admin Power House to create space for installation of new LT Panel, provision of 100mm x 50mm x 5mm thick supporting "C" channels including shifting of dismantled LT panel to AAI store etc. complete as required. (for Non-Essential LT Panel at Admin Power House)	1.00	Job	90,200.00	90,200.00
18.00	Installation, Testing and Commissioning of 415V, 1200 Amps Bus bar rating, MV Essential Panel mentioned at SH-I /SOQ item No. 2 including dismantling of existing LT Panel at Admin Power House to create space for installation of new LT Panel, provision of 100mm x 50mm x 5mm thick supporting "C" channels including shifting of dismantled LT panel to AAI store etc. complete as required. (for Essential LT Panel at Admin Power House)	1.00	Job	48,950.00	48,950.00

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
19.00	Installation, Testing and Commissioning of 415V, 1600 Amps Bus bar rating, MV AC Chiller Panel mentioned at SH-I/SOQ item No. 3 including dismantling of existing LT Panel at Admin Power House to create space for installation of new LT Panel, provision of 100mm x 50mm x 5mm thick supporting "C" channels including shifting of dismantled LT panel to AAI store etc. complete as required. (for METRO Chiller LT Panel at Admin Power House)	1.00	Job	45,100.00	45,100.00
20.00	Installation, Testing and Commissioning of 415V, 1600 Amps Bus bar rating, MV AC Chiller Panel mentioned at SH-I/SOQ item No. 4 including dismantling of existing LT Panel at Admin Power House to create space for installation of new LT Panel, provision of 100mm x 50mm x 5mm thick supporting "C" channels including shifting of dismantled LT panel to AAI store etc. complete as required. (for SR AC Chiller Panel at Admin Power House)	1.00	Job	35,750.00	35,750.00
21.00	Installation, Testing and Commissioning of 400 KVAR detuned capacitor panel mentioned at SH-I/SOQ item No. 5 including dismantling of existing Panel at Admin Power House to create space for installation of new LT Panel, provision of 100mm x 50mm x 5mm thick supporting "C" channels including shifting of dismantled LT panel to AAI store etc. complete as required. (for DAPFC Panel at Admin Power House)	2.00	Job	25,025.00	50,050.00
22.00	Installation, Testing and Commissioning of 320 KVA Prime Duty DG Set mentioned at SH-I/ SOQ item No. 6, including laying of fuel pipe lines, fixing of exhaust piping, and provision of suitable RCC foundation of 150mm height from finished floor level including performing Load Test for the DG sets at site arranged with suitable load & diesel for 13 hours load test etc. complete all as required.	2.00	Job	2,35,400.00	4,70,800.00
23.00	Installation, Testing and Commissioning of 500 KVA Prime Duty DG Set mentioned at SH-I/ SOQ item No. 7, including laying of fuel pipe lines, fixing of exhaust piping and provision of suitable RCC foundation of 150mm height from finished floor level including performing Load Test for the DG sets at site arranged with suitable load & diesel for 13 hours load test etc. complete all as required.	2.00	Job	3,35,500.00	6,71,000.00
24.00	Installation, Testing and Commissioning of 415V, 1000 Amps Bus bar rating, AMF Panel mentioned at SH-I / SOQ item No. 8 at Remote Bay Power House including all connections and interconnections etc. complete as required. (for AMF LT Panel at Remote Bay Power House)	2.00	Job	15,015.00	30,030.00
25.00	Installation, Testing and Commissioning of 415V, 1200 Amps Bus bar rating, AMF Panel mentioned at SH-I / SOQ item No. 9 at Admin Power House including all connections and interconnections etc. complete as required. (for AMF LT Panel at Admin Power House)	2.00	Job	15,015.00	30,030.00
26.00	Installation, Testing and Commissioning of 4000 Amps, 65 KA S.C (RMS) Indoor Sandwich type Bus trunking system consist of straight Run bus duct, 90 Degree bend & phase cross over, End Flange, Adaptor Box & Copper flexible for End Termination items mentioned at SH-I/SOQ Item No.10 including connection and interconnection etc as required.	50.00	Mtrs.	3,605.00	1,80,250.00
27.00	Installation, Testing and Commissioning of 1250 Amps, 50 KA S.C (RMS) Indoor Sandwich type Bus trunking system consist of straight Run bus duct, 90 Degree bend & phase cross over, End Flange, Adaptor Box & Copper flexible for End Termination items mentioned at SH-I/SOQ Item No.11 including connection and interconnection etc as required.	20.00	Mtrs.	1,100.00	22,000.00
28.00	Installation, Testing and Commissioning of 11 KV HT VCB Panel with 1 No. incoming of 800 Amps rating, 1 No outgoing of 800 Amps rating mentioned at SH-I / SOQ item No. 12 including dismantling of existing HT Panel at Residential colony Power House to create space for installation of new HT Panel, provision of 100mm x 50mm x 5mm thick supporting "C" channels including shifting of dismantled HT panel to AAI store etc. as required. (HT Panel at Residential Colony Power House)	1.00	Job	15,015.00	15,015.00
29.00	Dismantling of 1000 KVA 11KV/433 Volt Oil Type Transformer from Admin Power House including disconnection of control cabling and Power cabling, earthing including Shifting, Transporting and Handing Over of all dismantled materials to the Store of AAI etc. as required.	3.00	Job	20,020.00	60,060.00
30.00	Dismantling of 320 KVA DG Set including AMF Panel from Remote bay Power House including dismantling of fuel piping, exhaust piping, fuel tank, control cabling, Power cabling, earthing including Shifting, Transporting and Handing Over of all dismantled materials including AMF Panel to the Store of AAI etc., as required.	2.00	Job	25,025.00	50,050.00

