Bharat Heavy Electricals Limited

High Pressure Boiler Plant
Tiruchirappalli – 620 014. India
Civil Engineering Department (Factory)

TENDER DOCUMENT (PRICE BID)

Name of work	:	**Design, fabrication, supply and erection of Pre-Engineered structural steel shop floor Buildings including crane girder, rail, roof & side cladding, accessories, sky light panels, roof/ turbo ventilators etc. of production shop floors including Electrification of Shop floor (Shop Lighting), High mast lighting system and HT Substation equipment supply and erection works for the Power Equipment Fabrication Plant near Sakoli, Bhandara district in Maharashtra State.**
Tender Notice No.	:	**03 / 14-15**
Tender Schedule No.	:	**04 / 14-15**
Period of Contract	:	**10 Months**
Issued to	:	

SHEDULE 'A'

LIST OF WORKS AND PRICES

NAME OF WORK: Design, fabrication, supply and erection of Pre-Engineered structural steel shop floor Buildings including crane girder, rail, roof & side cladding, accessories, sky light panels, roof/ turbo ventilators etc. of production shop floors including Electrification of Shop floor (Shop Lighting), High mast lighting system and HT Substation equipment supply and erection works for the Power Equipment Fabrication Plant near Sakoli, Bhandara district in Maharashtra State.

DETAILS & QUANTITIES of each item of work shown in the BILL OF QUANTITIES are only approximate. They are given as a guide for the purpose of tendering only and are liable to variation and alteration of the Competent Authority. The work under each item as executed shall be measured and priced at the corresponding rate quoted by the contractor in the BILL OF QUANTITIES

Sl.No.	Description of work / supplied	Total amount of work / supplies (in figures and words) Rs. Ps.	Period of contract
1.	**Design, fabrication, supply and erection of Pre-Engineered structural steel shop floor Buildings including crane girder, rail, roof & side cladding, accessories, sky light panels, roof/ turbo ventilators etc. of production shop floors including Electrification of Shop floor (Shop Lighting), High mast lighting system and HT Substation equipment supply and erection works for the Power Equipment Fabrication Plant near Sakoli, Bhandara district in Maharashtra State.**		**10 MONTHS**

BILL OF QUANTITIES

Sl. No.	Appx. Qty.	Description of work	Rate (Both in Unit fig & Words	Amount Rs. Ps.

AS PER SEPARATE SHEETS ATTACHED CONTAINING **17** PAGES

FROM SERIAL No. **3 to 19 of Price Bid**

BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPPALLI- 620 014

BILL OF QUANTITIES – PACKAGE – I PEB WORK

Name of work: Design, fabrication, supply and erection of Pre-Engineered structural steel shop floor Buildings including crane girder, roof & side cladding, accessories, sky light panels, roof / turbo ventilators etc. of production shop floors for the Power Equipment Fabrication Plant near Sakoli, Bhandara district in Maharashtra State.

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Amount Rs. Ps.
1		**Design, fabrication supply and erection of pre-engineered structural steel shop floor Buildings including crane girder, roof & side cladding, accessories, sky light panels, roof / turbo ventilators etc. of production shop floors as per IS: 800-2007 and relevant codes for the following buildings all as per the technical and commercial specifications given in the tender documents and as per the attached drawings.**			
a	1	Bay A - 1 No of size 30 M x 240 M (8 @ 30M) with EOT crane capacity of 30T - 1 No, 20T - 1 No & 10 T – 2 Nos for the entire bay with the detailed scope of work specified in the tender document & attached drawings. The building shall be designed with a provision for future expansion.		LS	
b	5	Bays (in between A & B Bays) 5 Nos (Bay Nos.1 to 5) of each bay size: 30 M x 234 M (18 Bays @ 12M + 1 Bay @ 18M) with EOT crane capacity of 20 MT – 2 Nos + 10 MT – 1 No in Bay 1,3 & 4, 20 MT – 2 Nos + 10 MT – 2 Nos in Bay 2, 30 MT – 1 No + 20 MT – 1 No + 10 MT – 1 No in Bay 5 and Semi gantry crane of capacity 5 MT – 2 Nos - full length in bay 3 & 4 F row (except gangway) and 5 MT – 2 Nos - between column E9 to E21 in bay 5 with the detailed scope of work specified in the tender document & attached drawings. The building shall be designed with a provision for future expansion.		LS	

Sl. No.	Quantity	Description of work	Rate (both in figures and in words)	Unit	Amount Rs. Ps.
c	1	Bay B - 1 No of size 30 M x 240 M (8 @ 30M) with EOT crane capacity of 30T - 1 No (Future), 20T - 2 Nos & 10 T – 2 Nos for the entire bay with the detailed scope of work specified in the tender document & attached drawings. The building shall be designed with a provision for future expansion.		LS	

Total -- -- --

Applicable Service Tax @ % (Amount in Rs.) --

Grand Total -- --

(RUPEES ..... ONLY)

