

VOLUME - II

PRICE BID SPECIFICATION

PROJECT: *E&C works for Mechanical & Electrical package for 2x4 MLD Sewage Treatment Plant for BHEL Township, HPEP, R.C.Puram*

BHARAT HEAVY ELECTRICALS LIMITED

	TENDER NO.: HY/PE&SD/E&C/ STP-HPEP/ MECH._ELECT./002 Project :: E&C works for Mechanical & Electrical package for 2x4 MLD Sewage Treatment Plant for BHEL Township, HPEP, R.C.Puram	REV00
	PRICE SCHEDULE FOR E&C works for Mechanical & Electrical package for 2x4 MLD Sewage Treatment Plant for BHEL Township, HPEP, R.C.Puram	
	Name of the Bidder ::	Price offer no and Date :
	NOTES ::	
1	This document details the price/payment schedule format for the enquiry. No other format will be entertained and evaluated.	
2	Duly signed & stamped unpriced price schedule format shall be submitted along with Technical offer by bidder as a token of his concurrence that his price schedule is to be submitted in this format & prices shall be offered for all the items appearing in this price format .	
3	Bidder shall fill up prices of all items and submit to BHEL in separate sealed cover. All prices shall be submitted including of all taxes, (except service tax which is payable separately. Please refer, chapter: VII, Part - I of TCC for details)	
4	Total of price for all the items of "Schedule of Quantities" put together shall be considered for evaluation of the financial bid and for ascertaining the L-1 bidder. Any discount offered by the bidder on overall price or at the time of reverse auction will be uniformly applied on all the individual items for execution & billing purposes.	
5	For payment purpose, final contract value will be as per clause 2.14 of GCC	
6	All the bills will be settled from BHEL, PE&SD, -Hyderabad only.	

PROJECT :: E&C works for Mechanical & Electrical package for 2x4 MLD Sewage Treatment Plant for BHEL Township, HPEP, R.C.Puram

Section No.	Item Description	Amount (Rs.)	Remarks
1.0	Equipment Erection		Carry over total of Section 1.0
2.0	HVAC		Carry over total of Section 2.0
3.0	PE&SD Piping		Carry over total of Section 3.0
4.0	Fire Protection System		Carry over total of Section 4.0
5.0	Electrical and C&I		Carry over total of Section 5.0
6.0	Material Handling		Carry over total of Section 6.0
	Total (Rs. In figures)=		
	Total (Rs. In words)=		

Name of the Work::E&C works for Mechanical & Electrical package for 2x4 MLD Sewage Treatment Plant for BHEL Township, HPEP, R.C.Puram