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
31.00	Dismantling of 250 KVA DG Set including AMF Panel from Admin Hall Power House including dismantling of fuel piping, exhaust piping, fuel tank, control cabling, Power cabling, earthing including Shifting, Transporting and Handing Over of all dismantled materials including AMF Panel to the Store of AAI etc., as required.	3.00	Job	25,025.00	75,075.00
32.00	Fixing of nominal 2.5 mm OR 2.0 mm (Width 1 Mtr) thick PVC Synthetic, electric insulated mats conforming to IS 15652-2006 along with suitable adhesive/ chemibond, i/c providing water proofing of floor, (chipping of floor if required) sealing of all joints etc., as required.	250.00	sq.Mtr	55.00	13,750.00
33.00	Supply and Fixing of 10 mm thick SMC chequered plates including provision of 25 x 25 x 5mm thick MS angle in all side and diagonal of SMC plate for strengthening by Aluminium revtting, lifting hook etc., as required.	200.00	sq.Mtr	6,710.00	13,42,000.00
34.00	SITC of 15 Nos. of 2 Volt, 100 AH Exide Batteries [Totalling to 30V] of Model "PLANTE" with Initial Charging including providing and fixing MS Stand of suitable Size for all Batteries as required.	1.00	Job	1,39,700.00	1,39,700.00
35.00	SITC of 30V, 20 Amps, DC Battery Charger with Thyristor Based Rectifier suitable to operate in 230V, 50Hz, single phase AC Power Supply with charging arrangement for Trickle/Boost including with suitable range Digital Meter for both AC/DC for measuring Current and Voltage, Regulator, Selector Switches, Indication Lamps etc. for operating Batteries associated with 11 KV HT Panel, as required	1.00	Job	1,81,500.00	1,81,500.00
36.00	Supplying and installing following size of perforated pre-painted M.S. cable trays with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with M.S. suspenders including bolts & nuts, painting suspenders etc as required.				
36.01	300 mm (W) X 62.5 mm (D) X 2.0 mm Thickness	50.00	Mtr.	765.00	38,250.00
37.00	Supply, fabrication and installation of the MS channel/ angle/ flat for cable tray/ support including cutting, welding, drilling, fixing, grinding, applying redoxide of two coats, painting the same with Black etc., as required.	200.00	Kgs	110.00	22,000.00
	Total of SH - II				37,11,660.00
38.00	SH-III :LAYING OF CABLES AND ASSOCIATED WORKS				
38.01	Laying of one number multi core 1.5 sq.mm flexible stranded copper cable for control cabling in existing masonry open duct as required. (Control cable will supply by AAI)	30.00	Mtr.	10.00	300.00
39.00	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
39.01	Above 95 sq. mm and upto 185 sq. mm	50.00	Mtr.	365.00	18,250.00
39.02	Above 185 sq. mm and upto 400 sq. mm	50.00	Mtr.	400.00	20,000.00
40.00	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.				
40.01	Above 95 sq. mm and upto 185 sq. mm	50.00	Mtr.	75.00	3,750.00
40.02	Above 185 sq. mm and upto 400 sq. mm	50.00	Mtr.	100.00	5,000.00
41.00	Laying of one number PVC insulated and PVC sheathed/ XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.				
41.01	Above 95 sq. mm and upto 185 sq. mm	50.00	Mtr.	75.00	3,750.00
41.02	Above 185 sq. mm and upto 400 sq. mm	50.00	Mtr.	100.00	5,000.00
42.00	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 11 KV grade as required				
42.01	240 Sq. mm	2.00	Nos.	7,700.00	15,400.00
43.00	Supplying and making indoor 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.				
43.01	3½ x 120 Sq.mm	9.00	Nos.	660.00	5,940.00
43.02	3½ x 185 Sq.mm	8.00	Nos.	770.00	6,160.00
43.03	3½ x 240 Sq.mm	7.00	Nos.	935.00	6,545.00
43.04	3½ x 300 Sq.mm	31.00	Nos.	1,155.00	35,805.00
43.05	3½ x 400 Sq.mm	8.00	Nos.	1,485.00	11,880.00