NOTE

1 **The rate offered is for finished items of works and shall provide for the complete cost towards fuel, tools, tackles, plant & machinery, temporary works, labour, materials, levies, taxes, transport, lay-out, repairs, rectifications, maintenance till handing over, supervision, labour colonies, establishment, services, revenue expenses, overheads, profits & all other incidentals including insurance coverage for the total cost of the PEB structures, etc., complete.**

The rate quoted shall not include service tax and BOCW Cess. The service tax as applicable for this contract work and the same can be claimed from BHEL along with their monthly bills for further payment to be made to the authorities concerned. At present the rate of service tax is 4.944%. (Service tax + Edu. Cess+ Sec. Higher Edu. Cess). However the tenderer has to submit the service tax structure of applicability to their firm nature to arrive at the total cost to BHEL based on which the final award of work will be done. The contractor has to submit the payment challan as a documentary proof of having paid the service tax for the previous bill for which he has received the service tax payment along with the subsequent bill for which payment has to be processed.

The successful tenderer should remit 1% cess as per Building and Other Construction Workers Act 1996 as applicable to the authorities concerned from time to time. The same can be reimbursed from BHEL on production of valid documentary proof for having paid the 1% cess of the value of work done to the authorities concerned. As soon as the BHEL – PEFP Factory Registration obtained, the BOCW Act will not be applicable.

2 The period of contract is TEN months. The contractor is required to plan accordingly as indicated under Instructions to Tenderers.

3 The tenderer is required to provide breakup quantity & cost of the major components like structural steel, sheeting, polycarbonate sheet, ridge ventilator, turbo ventilator etc. for items 1(a), (b) & (c) separately, matching the quoted value to arrive at unit cost for payment purpose in the price bid cover

4 However no extra payment will be entertained on account of any increase in the indicated quantity subsequent to detailed Engineering and as supplied to site by the tenderer.

CONTRACTOR **ACCEPTING** 4 **OFFICER**

PACKAGE-II

HT SUBSTATION EQUIPMENT SUPPLY, ERECTION AND COMMISSIONING

PART B
Supply, installation, erection, testing and commissioning of Main Receiving Substations & CSS at PEFP Bhandara on Turnkey basis

Item: A Supply Items

S.No.	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
1	33/11KV 5 MVA Power transformer as per the technical specifications of Annexure-II.	2	No.		
2	Outdoor Plinth mounted type 1000 KVA, 11KV/415 Volts, Compact Substation (CSS) with Cast resin Transformer. Technical specifications for the CSS as Per Annexure-X.	10	No.		
3	24 Volts/ 100AH DC maintenance free Battery and Battery charger as per Annexure-IIIA & IIIB respectively.	6	No.		
4	50x6 mm size Hot dipped GI flat .MS flat shall conform to IS2062 &Galvanisation shall conform to IS4759.The thickness of the ZINC coating shall be min 80 microns with test certificate .	3000	Meters		
5	33 KV grade, 3 core 300 Sq.mm XLPE Cable with specification as per Annexure-IV.	500	Meters		
6	11 KV grade, 3 core 240 Sq.mm XLPE Cable with specification as per Annexure-V.	4000	Meters		
7	Heat Shrinkable Indoor end Termination Kit with suitable for 240sq mm 3 Core 11KV XLPE un earthed system cable indoor application. Cable Jointing kit should confirm to IS 13573-1982 and the offered joints should have been type tested by CPRI / ERDI.	12	No.		
8	Heat Shrinkable indoor/outdoor end Termination Kit suitable for 300sq mm 3 Core 33KV XLPE un earthed system cable. Cable Jointing kit should confirm to IS 13573-1982/relevent IS and the offered joints should have been type tested by CPRI / ERDI. Indoor--------- 10 nos Outdoor-------2 nos	12	No.		
9	Heat Shrinkable Straight through joint Kit with copper ferrule suitable for 240 Sq.mm 3 Core 11KV XLPE un earthed system cable. Cable Jointing kit should confirm to IS 13573-1982 and the offered joints should have been type tested by CPRI / ERDI.	10	No.		
10	Floor mounting cubicle type MV Switch gear panel (PCC) consisting of 19 nos of ACB breakers with technical specifications as per Annexure-VI	5	No.		

S.No.	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
11	Floor mounting detuned 300 KVAr APFC panels with technical specifications as per Annexure: VII	10	No.		
12	25 X 3 mm pure copper earth flat for earhing of lightning arrester to the earth pit.	500	Meters		
13	4 core 1.5 sqmm FRLS ISI marked copper conductor armoured cable for connecting auxillary relays and battery in SS.(200 m/ SS).	1000	Meters		
14	1100V 3.5C 185 Sqmm XLPE Armoured copper cable with technical specification as per Annexure-IX.	2000	Meters		
15	1100V 3.5 core 185sq.mm XLPE AA cable (for APFC panels) with technical specifications as per Annexure: VIII	1000	Meters		
16	Synthetic insulating mat as per IS: 15652-2006 as per the Annexure-XI. Note:- 1) The Synthetic insulating mat IS approved mark CPRI/ERDI tested should be supplied by contractor with TC 2)Size of mat required: a) 2.0mm Thick mat (for 415V)	75	Sq. Metre		
	b) 2.5mm Thick mat (for 11kV)	15	Sq. Metre		
	c) 3.0 mm thick mat (for 33kV)	10	Sq. Metre		
17	33kV indoor cubicle floor mounting type metering box confirming to MSEDCL norms equipped with 3 nos 33000/110V cast resin type PT and 200/5A cast resin type CT with suitable bus bar, connectors as per the Annexure-XII.	2	No.		
18	Supply of copper lightning arrester spike with complete set of 4 feet height copper tube of thickness/as per IS , one number bowl, one number copper base plate for earthing shopfloor and buildings.	10	No		
19	Supplying of the required substation tool & tackles and safety equipment as per Annexure-XIII.	2	Sets		
			TOTAL		

