

SUGGESTED PRICE FORMAT		Doc No:	PE-PF-417-554-A001		
		Rev No:	0		
		Date of issue	APR 2020		
NAME OF PROJECT:		5X800 MW TSGENCO YADADRI TPP			
NAME OF PACKAGE:		VENTILATION PACKAGE			
TECHNICAL SPECIFICATION No:		PE-TS-417-554-A001			
S. No.	DESCRIPTION	UNIT	QTY	AMOUNT (Ex-Works)	
1	Total lump sum firm price inclusive of all prevailing taxes, duties and other levies 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, fill of lubricants, chemicals, reagents and consumables required for pre-commissioning, commissioning , performance testing and till one year of operation after handing over, mandatory spares alongwith spares for erection, start-up and commissioning as required, forwarding, proper packing, shipment and delivery at site, unloading, handling, transportation & storage at site, in-site transportation, assembly, erection & commissioning, final painting at site, minor civil and structural work, trial run at site and carrying out Performance guarantee / Functional / Demonstration tests at site, 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	Lot	1		
2	MAJOR BREAK-UP OF PRICES GIVEN IN 1.0 ABOVE.				
2.1	Ventilation for Complete Plant expect for Switchyard area				
2.1.1	Total lump sum firm price inclusive of all prevailing taxes, duties and other levies for Supply part of main area 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, fill of lubricants, chemicals, reagents and consumables required for pre-commissioning, commissioning , performance testing and till one year of operation after handing over, alongwith spares for erection as required, start-up 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.(Price Break-up in Annexure-I)	Lot	1		
2.1.2	Total lumpsum firm prices inclusive of all prevailing taxes, duties and other levies for Services part of main area comprising of service part for unloading, handling, transportation & storage at site, 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, 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. (Price Break-up in Annexure-I)	Lot	1		
2.1.3	Total lumpsum firm price inclusive of all prevailing taxes, duties and other levies for Mandatory spares comprising of manufacture, fabrication, assembly, inspection / testing 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		
2.2	Ventilation for Switchyard area				
2.2.1	Total lump sum firm price inclusive of all prevailing taxes, duties and other levies for Supply part of Switchyard Area 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, fill of lubricants, chemicals, reagents and consumables required for pre-commissioning, commissioning , performance testing and till one year of operation after handing over, alongwith spares for erection as required, start-up 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. (Price Break-up in Annexure-III)	Lot	1		
2.2.2	Total lumpsum firm prices inclusive of all prevailing taxes, duties and other levies for Services part of Switchyard area comprising of service part for unloading, handling, transportation & storage at site, 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, 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. (Price Break-up in Annexure-III)	Lot	1		
2.2.3	Total lumpsum firm price inclusive of all prevailing taxes, duties and other levies for Mandatory spares for switch yard comprising of manufacture, fabrication, assembly, inspection / testing 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- IV)	Lot	1		

Note:					
1)	BOP to consider and suitably incorporate taxes, duties and other commercial aspects.				
2)	Lumpsum price quoted at Sl.no 1 shall be considered for evaluation, however separate LOA shall be placed for Ventilation system for Complete plant area except for switchyard (Sl.no 2.1) and Switchyard area (Sl.no 2.2) for scope of work defined in technical specification PE-TS-417-554-A001 and annexure of price schedule.				
3)	Stage # 1 (Unit 1 &2) and Stage # 2 (Unit 3,4, & 5) billing break up for Supply, Erection and commissioning and mandatory spares shall be submitted by bidder based on finalised BOQ arrived during detail engineering. Stage wise Billing break up is not applicable for Switchyard portion				
Particulars of bidder / authorised representative					
	Name	Designation	Signature	Date	Company Seal

