

पत्रसंख्या : AAI/SML/UPS PANELS/2024-25/ W.O./01

दिनांक: 12.04.2024

Work Order / कार्यआदेश

सेवा में,
मेसर्स अवस्थी इलेक्ट्रिक वर्क्स,
107/265 ब्रह्मा नगर
कानपुर, 208012

To,
M/s Awasthi Electric Works,
107/265 Brahma Nagar,
Kanpur, 208012.

विषय: "प्रोविज़न ऑफ 2X 80 KVA ऑनलाइन यूपीएस सिस्टम फॉर जीएलएफ़ इन्स्टालेशंस एंड एसआईटीसी ऑफ एलटी पेनल्स एट शिमला एयरपोर्ट".

Subject: "Provision of 2X 80 KVA Online UPS System for GLF Installations and SITC of LT Panels at Shimla Airport"

संदर्भ : 1. Tender ID:-2024_AAI_183371_1
2. Financial Bid Opened on dated 21.03.2024

महोदय/Dear Sir,

- उपरोक्त कार्य हेतु आपका ई-टेंडर आपके द्वारा कोट किये गए मद मूल्यों पर आपकी कुल राशि रु. 83,86,346.60/- (तिरासी लाख छियासी हजार तीन सौ छियालीस रु. और साठ पैसा) है (GST रहित) जो कि अनुमानित लागत रु. रु. 94,75,401.00/- (GST रहित) जो टेन्डर में दी गयी है से (-) 11.49% नीचे है, अध्यक्ष भारतीय विमानपत्तन प्राधिकरण की ओर से स्वीकृत किया जाता है।

Your e-Tender for the work mentioned above is hereby accepted on behalf of the Chairman, Airports Authority of India at the item rates totaling to **Rs. 83,86,346.60/-** (Eighty Three Lakh Eighty Six Thousand Three Hundred Forty Six Rupees and Sixty Paise Only) (Excluding GST) which is (-) 11.49% below the estimated cost put to the tender of **Rs. 94,75,401.00/-** (Excluding GST).

- सहा. महाप्रबंधक (अभि.-वि.), जम्मू एयरपोर्ट, जम्मू-180003 इस कार्य के प्रभारी अभियंता होंगे। आपसे निवेदन है कि आप करारनामे पर हस्ताक्षर करने हेतु कार्य आदेश के जारी होने से 15 (पंद्रह) दिनों के अन्दर किसी भी कार्य दिवस में कार्यालय सहा. महाप्रबंधक (अभि.-वि.), जम्मू एयरपोर्ट, जम्मू-180003 पर उपस्थित होकर करारनामे को पूरा करें। ठेके का कारनामा रु. 100/- के नॉनजुडिशल स्टांप पेपर पर निष्पादित किया जायेगा तथा नॉनजुडिशल स्टांप पेपर का खर्च आपके द्वारा उठाया जायेगा।

Astt General Manager (E-E), Jammu Airport, Jammu-180003 shall be Engineer-in-Charge of the work. You are requested to attend the Office of Astt. General Manager (Engg-E), Jammu Airport, Jammu-180003 to sign and complete the agreement within 15 (Fifteen) days of issuing of this work order. The contract agreement shall be executed on a Non-Judicial Stamp paper of **Rs. 100/-** and the cost of the stamp paper shall be borne by you.

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3. आपके द्वारा EMD के रूप में जमा राशि रुपये 1,89,508.00/- जो कि निविदा के साथ प्राप्त की गई है को अनुबंध दस्तावेज के पृष्ठ 16 पर जी सी सी क्लॉज 1A के अनुसार सुरक्षा जमा राशि के एक हिस्से के रूप में माना जाएगा और परिवर्तित किया जाएगा। कृपया इस पत्र के जारी होने की तिथि से 10 दिनों के भीतर 8,38,635.00 (रु. आठ लाख अड़तीस हजार छह सौ पैंतीस) सुरक्षा जमा राशि जमा करें, जिसे विफल करते हुए, अनुबंध के पृष्ठ 16 पर जी सी सी क्लॉज 1 A के अनुसार घटाया जाएगा।

The EMD amount of **Rs 1,89,508.00**, received along with your tender will be treated and converted as a part of Security Deposit as per GCC Clause 1A on page 16 of contract document. Please deposit of **Rs Rs 8,38,635.00** (Rupees Eight Lakh Thirty Eight Thousand Six Hundred & Thirty Five Only) towards Security Deposit within 10 days from the date of issue of this letter, failing which, the same will be deducted as per GCC Clause 1A on page 16 of contract document.

