



**BHARAT HEAVY ELECTRICALS LIMITED**  
**RAMACHANDRAPURAM::HYDERABAD::32**  
**PROJECTS DEPARTMENT**

**SCHEDULE- A**

Tender Notice No:

HY/FCD/OT-03/17-18, Dt: 05.06.2017

**PRICE BID**

Item no.: 1

**Name of work:-** HT & LT works for compact substations 1000 kVA -6 nos. at different locations.

S. No.	Description of the item	Unit	Qty	Rate (₹)	Amount (₹)
1	Shifting, Erection, Testing & Commissioning of free issued Compact Sub-station of 1000KVA capacity. a) Shifting of 1000KVA Compact Sub-station consisting of HT breakers, Dry type Transformer & LT Breakers from stores to erection site. Approx. Size: 3230 (L) x 2330 (W) x 2415 (H) mm & Wt: 6800kgs. b) Removal of Packing material of CSS and check up for the intactness of all items / components. c) Erection of CSS on the foundation. d) Tightening of all busbars from panel to panel, inside fasteners, clean up with cleaning agent and apply grease where ever it is required. e) All control wiring (AC & DC) has to be done for individual panel and panel to panel etc. f) Fixing up of all loose items such as PTs, CTs, Relays, Measuring Instruments (meters) and indication accessories etc. g) Checking up of CSS top with spirit level and aligning properly. h) Double earthing with free issued GI flat of 50 x 6mm size for all panels. i) Testing of primary injection, secondary injection and healthness of relays mounted, IR value etc. Test results are to be submitted in proper format. j) Checking of Mechanical & Electrical operation of HT & LT breakers etc.	Nos	6.00	32,315.18	1,93,891.08
2	Shifting, Erection, Testing & Commissioning of free issued APFC panel of 300KVAR capacity or more inside various substations	Nos	6.00	3,931.25	23,587.50
3	Shifting, Assembly, Erection, Testing & Commissioning of free issued CSS LT Extension panel of size 2060mm (L) X 575mm (B) X 1900mm (H) inside T3 Substation. Feeder combination of panel: Incoming - 3200A ACB(2 nos), Outgoing - 630A MCCB (6 nos). Approximate Weight: 500 Kgs	Nos	6.00	4,977.98	29,867.88
4	Shifting & Earthing of Equipment from nearest Earth riser with 50x6mm/ 25x3mm GI flat. Work includes supplying and applying Aluminium/Silver paint at each welding points.	Mts	1,000.00	22.00	22,000.00

S. No.	Description of the item	Unit	Qty	Rate (₹)	Amount (₹)
5	Shifting, Fabrication and Erection of structural steel for equipment/cable tray support etc. including 2 coats of red oxide painting. Supply of red oxide paint & Welding rods are in the scope of contractor.	Ton	10.00	9,066.00	90,660.00
6	Shifting & Erection of cable tray upto 600mm width of ladder / perforated type. The job includes fabrication of cable tray bends wherever required.	Mts	500.00	43.64	21,820.00
7	Supply and Erection of Earth pits for power distribution transformer neutral earthing with 1200x1200x12mm GI plate, 50mm dia 2500mm long GI pipe with holes of 1/4" dia at 4" apart at random & 75x10, 2250mm long GI flat material as per drawing. The work includes supply of material for alternate layers of charcoal(75kgs), salt(150kgs) and making RCC/Brick chambers with MS/Cast iron cover. Contractor shall dig 300mm depth and 200mm width trench in the soil for laying the copper cable from earth pit electrode to transformer neutral.	Nos	12.00	11,972.13	1,43,665.56
8	Supply and Erection of Earth pits for Equipment body earthing with 65mm dia GI pipe Medium (class-B), strictly as per IS: 3043, 3000mm long with holes of 12mm dia at 150mm apart at random & 50x6x260mm MS Earthing plate welded to pipe as per drawing. The work includes supply of material for alternate layers of charcoal(75kgs), salt(150kgs) and making RCC/brick chambers with MS/cast iron cover. Contractor shall dig 300mm depth and 200mm width trench in the soil for laying the earth flat from earth pit electrode to earth mat/equipment.	Nos	24.00	7,350.00	1,76,400.00
9	Shifting, Laying & Dressing of the following HT cables. The job includes placing single core cables in trefoil formation				
	a) 3C X 95 sq.mm, 11kV (UE), armored XLPE Aluminum cable	Mtrs	2,000.00	27.74	55,480.00
	b) 1C X 500 sq.mm, 11kV(UE), armored XLPE Aluminum cable	Mtrs	100.00	24.36	2,436.00
10	Removing from equipment and diversion of existing 1C X 500 sq.mm, 11kV (UE), armored XLPE Aluminum cables	Mtrs	200.00	30.80	6,160.00
11	Supply of Straight through joint for the following cables				
	a) 3C X 95 Sq.mm, 11kV (UE) XLPE cable. <b>Make: Raychem</b>	Nos	9.00	21,439.81	1,92,958.29
	b) 1C X 500 sq.mm, 11kV (UE), armored XLPE Aluminum cable, <b>Make: Raychem</b>	Nos	6.00	14,175.20	85,051.20
12	Supply of the following indoor end termination kits along with appropriate Right Angled Cold Applied Boots . <b>Make: 3M</b>				
	a) 1C X 500 sq.mm, 11kV (UE), armored XLPE Aluminum cable	Nos	6.00	5,442.05	32,652.30

