

**BILL OF QUANTITIES CUM PRICE SCHEDULE (Annexure-I)**

Name of the Work:-Receipt of equipment/ material at site, unloading, reconciliation, inspection, verification, storage, up-keeping during storage, erection, testing, commissioning and handing over of 220 kV GIS Substation at IOCL Panipat Refinery in Haryana.

Customer:- M/S INDIAN OIL CORPORATION LIMITED, PANIPAT REFINERY DIVISION

Tender Specification No. : - TBSM/IOCL PANIPAT/ETC/TENDER/21-22 Date: 03.08.2021

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
1	[A.1.i] 220/34.5kV (220/34.5kV, 50/65 MVA, ONAN/ONAF Power Transformers with associated accessories (ETC) ) : 220/34.5kV, 50/65 MVA, ONAN/ONAF Power Transformers with online oil dehydration system, online partial discharge monitoring sensor, OLTC, RTCC with AVR along with all accessories complete in all respect alongwith its marshalling kiosk, radiator bank and its cooling arrangement, conservator, cooler control cabinet/ marshalling kiosk, insulating oil and other associated accessories including OLTC and its control box and online UHF sensors for PD monitoring etc. Work includes erection of all auxiliaries such as turrets, bushings, terminal connectors, associated earthing works (excluding riser connections from main earthmat), laying of cable from transformer auxiliaries to cooler control cabinet/ marshalling kiosk, oil filtration, oil filling, hot oil circulation, oil testing etc. as required to complete the installation, testing & commissioning of transformer system in all respect. It includes following but not limited to, 1. The above activities includes oil filtration with oil filtration machine with appropriate capacity, filling of oil, hot oil circulation etc. for successful commissioning of transformer. 2. Transformer main body dragging from road/ jacking pad to transformer main foundation is included in scope. 3. The above work does not includes main earthing work and terminal connectors. 4. NIFP based firefighting system and FO based temperature sensor related work is not included in scope. Supervision of unloading, storage, erection, testing and/ or commissioning from OEM, if required shall be arranged.	4	Nos	4,91,003.19	19,64,012.76
2	[A.1.ii] 220/34.5kV (220/34.5kV, 50/65 MVA, ONAN/ONAF Power Transformers with associated accessories (ETC) ) : -RTCC Control Panel with AVR and associated accessories work in all respect including connection of special cables, if any.	4	Set	5,336.99	21,347.96
3	[A.1.iii] 220/34.5kV (220/34.5kV, 50/65 MVA, ONAN/ONAF Power Transformers with associated accessories (ETC) ) : -Oil testing work including but not limited to BDV, ppm, Resistivity & Tan delta, DGA, IFT, TAN Delta etc. for oil, if required. (1 set= all the tests on 2 samples collected from top & bottom).	4	Set	4,483.07	17,932.28
4	[A.1.iv] 220/34.5kV (220/34.5kV, 50/65 MVA, ONAN/ONAF Power Transformers with associated accessories (ETC) ) : -Complete dryout of transformer with nitrogen supply and purging/ filling/ vaccuming/ purging and heating as per OEM instructions, in case of requirement at site	1	Set	77,108.85	77,108.85
5	[A.2] 220kV (220kV, 2000A, 3X1 Phase HCB Isolator (ISO) with associated accessories(ETC) ) : 220kV, 2000A, 3X1 Phase HCB Isolator (Electrically operated mechanically ganged) with provision of remote and local motor control and local manual operation with one earth switch (Electrically operated mechanically ganged) complete with operating mechanism boxes, position indicating arrangement and accessories etc. including support insulators and terminal connectors but excluding structure work. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged,	2	Set	23,100.68	46,201.36
6	[A.3] 220kV (198kV, 10kA, 1 Phase, Class-III, Metal oxide gapless Surge Arrester (SA) with associated accessories (ETC) ) : 198kV, 10kA, 1 Phase, Class-III, Metal oxide gapless Surge Arrester complete with surge monitor inclusive of discharge counter, earthing connection cable and insulating base complete with all associated accessories including terminal connectors but excluding structure work.	6	Nos	2,668.50	16,011.00
7	[A.4] 220kV (220kV, 1 Phase Current Transformer with associated accessories (ETC) ) : 220kV, 1 Phase Current Transformer complete with all associated accessories including terminal connectors but excluding structure work.	6	Nos	6,824.76	40,948.56
8	[A.5] 220kV (220kV, 1 Phase, Capacitor Voltage Transformer (CVT) with associated accessories (ETC) ) : 220kV, 1 Phase, Capacitor Voltage Transformer complete with all associated accessories including terminal connectors but excluding structure work. Payment for CVT JB shall be done separately.	6	Nos	6,361.80	38,170.80
9	[A.6] 220kV (220kV, 1 Phase Potential Transformer with associated accessories (ETC) ) : 220kV, 1 Phase, Potential Transformer complete with all associated accessories including terminal connectors but excluding structure work.	6	Nos	6,361.80	38,170.80
10	[A.7.i] 220kV (220kV, 1 Phase, Suspension type Wave Trap along with associated accessories (At Local End/ IOCL PANIPAT End - PR & PNCP) (ETC)) : 220kV, 1 Phase, Suspension type Wave Trap along with associated accessories including terminal connectors but excluding suspension string. Payment for suspension string shall be done separately.	4	Nos	12,000.00	48,000.00
11	[A.7.ii] 220kV (220kV, 1 Phase, Suspension type Wave Trap along with associated accessories (At Remote End/ HVPNL MUNDH S/S End) (ETC)) : 220kV, 1 Phase, Suspension type Wave Trap along with associated accessories including terminal connectors but excluding suspension string. Payment for suspension string shall be done separately.	4	Nos	12,000.00	48,000.00
12	[A.8] 220kV (220kV, 1 Phase Post Insulators with associated accessories (ETC)) : 220kV, 6kN, 25mm/kV, 1 Phase, Outdoor type, Post Insulators suitable for Bus Support including mounting hardware complete with all other associated accessories including terminal connectors but excluding structure work.	2	Nos	1,280.88	2,561.76

