

राष्ट्रीय कोशिका विज्ञान केंद्र
NATIONAL CENTRE FOR CELL SCIENCE
(जैवप्रौद्योगिकी विभाग, भारत सरकार की स्वायत्त संस्था/
An Autonomous Institution of the Department of Biotechnology, Govt. of India)
सावित्रीबाई फुले पुणे विश्वविद्यालय परिसर, गणेशखिंड, पुणे-411007
Savitribai Phule Pune University Campus, Ganeshkhind Pune -411007

भाग II/ PART II- वाणिज्यिक/मूल्य बोली/ COMMERCIAL / PRICE BID

**SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF
400KVA SUBSTATION WITH ALLIED WORKS AT JIDNYASA BLDG.,
KOTHRUD, PUNE**



प्रस्तुत करने की नियत तारीख/ DUE DATE FOR SUBMISSION: 21/11/2023 @ 15 HRS

प्रेषित करने के लिए पता/ TO BE SUBMITTED TO:

निदेशक/ The Director

राष्ट्रीय कोशिका विज्ञान केंद्र/ National Centre For Cell Science

सावित्रीबाई फुले पुणे विश्वविद्यालय परिसर/ Savitribai Phule Pune University Campus,

गणेशखिंड/ Ganeshkhind, पुणे/ Pune 411007 (महाराष्ट्र, भारत/ Maharashtra, India)

बिडर का नाम एवं पता/ NAME AND ADDRESS OF BIDDER: _____

SEAL & SIGN OF THE BIDDER

BILL OF QUANTITY
SITC OF 400KVA SUBSTATION WITH ALLIED WORKS AT JIDNYASA BLDG., KOTHRUD, PUNE

SL NO.	DESCRIPTION	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
A	NCCS JIDNYASA BLDG PROPOSED SUBSTATION				
1	<p>Supplying, installing, testing and commissioning of SF6 Insulated 22kV, 630A, 16kA/3sec, 3 way outdoor, extensible motorized SCADA compatible RMU, internal arc tested as per electric supply company specification consisting of 2nos. feeder with 2 LBS & Earth switch and 1 no. feeder with 1 SF6 Gas Pressure Gauge Manometer with Vacuum circuit breaker with 230V AC Motor with 110V DC closing & opening coils. Rate shall include Suitable Aluminium bus bar Rating 3ph with heat shrinkable sleeves and busbar supports, Pressure Switch, Capacitive Voltage Indications (VPIS), Fault Passage indicator, Battery Charger Unit, Battery, Auxiliary Transformer, Potential Transformer, Operation Counter for LBS & CB, Surge Suppressor, MCB for Potential Transformer, MCB for Auxiliary Transformer and indicating lamps. Compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA.</p> <p>Foundation details to be provided. Any material or Hardware including Anchor Fastener, the cost of Crane /Hydra if required, necessary civil foundation work as per MSEDCL standards is included in this item. Necessary space provision for entry of HT cables from the bottom through 3mm thick detachable gland plates as per the technical specification. .</p>	1	EACH	9,05,021	9,05,021
2	<p>Supplying, erecting, testing and commissioning 22KV HT metering cubical (compact type) approved by MSEDCL / licensee fabricated with 2 mm (14SWG) M.S. sheets with supporting angle, painted with powder coating / epoxy paint of required shade, copper bus bar size 25 x 6 mm, heavy duty mechanical lock, with counter meter for measuring no. of times the opening of meter door, top side cover (CT, PT cover) interlock with meter door, epoxy casted 3 nos. CT having required ratio between 10/5A, VA 10, Class 0.5S, epoxy casted 3 nos. PT having ratio 22000/V3/110/V3 VA 50, Class 0.5 suitable for provided trivector meter, and provision for incoming and outgoing cables complete duly tested by licensee with necessary test certificates and erected on provided plinth/ cc foundation.</p> <p>Foundation details to be provided. Any material or Hardware including Anchor Fastener, the cost of Crane /Hydra if required, necessary civil foundation work as per MSEDCL standards is included in this item. Necessary space provision for entry of HT cables from the bottom through detachable gland plates as per the technical specification.</p>	1	EACH	2,24,733	2,24,733