Item: B Service Work					
S.No.	**DESCRIPTION**	**QTY.**	**UNIT**	**RATE**	**AMOUNT**
1	Suppy & erection of 10 m long 152x152mm RSJ double pole structure consisting of 33 KV,600 A double breaking isolators along with Earth switch, 33 KV disc insulators, support insulators , 33 KV lightning arrestors, mechanical interlocks for OPEN/CLOSE of main poles (R Y B) and earthing , jumpering, angle iron supports, 2 nos. stay wires with guy insulators , painting ,earthing, bus conductors,stringing, steel member, fastners, clamps, etc as per the model drawing as per Annexure-I. Note: 1) The operation of the isolator with earth switch for trouble free operation for opening/closing should be ensured.	1	Lot		
2	Assembling ,Erection,testing and commissioning of BHEL make ,HT,33KV, Model VM36 VCB panel size 1300mm width x 1831mm Length x 2712mm Height and weight 1000kg (appx) at Main Receiving sub station on the RCC floor with supply of suitable foundation bolts, mounting on the floor/cable trench, grouting etc. The VCB panel interlinking bus bar/earth connections should be done after properly matching all the VCB's on the floor/cable trench. The Breakers shall be completely checked up for its wiring as per the supplier drawing, tightness, working of the spring closing mechanism as per the instruction of the Electrical incharge during the time of erection. Interlocking arrangement between the incoming breaker and the Isolator switch at douvle pole structure in MRSS to be done by the contractor. Note: VCB panel with trunking panel, interlinking bus bars only will be issued by BHEL at the site stores.	6	Sets		
3	Assembling ,Erection,testing and commissioning of BHEL make ,HT,11KV, Model VM12 VCB panel size 820mm width x 1831mm Length x 2712mm Height and weight 1000kg (appx) at Main Receiving sub station on the RCC floor with supply of suitable foundation bolts, mounting on the floor/cable trench, grouting etc. The VCB panel interlinking bus bar/earth connections should be done after properly matching all the VCB's on the floor/cable trench. The Breakers shall be completely checked up for its wiring as per the supplier drawing, tightness, working of the spring closing mechanism as per the instruction of the Electrical incharge during the time of erection. Interlocking arrangement between the 33kV transformer breaker and the transformer 11kV breaker in MRSS to be done by the contractor. Note: VCB panel with trunking panel, interlinking bus bars only will be issued by BHEL at the site stores.	12	Sets		

S.No.	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
4	Erection, testing & commissioning of 33/11KV, 5 MVA Power transformer . The erection of the traformer includes providing suitable concrete plinth . Note: Contractor should engage suitable mobile crane during erection	2	Nos.		
5	Foundation preparation and erection of chain link mesh of size 3 inch x 3 inch to a height of 2.4 mtr with supporting pole span of 3 meter using suitable ISI angle 50x50x6mm around the power transformer yard and double pole structure yard including painting, earthing etc. Suitable weld mesh door with frame work for transformer yard and double pole structure yard should be provided. The supporting angle should be grouted with suitable concrete mixture. 1)Chain link mesh to be earthed as per the IS standards. 2)Corners should be properly supported by suitable angles.	60	Meter		
6	Supply & spreading of 40mm size blue metal jelly in the transformer yard and double pole structure yard to a height of 150mm.	100	Sq. metre		
7	Construction of brick wall (fire wall) of dimensions 5m height x 5 m length x 0.3m width with necessary concrete foundation, masonry, finishing, whitewashing, painting, etc., along with suitable RCC column & beam.	2	Lot		
8	Excavation of earth and construction of burnt oil pit of size 2mx2mx2m, 150mm thick with RCC mix and connection should be made between TR-1 & TR-2 to Burnt oil pit with 6 inch PVC pipe to a length of 35 meters appx. including required bends and fixing on the ground with required slope to burnt oil pit. The pit should be covered with RCC slab and man hole to be provided	1	Set		
9	Erection, testing and commissioning of outdoor type 1000 KVA, 11KV/415 Volts, Compact Substation (CSS) with suitably positioning on the concrete foundation. Making end termination using the screened seperable termination kit (4 nos/SS). Note: 1)Crane facility to be provided by contractor. 2)Foundation required for the CSS will be done by BHEL.	10	Sets		
10	Erection, testing and commissioning of 24 Volts/ 100AH DC maintenance free Battery and Battery charger with supply of necessary angle iron frame works, etc on the floor/cable trench.	6	Sets		