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
13	<p>[A.9.i] 220kV (220kV, 2000A GIS double main bus scheme (ETC)) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect.</p> <p>-GIS line bay complete in all respect as per following but not limited to,</p> <ol style="list-style-type: none"> <li>1. SF6 gas work required for completion of work.</li> <li>2. Structure materials for support including hardwares, foundation bolts/ embedded Items, rails and/ or other items structural items to complete in all respect.</li> <li>3. Complete earthing work as applicable.</li> <li>4. The above work excludes GIS surge arrester module and SF6 to EHV cable connection, if applicable.</li> </ol>	2	Set	91,589.70	1,83,179.40
14	<p>[A.9.ii] 220kV (220kV, 2000A GIS double main bus scheme (ETC)) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect.</p> <p>-GIS transformer bay complete in all respect as per following but not limited to,</p> <ol style="list-style-type: none"> <li>1. SF6 gas work required for completion of work.</li> <li>2. Structure materials for support including hardwares, foundation bolts/ embedded Items, rails and/ or other items structural items to complete in all respect.</li> <li>3. Complete earthing work as applicable.</li> <li>4. The above work excludes GIS surge arrester module and SF6 to EHV cable connection, if applicable.</li> </ol>	4	Set	78,544.13	3,14,176.52
15	<p>[A.9.iii] 220kV (220kV, 2000A GIS double main bus scheme (ETC)) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect.</p> <p>-GIS spare bay complete in all respect as per following but not limited to,</p> <ol style="list-style-type: none"> <li>1. SF6 gas work required for completion of work.</li> <li>2. Structure materials for support including hardwares, foundation bolts/ embedded Items, rails and/ or other items structural items to complete in all respect.</li> <li>3. Complete earthing materials including high frequency earthing</li> <li>4. The above work excludes GIS surge arrester module and SF6 to EHV cable connection, if applicable.</li> </ol>	4	Set	78,544.13	3,14,176.52
16	<p>[A.9.iv] 220kV (220kV, 2000A GIS double main bus scheme (ETC)) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect.</p> <p>-GIS buscoupler bay complete in all respect as per following but not limited to,</p> <ol style="list-style-type: none"> <li>1. SF6 gas work required for completion of work.</li> <li>2. Structure materials for support including hardwares, foundation bolts/ embedded Items, rails and/ or other items structural items to complete in all respect.</li> <li>3. Complete earthing work as applicable.</li> <li>4. The above work excludes GIS surge arrester module and SF6 to EHV cable connection, if applicable.</li> </ol>	1	Set	94,198.82	94,198.82
17	<p>[A.9.v] 220kV (220kV, 2000A GIS double main bus scheme (ETC)) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect.</p> <p>-GIS bus measurement bay complete in all respect as per following but not limited to,</p> <ol style="list-style-type: none"> <li>1. SF6 gas work required for completion of work.</li> <li>2. Structure materials for support including hardwares, foundation bolts/ embedded Items, rails and/ or other items structural items to complete in all respect.</li> <li>3. Complete earthing work as applicable.</li> <li>4. The above work excludes GIS surge arrester module and SF6 to EHV cable connection, if applicable.</li> </ol>	2	Set	35,493.74	70,987.48
18	<p>[A.9.vi] 220kV (220kV, 2000A GIS double main bus scheme (ETC)) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect.</p> <p>-GIS bus earth switch bay complete in all respect as per following but not limited to,</p> <ol style="list-style-type: none"> <li>1. SF6 gas work required for completion of work.</li> <li>2. Structure materials for support including hardwares, foundation bolts/ embedded Items, rails and/ or other items structural items to complete in all respect.</li> <li>3. Complete earthing work as applicable.</li> <li>4. The above work excludes GIS surge arrester module and SF6 to EHV cable connection, if applicable.</li> </ol>	2	Set	35,493.74	70,987.48
19	<p>[A.9.vii] 220kV (220kV, 2000A GIS double main bus scheme (ETC)) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect.</p> <p>-GIS surge arrester module with surge counter complete in all respect as per following but not limited to,</p> <ol style="list-style-type: none"> <li>1. SF6 gas required for placing bays into successful operation.</li> <li>2. Structure materials for support including foundation bolts, embedded Items, rails and/ or other items structural items to complete in all respect.</li> <li>3. Complete earthing work as applicable.</li> </ol>	24	Nos	4,269.59	1,02,470.16
20	<p>[A.9.viii] 220kV (220kV, 2000A GIS double main bus scheme (ETC)) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect.</p> <p>-Gas insulated bus duct complete in all respect as per following but not limited to,</p> <ol style="list-style-type: none"> <li>1. SF6 gas required for completion of work.</li> <li>2. Structure for support including hardwares, foundation bolts, embedded Items, rails and/ or other items structural items to complete in all respect.</li> <li>3. Complete earthing work as applicable.</li> </ol>	600	Mtrs	474.39	2,84,634.00

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21	[A.9.ix] 220kV (220kV, 2000A GIS double main bus scheme (ETC) ) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / -top-up etc complete in all respect. -SF6 to air bushing/ connection module complete in all respect as per following but not limited to, 1. SF6 gas required for completion of work. 2. Structure for support including hardwares, foundation bolts, embedded Items, rails and/ or other items structural items to complete in all respect. 3. Complete earthing work as applicable.	6	Nos	5,218.24	31,309.44
22	[A.9.x] 220kV (220kV, 2000A GIS double main bus scheme (ETC) ) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect. -SF6 to oil bushing/ connection module complete in all respect as per following but not limited to, 1. SF6 gas required for completion of work. 2. Structure materials for support including hardwares, foundation bolts, embedded Items, rails and/ or other items structural items to complete in all respect. 3. Complete earthing work as applicable.	12	Nos	5,218.24	62,618.88
23	[A.9.xi] 220kV (220kV, 2000A GIS double main bus scheme (ETC) ) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect. -SF6 to EHV cable GIS connection module complete in all respect as per following but not limited to, 1. SF6 gas required for completion of work. 2. Structure materials for support including hardwares, foundation bolts, embedded Items, rails and/ or other items structural items to complete work in all respect. 3. Complete earthing work as applicable.	36	Nos	4,269.59	1,53,705.24
24	[A.9.xii] 220kV (220kV, 2000A GIS double main bus scheme (ETC) ) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect. -Local control cubicle (LCC) complete in all respect as per following but not limited to, 1. Structure materials for placement including foundation bolts, embedded Items and other items structural items to complete in work all respect. 2. Complete earthing work as applicable.	11	Set	4,947.54	54,422.94
25	[A.9.xiii] 220kV (220kV, 2000A GIS double main bus scheme (ETC) ) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect. -Interconnecting cabling work from GIS to LCC and between LCC including installation of cable trays, laying, dressing, tagging, glanding, ferruling and lugging etc.	11	Bays	10,436.46	1,14,801.06
26	[A.9.xiv] 220kV (220kV, 2000A GIS double main bus scheme (ETC) ) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect. -HV testing complete in all respect subject to following but not limited to, 1. HV test kit shall be arranged by OEM along with testing engineer and accordingly test shall be conducted by OEM. However, all necessary support i.e. unloading, shifting, assembling of HV test kit, assistance in conduction of HV test including power supply, dismantling, shifting and loading on carrier complete in all respect. 2. Reconduction of HV test, if required shall also be in contractor's scope.	1	Lot	1,06,739.82	1,06,739.82
27	[A.9.xv] 220kV (220kV, 2000A GIS double main bus scheme (ETC) ) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect. -PD monitoring system for GIS	1	Lot	10,000.00	10,000.00
28	[A.9.xvi] 220kV (220kV, 2000A GIS double main bus scheme (ETC) ) : 220kV, 2000A GIS work includes complete installation of GIS bays, including Surge Arrester, Cable Connection Modules, associated Local Control Cubcles (LCC) and any other module, if applicable. Any other services required for ETC of complete GIS, walkways/ support structure, earthing / grounding, Internal cabling between GIS to LCC, SF6 Gas treatment, handling / filling / top-up etc complete in all respect. -Online gas monitoring system for GIS Building	1	Lot	45,000.00	45,000.00
29	[A.10] 33kV (33kV AIS Local Isolation Breaker (LIB) Panel with associated accessories (ETC) ) : 33kV AIS Local Isolation Breaker (LIB) Panel with associated accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of LIB Panel and accessories, as applicable. 2. Any other services required for completion of ETC of Panel, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. GI Gas duct work, if required shall also be in contractor's scope including supply. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged.	4	Set	20,000.00	80,000.00
30	[A.11.i] 33kV (33 KV Fault Current Limiter (FCL) Panel with its accessories (ETC) ) : 33KV Main Fault Current Limiter (FCL) Panel with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of FCL Panel and accessories, as applicable. 2. Any other services required for completion of ETC of Panel, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. GI Gas duct work, if required shall also be in contractor's scope including supply. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged.	2	Set	20,000.00	40,000.00