SL NO.	DESCRIPTION	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
3	<p>Supplying, installing, testing and commissioning of SF6 Insulated 22kV, 630A,16kA/3sec, 2 way outdoor, extensible motorised SCADA compatible RMU,internal arc tested as per electric supply company specification consisting of 1no. feeder with 1 LBS & Earth switch and 1 no. feeder with 1 SF6 Gas Pressure Gauge Manometer with Vacuum circuit breaker with 230V AC Motor with 110V DC closing & opening coils. Rate shall include Suitable Surge Suppressor, MCB for Potential Transformer, MCB for Auxillary Transformer and indicating lamps. Compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA.</p> <p>The panel shall contain the equipment component like 24V DC Close and trip coils with power pack, 1ph input & 24V DC output power pack, Transformer rating suitable CT's of 25A/1A with class 5P10 for protection, CTs 25A/1A with class PS for metering, MFM (Multi Function Meter with RS 485 port), IDMT(50.51.50N,51N) 3Nos over current & 1No Earth fault, 3 elements relay for winding, oil, Buchholz relay input, A74 NO,NC auxillary relays for Transformer protection, (95) supervision relay for trip circuit, (86) master trip relay, (94) internal circuit relay, 12window Annunciator, Hooter, Emergency push button, Toggle switch, Local/remote switch, Trip, Neutral, close(TNC) switch, necessary ON-OFF indicating lamps with all standard accessories to be considered and complete with suitable Aluminium Busbar and bus bar inter connections control wiring, Designation labels wherever required.</p> <p>Foundation details to be provided. Any material or Hardware including Anchor Fastener, the cost of Crane /Hydra if required, necessary civil foundation work as per MSEDCL standards is included in this item. Necessary space provision for entry of HT cables from the bottom through 3mm thick detachable gland plates as per the technical specification.</p>	1	EACH	15,84,150	15,84,150
4	Supplying, erecting & terminating XLPE insulated galvanized steel formed wire round armoured cable of following size aluminium conductor laid in provided trench / pipe as per specification no. CB-HT. Rate shall include cable route markers, name plates. The cable shall be clamped at regular intervals to the supports using MS clamps, cable ties and fasteners.				
4.1.	22 kV(E), 3 x 95 sq. mm. aluminium conductor	50	Mtrs	1,550	77,485
5	Supplying and erecting Heat shrinkable indoor termination kit for 22kV (E) XLPE HT cable 3x up to 95 sq. mm. with necessary material as per specification no. CB-JT/HT				
5.1.	3 X 95 sqmm- (Kiosk-2, T/f-1 i/c))	3	EACH	12,967	38,901
6	Supplying and erecting Touch proof joint termination kit for 22kV (E) XLPE HT cable 3x up to 95 sq. mm. with necessary material as per specification no. CB-JT/HT				
6.1.	3 X 95 sqmm- (NCCS RMU-2)	2	EACH	22,153	44,306