Tender No.: HY/PE&SD/E&C/ STP-HPEP/MECH. ELECT./002

SCHEDULE OF RATES

Section 1.0 ERECTION, TESTING COMMISSIONING AND PAINTING APPLICATION FOR EQUIPMENT				
Sl No	Item Description	Qty	Unit	Total Wt (MT)
1.1	DAF feed pumps with motor & accessories (submersible)	4	Set	0.6
1.2	Auto Screen and accessories	1	Set	0.4
1.3	Manual Screen and accessories	1	Set	0.2
1.4	Air compressor	1	set	0.5
1.5	Oil & grease skimmer	1	Set	0.35
1.6	Equilisation tank transfer pumps with motor & accessories (submersible)	4	Set	1.8
1.7	Auto Screen and accessories	1	Set	1
1.8	Manual Screen and accessories	1	Set	1
1.9	Mixing blower with motor & accessories for Sludge holding tank	3	Set	3.15
1.10	Polymer dosing system for Sludge	1	Set	0.2
1.11	Centrifuge	1	Set	2.5
1.12	Sludge Transfer pump with motor & accessories	2	Set	0.3
1.13	Auto Drum screen and accessories	2	Set	3
1.14	Coagulant dosing system prior to MBR	1	Set	0.2
1.15	Process blowers with motor & accessories	3	Set	9.45
1.16	UF membrane cassettes	8	Set	24
1.17	UF permeate/ backpulse pumps with motor & accessories	4	Set	2.8
1.18	RAS pumps with motor & accessories	6	Set	9
1.19	Membrane aeration blowers with motor & accessories	3	Set	3.15
1.20	Sodium hypochlorite dosing system	1	Set	0.2
1.21	Citric acid dosing system	1	Set	0.2
1.22	Backpulse tank	1	Set	1
1.23	Sodium hypochlorite dosing system	1	Set	0.2
1.24	DAF system & accessories	2	Lot	8
1.25	Air compressor for DAF	2	Set	0.3
1.26	DAF recirculation pumps with motor & accessories	2	Set	0.5
1.27	Coagulant dosing system for DAF	1	Set	0.2
1.28	Polymer dosing system for DAF	1	Set	0.2
1.29	Drum floating oil collection tank	1	No	0.1
1.30	Material handling arrangement for UF system	1	No	1
1.31	Material handling arrangement for pump areas	1	No	0.2
1.32	uPVC pipes and fittings	1	Lot	3
1.33	GRP pipes and fittings	1	Lot	20
1.34	Heavy duty GI pipes and fittings	1	Lot	15
1.35	cPVC piping & fittings PN10 rating	1	Lot	0.5
1.36	Valves (Butterfly, check, ball valves)	1	Lot	3.5
1.37	Steel for Fabrication (Plate & rolled section)	1	Lot	15
1.38	Hand rail, Floor grill & Toe guard plates	1	Lot	9
1.39	Emergency D.G set 450KVA, 415V	1	Nos	4.5
1.40	AMF Panel	1	Nos	1.9
1.41	LT Switchgear 415V MLDB (WALL MOUNTED)	1	Nos	1.5
1.42	LT Switchgear 415V ACDB	1	Nos	1.8
1.43	415/415V, 35 kVA Lighting Transformer	1	Nos	0.55
Total Weight (Metric Ton)				151.95
1.44	Additional misc. equipments & accessories @ 10%=			15.195
	Total equipment weight (MT) =			167.145
Rate / MT in figures(Rs.)=				
Rate / MT in words=				
Amount in figures(Rs.)=				
Amount in figures(Rs.)=				

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SCHEDULE OF RATES

Section 2.0 ERECTION,TESTING COMMISSIONING of HVAC System

Item No.	Equipment description	Qty (Nos)	Wt. of each equip. (tons)
AC SYSTEM			
2.1	2 TR Split Acs - Outdoor Unit	3	0.05
2.2	2 TR Split Acs - Indoor Unit	3	0.02
Ventilation System			
2.3	Tube Axial Ventilation Fans	7	0.3
	Total Metric Ton		2.31
Rate / MT in figures(Rs.)=			
Rate / MT in words(Rs.)=			
Amount in figures(in Rs.) =			
Amount in words(in Rs.) =			