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31	[A.11.ii] 33kV (34 KV Fault Current Limiter (FCL) Panel with its accessories (ETC) ) : 33kV off-load isolator Panel associated with 33kV Fault Current Limiter (FCL) Panel complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of Off-load Isolator Panel of FCL and accessories, as applicable. 2. Any other services required for completion of ETC of Panel, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. GI Gas duct work, if required shall also be in contractor's scope including supply. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged.	4	Set	10,000.00	40,000.00
32	[A.11.iii] 33kV (35 KV Fault Current Limiter (FCL) Panel with its accessories (ETC) ) : 33kV Cable Adapter Extension Panel, if required complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of 33kV Cable Adapter Extension Panel and accessories, as applicable. 2. Any other services required for completion of ETC of Panel, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged.	4	Set	10,000.00	40,000.00
33	[B.1.i] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR & PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR & PNCP)  Relay & BCU Panels & 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying & termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR & PNCP Complex to be in scope of ETC contractor). The scope includes complete installation, testing and commissioning (ETC) of SAS and Control & Relay Panels and associated accessories/ systems, as applicable. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. -220kV Line Relay & BCU Panel (Approx 800mm Wide) {1Set = 2 Nos. Panel}	2	Set	10,673.98	21,347.96
34	[B.1.ii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR & PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR & PNCP)  Relay & BCU Panels & 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying & termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR & PNCP Complex to be in scope of ETC contractor). The scope includes complete installation, testing and commissioning (ETC) of SAS and Control & Relay Panels and associated accessories/ systems, as applicable. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. -220/34.5 kV, 50/65 MVA Transformer Protection Panel (for both HV & LV side) (Approx 800mm Wide) {1Set = 2 Nos. Panel}	4	Set	10,673.98	42,695.92
35	[B.1.iii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR & PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR & PNCP)  Relay & BCU Panels & 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying & termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR & PNCP Complex to be in scope of ETC contractor). The scope includes complete installation, testing and commissioning (ETC) of SAS and Control & Relay Panels and associated accessories/ systems, as applicable. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. -220kV Spare Bay (Future Cable Feeder) Protection Panel (Approx 800mm Wide) {1Set = 2 Nos. Panel}	4	Set	10,673.98	42,695.92
36	[B.1.iv] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR & PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR & PNCP)  Relay & BCU Panels & 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying & termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR & PNCP Complex to be in scope of ETC contractor). The scope includes complete installation, testing and commissioning (ETC) of SAS and Control & Relay Panels and associated accessories/ systems, as applicable. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. -220kV Bus Coupler Protection panel (with FBT scheme) (Approx 800mm Wide) {1Set = 1 Nos. Panel}	1	Set	5,336.99	5,336.99
37	[B.1.v] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR & PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR & PNCP)  Relay & BCU Panels & 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying & termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR & PNCP Complex to be in scope of ETC contractor). The scope includes complete installation, testing and commissioning (ETC) of SAS and Control & Relay Panels and associated accessories/ systems, as applicable. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. -220kV Bus Bar Protection Panel (Single Bus Bar Protection) (Approx 800mm Wide) {1Set = 1 Nos. Panel}	2	Set	5,336.99	10,673.98

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
38	<p>[B.1.vi] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-SAS/ SUX Panel (Approx 800mm Wide) {1Set = 1 Nos. Panel}</p>	2	Set	5,336.99	10,673.98
39	<p>[B.1.vii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Grid Islanding Panel (Approx 800mm Wide) {1Set = 1 Nos. Panel}</p>	1	Set	5,336.99	5,336.99
40	<p>[B.1.viii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Central Transducer Panel (Approx 800mm Wide) {1Set = 2 Nos. Panel}</p>	1	Set	10,673.98	10,673.98
41	<p>[B.1.ix] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-SCAP Panel for PR Control Room (Approx 800mm Wide) {1Set = 9 Nos. Panel}</p>	1	Set	48,032.92	48,032.92
42	<p>[B.1.x] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Synchronising Trolley for SCAP Panels PR Control Room (Approx 600mm Wide) {1Set = 1 Nos. Trolley}</p>	2	Set	533.70	1,067.40
43	<p>[B.1.xi] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Energy Metering Panel (Approx 800mm Wide) {1Set = 1 Nos. Panel}</p>	1	Set	5,336.99	5,336.99

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
44	<p>[B.1.xii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Energy Metering System - Necessary Network Switches/ LIU/ Patch Cord/ HMI/ Software/TTB etc, as required</p>	1	Lot	12,000.00	12,000.00
45	<p>[B.1.xiii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Load Management System (LMS) - Necessary LMS Panels/ Network Switches/ LIU/ Patch Cord/ HMI/Transducers/ Auxiliary Relays etc, as required for completion of LMS system at GIS Building, PR Control Room, PNCP Control Room, PR SS-63, PNCP SS-9 etc.</p>	1	Lot	51,235.12	51,235.12
46	<p>[B.1.xiv] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Interfacing MB (IMB) Panel for Existing PR ECS Interfacing (Approx 800mm Wide) {1Set = 1 Nos. Panel}</p>	1	Set	5,336.99	5,336.99
47	<p>[B.1.xv] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-UPS System (2 x 25 kVA minimum) in parallel redundant configuration along with ACDB &amp; Ni-Cd Batteries (for GIS Building)</p>	1	Set	3,507.90	3,507.90
48	<p>[B.1.xvi] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-UPS System (2 x 3 kVA minimum) in parallel redundant configuration along with ACDB &amp; Ni-Cd Batteries (for PR Control Room)</p>	1	Set	3,507.90	3,507.90
49	<p>[B.1.xvii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-BCU Panel for SAS integration of 33kV LIB at PR SS-63 (Approx 800mm Wide) {1Set = 1 Nos. Panel}</p>	1	Set	5,336.99	5,336.99

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
50	<p>[B.1.xviii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Secondary injection test kit</p>	2	Nos	533.70	1,067.40
51	<p>[B.1.xix] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Armoured Fibre Optic Cable (to be laid in GI/ HDPE Pipe)</p> <p>(Scope - Laying of the cables in the GI/HDPE PIPE in GIS Building, PR Area, PNCP Area, HVPNL Mundh S/S)</p>	40	kM	14,272.64	5,70,905.60
52	<p>[B.1.xx] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-OWS/ EWS/ Station HMI/ DR PC/ Historian PC in 220kV GIS Building Control Room/ Engineering Room, PR CPP Control Room &amp; PNCP CPP Control Room</p>	10	Nos	632.39	6,323.90
53	<p>[B.1.xxi] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-A3/A4 size Colour Laser Jet Printer with MFD</p>	3	Nos	316.19	948.57
54	<p>[B.1.xxii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-A4 size Colour Laser Jet Printer</p>	1	Nos	316.19	316.19
55	<p>[B.1.xxiii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Dot Matrix Printer</p>	1	Nos	484.62	484.62

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
56	<p>[B.1.xiv] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-60" Video Wall Screen</p>	2	Nos	7,649.91	15,299.82
57	<p>[B.1.xv] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Laptop with relay parameterisation software</p>	8	Nos	790.65	6,325.20
58	<p>[B.1.xvi] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Time Synchronisation Equipments (GPS with all accessories, Antenna, Cables, Software, Lightning Arrestors for GPS, Separate time display unit display size of approx. 100 mm height. etc)</p>	1	Set	5,534.49	5,534.49
59	<p>[B.1.xvii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Handling &amp; installation of furniture required for OWS, printer, chairs etc. at GIS Building, PR Control Room, PNCP Control Room</p>	1	Lot	1,897.15	1,897.15
60	<p>[B.1.xviii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-SAS Networking Panel at PR Control Room (Approx 800mm Wide) (1Set = 1 Nos. Panel)</p>	1	Set	5,336.99	5,336.99



Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
61	<p>[B.1.xix] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-SAS Networking Panel at PNCP Control Room (Approx 800mm Wide) {1Set = 1 Nos. Panel}</p>	1	Set	5,336.99	5,336.99
62	<p>[B.1.xxx] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-SCAP Panel for PNCP Control Room (Approx 800mm Wide) {1Set = 4 Nos. Panel}</p>	1	Set	21,347.96	21,347.96
63	<p>[B.1.xxxii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Synchronising Trolley for SCAP Panels PNCP Control Room (Approx 600mm Wide) {1Set = 1 Nos. Trolley}</p>	2	Set	533.70	1,067.40
64	<p>[B.1.xxxiii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-UPS System (2 x 3 kVA minimum) in parallel redundant configuration along with ACDB &amp; Ni-Cd Batteries (for PNCP Control Room)</p>	1	Set	3,507.90	3,507.90
65	<p>[B.1.xxxiii] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-BCU Panel for SAS integration of 33kV LIB at PNCP SS-9 (Approx 800mm Wide) {1Set = 1 Nos. Panel}</p>	1	Set	5,336.99	5,336.99
66	<p>[B.1.xxxiv] (Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At Local End/ IOCL PANIPAT End - PR &amp; PNCP) (ETC) ) : Control and Relay Panels, SAS, LMS, SCAP Panels, Transducer Panels etc. (At IOCL PANIPAT End - PR &amp; PNCP)</p> <p>Relay &amp; BCU Panels &amp; 61850 Based Sub station Automation system/ associated systems complete with all accessories (Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of network switches/ LIUs, laying &amp; termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S/ Different Locations within PR &amp; PNCP Complex to be in scope of ETC contractor).</p> <p>The scope includes complete installation, testing and commissioning (ETC) of SAS and Control &amp; Relay Panels and associated accessories/ systems, as applicable.</p> <p>Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope.</p> <p>-Interfacing MB (IMB) Panel for Existing PNCP ECS Interfacing (Approx 800mm Wide) {1Set = 1 Nos. Panel}</p>	1	Set	5,336.99	5,336.99