S.No.	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
11	Supply & Providing earth electrodes as per IS standards as follows: Excavation of earth, supply and installation of earth electrode generally conforming to IS: 3043-1987. The electrode should be of 100 mm dia. C.I. pipe with suitable welded earth flat connecting arrangments, having wall thickness of 13 mm and height 2750 mm with supply and filling of alternate layers of Bentonite, river sand and charcoal around the electrode, construction of masonry chamber size of inner size 600mm x 600mm and RCC slab cover etc., with supply of masonry materials.Earth resistance value (to be measured using earth megger), earth electrode No. and date of inspection are to be painted inside the chamber wall and on the top of the cover. Earth electrode Locations: MRSS - 8 Nos SS1to5 - 50 Nos Metering point - 4 Nos Lightining Arrestors - 10 Nos **Total - 72 Nos** SPECIAL INSTRUCTIONS for making earth pits: a) Before commencement of work, contractor should discuss with Electrical in charge and finalise the location plan for the installation of earth electrodes. b) Contractor should fill earthing materials like bentonite, river sand, charcoal around electrode. c) Unique earth pit number should be allotted for every earth pit and same is to be painted with black colour paint on the inside wall of masonry chamber and cover. d) After erection of earth pit, the ohmic value to be measured and final report to be submitted. e) All the earthing works should be carried out in the presence of BHEL electrical staff.	72	No.		
12	Laying of 50 mm x 6 mm GI earth flat in formed/excavated trench/wall between the earth pit and the PCC. After laying,the earth flat should be connected with Earth electrode on one side and PCC on other side. All sub-items are under the contractor's scope.	3000	Meters		
13	Excavation of earth (ordinary soil) up to a depth of 1mtr, width 0.6mtr and with supply & laying of quality bricks (box type arrangement) , supply & filling with quality sand and closing the trench with excavated earth to make it good ,to facilitate cable laying. Note: Sand filling to be done with 0.075 m below the cable then cable laying,and then again sand filling to be done for 0.075m, arrangement of bricks in box type and then to be closed with the excavated earth.	6000	Meters		

S.No.	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
14	Removing and replacing back the RCC/ MS slabs/ plates over the formed cable trenches of width 0.3 to 1 meter, to facilitate laying or removal of 240 sq.mm HT XLPE cable.	3500	Meters		
15	Laying of Single runs of 33 KV, 3 core 300 Sq.mm XLPE Cable in already excavated trench/ open trench/ pipe.	500	Meters		
16	Laying of single run of 11 KV, 3 core 240 Sq.mm XLPE Cable in already excavated trench/ open trench/ pipe.	4000	Meters		
17	Making Indoor Cable End Termination for 11KV, 3 core 240 sq.mm XLPE cable using Heat shrinkable cable jointing Kit.	12	No.		
18	Making indoor/outdoor Cable End Termination for 33KV, 3 core 300 sq.mm XLPE cable using Indoor--------- 10 nos Outdoor-------2 nos Heat shrinkable cable jointing Kit.	12	No.		
19	Making Straight thru joint of 11KV, 3core 240 sq mm. XLPE cable using heat shrinkable straight through joint kit.	10	No.		
20	Erection, testing and commissioning of floor mounting cubicle type MV Switch gear (PCC) panel with supply of required foundation bolts ,grouting, earthing, mansionary works etc. During erection all the panel inner wirings should be checked up as per the drawings and other required interlocks and proper tightning, coupling the panel comparments bus bars. Minor touching up of panel painting, writing of the cables sizes of incomer & outgoings and feeder names etc should be carried out as per Engineer instructions at the time of commissioning.	5	Sets		
21	Erection, testing and commissioning of floor mounting detuned 300 KVAr APFC panels with supply of suitable foundation bolts, grouting, earthing, mansionary works etc.	10	No.		
22	Fixing of copper lightning arrester spike with complete set of 4 feet copper tube, one number bowl, one number copper base plate on the top of the building of height approx 15 M (for earthing shopfloor and buildings).	10	No.		
23	Laying of 25 X 3 mm electrical grade copper earth flat from the lightning arrester to the earth electrode with necessary support clamps (with porcelain bush insulator) on the truss / wall including terminating rigidly at both ends. 25 mtrs per lightning arrester (approximately). Total length = 250 metres. NOTE: - 1. Earth flat jointing with suitable size cadmium bolts is under the scope of contractor.	250	Meters		