4. आपसे निवेदन है कि आप केंद्रीय एवं राज्य सरकारों के 1970 के अधिनियम अनुबंध श्रम नियम तथा 1971 के केंद्रीय नियम (नियमन तथा उन्मूलन) तथा केंद्र एवं राज्य सरकार के न्यूनतम वेतन अधिनियम और नियमों के प्रावधानों 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 there of Central and State Governments.

5. आपको निर्देश दिया जाता है कि आप सहा. प्रबंधक (अभि.-वि.), शिमला विमानक्षेत्र से तुरंत मिलें और वह साइट सौंपने की व्यवस्था करेंगे। कृपया नोट करें कि कार्य का निर्धारित समय 03 (तीन) महीने है, जो कि 21.04.2024 से गिना जाएगा।

You are directed to contact Astt Manager (E-E), Shimla Airport immediately who will arrange to handover the site to you. Please note the time allowed for carrying out the work is **03 (Three) months** and the same shall be reckoned from 21.04.2024.

6. माप पुस्तिका में दर्ज कार्य के पूरा होने की तारीख से दोष दायित्व अवधि चौबीस (24) महीने होगी तत्पश्चात सी.एम.सी के अंतर्गत एक (01) माह की होगी।

The defect liability period shall be **Twelve (24) months** on overall work and **One (01) month** on CMC works from the date of completion of work recorded in the measurement book.

7. इस ठेके के सम्बन्ध में आगे का कोई भी पत्राचार सहा. महाप्रबंधक (अभि.-वि.), जम्मू एयरपोर्ट, जम्मू-180003 के पते पर किया जाए।

Any further correspondence in connection with this contract should normally be addressed to Astt General Manager (E-E), Jammu Airport, Jammu -180003.

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

All The letters referred above shall form part of contract.

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9. अगर अंग्रेजी और हिंदी के पाठ में कोई अंतर पाया जाता है तो अंग्रेजी विवरण सही माना जायेगा।

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

10. कृपया रसीद स्वीकार करें और स्वीकृति के टोकन के रूप में अधोहस्ताक्षरी को हस्ताक्षर करने के बाद इस पत्र की डुप्लीकेट प्रति संगलन 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.



(विवेक कटारा/Vivek Katara)

सहा.म.प्र. (अभि.-वि.)/AGM. (Engg-E)

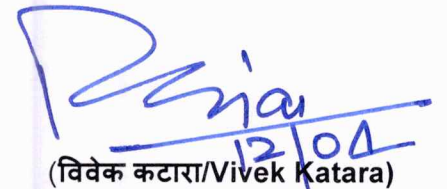
जम्मू विमानक्षेत्र/Jammu Airport.

जम्मू/Jammu-180003.

संगलन/Enclosed: शेड्यूल आफ क्वांटिटी /Schedule of Quantity

Internal:

1. महाप्रबंधक (अभि.), भा.वि.प्रा., क्षेत्रीय मुख्यालय-उत्तरी क्षेत्र, नई दिल्ली।
2. संयुक्त महाप्रबंधक (अभि.-वि.), भा.वि.प्रा., क्षेत्रीय मुख्यालय-उत्तरी क्षेत्र, नई दिल्ली।
3. महाप्रबंधक (वित्त), भा.वि.प्रा., क्षेत्रीय मुख्यालय-उत्तरी क्षेत्र, नई दिल्ली।
4. विमानपत्तन निदेशक, भा.वि.प्रा., शिमला विमानक्षेत्र।
5. एमआईएस इंजीनियरिंग अनुभाग, एएआई, आरएचक्यू-एनआर, रंगपुरी, नई दिल्ली-110037
6. एग्रीमेंट/ कार्य फाइल।



(विवेक कटारा/Vivek Katara)

सहा.म.प्र. (अभि.-वि.)/AGM. (Engg-E)

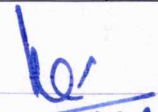
जम्मू विमानक्षेत्र/Jammu Airport.

जम्मू/Jammu-180003.

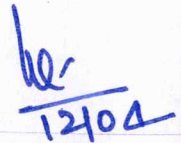
Scheduled of Quantity

Name of work :- Provision of 2X 80 KVA Online UPS System for GLF Installations and SITC of LT Panels at Shimla Airport.