SL NO.	DESCRIPTION	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
7	Laying, testing, commissioning & fixing of one number Armoured / Unarmoured PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray / existing trenches as required. With rate include of cable route markers, name plate, the cable shall be clamped at regular intervals to the supports in trench or on cable trays or civil wall using MS clamps, cable ties and fasteners, meggering values & submitting reports of tests as per tender technical specifications.			-	
7.1.	3½ core 300 sq. mm. (clamped with 40 x 3 mm MS flat clamp)	20	Mtrs	197	3,934
8	Supplying, installation and making end termination with brass compression gland and aluminium lugs, heat shrinkable sleeves on long ends, tapping, crimping for following size of Armoured / Un-Armoured PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
8.1.	3½ core 300 sq. mm. flange type	4	Nos.	1,271	5,083
9	Supply, Installation & Testing of Earthing with G.I earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal / coke and salt as required as per IS 3043.				
9.1.	For Kiosk-5, RMU-2, HT cable-1, LT Kiosk-2, Transformer-4, Fecing-1, MS Shade-1)	16	Nos.	7,945	1,27,120
9.2.	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection / terminating with G.I nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I nut bolt & spring washer spaced at 50mm). Two numbers of earth strips should run along with cable tray/civil wall with proper using bolt and nuts for strips connectivity and two earth points shall be end terminated for all Electrical panels etc., refer the earthing schematic for considering the earth strips.	120	Mtrs	153	18,374
9.3.	Supplying & fixing 25mm x 5mm GI strip on surface or in recess for connections etc., as required.	30	Mtrs	259	7,783
9.4.	Supply, Installation & Testing Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal / coke and salt as required as per IS 3043. (Transformer Neutral-2)	2	Nos.	14,714	29,428
9.5.	Supplying and laying 25 mm X 5 mm copper strip at 0.50 metre below ground as strip earth electrode, including connection / terminating with nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of brass nut bolt and spring washer spaced at 50mm) Two numbers of earth strips should run along with cable tray/civil wall with proper using PVC insulators, green color PVC sleeves for strips connectivity and two earth points shall be end terminated for Transformer Neutral points, refer the earthing schematic for considering the earth strips.	30	Mtrs	1,034	31,006
9.6.	Supplying & fixing 25mm x 5mm Copper strip on surface or in recess for connections etc., as required.	10	Mtrs	1,236	12,356

SL NO.	DESCRIPTION	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
10	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 400 kVA, HV side cable entry Box and LV side Cable Box, Mineral oil immersed and naturally cooled outdoor type, Copper wound, without gas cushioning, hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off Load +5 to -10 in steps of 2.5%, having 7 number of tap positions with standard accessories complete with test certificate with losses below 1286 Watts at 50% load, 3623 Watts at 100% load as per IS:2280 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL. Necessary civil foundation will be in Electrical contractor scope, hence contractor should co-ordinate with Transformer vendor for foundation details. WTI, OTI or equivalent protection should be provided with control cables from Transformer to RMU purpose. The scope includes above item Loading/Unloading of equipment from Truck and container, shifting to place of erection, unpacking at site, assembly of loosely furnished accessories, installation on ready foundation. The cost of Crane /Hydra if required to be included in this item.	1	Set	12,14,124	12,14,124
11	Supplying and fixing H.T. danger notice plate of 250mm x 200mm, made of mild steel, at least 2mm thick, and vitreous enameled white on both sides, and with inscription in single red colour on front side as required.	2	set	347	693
12	Supply, Installation, testing & commissioning of Outdoor (IP55) LT kiosk of 630A MDO ACB 4P 50kA and Microprocessor based releases for Short circuit, Over current, Earth fault, Shunt trip, ON/OFF /Trip indicating lamps with control MCB's & Emergency stop push button, Instrument panel consists of Maximum demand controller with RS 485 port with display, CTs, RYB & Trip indicating lamps with control MCB's upto 4A, REF Relay(64R) with 5P10, CTs. Single phase preventor, Auxiliary contactor with addition block, Auto manual switch, Line Voltage Monitor, 100KA SPD with 4pole Isolator complete as per IEC 60439. Panel cubicle type made out of 2.0mm thick enclosure, 3.0mm gland plate MS CRCA sheet which is derusted, degreased, phosphated and passivated with angle iron skeleton or sheet folded construction. The panel to be dust and vermin proof and water proof (IP 55) with canopy type and with powder coated paint after suitable seven tank pretreatment. The panel will have incoming cum outgoing feeder made out of cold rolled sheet and doors fitted with Neoprene gaskets and fasteners. Internal parts of panel can be of unpainted / GI parts to ensure effective earth continuity. Busbars are to be of high conductivity Aluminium Alloy E91E IS 5082. Complete with 800A Aluminium Busbar and bus bar inter connections control wiring, Designation labels wherever required. Necessary space provision for entry of cables from the Bottom through detachable gland plates. Lock Out Tag Out (LOTO) has to be provided for feeders. The cost of Crane /Hydra if required to be included in this item. Refer the technical specifications and SLD for more details. Foundation details to be provided. The cost of necessary civil foundation work is included in this item.	1	Set	7,33,335	7,33,335