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SCHEDULE OF RATES

Section 3.0: FABRICATION, RADIOGRAPHY, ERECTION, TESTING COMMISSIONING AND PAINTING APPLICATION FOR PIPING

Item No.	Item Description	Matl	Qty	UOM	Weight(Kg)
3.1	2"-SCH HVY-CS PIPE-GALV	CS	30	mts	224.4
3.2	1"-SCH HVY-CS PIPE-GAL	CS	50	mts	162
3.3	24" -CAST IRON PIPE SPOOL -1	CS	2	Nos	2540.16
3.4	18"- CAST IRON PIPE SPOOL-2	CS	2	Nos	1893.06
3.5	16"-CAST IRON PIPE SPOOL -3	CS	1	Nos	839.43
3.6	16"-CAST IRON PIPE SPOOL -4	CS	1	Nos	839.43
3.7	16"-CAST IRON PIPE SPOOL -5	CS	1	Nos	839.43
3.8	16"-CAST IRON PIPE SPOOL -6	CS	1	Nos	839.43
3.9	12"-CAST IRON PIPE SPOOL-7	CS	1	Nos	664.74
3.10	ELBOW 90DEG CS GAL.2"-NPT-F #3000	CS	5	Nos	3.25
3.11	EQUAL TEE CS GAL.2"-NPT-F #3000	CS	5	Nos	9.65
3.12	TEE REDR,CS,GALV,2"X2"X1"-NPT-F #3000	CS	5	Nos	13.5
3.13	STRAIGHT COUPLING ,CS,GALV,2"-NPT,CL3000	CS	8	Nos	11.2
3.14	EQUAL TEE CS GAL.1"-NPT-F #3000	CS	5	Nos	3.35
3.15	ELBOW 90D,CS,GALV,1"NPT-F,CL3000-SCRD	CS	20	Nos	23.6
3.16	STRAIGHT COUPLING 1"-NPT,CL3000-SCRD	CS	6	Nos	2.46
3.17	REDUCING COUPLING-SCRD	CS	6	Nos	10.2
3.18	12"- Sch STD 90 DEG LR ELBOW -FLAT FACED FLANGED	CS	2	Nos	120
3.19	24" -NON METALIK GASKET-class 125 -FLAT FACED	PTFE	3	Nos	9.78
3.20	28" -NON METALIK GASKET-class 125 -FLAT FACED	PTFE	3	Nos	11.25
3.21	16" -NON METALIK GASKET-class 125 -FLAT FACED	PTFE	8	Nos	14
3.22	12" -NON METALIK GASKET-class 125 -FLAT FACED	PTFE	3	Nos	3.102
3.23	STUD 2 NUTS M33X 185		40	Nos	50
3.24	STUD 2 NUTS M30X 160		32	Nos	33.6
3.25	STUD 2 NUTS M27X 150		132	Nos	125.4
3.26	STUD 2 NUTS M24X 130		24	Nos	19.2
3.27	2"-CS GATE VALVE CL800 SCR NPT	CS	3	Nos	38.7
3.28	1" CS GATE VALVE CL800 SCR NPT	CS	6	Nos	33.06
3.29	24" CAST IRON GATE VALVE -FLAT FACE FLANGED END CLASS 125	CS	1	Nos	1466
3.30	18" CAST IRON GATE VALVE -FLAT FACE FLANGED END CLASS 125	CS	1	Nos	720
3.31	16" CAST IRON GATE VALVE -FLAT FACE FLANGED END CLASS 125	CS	1	Nos	524
3.32	12" CAST IRON GATE VALVE -FLAT FACE FLANGED END CLASS 125	CS	1	Nos	298
Total weight(In Metric Ton)					12.39
Additional; weight for unforeseen works @ 10%=-					1.24
Total weight (In MT) =					13.62
Rate / MT in figures(Rs.)=-					
Rate / MT in words=-					
Amount in figures (in Rs.) =					
Amount in words (in Rs.) =					

SCHEDULE OF RATES

Section 4.0 Fire Protection System : FABRICATION, RADIOGRAPHY, ERECTION, TESTING COMMISSIONING AND PAINTING APPLICATION

Item No.	Item Description	Unit	Quantity	Rate(Rs.) in figure & word	Amount(Rs.) in figure & word	Remarks
4.1	Hydrant System (Fabrication, Erection, Testing, Wrapping, Painting, Commissioning)					
4.1.1	Pipes upto 150 NB & Below (U/G PIPES)	Mtrs	50			
4.1.2	Pipes upto 150 NB & Below (A/G PIPES)	Mtrs	250			
4.1.3	Single headed 63 mm dia hydrant landing valve (conforming to IS : 5290 : 1983) with MS matching flanges external	Nos	5			
4.1.4	63 mm Branch pipe Nozzle as per IS : 903 (Internal)	Nos.	5			
4.1.5	2 Nos of RRL Type - A with couplings as per IS:636 15 Mts	Nos.	5			
4.1.6	Hose boxes (External)	Nos.	5			
4.1.7	Pressure Indicator	Nos	1			
4.1.8	Reducers, elbow, fittings for above hydrant system	Lot	1			
4.1.9	Wrapping and coating of U/G hydrant pipes	SQM	30			
4.1.10	Paint and primer (* Given as 1 Lot, extrapolated with UG Quantity by 5 times)	SQM	150			
4.2	Fire Extinguisher (Installation & Fixing)					
4.2.1	CO2 Type 4.5 Kg . Fire extinguishers	Nos.	6			
4.2.2	DCP 6 kg. capacity	Nos.	6			
4.2.3	DCP 2 kg. capacity	Nos.	2			
4.2.4	Foam Type 9 lit. capacity	Nos.	2			
	Total in figures(Rs.) =					
	Total in words(Rs.) =					