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
67	[B.2.i] (Control and Relay Panels, SAS etc. (At Remote End/ HVPNL MUNDH S/S End) (ETC)) : Control and Relay Panels, SAS etc. (At HVPNL MUNDH S/S End) Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of Relays/network switches/ LIUs etc. in Existing panels, laying & termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S to be in scope of ETC contractor). The scope includes complete interfacing and installation, testing and commissioning (ETC) of SAS and Control & Relay Panels and associated accessories/ systems, as applicable. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. - Retrofitting of Line Differential Protection Relays in Existing C&R Panels	4	Nos	10,000.00	40,000.00
68	[B.2.ii] (Control and Relay Panels, SAS etc. (At Remote End/ HVPNL MUNDH S/S End) (ETC)) : Control and Relay Panels, SAS etc. (At HVPNL MUNDH S/S End) Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of Relays/network switches/ LIUs etc. in Existing panels, laying & termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S to be in scope of ETC contractor). The scope includes complete interfacing and installation, testing and commissioning (ETC) of SAS and Control & Relay Panels and associated accessories/ systems, as applicable. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. - Existing SAS Augmentation	1	Lot	18,435.26	18,435.26
69	[B.2.iii] (Control and Relay Panels, SAS etc. (At Remote End/ HVPNL MUNDH S/S End) (ETC)) : Control and Relay Panels, SAS etc. (At HVPNL MUNDH S/S End) Testing and commissioning of relays/ IEDs/ Numerical Devices in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment including mounting of Relays/network switches/ LIUs etc. in Existing panels, laying & termination of patch cords and including shifting/ loading/ unloading of equipments to HVPNL Mundh S/S to be in scope of ETC contractor). The scope includes complete interfacing and installation, testing and commissioning (ETC) of SAS and Control & Relay Panels and associated accessories/ systems, as applicable. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. - Armoured Fibre Optic Cable (to be laid in GI/ HDPE Pipe) (Scope - Laying of the cables in the GI/HDPE PIPE in HVPNL Mundh S/S)	1	kM	14,272.64	14,272.64
70	[B.3.i] (PLCC Equipment (Local End/ IOCL Panipat) (ETC)) : PLCC Equipment (Local End: IOCL Panipat) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. - Digital PLCC: Carrier Equipment (Speech+data+protection)	4	Nos	12,744.64	50,978.56
71	[B.3.ii] (PLCC Equipment (Local End/ IOCL Panipat) (ETC)) : PLCC Equipment (Local End: IOCL Panipat) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. - Digital PLCC: Carrier Equipment (Speech+data)	1	Nos	12,744.64	12,744.64
72	[B.3.iii] (PLCC Equipment (Local End/ IOCL Panipat) (ETC)) : PLCC Equipment (Local End: IOCL Panipat) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -Digital PLCC: Protection Coupler (4 Command)	4	Nos	7,151.16	28,604.64
73	[B.3.iv] (PLCC Equipment (Local End/ IOCL Panipat)(ETC)) : PLCC Equipment (Local End: IOCL Panipat) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -Digital PLCC: Coupling Device (1 Set = (2 LMU + 1 BT))	2	Set	12,744.64	25,489.28
74	[B.3.v] (PLCC Equipment (Local End/ IOCL Panipat) (ETC)) : PLCC Equipment (Local End: IOCL Panipat) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -EPAX (24/8) with 24 nos telephones, cable etc	1	Set	5,000.00	5,000.00
75	[B.3.vi] (PLCC Equipment (Local End/ IOCL Panipat) (ETC)) : PLCC Equipment (Local End: IOCL Panipat) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -4 wire telephone instrument (along with telephone cables)	2	Nos	105.38	210.76

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
76	[B.3.vii] (PLCC Equipment (Local End/ IOCL Panipat) (ETC)) : PLCC Equipment (Local End: IOCL Panipat) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -HF cable	1	km	10,541.83	10,541.83
77	[B.3.viii] (PLCC Equipment (Local End/ IOCL Panipat) (ETC)) : PLCC Equipment (Local End: IOCL Panipat) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -5 Pair Telephone Cables, armoured	2	km	10,541.83	21,083.66
78	[B.3.ix] (PLCC Equipment (Local End/ IOCL Panipat) (ETC)) : PLCC Equipment (Local End: IOCL Panipat) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -Single Pair Telephone Cables, armoured	2	km	10,541.83	21,083.66
79	[B.4.i] (PLCC Equipment (Remote End/ HVPNL Mundh S/S) (ETC)) : PLCC Equipment (REMOTE End: HVPNL Mundh S/S) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -Digital PLCC: Carrier Equipment (Speech+data+protection)	4	Nos	12,744.64	50,978.56
80	[B.4.ii] (PLCC Equipment (Remote End/ HVPNL Mundh S/S) (ETC)) : PLCC Equipment (REMOTE End: HVPNL Mundh S/S) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -Digital PLCC: Carrier Equipment (Speech+data)	1	Nos	12,744.64	12,744.64
81	[B.4.iii] (PLCC Equipment (Remote End/ HVPNL Mundh S/S) (ETC)) : PLCC Equipment (REMOTE End: HVPNL Mundh S/S) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -Digital PLCC: Protection Coupler (4 Command)	4	Nos	7,151.16	28,604.64
82	[B.4.iv] (PLCC Equipment (Remote End/ HVPNL Mundh S/S) (ETC)) : PLCC Equipment (REMOTE End: HVPNL Mundh S/S) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -Digital PLCC: Coupling Device (1 Set = (2 LMU + 1 BT))	2	Set	12,744.64	25,489.28
83	[B.4.v] (PLCC Equipment (Remote End/ HVPNL Mundh S/S) (ETC)) : PLCC Equipment (REMOTE End: HVPNL Mundh S/S) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -4 wire telephone instrument (along with telephone cables)	2	Nos	105.38	210.76
84	[B.4.vi] (PLCC Equipment (Remote End/ HVPNL Mundh S/S) (ETC)) : PLCC Equipment (REMOTE End: HVPNL Mundh S/S) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -HF cable	1	km	10,541.83	10,541.83