S.No.	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT
	2. Skilled electricians with valid license and high roof level work experience should only be involved in this work. Before starting the work contractor should get safety clearance from the Electrical incharge 3. Earth pit value to be maintained and proved to be less than 1 ohm.				
24	Laying of 4 core 1.5 sqmm copper conductor armoured cable in the cellar room for connecting auxillary relays and battery in SS. 200 m/ SS approximately .	1000	Meters		
25	Supply & making end termination of 4 core 1.5 sqmm insulated copper conductor cable with supply of glands ,lugs , earthing etc. 40 Nos / SS approximately . Total : 200 Nos	200	No.		
26	Laying of 5 runs of medium voltage 3.5 Core 185 Sqmm XLPE Armoured copper cable between the CSS outgoing and MV switchgear incomer in the ground/formed trench. Total length:(5 runs of 80 mtr length for each SS) = 2000 meter	2000	Meters		
27	Supply of double compression brass cable gland, necessary cable termination copper lugs and making end termination of 3.5 Core 185 Sqmm XLPE Armoured copper cable at the CSS outgoing side and MV switchgear incomer side.	120	No.		
28	Supply of steel materials, fabrication and erection of necessary cable racks and supports in the cable cellar room using 100 X 50 mm M.S channel for vertical support, 50 X 50 X 6 mm angle, 25 X 3 mm M.S. Flat and 100 X 100 X 6 mm M.S. plate as per the instruction of electrical incharge. Cable rack drawing to be submitted by the contractor for the approval by BHEL. Cable tray should be in the dimension of 300mm and 600 width. Note: All sub-items including necessary MS Channel/ angle/ flat/base plate are under the scope of the contractor.	2000	Kg.		
29	Laying of single runs of 3.5 core 185sq.mm XLPE AA cable in the excavated trench/formed trench /wall(for APFC panels).	1000	Meters		
30	Supply of double compression brass cable gland, necessary cable termination aluminium lugs and making end termination of 3.5 Core 185 Sqmm XLPE Armoured alluminium cable at the MV switchgear outgoing end and APFC side.	70	No.		

S.No.	DESCRIPTION		UNIT	RATE	AMOUNT
31	Laying and pasting of Synthetic insulating mat in front of newly commissioned HT switch gear and MV Panel in RSS ,SS 1 to SS 5. The insulating mat should be cut to the required length of the HT switch gear and MV Panel as per the insruction of the electrical incharge. Cleaning the surface of the floor by cleaning agent ,cutting the required size of the synthetic insulating mat and applying PEDILITE make SR998 / 998FW resin and pasting neatly on the floor in front of HT switch gear and MV Panels. Note:- 1)All other required materials including required qty. of cleaning agent ,PEDILITE make SR998 / 998FW resin and other materials are under the scope of the contractor.	100	Sq. Meter		
32	Installation of 33kV metering box at the identified location with required civil grouting.	2	No.		
	Special Instructions: Preparation of equipments layout drawings /single line diagrams incorporating all the supplied and installed equipments in this order and obtain necessary approval as per IE rules 1956/ Electricity Act 2003 and Safety Act 2010. The safety certificate from the Central Electrical authority for energising the equipments has to be obtained. Scope includes submission of application, completion certificate, valid ESA licence and coordination with the inspection of officials of CEA or any other statutory requirements applicable for the approval of all substations and allied installations.	Vendor to confirm			
	Note: **In case of any quantity over & above the tolerance limit (of +10%) during the commissioning period (not exceeding 6 months), the vendor may confirm their willingness to supply the same at the original rate mentioned in the offer.**	Vendor to confirm			

Commercial Terms for Package-II

a) Delivery Schedule for supply of all the items of substation package:
- 6 months from the PO date.

b) Time period for Installation and Commissioning of all the items of substation package.
- 4 months up on receiving the material.
- The total time period for the supply, installation, commissioning etc should not be more than 10 months from the PO date.

c) 100% Payment will be made after supply, installation, commissioning of the total substation upon producing 10% Performance Bank Guarantee.

PACKAGE-III

ELECTRIFICATION OF SHOP FLOOR (SHOP LIGHTING)
PART B
ELECTRFICATION OF SHOP FLOOR AT PEFP BHANDARA

Item No: A Electrification of Shop Floor- Supply of electrical & lighting installation material					
ITEM No.	**ITEM TEXT**	**Unit**	**QTY**	**RATE**	**AMOUNT**
1	Supply of 8 ways 16 A MCB Lighting distribution Boards with 100A, 4 pole MCB as incomer as per Annexure-I.	NO	**32**		
2	Supply of 400W, metal Halide High bay Industrial light fitting with lamp and luminaire as per Annexure-II.	NO	**830**		
3	Supply of 65W, CFL High performance high bay luminaries with prismatic reflector with lamp as per Annexure-III.	NO	**70**		
4	Supply of 2KVA UPS as per Annexure-IV.	NO	**10**		
5	Supply of roof light timer boxes as per Annexure-V.	NO	**32**		
6	Supply of single core,unsheathed,Flame retarant,Low smoke heat resistant (FRLS),bare high conductivity,Flexible multistrand Bright Annealed Electrolytic copper conductor,IS 8130/1984, insulated with PVC type A of IS 5831/84,650/1100 Volts grade, confirming to PVC insulated and rated upto 1100v as per IS 694/1990. Size. 2.5 sqmm with 100 Mtr. per roll. Preferable makes: Elkay/ Delton/ Gloster/ Nicco/ L&T/ Havells/ Finolex/ Kundan/ Mardia/ Siechem/ RR .	Rolls	**550**		
7	Supply of 2.0mm thick, 20mm diameter Rigid Fire Retardent low Smoke PVC Conduits conforming to IS : 9537 : 2006 and embossed with ISI mark. Preferable makes: KUNDAN/AVONPLAST/FINOLUX	KM	**14**		
8	Supply of 16 SWG Copper Earth wire.	Kg	**175**		
9	Supply of 25x3mm size Hot dipped GI flat .MS flat shall conform to IS2062 &Galvanisation shall conform to IS4759.The thickness of the ZINC coating shall be min 80 microns with test certificate.	M	**300**		
10	Supply of 15A 2-way bakelite connector block.	NO	**830**		
11	Supply of 3.5 core 50 sq.mm XLPE cable as per Annexure-VI	M	**2500**		
		TOTAL			