SCHEDULE OF RATES**Section 5.0: Electrical and C&I works**

Item No.	Description	Qty	UNIT	Rate(Rs.) in figure & word	Amount(Rs.) in figure & word	Remarks
5.1	Laying of 3CX2.5 Sq. mm, 1.1KV Armoured Cu.Cond. PVC /FRLS PVC Cable	2000	Mtrs			
5.2	Laying of 4CX4Sq.mm, 1.1KV Armoured Cu. Cond. PVC /FRLS PVC Cable	500	Mtrs			
5.3	Laying of 4CX35Sq.mm,1.1KV Armoured Al. Cond. PVC /FRLS PVC Cable	2000	Mtrs			
5.4	Laying of 3½CX300 Sq.mm,1.1KV Armoured Al. Cond. PVC /FRLS PVC Cable	300	Mtrs			
5.5	Laying of 7Cx2.5 Sq. mm,1.1kV Cu. Cond. PVC /FRLS PVC Cable	800	Mtrs			
5.6	Installation of 300mm width ladder type straight run cable tray along with accessories including coupler plates	100	Nos.			
5.7	Installation of 150mm width perforated type straight run cable tray along with accessories including coupler plates	150	Nos.			
5.8	Excavation, laying & fixing of 40mm Dia MS Rod for underground earth mat and risers as per technical specification	700	Mtrs			
5.9	Laying & fixing of 50 x 6 mm GI Strips for earthing as per technical specification	400	Mtrs			
5.10	Laying & fixing of 35 x 6 mm GI Strips for earthing as per technical specification	1100	Mtrs			
5.11	Laying & fixing of 8 SWG GI wire(Solid) for earthing as per technical specification	1400	Mtrs			
5.12	Laying & fixing of GI pipe Electrode for earthing as per technical specification	8	Mtrs			
5.13	Laying & fixing of Copper Pipe electrode for earthing as per technical specification	4	Mtrs			
5.14	Installation of 600x 600mm Recess mounted decorative mirror optic luminaire with electronic ballast and anodized aluminium reflector, paralite P5 louvers for glare free operation with 2x36W CFL Lamp	10	Nos.			
5.15	Installation of Industrial type general purpose luminaire with high efficiency electronic ballast, MS sheet steel housing(CRCA) with external reflector and vitreous enamelled/Epoxy powder coated and 2X36W	18	Nos.			
5.16	Installation of Industrial type Corrosion proof luminaire with high efficiency electronic ballast,FRP housing and clear acrylic cover and 2x36W Fluorescent lamps - Surface mounted	15	Nos.			
5.17	Installation of Industrial type Non-Integral Well glass luminaire with cast aluminium alloy mounting piece and sheet steel Al. canopy with stove enamell, white inside and grey outside reflector, heat resistant glass and wire gaurd and 150W HPSV lamp in complete with control gear box, eyebolt and bracket for suitability of suspension/ceiling/pole mounting	40	Nos.			
5.18	Installation of Street Light luminaire with single piece die cast aluminium body ,bowl type aluminium reflector and with heat resistant clear arcylic cover, power factor improvement capacitor etc. and 150W HPSV tubular lamp	32	Nos.			
5.19	Installation of Integral Flood Light luminaire with heat resistant toughened glass cover etc. and 1x250W HPSV lamp	2	Nos.			
5.20	Installation of Non-integral Flood Light luminaire with heat resistant toughened glass cover etc. and 2x400W HPSV lamp	6	Nos.			
5.21	6 way AC Indoor Lighting/Power Panel with 6 nos. 20A DP MCB outgoing with necessary cable glands. Panel shall have cable entries suitable for 4Cx35sqmm al. cable (for incommer) and cable entries suitable for 3cx2.5 sqmm cable (for 6nos. outgoing feeder).	1	Nos			
5.22	12 way AC Indoor Lighting/Power Panel with 12 nos. 20A DP MCB outgoing with necessary cable glands. Panel shall have cable entries suitable for 4Cx35sqmm al. cable (for incommer) and cable entries suitable for 3cx2.5 sqmm cable (for 12 nos. outgoing feeder).	1	Nos			

