

BOQ CUM PRICE FORMAT

NAME OF PROJECT:	3X200 MW ESP CONTROL ROOM - R&M-NTPC RAMAGUNDAM- Stage-I, For Unit-1,
NAME OF PACKAGE:	HVAC SYSTEM
TECHNICAL SPECIFICATION No:	PE-TS-448-571-15000A-A001

S. No.	DESCRIPTION	UNIT	QTY
1	Total lump sum firm price for Supply part, Services part and Mandatory spares comprising of design (i.e. preparation and submission of drawing / documents including "As Built" drawings and O&M manuals), engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles (as applicable) fill of lubricants & consumables along with erection, startup and commissioning spares as required, forwarding, proper packing, shipment and delivery at site, unloading, handling, transportation to stores area & storage, transportation to site (from stores area) & in-site transportation, assembly, erection & commissioning, final painting at site, minor civil work, trial run at site and carrying out Performance guarantee / Functional / Demonstration tests at site (As applicable), training of customer/client O&M staff and handover in flawless condition of the package to the end customer complete with all accessories after handing over, for the total scope defined as per BHEL NIT & tender technical specification as specified above, amendment & agreements till placement of order.	Lot	1
2	MAJOR BREAK-UP OF PRICES GIVEN IN 1.0 ABOVE.		
2.1	Total lump sum firm price for Supply part comprising of design (i.e. preparation and submission of drawing / documents including "As Built" drawings and O&M manuals), engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles (as applicable), fill of lubricants & consumables along with erection, startup and commissioning spares as required, forwarding, proper packing, shipment and delivery at site for the total scope defined as per BHEL NIT & tender technical specification as specified above, amendment & agreements till placement of order. (Break-up as per Annexure-I)	Lot	1
2.2	Total lump sum firm price for Services part comprising for unloading, handling, transportation to stores area & storage, transportation to site (from stores area) & in-site transportation, assembly, erection & commissioning, final painting at site, minor civil work, trial run at site and carrying out Performance guarantee / Functional / Demonstration tests at site (As applicable), training of customer/client O&M staff and handover in flawless condition of the package to the end customer complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification as specified above, amendment & agreements till placement of order. (Break-up as per Annexure-I)	Lot	1
2.3	Total lump sum firm price for Mandatory Spares comprising of manufacture, fabrication, assembly, inspection / testing (as applicable) at vendor's & sub-vendor's works, painting, forwarding, proper packing, shipment, delivery at site & guarantee as per tender technical specification above, amendment & agreements till placement of order. (Price break up of mandatory spares is to be furnished as per Annexure- II)	Lot	1

SUGGESTED PRICE FORMAT
ANNEXURE - I
PRICE BREAKUP (FOR ESP CONTROL - R&M for Unit-1, Unit-2 and Unit-3)