Item No: B Erection of Electrical & Lighting materials for the Electrification of Shop Floor					
ITEM No.	**ITEM TEXT**	**Unit**	**QTY**	**RATE**	**AMOUNT**
1	Assembling, fixing and testing of 8 ways 16 A MCB Lighting distribution Boards. The MCB DB (DL) should be provided with necessary angle iron frame work on the wall / column. Necessary cable adopter boxes for both incoming & outgoing, support channels with required fasteners are to be supplied by the contractor.	NO	**32**		
2	Assembling, Fixing & Testing of 400W, metal Halide High bay Industrial light fitting with lamp & lid on the truss with the supply of necessary MS clamps, bolts and nuts secured by suitable size cotter pin and safety chain. Safety chain shall be GI of suitable dia and required length with 'D' Shackle at one end for connecting to the fitting hook and other end to be connected to the nearby truss member. Note: Clamp and GI Safety chain samples should be produced and get the approval from the Electrical Incharge before fixing the same at the site .Required mobile crane to a height of 20m is under contractor scope.	NO	**830**		
3	Assembling, fixing and testing of 65W, CFL High performance high bay luminaries with prismatic reflector with lamp & lid on the truss with the supply of necessary clamps and safety chains. Safety chain shall be GI of 4 mm dia. and required length with 'D' Shackle at one end for connecting to the fitting hook and other end to be connected to the nearby truss member. Note: - 1)Clamps shall be painted with one coat of red oxide and two coats of Aluminium paint.	NO	**70**		
4	Installation & commissioning of 2KVA UPS on the wall / column with suitable iron frame. Necessary support channels / iron frame works with required fasteners are to be supplied by the contractor.	NO	**10**		
5	Fixing of roof light timer boxes on column near by the MCB DL boards in the shop floors. The timer boxes should be fixed on the 25 mm x 6 mm MS flat with suitable bolts and nuts. **Note:** The materials required like 25 mm x 6 mm MS flat and fasteners are under contactor's scope.	NO	**32**		
6	Wiring with **6 runs of 2.5sqmm** stranded copper conductor unsheathed cable in the medium quality,1.5mm thick,20mm dia,pvc conduit pipe with continuous running of 16 SWG GI wire as earthing on the steel structural members of the roof with suitable clamping .	M	**3500**		

ITEM No.	ITEM TEXT	Unit	QTY	RATE	AMOUNT
	Note: 1.One running meter of wiring consist of 1m PVC conduit, 1m earth wire and 6 runs of 1m copper wire with suitable clamps. 2. Necessary materials like Tees,L bends, Clamps,PVC flexible conduits required for the wiring are under contractor's scope.				
7	Wiring with **4 runs of 2.5sqmm** stranded copper conductor unsheathed cable in the medium quality,1.5mm thick,20mm dia,pvc conduit pipe with continuous running of 16 SWG GI wire as earthing on the steel structural members of the roof with suitable clamping . **Note:** 1.One running meter of wiring consist of 1m PVC conduit, 1m earth wire and 4 runs of 1m copper wire with suitable clamps. 2. Necessary materials like Tees,L bends, Clamps,PVC flexible conduits required for the wiring are under contractor's scope.	M	**4000**		
8	Wiring with **2 runs of 2.5sqmm** stranded copper conductor unsheathed cable in the medium quality,1.5mm thick,20mm dia,pvc conduit pipe with continuous running of 16 SWG GI wire as earthing on the steel structural members of the roof with suitable clamping . **Note:** 1.One running meter of wiring consist of 1m PVC conduit, 1m earth wire and 2 runs of 1m copper wire with suitable clamps. 2. Necessary materials like Tees,L bends, Clamps,PVC flexible conduits required for the wiring are under contractor's scope. **Break up:** 1) Roof light wiring :1700m 2) Emergency light wiring : 3300m **Total :4900m.**	M	**5000**		
9	Running of 2 core 2.5 sq.mm stranded copper conductor PVC insulated unsheathed TRS flexible cable in the 20 mm dia flexible conduit with required connections at lamp and terminal box. Note: Flexible TRS conduit is in contractor's scope	M	**830**		
10	Laying of 25 X 3 mm GI earth flat for earthing the MCB DB's in the wall/column and terminating in the trench.	M	**300**		
11	Fixing of 15A 2-way bakelite connector block on the truss for facilitating power supply to high bay luminaire in a suitable polycarbonate junction box.	NO	**830**		
12	Laying of 3.5 core 50 sq.mm XLPE cable in the excavated/formed trench between: 1. ML and the roof light timer box 1. 16A MCB DB and roof light timer box.	M	**2500**		