SUGGESTED PRICE FORMAT ANNEXURE - I (COMPLETE PLANT EXCEPT FOR SWITCHYARD)								PE-PF-417-554-A001	
							Rev No:	0	
							Date of issue	APR 2020	
NAME OF PROJECT:			5X800 MW TSGENCO YADADRI TPS						
NAME OF PACKAGE:			VENTILATION SYSTEM						
TECHNICAL SPECIFICATION No:			PE-TS-417-554-A001						
SL NO	DESCRIPTION	Unit	QUANTITY		TOTAL	SUPPLY	E&C	TOTAL SUPPLY COST	TOTAL ERECTION AND COMMISSIONING COST
			STAGE#1	STAGE#2	QUANTITY	UNIT PRICE (Ex-Works)	UNIT PRICE (Ex-Works)	AMOUNT (Ex-Works)	AMOUNT (Ex-Works)
1	Sheet metal containerized type air washer unit with centrifugal fan (DIDW) with motor, pumps with motors, air washer internals, inlet air louvers, filters, piping as per IS:1239, Part-I (heavy class galvanised), valves, nozzles, level switch, temp indicators, back wash arrangement, galvanised drain piping, etc. as per specification of capacity 2,80,000 CMH. Each air washer has 2 no centrifugal fan (2 x 50% duty) of capacity 1,40,000 CMH at min. 85 mm SP.	NO	8	12	20				
2	Unitary air filtration unit with centrifugal fan (SISW) with motor, pumps with motors, inlet air louvres, filters, UAF internals, piping as per IS: 1239 pt. I (heavy class galvanised), valves for auto start of standby equipment, nozzles, level switch, pressure switches, Temp. indicators, back wash arrangement, galvanised drain piping etc. as per spec. (Fan capacity 100,000 CMH at min. 60 mmwc static pressure)	NO	3	4	7				
3*	Supply air ducting (finished) for above area complete with dampers, grills (with VCD & without VCD), supports (painted) and all accessories as specified.								
3.1*	Finished GSS (zinc coating 180 gms/sq.m) Ducting with support structure etc.								
a)*	18 G	SQM*	8250	12250	20500				
b)*	20 G	SQM*	9100	13400	22500				
3.2*	MS Duct With Epoxy paint for battery room.	SQM*	120	180	300				
3.3*	MS Grilles with VCD	SQM*	220	330	550				
3.4*	MS Grilles without VCD	SQM*	10	15	25				
3.5*	Exposed duct insulation with fibre glass insulation as per specifications.	SQM*	2450	3650	6100				
3.6*	Wall mounted dampers (gravity operated) for different areas.	SQM*	55	20	75				
3.7*	Inlet Louvres	SQM*	500	300	800				
3.8*	VOLUME CONTROL DAMPERS in GI construction as per specifications	SQM*	60	90	150				

4*	FIRE DAMPER								
a)*	Fire damper	SQM*	22	33	55				
b)*	Motorized Actuator with single phase power supply for the above Fire damper with auto resetting, limit switches, indication lamps etc.	Nos.*	45	65	110				
c)*	Fusible Link type Fire Damper	SQM*	30	35	65				
5*	Roof extractor units (axial flow type) with hood, disconnect switch and all accessories as specified. Following fan shall have 15 mmwc static pressure.								
a)*	Capacity 50,000 CMH with Motor	Nos.*	50	75	125				
b)*	Capacity 40,000 CMH with Motor	Nos.*	15	0	15				
c)*	Capacity 20,000 CMH with Motor	Nos.*	32	18	50				
6*	Axial flow supply fans with pre and fine filter (wall mounted fan filter unit) 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.								
a)*	Capacity 10,000 CMH	Nos.*	21	4	25				
b)*	Capacity 7,500 CMH	Nos.*	23	12	35				
c)*	Capacity 6,000 CMH	Nos.*	20	5	25				
d)*	Capacity 4,000 CMH	Nos.*	3	5	8				
7*	Axial flow supply fans with pre filter (wall mounted wall mounted fan filter unit) 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) as specified. Following fan shall have 20 mmwc static pressure.								
a)*	Capacity 15,000 CMH	Nos.*	15	10	25				
b)*	Capacity 10,000 CMH	Nos.*	30	10	40				
c)*	Capacity 7,500 CMH	Nos.*	4	2	6				
d)*	Capacity 6,000 CMH	Nos.*	18	7	25				
e)*	Capacity 4,000 CMH	Nos.*	4	2	6				
8*	Axial flow exhaust fans (Bifurcated type, spark proof construction, wall mounted) complete with casing, flame proof 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 15 mmwc static pressure.								
a)*	Capacity 20,000 CMH	Nos.*	10	10	20				
b)*	Capacity 15,000 CMH	Nos.*	17	3	20				
c)*	Capacity 10,000 CMH	Nos.*	6	6	12				
d)*	Capacity 7,500 CMH	Nos.*	9	3	12				
e)*	Capacity 6,000 CMH	Nos.*	6	6	12				
f)*	Capacity 4,000 CMH	Nos.*	8	4	12				
g)*	Capacity 2,000 CMH	Nos.*	7	3	10				
9*	Axial flow exhaust fans (Bifurcated type, spark proof construction, wall mounted) complete with casing, flame proof 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 25 mmwc static pressure.								
a)*	Capacity 20,000 CMH	Nos.*	10	2	12				
b)*	Capacity 15,000 CMH	Nos.*	2	6	8				