NAME OF PROJECT:	3X200 MW ESP CONTROL ROOM - R&M-NTPC RAMAGUNDAM- For Unit-1, Unit-2 and Unit-3
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NAME OF PACKAGE:	HVAC SYSTEM
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TECHNICAL SPECIFICATION No:	PE-TS-448-571-15000A-A001
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SL NO	DESCRIPTION	Qty	UNIT	SUPPLY	ERECTION AND COMMISSIONING	
A	VENTILATION SYSTEM					
1	Axial flow supply fans with pre and fine filter (wall mounted) complete with casing, TEFC sq cage induction motors & mounting frame, MS rain protection cowl, bird screen and all other accessories (suitable for 415V/3-phase supply). Following fan shall have 30 mmwc static pressure.					
1.1*	Capacity 7,500 CMH with Motor rating 1.5 KW	6	NO*			
1.2*	Capacity 10,000 CMH with Motor rating 2.2 KW	3	NO*			
2	Axial flow exhaust fans (Wall mounted) complete with casing, TEFC sq cage induction motor & mounting frame, MS rain protection cowl, bird screen and all other accessories epoxy painted (suitable for 415V/3-phase supply) as specified. Following fan shall have 10 mmwc static pressure.					
2.1*	Capacity 6,000 CMH with Motor rating 0.55 KW	3	NO*			
2.2*	Capacity 4,500 CMH with Motor rating 0.55 KW	6	NO*			
3	Exhaust fan (propeller type) completes with induction motor & mounting frame MS rain protection cowl, bird screen and all other accessories as specified (suitable for 240V/ 1 phase). Following fan shall have 10 mmwc static pressure.					
3.1*	Capacity 1200 CMH with Motor rating 100 watts	9	NO*			
B	AIR CONDITIONING SYSTEM					
1.1	AIR COOLED PACKAGE AC UNITS consisting of outdoor unit and indoor unit, interconnecting refrigerant piping as per site requirement & fitting with insulation, electrical power cord etc.					
1.1.1*	15 TR actual capacity (ductable type, 415 V, 3 phase with isolation switch).	6	NO*			
1.2	MONSOON REHEATING / WINTER HEATING KIT comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat & humidistat/ sensors etc.	3	LOT			
1.3	HUMIDIFIER for each AC areas complete with humidistat, safety controls, make up water piping from make up tank / nearest source of water, valves fittings etc	3	LOT			
1.4	FRESH AIR FANS (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers, etc for all the package AC areas	3	LOT			
1.5	ACOUSTIC INSULATION of the first 5 of ducting from PAC outlets with material and finish as per specifications.	3	LOT			
1.6*	2.0 TR capacity (non-ductable Split type, 240 V, 1 phase isolation switch) i.e MCB of suitable rating as specified. (Maximum star rating available as per BEE Standard)	1	NO*			
1.7	GSS zinc coating 275 gms/ m ² finished ducting complete with hangers/ supports etc.					
1.7.1*	18G.	75	SQM*			
1.7.2*	20G.	75	SQM*			
1.7.3*	22G.	115	SQM*			
1.7.4*	24G.	115	SQM*			
1.7.5*	Thermal insulation of duct with finish as specified (for Air conditioning System)	380	SQM*			
1.8	Fire damper					
1.8.1*	Fire damper with auto resetting, limit switches, indication lamps etc.	6	SQM*			
1.8.2*	Motorized actuator with single phase power supply for the above fire damper.	6	NO*			
1.9*	MANUAL VOLUME CONTROL DAMPERS in GI construction as per specifications for supply / return ducts complete with fixing arrangement.	6	SQM*			
1.10	Grills / Diffusers					
1.10.1*	SUPPLY AIR DIFFUSERS / GRILLS with VCD (Extruded Aluminium powder coated) complete with fixing frames, nuts, bolts, gaskets, washers etc	10	SQM*			
1.10.2*	RETURN AIR DIFFUSERS / GRILLS without VCD (Extruded Aluminium powder coated) complete with fixing frames, nuts, bolts, gaskets, washers etc	10	SQM*			
1.11	GIU based control System as per specified in specification	3	LOT			
1.12*	40NB GI medium class INSULATED DRAIN WATER PIPING from various equipment like PACs etc upto nearest available drain point with necessary fittings like tees, reducers, expanders, elbows, flanges, valves with flanges, U trap etc as per specifications.	40	Rmt*			
1.13	FIELD INSTRUMENTS like gauges, switces for measuring of air flow, pressure, level & humidity sensor, Temepertaure sensor etc. and other instrument required for local monitoring & control etc for HVAC System	3	LOT			
C	Common items for all Air conditioning & Ventilation System for all Units					
1	415V ACDB, LPBS, LT power cables, LT control cables, screen control cables, LMS, Local starter, conduits etc. for completeness of HVAC system- :					
1.1	415V ACDB	3	NO			
1.2	Local Push Button Station(LPBS)	1	LOT			
1.3	Local Motor Starter	1	LOT			
1.4	Local starter panel (for contactors)	1	LOT			
1.5	LT Power Cables	1	LOT			
1.6	LT Control Cables	1	LOT			
1.7	Instrumentation Cables	1	LOT			
1.8	Cable tray/trough/Conduits	1	LOT			
2	Structure Support for Duct, Fan Fixing and other equipments etc.	1	LOT			
3	Total lumpsum price for special tools & tackles for maintenance inclusive of packing forwarding, transportation up to site, etc. (Bidder shall submit item-wise price break-up).	1	LOT		NA	
4	Total lumpsum price for commissioning spares inclusive of packing forwarding, transportation up to site, etc. (Bidder shall submit item-wise price break-up).	1	LOT		NA	
NOTE						
1	The bidder shall furnish unit rates for variable item (marked *) for necessary adjustment (plus or minus) variation during detailed engg. stage. The unit rates quoted above shall be considered for adjustment. Unit rates shall be valid throughout the contract. Final qty. shall be paid as per actual erected qty. at site for all the variable items.					
2	Price format shall not be changed by the bidder as the bidder may get disqualified by doing so.					
3	The BOQ mentioned above shall be read in conjunction with technical specification requirement. Any item required as per technical specification but not specifically indicated in above BOQ, shall deemed to be included in total prices quoted by bidder. No additional price shall be payable against such items.					