SL NO.	DESCRIPTION	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
13	Digging & refilling of 300mmX900mm (widthXdepth) underground cable trenches. Rate shall include covering of cable by using tiles/bricks, sand etc. complete	20	Mtrs	2,148	42,952
14	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 300 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL				
14.1	3½ core 300 sq. mm. LT XLPE insulated Aluminium conductor PVC outer sheathed Armoured cable	40	Mtrs	1,930	77,219
15	Supplying & laying (including excavation) reinforced cement concrete pipe of IS 458:2003 NP-2 class of 150 mm internal diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.	20	Mtrs	671	13,428
16	Shed for Metering kiosk as per MSEDCL standard				
16.1	Supplying and erecting GI sheet 0.8 mm (22 SWG) having zinc coating of 275 microns with galvanization process compliance to IS 2629:1985 to be used for fabrication of boxes panel boards etc. including cutting, bending, drilling, welding, riveting etc. and painting with one coat of red lead paint and 2 coats of enamel paint. (5mx5mx5m ht)	25	sqmtr	1,699	42,480
16.2	Supplying and erecting iron work, sheet metal work consisting of CRCA sheets, various sections of iron, plates, chequered plates, rods, bars, MS pipes, etc. for panel board or any other purpose with bending, cutting, drilling and welding complete erected at the position with necessary materials duly painted with one coat of red oxide and two coats of enamel paint to match the switchgears or as per directions by the authority	250	Kg	219	54,870
17	Supply, fabricating and fixing of weld mesh fencing for transformer yard with required gate of 2.5 mtr -2 nos. height made out of 2"x2"10 swg, Weld mesh made up of 40x40x6 mm frame in the height of 2500 mm with necessary grouting arrangements with detachable type complete as required.	45	sqmtr	6,195	2,78,775
18	Supply and spreading of 2" nominal size jelly stone on the floor of the yard.	5	Cu. Mtrs	18,786	93,928
19	Transformer Foundation	1	Job	2,33,640	2,33,640
19.1	RCC Foundation M25 Grade, suitable for 400KVA Transformer having approx 1.5 mtr ht from ground level, using steel bar, Excavation, refilling with stone & dubber, coloring etc required as per MSEDCL guidelines. Complete job. Foundation drawing should be get it approve from NCCS & consultant before start of work.				
20.0	SAFETY & MISCELLANEOUS ITEMS				
20.1	Supply and fixing of 5 Kg capacity CO2 type fire extinguisher conforming to IS2876 including fixing clamps, brackets, bolts & nuts etc as required	1	lot	10561	10561
20.2	Supply and fixing of shock treatment chart in three language (English & Local Language)	1	Nos	2360	2360
20.3	Supply and laying of Rubber mat of size 1000mmx2000mmx2.5mm thick of 11K V grade as per IS 15652 or equivalent.	1	Nos	2360	2360