Sl. No.	Description of Items	Qty	Unit	Basic Rate Exc. GST	Amount
44.00	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.				
44.01	3.5 X 95 Sq.mm	5.00	Job	2,440.00	12,200.00
44.02	3.5 X 120 Sq.mm	5.00	Job	3,400.00	17,000.00
44.03	3.5 X 185 Sq.mm	5.00	Job	3,510.00	17,550.00
44.04	3.5 X 300 Sq.mm	5.00	Job	4,595.00	22,975.00
44.05	3.5 X 400 Sq.mm	5.00	Job	6,105.00	30,525.00
45.00	Providing of earth pits using Copper bonded Earth electrode of 17.2 mm dia, 3 Metres installed vertically as per the site conditions, providing enhancing compound of 25 kgs. along with required masonry chamber, CI Cover including excavation, refilling, painting of cover & marking of earth value etc. as required.	25.00	Nos.	12,265.00	3,06,625.00
46.00	Providing and fixing 50 mm X 5 mm copper strip in 80 mm dia 'B' Class G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer i/c excavation of bituminous/ concrete road/ pavement & excavation of Soil to the depth of 0.30 Mtrs from ground, refilling the Soil and with Bitumen on top for 0.15 Mtrs after laying Pipe and making good the same to original etc., as required.	250.00	Mtr.	2,290.00	5,72,500.00
47.00	Providing and fixing 50 mm X 5 mm copper strip on surface or in recess (including cutting of concrete floor and finishing to original floor) for connections etc. as required.	100.00	Mtr.	1,450.00	1,45,000.00
48.00	Providing and fixing earth bus of 50 mm X 5 mm copper strip on surface for connections etc. as required.	250.00	Mtr.	1,370.00	3,42,500.00
49.00	Providing Civil Works as required as detailed below:				
49.01	Cement concrete in 1:3:6 (1 cement: 3 coarse sand: 6 graded stone aggregate 20mm nominal size)	6.00	Cum	8,800.00	52,800.00
49.02	Cement mortar in 1:6 (1 cement: 6 coarse sand)	6.00	Cum	6,600.00	39,600.00
49.03	Brick work with bricks of class designation 60 in foundation and plinth in 1:6 (1 cement: 6 coarse sand)	6.00	Cum	6,600.00	39,600.00
49.04	Cement plaster 12mm thick of mixture 1:6	10.00	Sq Mtr	660.00	6,600.00
49.05	Steel rod for RCC Slabs	100.00	Kgs	110.00	11,000.00
	Total of III				17,54,255.00
	Total of SH-I,II & III				Rs. 3,06,90,180.00

(Rupees Three Crores Six Lakhs Ninety Thousand One Hundred and Eighty Only)

Note: Applicable GST will be paid extra as per actual


 14/10/2020
(G.N.D.KENNEDY)
Jt. General Manager (E-E)-I