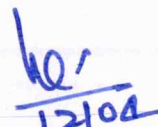
Sr. No	Item Description	Units	Qty	Rate (Ex GST)	Amount (Ex GST)
1.00	SUB HEAD A (PROVISION OF 2X80 KVA UPS)				
1.01	SH(A-I): SITC of UPS and LT panels Design, Fabrication, Supply, Installation, Testing and Commissioning of 3 Phase, 50 Hz Online UPS system of 2x 80 KVA capacity, 3-phase input, 3 phase output online UPS with double conversion IGBT technology with suitable rated isolation transformer to drive constant current regulators, Suitable for 100% unbalanced load, built in automatic static by pass, active input power factor correction, phase sequence corrector, pure sine wave output, input/ output isolation, compatibility with generator supply, cold start capability, EMI/RFI noise filter, advanced communication- RS232 port and user friendly LCD display, suitable to operate at 415V, 50Hz, 3 phase AC supply and capable to load 2 phase & single phase loads on 3phase output with 100% unbalanced and necessary safety protections, to be operated in parallel redundancy configuration in dust and vermin proof cubicle panel duly painted and with ventilation ducts, forced air cooling, floor mounted comprising of supply and connecting required/suitable size & number of 12 V SMF batteries shall have backup time of minimum 30 minutes at rated full load for individual UPS along with battery rack, arranged in racks with terminals, intercell connectors, DC cables with insulated copper conductor of required size with suitable capacity battery MCCB of interface with UPS as per site condition and all accessories and capable of giving desired output suitable to operate Airport runway Airfield lighting systems through Constant Current regulators with all controls and protective circuits and conforming to IEC-62040-1/ IEC-62040-2/ IEC-62040-3/ IS 16242-1 etc. complete as per technical specifications and approved make.	1	Set	3545000.00	3545000.00
1.02	Design, fabrication, assembling, supply, installation, testing and commissioning of cubicle type - UPS Output LT panel wall/Floor mounted, free standing suitable for 415 V 3 phase, 4 wire 50 Hz AC supply system fabricated in compartmentalized design from CRCA sheet steel of 2 mm thick for frame work IP 42 and covers, 3 mm thick for gland plates i/c cleaning and finishing complete 7 tank process for powder coating in approved shade, extendable type TPN aluminium busbars of high conductivity, extended rotary handles, DMC/SMC busbar supports, with bottom base channel of MS section not less than 100mm X 50 mm X 5 mm thick, entire panel shall have a common copper earthbar of size 25mm X 5 mm at the rear with 2 Nos. earth studs, solid connection from main busbar to switchgears with require size of aluminium busbar & control wiring with FRLS insulated copper conductor cable, cable alleys, cable gland plates i/c accessories as per specification and providing switchgears, metering instruments etc. as per specifications.	1	Job	455000.00	455000.00
	INCOMER:				
	a) 2 Nos. 200 Amp, 36KA, 4P Moulded Case Circuit Breaker with Thermal magnetic release with thermal adjustability with O/C and S/C protection.				
	b) 2 Nos. digital multifunction meter, Class 1.0, LCD type including suitable rating CTs for 3 phase, 4 wire operation.				
	c) 2 Set of RYB phase indicating lamps controlled by MCBs. (I/C & O/G)				
	d) 2 Nos. of ON/OFF/TRIP Indication lamps.				
	BUSCOUPLER :				
	200 Amps, 4 Pole, 36 kA MCCB				
	BUSBARS:				
	Amp 300 TPN busbars of high conductivity electrolytic quality aluminium alloy.				
	OUTGOING:				
	a) 4 Nos. 100 Amp, 36KA, 4P Moulded Case Circuit Breaker with Thermal magnetic release with thermal adjustability with O/C and S/C protection.				
	b) 6 Nos. 63 Amp, 36KA, 4P Moulded Case Circuit Breaker with Thermal magnetic release with thermal adjustability with O/C and S/C protection.				
	c) 4No. 32A 4P, 10KA, MCB				
1.03	SH(A-II): Supply of cable Supply of 4Cx 70sqmm copper XLPE insulated /PVC sheathed armoured 1.1KV grade conforming to IS:7098 (Part-1) 1988 with up to date amendments power cable etc. as required.	154	Mtr	3100.00	477400.00
1.04	Supply of 4Cx 50 sqmm aluminium XLPE insulated /PVC sheathed armoured 1.1KV grade conforming to IS:7098 (Part-1) 1988 with up to date amendments power cable etc. as required.	206	Mtr	310.00	63860.00


 सह. महानिरीक्षक (आमि.-वि.)
 Asstt. G.M. (Engg.-E)