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
85	[B.4.vii] (PLCC Equipment (Remote End/ HVPNL Mundh S/S) (ETC)) : PLCC Equipment (REMOTE End: HVPNL Mundh S/S) work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of PLCC System Equipments and accessories, as applicable. 2. Any other services required for completion of ETC, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Supervision of Testing and commissioning of PLCC Equipments in scope of panel supplier. Necessary manpower support, tools, tackles and testing equipment and including shifting/ loading/ unloading of equipments to remote end to be in scope of ETC contractor. -5 Pair Telephone Cables, armoured	0.5	km	10,541.83	5,270.92
86	[C.1.i] 415V/220V (LT Switchgear with its accessories (Local End/ IOCL Panipat) (ETC)) : LT Switchgear with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of LT Switchgear and accessories, as applicable. 2. Any other services required for completion of ETC of Panel, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. 1Set includes all the section of same type of Panels. 4. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. -415V POWER cum MOTOR CONTROL CENTRE (PMCC)	1	Set	32,021.95	32,021.95
87	[C.1.ii] 415V/220V (LT Switchgear with its accessories (Local End/ IOCL Panipat) (ETC)) : LT Switchgear with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of LT Switchgear and accessories, as applicable. 2. Any other services required for completion of ETC of Panel, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. 1Set includes all the section of same type of Panels. 4. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. -415V MAIN LIGHTING DISTRIBUTION BOARD (including 2 nos. 250 kVA, 415/415V Lighting transformer) (MLDB)	1	Set	37,358.94	37,358.94
88	[C.1.iii] 415V/220V (LT Switchgear with its accessories (Local End/ IOCL Panipat) (ETC)) : LT Switchgear with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of LT Switchgear and accessories, as applicable. 2. Any other services required for completion of ETC of Panel, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. 1Set includes all the section of same type of Panels. 4. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. -415V VAM MOTOR CONTROL CENTRE (VAM MCC)	1	Set	25,617.56	25,617.56
89	[C.1.iv] 415V/220V (LT Switchgear with its accessories (Local End/ IOCL Panipat) (ETC)) : LT Switchgear with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of LT Switchgear and accessories, as applicable. 2. Any other services required for completion of ETC of Panel, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. 1Set includes all the section of same type of Panels. 4. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. -220V DC DISTRIBUTION BOARD	1	Set	32,021.95	32,021.95
90	[C.2.i] 220/48V DC (Battery Bank with its accessories (Local End/ IOCL Panipat) (ETC)) : Battery Bank with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation of the battery banks, assembly of individual cell, electrolyte -top up and carrying out the first time charging and discharging of the battery system, generation of the test reports etc. 2. Any other services required for completion of battery system work complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. The work at other end ("Mundh S/stn) shall also be in contractor's scope. 5. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged. -220V, 150AH (min.) Ni-Cd battery bank system with all accessories	2	Set	38,502.76	77,005.52
91	[C.2.ii] 220/48V DC (Battery Bank with its accessories (Local End/ IOCL Panipat) (ETC)) : Battery Bank with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation of the battery banks, assembly of individual cell, electrolyte -top up and carrying out the first time charging and discharging of the battery system, generation of the test reports etc. 2. Any other services required for completion of battery system work complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. The work at other end ("Mundh S/stn) shall also be in contractor's scope. 5. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged. -48V, 54AH (min.) Ni-Cd battery bank system with all accessories	2	Set	30,802.21	61,604.42
92	[C.2.iii] 220/48V DC (Battery Bank with its accessories (Remote End/ HVPNL Mundh S/S) (ETC)) : Battery Bank with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation of the battery banks, assembly of individual cell, electrolyte -top up and carrying out the first time charging and discharging of the battery system, generation of the test reports etc. 2. Any other services required for completion of battery system work complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. The work at other end ("Mundh S/stn) shall also be in contractor's scope. 5. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged. -48V, 54AH (min.) Ni-Cd battery bank system with all accessories*	2	Set	30,802.21	61,604.42
93	[C.3.i] 220/48V DC (Battery Charger with its accessories (Local End/ IOCL Panipat) (ETC)) : Battery Charger with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of battery chargers and accessories, as applicable. 2. Any other services required for completion of ETC of battery chargers, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. The work at other end ("Mundh S/stn) shall also be in contractor's scope. 5. 48V DCDB shall be integrated with 48V battery Charger system. 5. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged. -220V, 135A Dual FCBC Charger System	1	Set	10,673.98	10,673.98

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
94	[C.3.ii] 220/48V DC (Battery Charger with its accessories (Local End/ IOCL Panipat) (ETC) ) : Battery Charger with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of battery chargers and accessories, as applicable. 2. Any other services required for completion of ETC of battery chargers, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. The work at other end (*Mundh S/stn) shall also be in contractor's scope. 5. 48V DCDB shall be integrated with 48V battery Charger system. 5. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged. -48V, 65A Dual FCBC Charger System including DCDB	1	Set	21,347.96	21,347.96
95	[C.3.iii] 220/48V DC (Battery Charger with its accessories (Local End/ IOCL Panipat) (ETC) ) : Battery Charger with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of battery chargers and accessories, as applicable. 2. Any other services required for completion of ETC of battery chargers, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. The work at other end (*Mundh S/stn) shall also be in contractor's scope. 5. 48V DCDB shall be integrated with 48V battery Charger system. 5. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged. -220V Battery MCCB Box	2	Set	5,000.00	10,000.00
96	[C.3.iv] 220/48V DC (Battery Charger with its accessories (Local End/ IOCL Panipat) (ETC) ) : Battery Charger with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of battery chargers and accessories, as applicable. 2. Any other services required for completion of ETC of battery chargers, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. The work at other end (*Mundh S/stn) shall also be in contractor's scope. 5. 48V DCDB shall be integrated with 48V battery Charger system. 5. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged. -48V Battery MCCB Box	2	Set	5,000.00	10,000.00
97	[C.3.v] 220/48V DC (Battery Charger with its accessories (Local End/ IOCL Panipat) (ETC) ) : Battery Charger with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of battery chargers and accessories, as applicable. 2. Any other services required for completion of ETC of battery chargers, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. The work at other end (*Mundh S/stn) shall also be in contractor's scope. 5. 48V DCDB shall be integrated with 48V battery Charger system. 5. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged. -Cell Booster suitable for 220V & 48V Battery Bank	1	Set	5,000.00	5,000.00
98	[C.3.vi] 220/48V DC (Battery Charger with its accessories (Remote End/ HVPNL Mundh S/S) (ETC) ) : Battery Charger with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of battery chargers and accessories, as applicable. 2. Any other services required for completion of ETC of battery chargers, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. The work at other end (*Mundh S/stn) shall also be in contractor's scope. 5. 48V DCDB shall be integrated with 48V battery Charger system. 5. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged. -48V, 65A Dual FCBC Charger System including 48V DCDB	1	Set	10,673.98	10,673.98
99	[C.3.vii] 220/48V DC (Battery Charger with its accessories (Remote End/ HVPNL Mundh S/S) (ETC) ) : Battery Charger with its accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of battery chargers and accessories, as applicable. 2. Any other services required for completion of ETC of battery chargers, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope. 4. The work at other end (*Mundh S/stn) shall also be in contractor's scope. 5. 48V DCDB shall be integrated with 48V battery Charger system. 5. Supervision of erection, testing and/ or commissioning from OEM, if required shall be arranged. -48V Battery MCCB Box	2	Set	5,000.00	10,000.00
100	[C.4] (CVT Junction Box with its Accessories (ETC) ) : CVT Junction Box (on foundation/structure) with its Accessories work complete in all respect as per following but not limited to, 1. The scope includes complete installation, testing and commissioning (ETC) of CVTJB and accessories, as applicable. 2. Any other services required for completion of ETC of CVTJB, fixing of support/ edge protection structure, earthing / grounding work, Internal cabling etc. complete in all respect shall be in contractor's scope. 3. Any dismantling/ rework before commissioning shall be in also be in contractor's scope.	2	Nos	2,256.84	4,513.68
101	[C.5.i] (LT Cabling Work (ETC)- Control Cables, HR PVC ) : LT Cabling Work includes laying, tagging, dressing, ferruling, glanding, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates- laying can be on trays, overbridge, supports, underground, buried in ground or through GI/PVC/HDPE pipe over/ under ground, through wall, on structure/ LLM etc. All erection materials including but not limited to ferrules, copper lugs, cable ties/ straps, aluminium tags, markers, GI / PVC/HDPE wall sleeves with rubber/ nylon bushes and flexible steel conduits shall be supplied by contractor. Glands shall be quoted separately. -5C x 4 sq mm HR PVC/Copper, Armoured Control Cables	500	Mtrs	17.18	8,590.00
102	[C.5.ii] (LT Cabling Work (ETC)- Control Cables, HR PVC ) : LT Cabling Work includes laying, tagging, dressing, ferruling, glanding, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates- laying can be on trays, overbridge, supports, underground, buried in ground or through GI/PVC/HDPE pipe over/ under ground, through wall, on structure/ LLM etc. All erection materials including but not limited to ferrules, copper lugs, cable ties/ straps, aluminium tags, markers, GI / PVC/HDPE wall sleeves with rubber/ nylon bushes and flexible steel conduits shall be supplied by contractor. Glands shall be quoted separately. -3C x 2.5 sq mm HR PVC/Copper, Armoured Control Cables	3000	Mtrs	12.46	37,380.00