Item No.	Description	Qty	UNIT	Rate(Rs.) in figure & word	Amount(Rs.) in figure & word	Remarks
5.23	12 way AC Indoor Lighting/Power Panel with 9 nos. 20A DP MCB outgoing and 3 nos. 32A TPN MCB incoming with necessary cable glands. Panel shall have cable entries suitable for 4Cx35sqmm al. cable (for incoming & 3 nos. outgoing feeder) and cable entries suitable for 3cx2.5 sqmm cable (for 9 nos. outgoing feeder).	2	Nos			
5.24	Sublighting Distribution Board with 32A TPN MCB incoming and 3nos. 20A SPN MCB at outgoing with necessary wiring and cable glands. Sub distribution board shall have cable entries at bottom suitable for 4Cx35sqmm al. cable (for incoming) and cable entries suitable for 3cx2.5 sqmm cable (for 3 nos. outgoing feeder).	4	Nos			
5.25	4 way Indoor JB with - 4 nos. Of 2 Pin TB suitable for 6 sqmm wire. (JB shall have IP-55 protection, 16SWG sheet steel with cable entry suitable for 3Cx2.5sqmm Cu. Cable along with its DC cable glands).	5	Nos			
5.26	4 way 250x200x100mm rectangular sheet steel JB outdoor type (IP55) with two cable entries suitable for 4Cx35sqmm al. cable and two cable entries suitable for 3Cx2.5sqmm (3/4") along with glands and TB 4 nos. suitable for 35sq.mm & 4 nos. 4sq.mm wire.	15	Nos			
5.27	88mm dia GI 4 way Round JB with 3nos. TB suitable for 6sqmm wire & Flat cover. JB should have cable entries suitable for fitting with 25mm GI conduit.	25	Nos			
5.28	Laying of 1Cx2.5sq.mm. Red colour Cu flexible wire, 1.1kV PVC Insulated Single Core Copper Conductor Flexible Wires	1000	Mtrs			
5.29	Laying of 1Cx2.5sq.mm. Yellow colour Cu flexible wire 1.1kV PVC Insulated Single Core Copper Conductor Flexible Wires	700	Mtrs			
5.30	Laying of 1Cx2.5sq.mm. Blue colour Cu flexible wire 1.1kV PVC Insulated Single Core Copper Conductor Flexible Wires	600	Mtrs			
5.31	Laying of 1Cx2.5sq.mm. Black colour Cu flexible wire 1.1kV PVC Insulated Single Core Copper Conductor Flexible Wires	2300	Mtrs			
5.32	Laying of 1Cx2.5sq.mm. Green colour Cu flexible wire 1.1kV PVC Insulated Single Core Copper Conductor Flexible Wires	2300	Mtrs			
5.33	Installation of wiring of required size through 3000mm long 25mm GI conduit with accessories and fixtures. Wiring shall be concealed type for wherever required as per instructed by BHEL Engineer	500	Nos			
5.34	Installation of wiring of required size through 20mm GS stripped PVC coated Flexible conduit with accessories and fixtures. Wiring shall be concealed type for wherever required as per instructed by BHEL Engineer	75	Mtrs			
5.35	Installation of wiring of required size through 25mm GS stripped PVC coated Flexible conduit with accessories and fixtures. Wiring shall be concealed type for wherever required as per instructed by BHEL Engineer	70	Mtrs			
5.36	Installation of wiring of required size through 3000mm long 50mm GI conduit with accessories and fixtures. Wiring shall be concealed type for wherever required as per instructed by BHEL Engineer	5	Nos			
5.37	Installation of wiring of required size through 3000mm long 25mm PVC conduit with accessories and fixtures. Wiring shall be concealed type for wherever required as per instructed by BHEL Engineer	15	Nos			
5.38	Installation of wiring of required size through 3000mm long 50mm PVC conduit with accessories and fixtures. Wiring shall be concealed type for wherever required as per instructed by BHEL Engineer	5	Nos			
5.39	Installation of wiring of required size through 3000mm long 20mm GI conduit with accessories and fixtures. Wiring shall be concealed type for wherever required as per instructed by BHEL Engineer	30	Nos			
5.40	Fixing of 1200mm long 150° bend 50NB pipe with 2 nos suitable clamp with base	15	Nos			
5.41	Erection of 7.5 meter Street lighting pole with 1.5 Mtr deep evacuation , concreting in 1:4:8 ratio size 45cm*45cm*150cm and pole plinth in 1:3:6 cement concreting having 300mm height and 300mm dia. including double earthing of pole with suitable arrangement, duly painted with two coats of redoxide paint and one coat of aluminium paint to be applied after erection; the length of the paint below ground to be painted with two coats of black bituminous paint.	17	Nos			
5.42	Erection of 11 meter Flood lighting pole with 1.5 Mtr deep evacuation , concreting in 1:4:8 ratio size 45cm*45cm*150cm and pole plinth in 1:3:6 cement concreting having 300mm height and 300mm dia. including double earthing of pole with suitable arrangement, duly painted with two coats of redoxide paint and one coat of aluminium paint to be applied after erection; the length of the paint below ground to be painted with two coats of black bituminous paint.	1	Nos			
5.43	Installation of FSB-2 Flush mounted swbd with 2 nos 5A piano type switches (modular type).	1	Nos			