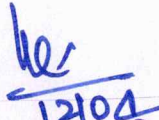
Sr. No	Item Description	Units	Qty	Rate (Ex GST)	Amount (Ex GST)
1.05	Supply of 50 sqmm FR PVC insulated single core unsheathed industrial multistrand cables with bright annealed electrolytic bare copper conductor for voltage grade upto 1100 v conforming to IS- 694:2010.	200	Mtr	530.00	106000.00
1.06	SH(A-III): Laying and end termination of cables 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.				
	a) Above 35 sq. mm and upto 95 sq. mm	30	Mtr	35.00	1050.00
1.07	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
	a) Above 35 sq. mm and upto 95 sq. mm (clamped with suitable size MS flat clamp)	30	Mtr	125.00	3750.00
1.08	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required.				
	a) Above 35 sq. mm and upto 95 sq. mm (clamped with suitable size MS flat clamp)	270	Mtr	130.00	35100.00
1.09	Supplying and making end termination with brass compression gland and copper lugs for 4C X 70 sq. mm (38mm) cable size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.	4	Set	650.00	2600.00
1.10	Supplying and making end termination with brass compression gland and aluminium lugs for 4C X 50 sq. mm (35mm) cable size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.	8	Set	425.00	3400.00
1.11	Supplying and making end termination with copper lugs for 50 sq.mm of FR PVC insulated single core sheathed cable flexible bright annealed multi stranded bare copper conductor 650/1100 volts grade as required.	38	Set	460.00	17480.00
1.12	SH(A-IV): Supplying and installing of cable trays Supplying and installing following size of perforated painted with powder coating 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 or fixed to the wall with M.S. angles/bolts including bolts & nuts, painting suspenders/ angle etc. as required. a) 225 mm width X 50 mm depth X 1.6 mm thickness	140	Mtr	650.00	91000.00
1.13	SH(A-V): Earthing works Providing and fixing of advance technology earth electrode earthing system fabricated from Pure Copper pipes (pipe in pipe technology) & cavity between pipes pressure filled with highly conductive non-corrosive crystalline material complete with chemically modified homogenous earth enhancing compound (back fill compound 25 Kg) to treat the soil for lowering the effective ground impedance for each earth pit to make it maintenance free and to minimize the ground voltage potential rise i/c excavation of earth pit suitable to accommodate earth electrode, prefabricated FRP enclosure with cover plate all as required & conforming to (IS:3043 : 1987) duly CPRI/ERDA approved all as required & as specified for Size :- Outer pipe dia = 80mm Inner pipe dia = 40mm Length of electrode = 3 Mtr	2	Set	55000.00	110000.00
1.14	Providing and fixing of advance technology earth electrode earthing system fabricated from hot deep galvanized pipes (pipe in pipe technology) & cavity between pipes pressure filled with highly conductive non-corrosive crystalline material complete with chemically modified homogenous earth enhancing compound (back fill compound 25 Kg) to treat the soil for lowering the effective ground impedance for each earth pit to make it maintenance free and to minimize the ground voltage potential rise i/c excavation of earth pit suitable to accommodate earth electrode, prefabricated FRP enclosure with cover plate all as required & conforming to (IS:3043 : 1987) duly CPRI/ERDA approved all as required & as specified for Size :- Outer pipe dia = 80mm Inner pipe dia = 40mm Length of electrode = 3 Mtr	2	Set	29500.00	59000.00
1.15	Supplying, Installation, testing, and commissioning of Digital Non-contact Earth - Resistance Monitoring System with built in capability of monitoring the earth resistance value, C type Sensor Unit, raising alarms on detections of any failure or deviation beyond preset maximum threshold resistance value of the individual earth terminal, grid or of the network without online cloud service, Conforming to IEC/CE Marked/ISO 9000 & ISO 14001-2015. Type: 220 Volt Ac, 1 Ph, 3 wire etc complete as per technical specification	1	Job	46500.00	46500.00


 सह.महा.प्रब.(अभि.-वि.)
 Asstt. G.M. (Engg.-E)