SL NO.	DESCRIPTION	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
20.4	Supply and fixing first aid box of standard type suitable for minimum 10 workers having necessary antiseptic cream, medicine for use on wounds due burn, crepe bandage, gauge bandage, medicated ready to use bandage (Band-Aid) adhesive tape for medicinal use, scissors, anti-septic solution, etc. (All above contents shall be of standard makes)	1	Nos	2360	2360
	SUB-TOTAL OF A				59,12,765
B	MSEDCL RMU TAP POINT PAUD ROAD TO NCCS JIDNYASA BLDG SUBSTATION				
1	<p>Supplying, installing, testing and commissioning of SF6 Insulated 22kV, 630A,16kA/3sec, 3 way outdoor, extensible motorised SCADA compatible RMU,internal arc tested as per electric supply company specification consisting of 2nos. feeder with 2 LBS & Earth switch and 1 no. feeder with 1 SF6 Gas Pressure Gauge Manometer with Vacuum circuit breaker with 230V AC Motor with 110V DC closing & opening coils. Rate shall include Suitable Aluminium bus bar Rating 3ph with heat shrinkable sleeves and busbar supports, Pressure Switch, Capacitive Voltage Indications (VPIS), Fault Passage indicator, Battery Charger Unit, Battery, Auxiliary Transformer, Potential Transformer, Operation Counter for LBS & CB, Surge Suppressor, MCB for Potential Transformer, MCB for Auxillary Transformer and indicating lamps. Compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA.</p> <p>Foundation details to be provided. Any material or Hardware including Anchor Fastener, the cost of Crane /Hydra if required, necessary civil foundation work as per MSEDCL standards is included in this item. Necessary space provision for entry of HT cables from the bottom through 3mm thick detachable gland plates as per the technical specification.</p>	1	Each	9,05,021	9,05,021
2	Supplying, erecting & terminating XLPE insulated galvanised steel formed wire armoured (Round) cable 22 kV(E), 3 x 300 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT. Rate shall include cable route markers, name plates. The cable shall be clamped at regular intervals to the supports using MS clamps, cable ties and fasteners.				
2.1.	22 kV(E), 3 x 300 sq. mm.	160	Mtrs	2,625	4,20,014
3	Supplying and erecting Touch proof termination kit for 22kV (E) XLPE HT cable 3x240 to 400 sq. mm. with necessary material as per specification no. CB-JT/HT				
3.1.	3 X 300 sqmm- (MSEDCL RMU-1, RMU for MSEDCL-1 i/c)	2		22,153	44,306
3.2.	3 X 95 sqmm- (Add RMU for MSEDCL-1 O/c,)	1		22,153	22,153
4	Supplying & laying (including excavation) reinforced cement concrete pipe of IS 458:2003 NP-2 class of 250 mm internal diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.(For Road Crossing)	40	Mtrs	755	30,208
5	Supplying & laying (including excavation) half round reinforced cement concrete pipe of IS 458:2003 NP-2 class of 250 mm internal diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.	120	Mtrs	643	77,172

SL NO.	DESCRIPTION	QTY	UNIT	UNIT RATE	TOTAL AMOUNT
6	Earthing				
6.1.	Supply, Installation & Testing of Earthing with G.I earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal / code and salt as required as per IS 3043.	2	Nos.	7,945	15,890
6.2.	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection / terminating with G.I nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I nut bolt & spring washer spaced at 50mm). Two numbers of earth strips should run along with cable tray/civil wall with proper using bolt and nuts for strips connectivity and two earth points shall be end terminated for all Electrical panels etc., refer the earthing schematic for considering the earth strips.	10	Mtrs	153	1,531
7	Supplying, erecting & terminating FR XLPE insulated, galvanized steel formed wire armoured (strip) cable 1100 V, 4 core 4 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU. (For Power supply to RMU's)	30	Mtrs	350	10,514
	SUB-TOTAL OF B				15,26,809
	TOTAL PROJECT COST (A+B)				74,39,574

**राष्ट्रीय कोशिका विज्ञान केंद्र
NATIONAL CENTRE FOR CELL SCIENCE**

NIT No. **NCCS/MAINT/HT/454D/2023**

Name of Work: -SITC OF 400KVA SUBSTATION WITH ALLIED WORKS AT JIDNYASA BLDG., KOTHRUD, PUNE-411038

PRICE BID

Name of the Contractor: M/s._____

SNo.	Name of component	Total Project Cost	Percentage above or below the Total Project Cost	% in Figure	Total Amount
1	SITC OF 400KVA SUBSTATION WITH ALLIED WORKS AT JIDNYASA BLDG., KOTHRUD, PUNE	74,39,574			
TOTAL AMOUNT IN WORDS					