[illegible]

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
114	[C.5.xiv] (LT Cabling Work (ETC)- Aux. Power Cables, HR PVC) : LT Cabling Work includes laying, tagging, dressing, ferruling, glanding, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates- laying can be on trays, overbridge, supports, underground, buried in ground or through GI/PVC/HDPE pipe over/ under ground, through wall, on structure/ LLM etc. All erection materials including but not limited to ferrules, copper lugs, cable ties/ straps, aluminium tags, markers, GI / PVC/HDPE wall sleeves with rubber/ nylon bushes and flexible steel conduits shall be supplied by contractor. Glands shall be quoted separately. -1C x 630 sq mm HR PVC/Aluminium, Armoured Auxiliary Power Cables	2500	Mtrs	158.08	3,95,200.00
115	[C.5.xv] (LT Cabling Work (ETC)- Signal Cables, HR PVC) : LT Cabling Work includes laying, tagging, dressing, ferruling, glanding, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates- laying can be on trays, overbridge, supports, underground, buried in ground or through GI/PVC/HDPE pipe over/ under ground, through wall, on structure/ LLM etc. All erection materials including but not limited to ferrules, copper lugs, cable ties/ straps, aluminium tags, markers, GI / PVC/HDPE wall sleeves with rubber/ nylon bushes and flexible steel conduits shall be supplied by contractor. Glands shall be quoted separately. -8P x 1.5 sq mm HR PVC/Copper, Individual & Overall Screened, Armoured Signal Cables	14000	Mtrs	18.82	2,63,480.00
116	[C.6.i] (Cable Glands including its accessories (Supply)- Control Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -5C x 4 sq mm HR PVC/Copper, Armoured Control Cables	30	Nos	214.25	6,427.50
117	[C.6.ii] (Cable Glands including its accessories (Supply)- Control Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -3C x 2.5 sq mm HR PVC/Copper, Armoured Control Cables	160	Nos	214.25	34,280.00
118	[C.6.iii] (Cable Glands including its accessories (Supply)- Control Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -5C x 2.5 sq mm HR PVC/Copper, Armoured Control Cables	300	Nos	214.25	64,275.00
119	[C.6.iv] (Cable Glands including its accessories (Supply)- Control Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -10C x 2.5 sq mm HR PVC/Copper, Armoured Control Cables	700	Nos	248.68	1,74,076.00
120	[C.6.v] (Cable Glands including its accessories (Supply)- Control Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -14C x 2.5 sq mm HR PVC/Copper, Armoured Control Cables	380	Nos	321.38	1,22,124.40
121	[C.6.vi] (Cable Glands including its accessories (Supply)- Control Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -19C x 2.5 sq mm HR PVC/Copper, Armoured Control Cables	370	Nos	348.15	1,28,815.50
122	[C.6.vii] (Cable Glands including its accessories (Supply)- Aux. Power Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -2C x 10 sq mm HR PVC/Copper, Armoured Auxiliary Power Cables	230	Nos	249.28	57,334.40
123	[C.6.viii] (Cable Glands including its accessories (Supply)- Aux. Power Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -4C x 6 sq mm HR PVC/Copper, Armoured Auxiliary Power Cables	80	Nos	254.94	20,395.20

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
124	[C.6.ix] (Cable Glands including its accessories (Supply)- Aux. Power Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -4C x 16 sq mm HR PVC/Copper, Armoured Auxiliary Power Cables	60	Nos	321.38	19,282.80
125	[C.6.x] (Cable Glands including its accessories (Supply)- Aux. Power Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -3.5C x 35 sq mm HR PVC/Aluminium, Armoured Auxiliary Power Cables	20	Nos	374.94	7,498.80
126	[C.6.xi] (Cable Glands including its accessories (Supply)- Aux. Power Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -3.5C x 70 sq mm HR PVC/Aluminium, Armoured Auxiliary Power Cables	80	Nos	428.49	34,279.20
127	[C.6.xii] (Cable Glands including its accessories (Supply)- Aux. Power Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -3.5C x 300 sq mm HR PVC/Aluminium, Armoured Auxiliary Power Cables	20	Nos	802.18	16,043.60
128	[C.6.xiii] (Cable Glands including its accessories (Supply)- Aux. Power Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -1C x 150 sq mm HR PVC/Aluminium, Armoured Auxiliary Power Cables	40	Nos	564.30	22,572.00
129	[C.6.xiv] (Cable Glands including its accessories (Supply)- Aux. Power Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -1C x 630 sq mm HR PVC/Aluminium, Armoured Auxiliary Power Cables	30	Nos	2,187.75	65,632.50
130	[C.6.xv] (Cable Glands including its accessories (Supply)- Signal Cables, HR PVC) : Cable Glands materials including its accessories as required shall be supplied by contractor, which shall be double compression type nickel plated (coating thickness not less than 10 microns) brass cable glands complete with necessary armour clamp and tapered washer, etc. for all power and control cables to provide dust and weather proof terminations. Cable glands shall match with the sizes of different HT/ LT/ Control cables. The cable glands shall conform to BIS: 6121 unless otherwise mentioned. They shall comprise of heavy duty brass casting, machine finished and nickel plated, to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. Cable glands shall be procured as per customer vendor list. -8P x 1.5 sq mm HR PVC/Copper, Individual & Overall Screened, Armoured Signal Cables	210	Nos	389.99	81,897.90
131	[D.1] (Stringing hardware work) : 245kV single suspension string insulator (120 kN per string) with single anchoring points with 1X12 nos antifog disc with all hardware accessories suitable for suspension of wave trap. In addition to this, any stringing work with terminating lines entering in switchyard area shall be also covered.	16	Set	1,601.10	25,617.60
132	[D.2.i] (Busbar/ stringing work- GS earthwire work) : 7/3.66mm dia GS earthwire work includes fixing of strain/ tension clamps (STE), Strain plate (SP), PG clamp (PGE) , Cleat type clamp (CC1&CC2), Pad type clamp (PD) and lug type clamp (LG) etc. complete in all respect but not limited to.	500	Mtrs	27.59	13,795.00
133	[D.2.ii] (Busbar/ stringing work- ACSR Conductor work) : ACSR Conductor work includes fixing of Boltless C-type Wedge Connector and PG clamp for droppers to equipment connections/ busbar jumpering, Twin bundle spacers, if applicable etc. complete in all respect but not limited to above.	1000	Mtrs	54.30	54,300.00



Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
134	<p>[D.3.i] (Earthing material and its associated work (ETC)) : Earthing material and its associated work includes earthing of all switchyard equipment, towers, LLM, pipe structure, cable trenches, fence, pipe/ rod electrode, neutral of transformer &amp; at interconnections of other grids, control room equipments and GIS in GIS building using necessary connectors for earthing flats. Clamping for earthing shall be carried out by contractor including supply.</p> <p>-Earthing works with 75X12mm GI FLAT includes earthing of all switchyard equipments, towers, LLM, lattice/pipe structure, cable trenches, fence, electrodes for neutral of LT transformer/ Reactor &amp; at interconnections of other grid, Control Room equipment/ GIS equipment using necessary Connectors for earthing flats. GI Flat including cutting, bending, welding with 40 mm dia MS rod riser/ earth strip, applying zinc rich paint, clamping to structure/building wall etc. to complete. Hardware required for connecting flat on pads of structure &amp; equipment included in scope.</p>	16	MT	8,904.90	1,42,478.40
135	<p>[D.3.ii] (Earthing material and its associated work (ETC)) : Earthing material and its associated work includes earthing of all switchyard equipment, towers, LLM, pipe structure, cable trenches, fence, pipe/ rod electrode, neutral of transformer &amp; at interconnections of other grids, control room equipments and GIS in GIS building using necessary connectors for earthing flats. Clamping for earthing shall be carried out by contractor including supply.</p> <p>- Earthing works with 50x6mm GI FLAT includes earthing of all switchyard equipments, towers, LLM, lattice/pipe structure, cable trenches, fence, electrodes for neutral of LT transformer/ Reactor &amp; at interconnections of other grid, Control Room equipment/ GIS equipment using necessary Connectors for earthing flats. GI Flat including cutting, bending, welding with 40 mm dia MS rod riser/ earth strip, applying zinc rich paint, clamping to structure/building wall etc. to complete. Hardware required for connecting flat on pads of structure &amp; equipment included in scope.</p>	30	MT	20,786.63	6,23,598.90
136	<p>[D.3.iii] (Earthing material and its associated work (ETC)) : 40mm dia MS Rod and its associated work includes cutting, bending, welding with 40 mm dia MS rod riser/ main mat, bolting/ clamping to structure, Painting etc to complete in all respect. Equipment's to be earthed includes all switchyard equipments, towers, lattice/pipe structure, cable trenches, fence, electrodes for neutral of LT transformer/Reactor, Control Room equipments using necessary Connectors for earthing flats.</p> <p>-Earthing works with 40mm dia MS Rod (for equipment risers/ main mat,if required)</p>	0.5	MT	10,948.40	5,474.20
137	<p>[D.3.iv] (Earthing material and its associated work (ETC)) : Electronic earth pit includes its connection up-to equipment/ panel/ battery charger by use of required size of copper cables</p> <p>The scope of work includes,</p> <ol style="list-style-type: none"> <li>1. Supply and installation of electronic earth pit including all materials.</li> <li>2. Typical drawing for electronic earth pit is attached for reference, however work shall be carried out as per approval from BHEL/ Customer as per proposal raised at site.</li> </ol>	4	Nos	23,000.00	92,000.00
138	<p>[D.4.i] (Cable Trays and its accessories work (ETC)) : Cable Trays and its accessories work includes installation of GI cable trays with its tray cover with horizontal and vertical bends, reducers, tees, cross members and other accessories, as per applicability including site fabrications, as required and duly suspended from the ceiling and/ or fixed to steel/ RCC columns, beams, rack assemblies in tresle/ trench/ cable cellar or any other structural members with MS suspenders, angles, channels etc. complete in all respect, including painting with one coat of red oxide primer and zink chromate as required or specified elsewhere. Cable trays carrying control cables shall be covered with GI cover trays duly approved by BHEL/ Customer. Cable trays shall be fixed with racks assembly with welding/ U clamps- Ladder/ channel type cable tray.</p> <p>- 750mm wide, 100mm high, each 2.5m long</p>	100	Mtrs	96.98	9,698.00
139	<p>[D.4.ii] (Cable Trays and its accessories work (ETC)) : Cable Trays and its accessories work includes installation of GI cable trays with its tray cover with horizontal and vertical bends, reducers, tees, cross members and other accessories, as per applicability including site fabrications, as required and duly suspended from the ceiling and/ or fixed to steel/ RCC columns, beams, rack assemblies in tresle/ trench/ cable cellar or any other structural members with MS suspenders, angles, channels etc. complete in all respect, including painting with one coat of red oxide primer and zink chromate as required or specified elsewhere. Cable trays carrying control cables shall be covered with GI cover trays duly approved by BHEL/ Customer. Cable trays shall be fixed with racks assembly with welding/ U clamps- Ladder/ channel type cable tray.</p> <p>- 150mm wide, 100mm high, each 2.5m long</p>	100	Mtrs	51.51	5,151.00
140	<p>[D.5] (Cable Rack Assembly and its associated work (Supply+ETC)) : Cable Rack Assembly and its associated work includes welding of galvanised steel racks on inserts of trench walls in trenches/ ceiling/ floor in switchyard / control room/ GIS Building. Cable rack assembly shall be as per typical drawings, however, work shall be carried out as per approval from BHEL/ Customer as per site requirements. Supply of materials required for completion of work is in contractor's scope.</p>	5	MT	98,657.43	4,93,287.15
141	<p>[D.6.i] (GI Pipes/ Conduiting work (Supply+ETC)) : GI pipes/ Conduiting work includes supply, laying of pipes/ conduits at a depth of 300mm including excavation, backfilling, making and repairing of walls in trenches, cutting, threading, fixing of sockets/ bends where required etc. complete in all respect. Both ends of pipes/ conduits shall be closed by plastering or any other suitable method duly approved by BHEL/ Customer. Materials shall be procured as per customer vendor list.</p> <p>- GI pipe, 50 NB</p>	100	Mtrs	554.75	55,475.00
142	<p>[D.6.ii] (GI Pipes/ Conduiting work (Supply+ETC)) : GI pipes/ Conduiting work includes supply, laying of pipes/ conduits at a depth of 300mm including excavation, backfilling, making and repairing of walls in trenches, cutting, threading, fixing of sockets/ bends where required etc. complete in all respect. Both ends of pipes/ conduits shall be closed by plastering or any other suitable method duly approved by BHEL/ Customer. Materials shall be procured as per customer vendor list.</p> <p>- GI Pipe, 100 NB</p>	100	Mtrs	1,270.07	1,27,007.00
143	<p>[D.7.i] (PVC Pipes/ Conduiting work (Supply+ETC)) : PVC pipes/ conduiting work includes supply, laying of pipes/ conduits at a depth of 300mm including excavation, backfilling, making and repairing of walls in trenches, cutting, threading, fixing of sockets/ bends where required etc. complete in all respect. Both ends of pipes/ conduits shall be closed by plastering or any other suitable method duly approved by BHEL/ Customer. Materials shall be procured as per customer vendor list.</p> <p>- PVC pipe, 50 NB</p>	100	Mtrs	155.18	15,518.00
144	<p>[D.7.ii] (PVC Pipes/ Conduiting work (Supply+ETC)) : PVC pipes/ conduiting work includes supply, laying of pipes/ conduits at a depth of 300mm including excavation, backfilling, making and repairing of walls in trenches, cutting, threading, fixing of sockets/ bends where required etc. complete in all respect. Both ends of pipes/ conduits shall be closed by plastering or any other suitable method duly approved by BHEL/ Customer. Materials shall be procured as per customer vendor list.</p> <p>- PVC Pipe, 100 NB</p>	100	Mtrs	325.10	32,510.00