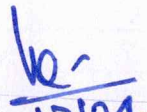
Sr. No	Item Description	Units	Qty	Rate (Ex GST)	Amount (Ex GST)
1.16	Supplying installation, testing and commissioning of Digital Grounding Device 240 kA 3 phase 5 wire Portable type with resistance sensor built in Low Impedance equipment Grounding & bonding system, Providing protection against Lightning Surges, Static charge, Noises, ESD, EPR and eliminates abnormal electrical disturbances which enter from power and other service lines, ensuring clear bonding potential (earth to Neutral voltage) less than 1.0V having a digital lightening surge counter, self-health visual status indicator with facility to monitor ONLINE input voltages & Earth to Neutral Voltages Pre-wired pulverulent body painted metal enclosure to be connected in paralleled to the power supply circuit, tested & Certified from CPRI,/MIL STD810G,/IEC61000-6-1/ IEC 61000-6-3/IEC 61643-11-2011 & confirming to ISO 9000 & ISO 14001-2015 & CE etc complete as per technical specification.	1	Job	65000.00	65000.00
1.17	Providing and fixing 25 mm x 5 mm GI strip on surface or in recess for connections with clamping etc as required.	30	Mtr	170.00	5100.00
1.18	Providing and fixing 25 mm X 5 mm GI strip in 40 mm dia GI pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	60	Mtr	650.00	39000.00
1.19	Providing and fixing 25 mm x 5 mm Copper strip on surface or in recess for connections with clamping etc as required.	20	Mtr	1250.00	25000.00
1.20	Providing and fixing 25 mm X 5 mm Copper strip in 40 mm dia GI pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	40	Mtr	1530.00	61200.00
1.21	Providing and fixing 6 SWG dia G.I. earth wire along the cable length or on surface or in recess for loop earthing as required	50	Mtr	23.00	1150.00
1.22	Excavation of the cable trenches by demolishing nominal cement concrete manually /by mechanical means including disposal of material within 50 metres lead as directed complete as required.	5	Cum	1200.00	6000.00
1.23	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means in foundation trenches or drains (not exceeding 3m in width or 20 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 3m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m. a) All kinds of soil	5	Cum	1500.00	7500.00
1.24	Providing and laying in position cement concrete 1:3:6 (1 cement : 2 coarse sand : 6 graded stone aggregate 40 mm nominal size) etc complete as required.	5	Cum	8500.00	42500.00
1.25	SH(A-VI): Miscellaneous Work Disconnection of end termination of following size of PVC insulated and PVC sheathed/ XLPE aluminium conductor cable of 1.1 kV grade from the existing panel complete as required. a) 4C X25sqmm	4	Set	250.00	1000.00
1.26	b) 2CX25Sqmm	4	Set	250.00	1000.00
1.27	c) 4C X35Sqmm	2	Set	250.00	500.00
1.28	SH(A-VII): CMC of UPS Comprehensive annual maintenance contract for 80 KVA UPS (taken through item No.1) inclusive of all spare parts to maintain the system healthy on all days inclusive of periodic maintenance as per schedule as well as breakdown maintenance as and when called or needed. [Note: AMC will start after Two years of completion of work as for Two years same are covered under defect liability period.] a) For first year (Starts after successful completion of 2 year defect liability period) [Remark: Rate will automatically be fixed 3% of item no.1 of SH(I) for individual UPS]	2	Per Set per year	53175.00	106350.00
1.29	b) For Second year [Remark: 3% cumulative enhancement on first year cost]	2	Per Set per year	54770.25	109540.50
1.30	c) For Third year [Remark: 3% cumulative enhancement on Second year cost]	2	Per Set per year	56413.36	112826.72
1.31	d) For Forth year [Remark: 3% cumulative enhancement on Third year cost]	2	Per Set per year	58105.76	116211.52


 सहा.महा.प्रब.(अभि.-वि.)
 Asstt. G.M. (Engg.-E)