Item No.	Description	Qty	UNIT	Rate(Rs.) in figure & word	Amount(Rs.) in figure & word	Remarks
5.44	Installation of FSB-5 Flush mounted swbd with 5 nos 5A piano type switcheds(modular type).	5	Nos			
5.45	Installation of 5/15A Socket with switch (Flush mounted Type)	8	Nos			
5.46	Installation of Industrial metal clad type 5/15A receptacle with switch (Indoor Type)	2	Nos			
5.47	Installation of 63A TPN welding receptacles (Safe area)	2	Nos			
5.48	Installation of Double compression nickle plated brass cable glands for safe area suitable for 4Cx35sq.mm Al. Armoured cable	60	Nos			
5.49	Installation of Double compression nickle plated brass cable glands suitable for 3Cx4 sqmm cu armoured cable for safe area	325	Nos			
5.50	Structural Steel Fabrication and Erection of ISMC 100X50X6 mm channels	2500	kgs			
5.51	Structural Steel Fabrication and Erection of ISA 50X50X6mm Runner angles	1000	kgs			
	Total in figures(Rs.) =					
	Total in words(Rs.) =					

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SCHEDULE OF RATES

Section 6.0 Material Handling

Item No.	Description	Weight(in MT)	Remarks
6.1	Equipments	151.95	
6.2	Piping	12.39	
6.3	Misc Equipments	16.43	
	Total	180.77	
Rate / MT in figures(Rs.)=			
Rate / MT in words=			
Amount in figures(Rs.)=			
Amount in figures(Rs.)=			