SUGGESTED PRICE FORMAT
APPENDIX-A
Special tools & tackles for maintenance

NAME OF PROJECT:		3X200 MW ESP CONTROL ROOM - R&M-NTPC RAMAGUNDAM- For Unit-1, Unit-2 and Unit-3			
NAME OF PACKAGE:		HVAC SYSTEM			
TECHNICAL SPECIFICATION No:		PE-TS-448-571-15000A-A001			
SL NO	DESCRIPTION	UNIT	Qty		
1	FLAT D WRENCH - 6 MM TO 32 MM (12 Pcs)	SET	1		
2	BOX WRENCHES - 6 MM TO 22 MM (14 Pcs)	SET	1		
3	COMPLETE SETS OF RING SPANNER - 6 MM TO 32 MM (12 Pcs)	SET	1		
4	ALLEN KEYS - 2 MM TO 10 MM	SET	1		
5	CRESCENT SCREW SPANNER	NO.	1		
6	ADJUSTABLE SPANNER	NO.	1		
7	COMPLETE SET OF SCREW DRIVER	SET	1		
8	OFFSET SCREW DRIVER	NO.	1		
9	INSULATED PLIER	NO.	1		
10	GREASE GUN	NO.	1		
11	OIL GUN	NO.	1		
12	LINE TESTER	NO.	1		
13	TORCH LIGHT FOR 2 CELL	NO.	1		
14	HAMMER 1 LB	NO.	1		
15	OIL CAN	NO.	1		
16	POCKET THERMOMETER - 0 TO 50 DEG. C)	NO.	1		
17	INSULATION TAPE ROLL	NO.	1		
18	STEEL FOOT RULE - 12"	NO.	1		
19	FEELER GAUGE 9 BLADES	NO.	1		
20	PIPE WRENCH	NO.	1		
21	FLARE NUT (1/4")	NOS.	6		
22	FLARING TOOL	NO.	1		
23	TUBE CUTTER	NO.	1		
24	GAS CHARGING PIPE	NO.	1		
25	NITROGEN CHARGING ADAPTER	NO.	1		
26	FREON PRESSURE GAUGE (2 1/2" DIA DIAL)) 0 - 300 MM PSI	NO.	1		
27	FREON PRESSURE GAUGE (2 1/2" DIA DIAL)) 30 - 150 MM PSI	NO.	1		
28	PSYCHRO METER	NO.	1		
29	LOCK WITH KEY FOR TOOL BOX	NO.	1		
30	RATCHET 1/4"	NO.	1		
31	MS TOOL BOX	NO.	1		
NOTES					
1	ABOVE IS THE MINIMUM LIST. ANY OTHER TOOL / TACKLE REQUIRED FOR THE SYSTEM SHALL ALSO BE PROVIDED BY THE VENDOR WITHOUT ANY COST IMPLICATION.				