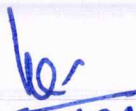
Sr. No	Item Description	Units	Qty	Rate (Ex GST)	Amount (Ex GST)
1.32	e) For Fifth year [Remark: 3% cumulative enhancement on Fourth year cost]	2	Per Set per year	59848.93	119697.86
2.00	SUB HEAD B (Provision of 1.5 ton Split AC's for UPS Room) Supply of 5 star BEE rated, Hi Wall mounted , remote controlled 1.5 Ton Inverter split AC with 100% copper coiled anti corrosive film protected, rotary type, R-32/R-22/R-410A refrigerant based compressor/ condenser unit. The Indoor Unit having air flow volume of 500 CFM or more including LED/LCD Panel display, pre Filter mesh with anti microbial/virus protection, Auto/cool/Fan/Dry mode capable of performing , Turbo cooling, Dehumidification, Air circulation etc including features as Auto restart & smart/self diagnose , remote control with LCD/LED Display, suitable to work on 230V, 50 Hz AC supply etc complete as per Technical specification sheet and as required.	2	Each	39000.00	78000.00
2.01	Installation , testing and commissioning of HI-Wall mounted , 1.5 Ton split Ac at UPS room including Fixing of 1/2" & 1/4" Copper refrigerant pipes, Drain pipe , Jacketing of refrigerant pipes with 12mm(nominal) nitrile rubber Insulation, Taping, electrical connections, dressing of wires, gas charging, proving foundation / Fixing of angle iron frame, minor civil works and submission of report to AAI etc complete as required.	2	Job	2500.00	5000.00
2.02	Supply and Fixing of Wall mounted cabinete type 4KVA Electronic Voltage Stabilizer, voltage regulation range from 130-300VAC (nominal) with LED/LCD Digital Display panel, time delay , low & high voltage protection, thermal Overload protection etc complete as required as per technical specification sheet and as required.	2	Each	4200.00	8400.00
2.03	Supply of prefabricated Powder Coated MS/GI Angle frame for 1.5 ton AC Outdoor Unit etc Complete as required.	2	Set	1400.00	2800.00
2.04	Supply of 1/4" AC copper pipe etc complete as required.	10	Mtrs	585.00	5850.00
2.05	Supply of 1/2" AC copper pipe etc complete as required.	10	Mtrs	740.00	7400.00
2.06	Supply of 12mm (nominal) Nitrile rubber Insulation sleeves for AC copper pipes Including Vinyl Taping etc Complete as required.	10	Mtrs	85.00	850.00
2.07	Supply of PVC Drain pipe (25mm) nominal etc complete as required.	10	Mtrs	165.00	1650.00
2.08	Supply of 4C x 2.5 Sqmm PVC insulated and PVC/XLPE sheathed AC copper control cable confirming to IS-694 with up to date amendments etc complete as required.	10	Mtrs	140.00	1400.00
3.00	SUB HEAD C (REPLACEMENT OF LT PANELS) SH(C-I): SITC OF LT PANELS Main Non Essential LT Panel (Substation) (Panel shall conform to IEC 61439/1-2 & shall be IP-42 & of Form-4b construction). Supply, Installation, Testing and Commissioning of cubicle type Indoor, LT panel, IP42, suitable for 415V+/-10%, 3 Phase, 4 wire 50 Hz AC supply system, fabricated in compartmentalized modular design 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 7 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 as per design subject to minimum 50 KA for 1 sec , 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 bus bar of size as per IS 3043 subject to minimum 50 mm x 6 mm at the rear with 2 Nos. earth stud, solid / flexible connections from main earth bus bar to switchgears with required size of Copper / Aluminium conductors / bus bars and control wiring with 2.5 sqmm PVC insulated copper conductor cable (FRLS), cable alleys, cable gland plates in two half, including provision of SPD's. Surge Protection Devices (SPD'S) shall be provided at main LT Panel incoming feeders ECA 3G i/c providing following switchgears / accessories as per specifications. Incomer 02 Nos. ACB, 630 Amps, 50 kA, 4 Pole, Microprocessor release Horizontal draw out type of fault breaking capacity 50KA (Ics=Icu=Icw for 1.0 secs) Electrical Draw Out Motorized operated, fitted with interlocked door, automatic safety shutters, mechanical ON / OFF and service/ test/ isolated position indicators and frame earthing contact, conforming to IS-60947-2 1993 as amended up-to-date complete with Independent Electrical & manual spring closing mechanism, Microprocessor release (EMI & EMC certified) for over current (Phase & neutral), 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 electrical & mechanical interlocking with suitable accessories all protection i/e Earth fault, Under/Over Voltage, Under/Over Frequency, Current & Voltage Unbalance, etc. and Real-time Clock.	1	Job	1695000.00	1695000.00


 सह. महा. प्रब. (अभि.-वि.)
 Asstt. G.M. (Engg.-E)