ITEM No.	ITEM TEXT	Unit	QTY	RATE	AMOUNT
13	Making of end termination for Medium voltage 3.5 core 50 sq.mm XLPE cable with suitable brass cable glands, copper lugs, gland earthing, cable clamping etc. **Note: -** 1)Brass cable glands, copper lugs, gland earthing, cable clamping and PVC insulation tape etc. are contractor's scope. 2) Crimping tools and other materials required for carrying out the work will be in the scope of the contractor. 3) The cable Glands should be properly earthed by suitable copper earth plate with 16 SWG copper wire.	NO	**150**		
14	**Special Instructions:** 1. The contractor should arrange the lifting tools like ladder/ hydraulic lift for fixing the lamps to the shop floor roof (Max. 18 meters). 2. Cable tags should be provided for all power and control cables. 3. Letter painting work in all breakers mentioning the cable size, bus bar arrangement identification of the breaker etc should be done by the contractor as per the instruction of Electrical in charge. 4. Electric Power for welding and other erection purpose are to be arranged by contracor scope. 5. Welding m/c,gas cutting set and regulator should be brought by the contractor. 6. Any clarification & modification of the work should be directly discussed with the Electrical In charge.	Vendor to confirm			
	7. Minor paint touching shall be done in the panel for damages caused during transport are under contractors scope. 9.The contractor should get proper clearance from the security personnel while taking their materials inside and outside the site.They should maintain an invoivce register ,which is liable for inspection by the Electrical Incharge. 10. Crane facility required for the unloading/movement of the equipment are under the contractor scope. 8. Pre dispatch inspection for all the equipment should be arranged at the supplier works. 9. For the erection of the items, quantity on Pro-Rata basis to be considered.				
	Note: In case of any quantity over & above the tolerance limit (of +10%) during the commissioning period (not exceeding 6 months), the vendor may confirm their willingness to supply & erection the same at the original rate mentioned in the offer.	Vendor to confirm			
		TOTAL			

Commercial Terms for Package-III

a) Delivery Schedule for supply of all the items for Electrification of shop floor package:
   - 6 months from the PO date.

b) Time period for Installation and Commissioning of all the items of Electrification of shop floor package.
   - 4 months up on receiving the material.
   - The total time period for the supply, installation, commissioning etc should not be more than 10 months from the PO date.

c) 100% Payment will be made after supply, installation, commissioning of the total Electrification of shop floor upon producing 10% Performance Bank Guarantee.

PACKAGE-IV

Supply & Erection of High-mast Lighting System at PEFP/BHEL - BHANDARA

Sl. No.	Description	Quantity	Unit	Price	Amount
1	Supply of High-mast lighting system as per the scope mentioned in package-IV.	11	No		
2	Erection of High-mast lighting system as per the scope mentioned in point no: 09 of the high-mast lighting system specifications	11	No		
	TOTAL				

Commercial Terms for Package-IV

a) Delivery Schedule for supply of all the items of High-mast Lighting system package:
- 6 months from the PO date.

b) Time period for Installation and Commissioning of all the items of High-mast Lighting system package.
- 4 months up on receiving the material.
- The total time period for the supply, installation, commissioning etc should not be more than 10 months from the PO date.

c) 100% Payment will be made after supply, installation, commissioning of the total High-mast Lighting system upon producing 10% Performance Bank Guarantee.

SCHEDULE 'B'

1. The following materials will be issued FREE of cost to contractor at **Power Equipment Fabrication Plant near Sakoli, Bhandara district in Maharastra State.**

Sl.No	Name of Material
01	----NIL---

SCHEDULE 'C'

ISSUE OF TOOLS AND PLANTS TO CONTRACTORS

Sl.No.	Qty.	Particulars	Details of BHEL Crew Supplied	Hire Charges Per unit Per Day	Place of Issue	Remarks
……..Nil…….						

SCHEDULE 'D'

NOTE: All Drawings are to be signed by the Contractor as well as the officer entering into contract.

SL.No.	DRAWING NUMBER	DESCRIPTION
1	**1-TP-CEG-01050**	Layout of Plant.
2	**0-TP-CEG-01508**	General arrangement of production shop
3	**M&S-PD-13-124**	Wheel Load for 10T EOT and 20T EOT
4	**M&S-PD-13-125**	Wheel Load for 30T EOT and 5T SEMI GANTRY
5	**M&S-PD-13-127**	Clearance diagram and Rail Level for EOT Cranes
6	**BHE:CP:04:39:2001**	Details of cup type rail clamp Refer Page No. 85 of QB.
7	**1-TP-CEG-01500**	Details showing earth work for Main Column Foundation

SCHEDULE 'E'

LEAD STATEMENT

Sl.No	Name of Material	Name of Source	Lead Particulars
1	Cement	NOT APPLICABLE	
2	M.S Rounds,CTD Bars &Structural Steel, rails and all railway materials		
3	Al-Zn alloy coated HT Steel / Polycarbonate Sheets		
4	Cast iron pipes & Specials including pig lead for jointing		

C.A……..Date ……
(To be used in conjunction with BHE Ltd., General Conditions of Contract)

AUTHORITY TO TENDER

Tender Notice No. **03 / 14-15**

Office of the
SR. MANAGER / CIVIL / FACTORY (PLANNING)
BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHY – 14.