SUGGESTED PRICE FORMAT
APPENDIX-B
Commissioning spares

NAME OF PROJECT:		3X200 MW ESP CONTROL ROOM - R&M-NTPC RAMAGUNDAM-			
NAME OF PACKAGE:		HVAC SYSTEMM			
TECHNICAL SPECIFICATION No:		PE-TS-448-571-15000A-A001			
SL NO	DESCRIPTION	UNIT	Qty		
1	Filters (each type)	SET	1		
2	Compressor Oil	LOT	1		
3	Refrigerant	LOT	1		
NOTES					
1	ABOVE IS THE MINIMUM LIST. ANY OTHER COMMISSIONING SPARE REQUIRED FOR THE SYSTEM SHALL ALSO BE PROVIDED BY THE VENDOR WITHOUT ANY COST IMPLICATION.				

**SUGGESTED PRICE FORMAT
ANNEXURE - II
LIST OF MANDATORY SPARES**

NAME OF PROJECT:		3X200 MW ESP CONTROL ROOM - R&M-NTPC RAMAGUNDAM- For Unit-1, Unit-2 and Unit-3		
NAME OF PACKAGE:		HVAC SYSTEM		
TECHNICAL SPECIFICATION No:		PE-TS-448-571-15000A-A001		
S. No.	Description	UNIT	Qty	
A	HVAC SYSTEM			
1	Electrical Actuators			
1.1	Actuators	4 no. of each type, class, size and model whichever is more.		
1.2	Control/selector switch	2 nos. of each type and rating		
1.3	Control fuses	5 nos. of each type and rating		
1.4	Neutral link	2 nos.		
1.5	Vertical busbar dropper support insulator	3 nos.		
1.6	Power fuses	12 nos. (equally divided for all ratings)		
1.7	Each type of contactor	2 nos.		
1.8	Indication Lamps	5 nos.		
1.9	Each type of push button	2 nos.		
1.10	Indicating lamp holders complete	10 nos. (equally divided for all ratings)		
1.11	Terminal blocks of each type and rating	2 nos.		
1.12	Horizontal busbar support insulator	2 nos.		
2	Control Panels			
2.1	Control supply transformer (if any)	1 no. of each type and rating		
2.2	Relays and timers	1 no. of each type and rating		
2.3	Contactors	1 no. of each type and rating		
2.4	LEDs	5 no. of each type and rating		
2.5	Control switches	1 no. of each type		
2.6	Selector switches	1 no. of each type		
2.7	Push buttons	2 nos. of each type and colour		
2.8	Any special meters	1 no. of each type		
3	Control & Instrumentation			
3.1	Process Actuated Switch Devices			
3.1.1	a. Includes all types of Pressure, differential pressure, flow, temperature, level switch Devices.	10% or 1 no. of each type and model whichever is more		
	TOTAL			
Notes:				
a) Spares listed in Price Schedule is bare minimum requirement. In case any additional mandatory spares requirement is covered elsewhere in the tender specification apart from specified above, same shall be deemed to have been covered in bidder's scope of supply.				
b) Wherever 'set' is indicated, it shall mean complete replacement for one main equipment.				
c) "Total Population" as mentioned in the table, refers to the total population of the corresponding item as installed for all the units.				
d) Quantity mentioned in percentage (%) is the % of total installed.				
e) If percentage comes as fraction next higher integer should be considered for the purpose of quantity required.				
f) All Spares shall be supplied as per the requirement of the specifications. In case any spare indicated in the specification is "not applicable" for particular equipment, then suitable applicable alternate spare shall be offered / shall be supplied by the bidder without any financial implication."				
g) Any item which is quoted as "not applicable" by the bidder in the above list and is found to be "applicable" at a later date shall be supplied by the bidder without any commercial and delivery implication.				
h) Any cell left blank in the unpriced schedule shall be treated as "Quoted" and is included in total price.				