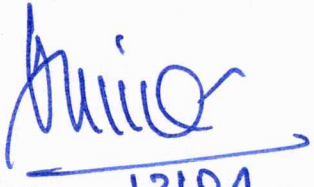
Sr. No	Item Description	Units	Qty	Rate (Ex GST)	Amount (Ex GST)
	All ACBs shall be provided with Mechanical Operation Counter, Door Interlock with Panel door				
	Each Incomer shall have one set of the following items:				
	Intelligent multi function digital meter to read V,A,kVA, KW, kVAR, PF, Hz etc with communication facility (RS485 port), THD and Individual order harmonics upto 31st Order. LED display with required Nos CTs, of suitable CT ratio, 15 VA, class 1.0 and control circuit wiring with 2 Amp MCB for controlling.				
	1 Set of Indication Lamps, LED type, R,Y,B Phase indicating lamp with 2 Amp MCB for controlling.				
	1 Set of Indication Lamps, LED type for breaker 'ON' , 'OFF', 'TRIP' & spring charged lamps with 2 Amp MCB for controlling.				
	240 V AC Shunt trip coil. - 1 Set				
	Accessories for Electrical & Mechanical Interlocking				
	3Nos. additional CTs of Class-0.5 in each transformer Incoming bus section for 3Phase 3CT capacitor panel / hybrid panel.				
	Single phase preventer, Phase Reversal relay, Under voltage, Over voltage for each transformer with indicator for trip and hooter for alarm.				
	01 Sets Surge protection device ECA 3G Including with inbuilt fuse and all necessary accessories and wire connections as per specifications.				
	Bus Coupler				
	1 No. 630 Amps, 50 kA, 4 Pole, (EDO) Air Circuit Breaker Horizontal draw out type (without release) of fault breaking capacity 50KA (Ics=Icu =Icw=50KA at 440V) Electrical Draw Out Motorized, electrically operated, Independent Electrical / manual spring closing mechanism fitted with interlocked door, automatic safety shutters, mechanical ON / OFF, service, test, isolated position indicators and frame earthing contact, conforming to IEC 60947 / IS-13947-2 1993 as amended up-to-date complete with necessary Auxiliary contact & MCB. Test terminal block set circuits as per standard practice, auxiliary contactors with contacts (minimum 4NO+4NC) for positive interlocking of the breakers, necessary electrical & mechanical interlocking with suitable accessories.				
	3 Sets Indication Lamps, LED type, for RYB with 2 Amp control MCB.& breaker 'ON' , 'OFF', 'TRIP' & spring charged lamps with 2 Amp MCB for controlling.				
	Bus Bars				
	TPN aluminium extensible type main bus bars of minimum 800 Amps capacity with heat shrinkable coloured sleeves having 100% neutral bus as that of phase i/c DMC / SMC bus bars supports at required intervals complete for cross section, size supports & having spacing etc. for withstanding fault level of 50kA capacity for 1 sec.				
	Outgoings				
	02 Nos. MCCB, 250 Amps , 4 Pole, 36 kA with adjustable setting , microprocessor release with O / C & S / C protection, Digital KWH Meter with maximum demand load and current display RS485 module of class-0.5 accuracy with suitable range of cast resin CT including connections etc as required.				
	02 Nos. MCCB, 200 Amps , 4 Pole, 36 kA with adjustable setting , thermal magnetic release with O/C & S/C protection, Digital KWH Meter with maximum demand load and current display RS485 module of class-0.5 accuracy with suitable range of CT including connections etc as required.				
	04 Nos. MCCB, 100 Amps , 4 Pole, 35 kA with adjustable setting ,thermal magnetic release with O/C & S/C protection, Digital KWH Meter with maximum demand load and current display RS485 module of class-0.5 accuracy with suitable range of cast resin CT including connections etc as required.				
	03 Nos. MCCB, 63 Amps , 4 Pole, 35 kA with adjustable setting ,thermal magnetic release with O/C & S/C protection, Digital KWH Meter with maximum demand load and current display RS485 module of class-0.5 accuracy with suitable range of cast resin CT including connections etc as required.				


 12/04
 सहा. मेह. प्रब. (अभि.-वि.)
 Assst. G.M. (Engg.-E)