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
145	[D.8.i] (HDPE Pipes/ Conduiting work (Supply+ETC)) : HDPE pipes/ conduiting work includes supply, laying of pipes/ conduits at a depth of 300mm including excavation, backfilling, making and repairing of walls in trenches, cutting, threading, fixing of sockets/ bends where required etc. complete in all respect. Both ends of pipes/ conduits shall be closed by plastering or any other suitable method duly approved by BHEL/ Customer. Materials shall be procured as per customer vendor list - HDPE pipe, 50 NB	100	Mtrs	259.72	25,972.00
146	[D.8.ii] (HDPE Pipes/ Conduiting work (Supply+ETC)) : HDPE pipes/ conduiting work includes supply, laying of pipes/ conduits at a depth of 300mm including excavation, backfilling, making and repairing of walls in trenches, cutting, threading, fixing of sockets/ bends where required etc. complete in all respect. Both ends of pipes/ conduits shall be closed by plastering or any other suitable method duly approved by BHEL/ Customer. Materials shall be procured as per customer vendor list - HDPE Pipe, 100 NB	100	Mtrs	1,292.17	1,29,217.00
147	[D.9] (Fire Proof Sealing work (Supply+ETC)) : Fire Proof Sealing work / fire stop system / fire protection coating system required to prevent spreading of fire from one place to other place (or one zone to other zone) through the openings in wall / floor, cables laid in trays/ racks and openings below GIS building/ LT Switchgear room/ Control & relay room/ SAS room etc. Work statement shall be approved by BHEL/ Customer as per requirement. Materials shall be procured as per customer vendor list/ approval shall be obtained from BHEL/ customer before procurement.	20	Sqm	2,314.76	46,295.20
148	[D.10] (Angles/ Channels work (Supply+ETC)) : Angles/ Channels work includes fixing of edge protection angle/ channel, Panel Supporting Angles/ channels etc. on cable trench/ cutouts in GIS building / LT Switchgear room/ Control & relay room/ SAS room/ GIS building etc. Materials shall be procured as per customer vendor list/ approval shall be obtained from BHEL/ customer before procurement.	5	MT	64,225.86	3,21,129.30
149	[D.11.i] (Structural steel and its associated work (ETC)) : Structural Steel Work welded in built up sections like angles, channels & framed work etc including providing, cutting, hoisting, fixing in position and applying a priming coat of approved steel primer complete in all respect. The erection activities may require temporary Scaffolding/ Staging work and hence provision for same is to be considered. - Galvanised steel Lattice Structures including hardwares for Towers, Beams/ Gantry & equipment support	37	MT	4,005.51	1,48,203.87
150	[D.11.ii] (Structural steel and its associated work (ETC)) : Structural Steel Work welded in built up sections like angles, channels & framed work etc including providing, cutting, hoisting, fixing in position and applying a priming coat of approved steel primer complete in all respect. The erection activities may require temporary Scaffolding/ Staging work and hence provision for same is to be considered. - Galvanised steel Pipe Structures including hardwares for equipment support	13	MT	3,382.43	43,971.59
151	[D.11.iii] (Structural steel and its associated work (ETC)) : Structural Steel Work welded in built up sections like angles, channels & framed work etc including providing, cutting, hoisting, fixing in position and applying a priming coat of approved steel primer complete in all respect. The erection activities may require temporary Scaffolding/ Staging work and hence provision for same is to be considered. - Fabrication and making holes (Irrespective of size and thickness of section) in structural steel sections including angles & plates as per site requirement.	20	Nos	49.84	996.80
152	[D.11.iv] (Structural steel and its associated work (ETC)) : Structural Steel Work welded in built up sections like angles, channels & framed work etc including providing, cutting, hoisting, fixing in position and applying a priming coat of approved steel primer complete in all respect. The erection activities may require temporary Scaffolding/ Staging work and hence provision for same is to be considered. - Supply and fixing of GI structure hardware materials, in case of small shortages at site	20	Kg	94.84	1,896.80
153	[D.12.i] (Sump Motor Pumps and its associated work (Supply+ETC)) : Supply and ETC of Sump Motor Pumps and its associated work is detailed as follows, however, work shall be carried out as per approval from BHEL/ Customer as per proposal raised at site- Supply & ETC of Customer approved make 2 HP Automatic Start/ Stop type Centrifugal pump and accessories for sump pit of transformer/ reactor/ trench	1	nos	12,098.96	12,098.96
154	[D.12.ii] (Sump Motor Pumps and its associated work (Supply+ETC)) : Supply and ETC of Sump Motor Pumps and its associated work is detailed as follows, however, work shall be carried out as per approval from BHEL/ Customer as per proposal raised at site- Supply & ETC of Customer approved make 1 HP Automatic Start/ Stop type Centrifugal pump and accessories for sump pit of transformer/ reactor/ trench	1	nos	11,207.68	11,207.68
155	[D.12.iii] (Sump Motor Pumps and its associated work (Supply+ETC)) : Supply and ETC of Sump Motor Pumps and its associated work is detailed as follows, however, work shall be carried out as per approval from BHEL/ Customer as per proposal raised at site- Supply & ETC of Customer approved make 0.5 HP Automatic Start/ Stop type Centrifugal pump and accessories for sump pit of transformer/ reactor/ trench	6	nos	7,259.51	43,557.06
156	[D.13] (Phase Color Discs, Danger Plate and Identification Plates for bays & equipment (Supply+ETC)) : Supply & Mounting of Phase Color Discs, Danger Plate and Identification Plates for bays & Equipment as per IS:2551-1982 & IS:5-1978.	1	Lot	1,20,991.75	1,20,991.75
157	[D.14] (Equipment Fixing Hardware (Supply+ETC)) : Supply of equipment fixing hardware as per specification TB-XXX-618-002a. This includes following but not limited to, 1. M20 x 80 LG Bolts (Full Threaded) with nut 2. M30 x 150 LG Bolts (Full Threaded) with nut 3. Plain washer suitable for M20 Bolts 4. Plain washer suitable for M30 Bolts 5. Spring washer suitable for M20 Bolts 6. Spring washer suitable for M30 Bolts	100	kg	84.30	8,430.00
158	[D.15] (Insulating Mat (Supply+ETC)) : The scope covers supply and laying of insulating mats of "class A" conforming to IS: 15652-2006. These insulating mats shall be laid in front of all floor mounted AC and DC switchboards and control & relay panels located in control room building/ Switchyard panel room / GIS LCC Panel e.t.c.refer scope note for details	100	SqMeter	4,072.97	4,07,297.00
159	[D.16] (Watch and Ward) : Watch & ward of stored / erected material at project site and storage area or any other locations as per instruction of site in charge. (round the clock security by authorised service agency consisting of armed guard)	24	months	47,421.55	11,38,117.20

Sl. No.	Description of Item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
160	[D.17] (Mandatory Spares/ Maintenance Equipment ) : Unloading, storage & handing over of Essential/ Mandatory spares/ Maintenance Equipment to Customer as per Annexure-spares but not ilimited to it as it is only indicative list for general understanding.	1	Lot	63,539.76	63,539.76
161	[D.18] (Office Furnitures (Supply+Installation)) : Office Furnitures shall include following but not limited to, 1. Office tables, PC and printer table and chairs for office rooms in GIS cum Control Room Building (Min. 1 table, 1 revolving chair and 4 visiting chair each for two rooms) 2. Document shelves of adequate size in every office room, cabinet room, control rooms and engineering room. (minimum 10 nos.)	1	Lot	1,75,000.00	1,75,000.00
162	[D.19] (First aid box, bilingual shock treatment charts, Equipment layout diagram, Substation Single line drawings, fire buckets (Supply+Installation)) : This shall include following but not limited to, First aid box, bilingual shock treatment charts, Equipment layout diagram, Substation Single line drawings, fire buckets both substation and transformer yard shall be provided in adequate number as per CEA and IE rules requirements. All display board shall be made of high quality flex type.	1	Lot	35,000.00	35,000.00

**Total Amount ( in Rs. Excluding GST)**

**135,24,313**

Annexure-II						
Price Schedule / Price Bid						
NAME OF WORK :- RECEIPT OF EQUIPMENT/MATERIAL AT SITE, UNLOADING, RECONCILIATION, INSPECTION, VERIFICATION, STORAGE, UP-KEEPING DURING STORAGE, ERECTION, TESTING, COMMISSIONING AND HANDING OVER OF 220KV GIS SUBSTATION AT IOCL PANIPAT REFINERY IN HARYANA.						
TENDER SPECIFICATION NO.:- TBSM/IOCL PANIPAT/ETC/TENDER/21-22 DATE 03.08.2021						
Name of Bidder						
(This BOQ template must not modified/ Replaced by the bidder and same shall be uploaded after filling the relevant columns , else the bidder is liable to be rejected for this tender. Bidders has to be fill the Bidder Name and values only)						
Sl No.	Item Description	Quantity	Units	Estimated Rate in Rs.	Total Amount Without taxes (Rs.)	Total Amount ( in words)
1	Total amount as per rates in BOQ (as per Annexure-I) for "Receipt of equipment/ material at site, unloading, reconciliation, inspection, verification, storage, up-keeping during storage, erection, testing, commissioning and handing over of 220 kV GIS Substation at IOCL Panipat Refinery in Haryana. "- Excluding GST	1.00	Nos	135,24,313.00	135,24,313.00	Rupees One Crore Thirty Five Lakh Twenty Four Thousand Three Hundred Thirteen Only.
Total in Figures					135,24,313.00	Rupees One Crore Thirty Five Lakh Twenty Four Thousand Three Hundred Thirteen Only.
Quoted Rate in Figures			Select	% (Percentage) Excess/Less/ at par		
Quoted Rate (Rs.) in Words after considering % (percentage) Excess/Less/at par						