S. No.	Description of the item	Unit	Qty	Rate (₹)	Amount (₹)
13	Execution of end terminations for the following cables. Tools for end termination execution is in the scope of contractor.				
	a) BHEL free-issued end termination kit for 3C X 95 sq.mm, 11kV (UE) cable under the supervision of M/s ABB. Tools for execution and termination are in the scope of contractor	Nos	18.00	1,244.49	22,400.82
	b) 1C X 500 sq.mm, 11kV(UE), armored XLPE Aluminum cable	Nos	6.00	1,244.49	7,466.94
14	Temporary Connection of the following cables to the old LT ACB panel for facilitating power transfer from old to new LT panel. The job includes removal of old cables from incomer of LT panel, connection of new cables through cable lugs to the incomer of old LT panel and then removal of cables from incomer of old panel after the new panel is erected, relaying and connecting the same in new LT panel. Supply of cable lugs for this item is in the scope of the contractor				
	1C X 400 sq.mm	nos	50.00	685.19	34,259.50
15	Supply of LT Straight through joints for the following aluminum cables				
	a) 3.5C X 300 sq.mm, <b>make: Raychem</b>	Nos	2.00	2,809.24	5,618.48
	b) 3.5C X 240 sq.mm, <b>make: Raychem</b>	Nos	2.00	2,339.37	4,678.74
16	Execution of the straight through joints for the following cables. All the required tools are in the scope of contractor				
	a) 3C X 95 Sq.mm, 11kV (UE) XLPE cable	Nos	9.00	1,540.24	13,862.16
	b) 1C X 500 sq.mm, 11kV (UE), armored XLPE Aluminum cable	Nos	6.00	1,540.24	9,241.44
	c) 3.5C X 300 sq.mm, 1.1kV, HR PVC Aluminum armored cable	Nos	2.00	1,244.49	2,488.98
	d) 3.5C X 240 sq.mm, 1.1kV, HR PVC Aluminum armored cable	Nos	2.00	1,244.49	2,488.98
17	Removal of existing cables, dismantling, shifting to Scrap Yard or handing over of 30V dc battery charger and battery bank of Amarraja/HBL Make. to Power distribution or following the instructions of the Site Engineer Approx. Size: 390mm X 530mm X 1000mm. Approx. weight: 200kgs	Nos	6.00	948.62	5,691.72
<b>T29 Substation</b>					
18	Removal of existing cables, dismantling, shifting to Scrap Yard or handing over of the following items to Power distribution or following the instructions of the Site Engineer				
	a) 11KV, IB4 oil switch. Approx.Size:2000mmx1000mmx2000mm and Wt.1.0T	Nos	3.00	2,700.63	8,101.89
	b) 750KVA, 11kV/415V Oil filled distribution transformer. Approximate Size: 2500mm (L)X 1500mm(B) X 2500mm (H). Total weight: 5000 Kgs	Nos	1.00	9,241.44	9,241.44
	c) 415V LT ACB panel of size: 4150mm X 1000mm X 2300mm. Approx. weight: 3000Kgs	Nos	1.00	6,160.96	6,160.96