Sr. No	Item Description	Units	Qty	Rate (Ex GST)	Amount (Ex GST)
	Note : All incomers and Buscoupler breakers shall be electrically & mechanically interlocked with suitable accessories. 1 No ON, OFF & TRIP indication lamp (LED type) with 2 Amp SP MCB for each outgoing. All ACBs shall be provided with Operation Counter, Door Interlock with Panel door. 1 No. 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. LED display with required Nos CTs of suitable CT Ratio .(5 / 15) VA , class 0.5 and control circuit wiring with 2 Amp protection MCB with all incoming and outgoing ACB's. 1 Set Rotary operating mechanism and terminal extension spreaders for all the ACBs / MCCB's. Space heater with thermostat and MCB				
3.01	Main Essential LT Panel (Substation)(Panel shall conform to IEC 61439/1-2 & shall be IP-42 & of Form-4b construction). Supply, Installation, Testing and Commissioning of cubicle type LT panel, IP42, suitable for 415V, 3 Phase, 4 wire 50 Hz AC supply system fabricated in compartmentalized modular design 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 7 tank process for powder coating in approved shade, having TPN Aluminium alloy bus bars for high conductivity, SMC bus bar supports, 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 25 mm x 5 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 (FRLSH), cable alleys, cable gland plates in two half, including provision of Surge protection Devices of type ECA 3G i/c providing following switchgears / accessories as per specifications. INCOMER 02 Nos. MCCB, 250 Amps , 4 Pole, 36 kA with adjustable setting , microprocessor release with O / C, S / C & Earth fault protection Digital KWH Meter with maximum demand load and current display RS485 module of class-0.5 accuracy with suitable range of cast resin CT including connections etc as required. Each Incomer shall have one set of the following items: 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. LED display with required Nos CTs,of suitable CT ratio,15 VA, class 1.0 and control circuit wiring with 2 Amp MCB for controlling. 1 Set of Indication Lamps, LED type, R,Y,B Phase indicating lamp with 2 Amp MCB for controlling. Surge protection device ECA 3G Including with inbuilt fuse and all necessary accessories and wire connections as per specifications. BUS COUPLER 250 Amps , 4 Pole, 36 kA. BUSBAR TPN aluminium extensible type main bus bars of minimum 400 Amps . capacity with heat shrinkable coloured sleeves having 100% neutral bus as that of phase i/c DMC / SMC bus bars supports at required intervals complete for cross section, size supports & having spacing etc. for withstanding fault level of 36kA capacity for 1 sec. OUTGOING 02 Nos. MCCB, 200 Amps , 4 Pole, 36 kA with adjustable setting , microprocessor release with O / C & S / C protection. 06 Nos. MCCB, 100 Amps , 4 Pole, 36 kA with adjustable setting , microprocessor release with O / C & S / C protection. 06 Nos. MCCB, 63 Amps , 4 Pole, 36 kA with adjustable setting , microprocessor release with O / C & S / C protection.	1	Job	685000.00	685000.00


 सहा. मह. प्र. (आभ.-वि.)
 Asstt. G.M. (Engg.-E)

Sr. No	Item Description	Units	Qty	Rate (Ex GST)	Amount (Ex GST)
	Note :				
	1 Set Rotary operating mechanism and terminal extension spreaders for all the MCCB's				
	1 No ON, OFF & TRIP indication lamp (LED type) with 2 Amp SP MCB for each outgoing/spare				
	1 No. Mechanical (Castle Lock) for all the Incomers /bus coupler/outgoing.				
	Space heater with thermostat and MCB				
	All incomers and Buscoupler breakers shall be electrically & mechanically interlocked with suitable accessories.				
3.02	SH(C-II): END TERMINATIONS & DISMANTLING Disconnection of End termination of cable size 2C/3C/3.5C/4C 300sqmm to 6Sqmm PVC Insulated and PVC Sheathed/XLPE aluminium conductor cable of 1.1kV grade from the existing panel complete as required.	30	Set	250.00	7500.00
3.03	Supplying and making end termination with brass single compression gland and aluminium lugs for following sizes of PVC/XLPE insulated PVC sheathed aluminium conductor cable of 1.1 KV grade as required.	2	Set	240.00	480.00
3.04	a) 2C x 6 sq.mm b) 4C x 16 sq.mm	2	Set	300.00	600.00
3.05	c) 3.5C x 25 sq.mm	7	Set	310.00	2170.00
3.06	d) 3.5C x 95 sq.mm	4	Set	600.00	2400.00
3.07	e) 3.5C x 150 sq.mm	2	Set	790.00	1580.00
3.08	f) 3.5C x 185 sq.mm	10	Set	950.00	9500.00
3.09	g) 3.5C x 300 sq.mm	3	Set	1350.00	4050.00
3.10	Dismantling the existing LT Panel along with all its accessories, including all manpower and machinery required, stacking the dismantled materials at the store/specified location etc complete as required.	2	Job	15000.00	30000.00
				Total	8386346.60
(Eighty Three Lakh Eighty Six Thousand Three Hundred Forty Six Rupees and Sixty Paise)					


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 विवेक कटारा/Vivek Katara,
 सहा.महा.प्रब.(अभि.-वि.)/Asstt.G.M. Engg.-E),
 भा.वि.प्रा., विमानतल जम्मू/ AAI, CA, Jammu