Tender Schedule No. **04 / 14-15**

Item rate tender for the work required," Design, fabrication, supply and erection of Pre-Engineered structural steel shop floor Buildings including crane girder, rail, roof & side cladding, accessories, sky light panels, roof/ turbo ventilators etc. of production shop floors including Electrification of Shop floor (Shop Lighting), High mast lighting system and HT Substation equipment supply and erection works for the Power Equipment Fabrication Plant near Sakoli, Bhandara district in Maharashtra State."

Messrs / Mr. ……..

……of……..

are / is hereby authorized to tender for the above work. The Tender is to be delivered at the Office of the SR. MANAGER / CIVIL / FACTORY (PLANNING) Bharat Heavy Electricals Limited Unit, Thiruverumbur, Tiruchirappalli – 620 014, **up to 10.00 hrs. on 28.05.2014** addressed to the DY GEN MANAGER / CIVIL / FACTORY (PLANNING & DESIGNS), BHEL. Tiruverumbur, Tiruchirapalli – 620 014 superscribing the name of work as mentioned above.

Any correspondence concerning this tender should be addressed as indicated above quoting the Tender Notice, Schedule No. and other relevant particulars.

BHARAT HEAVY ELECTRICALS LIMITED DO NOT BIND THEMSELVES TO ACCEPT THE LOWEST OR ANY TENDER.

Issuing Officer with

Designation

Contract Agreement No…….

TENDER

To

The DY GEN MANAGER / CIVIL / FACTORY (PLANNING & DESIGNS)
Bharat Heavy Electricals Limited
Unit : Tiruverumbur
TIRUCHIRAPPALLI – 620 014.

I / We hereby offer to carry out the **Design, fabrication, supply and erection of Pre-Engineered structural steel shop floor Buildings including crane girder, rail, roof & side cladding, accessories, sky light panels, roof/ turbo ventilators etc. of production shop floors including Electrification of Shop floor (Shop Lighting), High mast lighting system and HT Substation equipment supply and erection works for the Power Equipment Fabrication Plant near Sakoli, Bhandara district in Maharashtra State.**

I / We hereby carefully perused the following documents connected with the above noted work and agree to abide by the same.

1. Specifications (General & Particular)
2. Drawings
3. Schedule 'A', 'B', 'C', 'D' & 'E'
4. Preamble, BOQ with detailed specifications, terms and conditions, etc.
5. BHE Ltd., General & Special Conditions of Contract, Tender Notice and Instructions to Tenders attached hereto.

I / We forward herewith the sum of Rs…….as Earnest Money, which shall be refunded should this tender be rejected. I / We further agree to deposit such sum which along with the sum of Rs……mentioned above shall make up 50% of the fully Security Deposit for this work as provided for under conditions of the BHARAT HEAVY ELECTRICALS LIMITED General Conditions of Contract.

I / We further agree to execute all the work referred to in the said documents upon the terms & conditions contained or referred therein and as detailed in Schedule 'A' and Bill of Quantities annexure thereto and to carry out such deviations as may be ordered, vide conditions 6 of the BHEL Ltd., General Conditions of Contract up to a maximum of 20% of the tendered amount of Rs…….

I / We further agree to refer all disputes, as required by condition 62 of the General conditions of Contract to the sole arbitration of an Officer, to be appointed by the General Manager, B.H.E Ltd., in his sole discretion whose decision shall be final and binding.

WITNESS Signature of the Contractor

Date :

1. …….

2. …….

GENERAL SUMMARY

1. (a) Net Cost of works or building etc., from Schedule 'A' Rs.

2. Provisional sum Rs.

……

Total Rs.

……

Rupees……

……

……

Shri…… in the capacity of …… has been duly authorized by me / us to sign the tender for and on behalf of ……

(in block letters)

Date : SIGNATURE OF CONTRACTOR

Witness : Postal Address :

1……. Telephone No.
Address

2. ……
Address

…….. alterations have been made in the Tender Document and as evidence that these alterations were made before the execution of contract agreement, they have been initialed by the Contractor and the ……
……..……
……..……
……..……
……the said officer is hereby authorized to sign and initial on my behalf the documents forming part of this contract (Number of alternation in figures and words to be given here)

The above tender is accepted by me on behalf of the Bharat Heavy Electricals Limited, Unit: Thriuverumbur, Tiruchirappalli – 620 014. for a sum of Rs…… ……
……..……
……
……..….at the rates as indicated in Schedule 'A'.(Bill of Quantities)

Signature ……..Date……..

Designation ……