S. No.	Description of the item	Unit	Qty	Rate (₹)	Amount (₹)
<b>T30 Substation</b>					
19	Removal of existing cables, dismantling, shifting to Scrap Yard or handing over of the following items to Power distribution or following the instructions of the Site Engineer				
	a) Dismantling/Removing of 11KV, VM-12 VCBs and shifting to 52 building or as per the instructions of site engineer. Approx.Size:2000mmx1000mmx2000mm and Wt.1.0T	Nos	3.00	3,080.48	9,241.44
	b) 750KVA, 11kV/415V Oil filled distribution transformer. Approximate Size: 2500mm (L)X 1500mm(B) X 2500mm (H). Total weight: 5000 Kgs	Nos	1.00	9,241.44	9,241.44
	c) 415V LT ACB panel of size: 2500mm X 1100mm X 2300mm. Approx. weight: 2000Kgs	Nos	1.00	4,977.98	4,977.98
<b>T2 Substation</b>					
22	Removal of existing cables, dismantling, shifting to Scrap Yard or handing over of the following items to Power distribution or following the instructions of the Site Engineer				
	a) 1000KVA, 11kV/415V Oil filled distribution transformer. Approximate Size: 2500mm (L)X 1500mm(B) X 2500mm (H). Total weight: 5000 Kgs	Nos	1.00	9,241.44	9,241.44
	b) 415V LT ACB panel of size: 4150mm X 1000mm X 2300mm. Approx. weight: 3000Kgs	Nos	1.00	6,160.96	6,160.96
<b>T22 Substation</b>					
23	Removal of existing cables, dismantling, shifting to Scrap Yard or handing over of the following items to Power distribution or following the instructions of the Site Engineer				
	b) 750KVA, 11kV/415V Oil filled distribution transformer. Approximate Size: 2500mm (L)X 1500mm(B) X 2500mm (H). Total weight: 5000 Kgs	Nos	1.00	9,241.44	9,241.44
	c) 415V LT ACB panel of size: 2500mm X 1100mm X 2300mm. Approx. weight: 2000Kgs	Nos	1.00	4,977.98	4,977.98
<b>09-Tr2 Substation</b>					
24	Removal of existing cables, dismantling, shifting to Scrap Yard or handing over of the following items to Power distribution or following the instructions of the Site Engineer				
	a) 11KV, IB4 oil switch. Approx.Size:2000mmx1000mmx2000mm and Wt.1.0T	Nos	3.00	2,700.63	8,101.89
	b) 750KVA, 11kV/415V Oil filled distribution transformer. Approximate Size: 2500mm (L)X 1500mm(B) X 2500mm (H). Total weight: 5000 Kgs	Nos	1.00	9,241.44	9,241.44
	c) 415V LT ACB panel of size: 2500mm X 1100mm X 2300mm. Approx. weight: 2000Kgs	Nos	1.00	4,977.98	4,977.98

S. No.	Description of the item	Unit	Qty	Rate (₹)	Amount (₹)
25	Shifting and laying of following LT power PVC armoured aluminium/elastomeric LT copper flexible cable including Dressing				
	a) 1C X 400 sq.mm Aluminum cable	Mts	2,000.00	16.09	32,180.00
	b) 3.5C X 300 sq.mm Aluminum cable	Mts	3,500.00	21.11	73,885.00
	c) 3.5C X 240 sq.mm Aluminum cable	Mts	300.00	21.84	6,552.00
	d) 4C/3.5C X 50 sq.mm Copper cable	Mts	200.00	16.32	3,264.00
	e) 5C X 1.5 sq.mm Copper cable	Mts	300.00	11.22	3,366.60
26	Power cable termination including supply of cable glands for 3.5C X 300 sq.mm LT aluminum armored PVC cable. Cable lugs will be provided by BHEL	Nos	100.00	953.09	95,309.00
27	Power cable termination including supply of cable glands & lugs(Copper/Aluminium).				
	a) 1C X 400 sq.mm Aluminum cable	Nos	110.00	397.16	43,687.60
	b) 3.5C X 240 sq.mm Aluminum cable	Nos	20.00	1,344.00	26,880.00
	c) 4C/3.5C X 50 sq.mm Copper cable	Nos	24.00	367.31	8,815.44
	d) 5C X 1.5 sq.mm Copper cable	Nos	12.00	204.06	2,448.72
28	Identification and Removal of existing HT and LT power cables from trench between each substation and Individual RM Boards in all the blocks which are fed power supply from respective Substation and shifting them to scrap yard after checking by site engineer or following the instructions of site engineer.	mts	3,000.00	16.59	49,779.80
29	Removal of existing cables, dismantling, shifting to Scrap Yard or handing over of the following items to Power distribution or following the instructions of the Site Engineer				
	a) Power Factor Control Panel. Approximate dimensions of Power Factor Control Panel: 800mm X 800mm X 2300mm. Approx. weight: 500Kgs	Nos	3.00	1,306.01	3,918.03
	b) Capacitor Bank. Approximate dimensions: 170mm X 610mm X 1150mm. Approximate weight: 200 Kgs	Nos	3.00	435.33	1,305.99
	c) 500A CFSU switch	Nos	2.00	435.33	870.66
30	Removal of cables, Dismantling and shifting of old LT ACB Panel with the following feeder combination:				
	a) I/C: 2000A - 2 Nos, O/G: 800A - 4 Nos, Approx. Size: 2500 mm X 2500mm X 1700mm. Approx. weight: 3000Kgs	Nos	1.00	6,160.96	6,160.96
	a) I/C: 2000A - 2 Nos, O/G: 800A - 4 Nos, Approx. Size: 2500 mm X 2300mm X 1000mm. Approx. weight: 2500Kgs	Nos	1.00	6,160.96	6,160.96
31	Shifting, Assembly, Erection, Testing & Commissioning of free issued LT ACB panel of size 5000mm (L) X 1200mm (B) X 2500mm (H) inside Admin Building Substation. Feeder combination of panel: Incoming - 2500A ACB(2 nos), Outgoing - 800A MCCB (8 nos). Approximate Weight: 6000 Kgs. The job includes connecting all the existing cables removed from the old panel of item 30(a)&(b)	Nos	1.00	21,563.36	21,563.36

S. No.	Description of the item	Unit	Qty	Rate (₹)	Amount (₹)
32	Excavation of cable trench(500x1000mm)				
	i) In soil, excavation of 1000mm deep and 500mm width trench, supply & spreading of sand, supply & laying of bricks & shabad stone as per IS:1255 1983 and back filling after cable laid with marking plates.	Mts	300.00	428.11	1,28,433.60
	ii) Cutting of Road, RCC & Hard rock	Mts	25.00	317.12	7,928.00
	iii) Supply & laying of 9" dia 2 M long RCC hume pipes at Road and Railway track crossings.	nos	20.00	645.75	12,915.07
33	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge	cu.m	3.00	970.14	2,910.42
34	Supply of Commissioning Assistance during machines & other systems commissioning.				
	i) Skilled	days	15.00	743.10	11,146.50
	ii) Unskilled	days	15.00	615.15	9,227.25
	<b>Total value of work</b>			<b>₹</b>	<b>18,42,444.81</b>

**Note:**

1	<b>BHEL estimate rates are excluding VAT/service tax/GST etc.</b>
2	A penalty of 0.5% of the gross value of work will be levied for every week's delay of work or part there of subject to a maximum penalty of 10% of the gross value of work executed after the period of completion.
3	The contractor should execute the work simultaneously at two substations atleast.
4	The Contractor has to submit separate Service tax\GST invoice along with RAB (Running Account Bill)
5	The quantities indicated in the schedule are tentative and may increase or decrease or delete.
6	Any other works not mentioned but required for completion of the project are to be carried out by the contractor with mutually agreed rates and vetted by finance.
7	The works are to be carried out in accordance with Indian Electricity rules 1956
8	The contractor shall mark with paint on all panels regarding power cables size & FROM/TO destinations.
9	The contractor should follow all the statutory requirements, Environmental Management System (EMS), Occupation Health and Safety Management System (OHSAS) while executing the work.
10	Contractor shall shift the materials from different locations inside the factory to the project site and return back the left over materials after completion of the work to the project stores or as per the instructions of the site engineer.
11	All the unused/excess materials issued by BHEL shall be returned to the store / or as directed by the site engineer after use.
12	Contractor has to ensure neatness of the site by removing unwanted materials/scrap materials.
13	Safety : Contractor has to ensure usage of safety shoes, safety helmets, safety belts, safety net & anchoring rope, hand gloves etc. during erection and commissioning for all his personnel.
14	The agencies are advised to visit the site to understand the nature of work/quantum of work in its true perspective to avoid any complications.
15	Tenderer should have valid HT Electrical license issued by competent authority.
16	GST: All the terms and conditions of the contract with respect to taxes & duties are subject to the new taxation laws introduced from time to time (e.g. GST). The terms and conditions will be modified in accordance with the provisions of new laws (e.g. GST).

S. No.	Description of the item	Unit	Qty	Rate (₹)	Amount (₹)
17	After completion of erection works, the contractor has to arrange inspection by Central Electricity Authority (CEA) and obtain the permission for charging the transformer. BHEL will provide all relevant drawings and pay the processing fee indicated by CEA and other necessary arrangements shall be born by the contractor.				
18	<b>Taxes:</b> Bidders shall quote their Basic price exclusive of taxes. The applicable taxes on supply of material or services, as the case may be viz., VAT/Service Tax/GST shall be quoted separately, clearly showing the Service Code/Tariff Head, Rate of Tax and Amount of Tax in the Bid. The reimbursement of taxes to the contractor is contingent upon fulfilment by the contractor of all statutory provisions as stipulated in the relevant taxation statute enabling BHEL to avail the eligible input tax credits. TDS at the rates prescribed under Income Tax Act shall be deducted from the payments due to Contractor and BHEL shall issue the necessary TDS Certificates for such deductions made.				
19	The maintenance period of the work is <b>6 months</b> . The security deposit will be released after satisfactory completion of the work and after getting I.R clearance and payment of final bill.				
20	The agency has to pay the minimum wages to workers with statutory payments like ESI, PF etc., is as per BHEL notification and as per NIT. For USW=₹ 500.80, SSW=₹ 553.15, SW = ₹ 604.96 + ESI + PF + PPE's and other statutory if any increase in future DA is to be borne by the agency.				

**Note :** The bidders are required to quote the tender value on percentage (%) basis at excess or less or on par with estimate value in figures and words.

Tender %	In figure	In words
Excess		
Less		
Estimated value		