10*	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.							
a)*	Capacity 15,000 CMH	Nos.*	3	5	8			
b)*	Capacity 10,000 CMH	Nos.*	23	7	30			
c)*	Capacity 7,500 CMH	Nos.*	14	6	20			
d)*	Capacity 6,000 CMH	Nos.*	12	6	18			
e)*	Capacity 4,000 CMH	Nos.*	3	3	6			
f)*	Capacity 2,000 CMH	Nos.*	4	4	8			
11*	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 5 mmwc static pressure.							
a)*	Capacity 1200 CMH	Nos.*	200	100	300			
12*	Handling arrangement for Ventilation system.							
a*	Manual operated trolley, platform trolley of 1 ton capacity with base area 2mx1.5m.	Nos.*	3	3	6			
b*	1 T Chain Pulley Block with Travelling trolley.	Nos.*	1	1	2			
c*	1 T Chain Pulley Block with tripod stand (without Travelling trolley .	Nos.*	3	4	7			
13	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-As per Appendix A).	LOT	1	1	2			
14	Total lumpsum price for commissioning spares inclusive of packing forwarding, transportation up to site, etc. (Bidder shall submit item-wise price break-up-As per Appendix B).	LOT	1	1	2			
15	Electrical items like Cable tray, conduits, junction box and any other item etc. required for completion of Ventilation system.	LOT			1			
16	FIELD INSTRUMENTS like gauges, switches, transmitters for measurement of pressure , temperature, pressure, differential pressure, flow etc. and other instruments as required for completeness of Ventilation System	LOT			1			
17*	Providing full support during FAT of PLC, preparation of control scheme, and commissioning of PLC as per relevant specification.	Man days *	5	5	10			
18	Any other item not indicated above, but required to make the system complete in all respects.	LOT			1			

NOTES					
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 and no separate unit rates shall be quoted. Unit rates shall be valid throughout the contract.				
2	Any other item not indicated above, but required to make the system complete in all respects, as per the technical specification, shall be supplied without any cost implication to BHEL.				
3	Any cell left blank in the unpriced schedule shall be treated as "Quoted" and is included in total price.				
4	List of commissioning spares given in Appendix B is bare minimum, any additional commissioning spare required for successful commissioning of ventilation package shall be provided within price quoted against Sl.no. 14.				
5	Stage # 1 (facilities for Unit # 1, Unit # 2, common to station as well as common for Unit #1 & 2) and Stage # 2 (facilities for Unit 3,4, & 5 and common for Unit #3,4,& 5) BOQ has been given above, Bidder shall quote unit rate as well as total price for Supply and Erection & Commissioning in the given price format. Further bidder to note that for items at Sl.no 15, 16 and 18, total supply and erection & commissioning price shall be quoted for complete station against referred clauses, which shall be proportioned based on BOQ arrived during detail engineering for the propose of billing break up.				
Particulars of bidder / authorised representative					
	Name	Designation	Signature	Date	Company Seal

SUGGESTED PRICE FORMAT ANNEXURE-II (COMPLETE PLANT EXCEPT FOR SWITCHYARD) LIST OF MANDATORY SPARES			Doc No:	PE-PF-417-554-A001
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NAME OF PROJECT:		5X800 MW TSGENCO YADADRI TPS		
NAME OF PACKAGE:		VENTILATION SYSTEM		
TECHNICAL SPECIFICATION:		PE-TS-417-554-A001		
S. No.	DESCRIPTION	UNIT	Qty	AMOUNT (Ex-Works)
	EQUIPMENT / PACKAGE			
1	Ventilation System (Mechanical)			
1.1	Centrifugal fans			
1.1.1	Sets of bearings for Air washer fans	Set	2 Set for each Type of Fan	
1.1.2	Sets of bearings for U.A.F. fans	Set	2 Set for each Type of Fan	
1.1.3	Impeller for the Fan	Set	2 Set for each Type of Fan	
1.2	Centrifugal pumps			
1.2.1	Set of bearings for Air washer pumps	Set	2 Set for each Type and rating of Pump	
1.2.2	Set of bearings for U.A.F. pumps	Set	2 Set for each Type and rating of Pump	
1.2.3	Gland packing, shaft sleeve & casing wearing ring	Set	2 Set for each Type and rating of Pump	
1.2.4	Impeller for the Pump	Set	2 Set for each Type and rating of Pump	
1.3	Spray Nozzles			
1.3.1	Spray nozzles for air washer unit	Nos.	10% of total installed quantity	
1.3.2	Spray nozzles for U.A.F. unit	Nos.	10% of total installed quantity	
1.4	SS Filters			
1.4.1	SS Filter for Air washer	Nos.	20% of total installed quantity	
1.4.2	SS Filter for Unitary air filtration unit	Nos.	20% of total installed quantity	
1.5	Flow Regulating Valve			
1.5.1	For Air Washer	Nos.	20% or minimum 2 Nos. Whichever is higher	
1.5.2	For Unitary Air Filtration Unit	Nos.	20% or minimum 2 Nos. Whichever is higher	
1.6	Basket for POT Strainer			
1.6.1	Strainer Basket for Air Washer	Nos.	2 Nos. For each type and size	
1.6.2	Strainer Basket for Unitary Air Filtration unit	Nos.	2 Nos. For each type and size	
1.7	Valves			
1.7.1	Gate valve for Air washer	Nos.	20% or minimum 2 Nos. Whichever is higher	
1.7.2	NR Valve for Air washer	Nos.	20% or minimum 2 Nos. Whichever is higher	
1.7.3	Gate valve for Unitary Air Filtration Unit	Nos.	20% or minimum 2 Nos. Whichever is higher	
1.7.4	NR valve for Unitary Air Filtration Unit	Nos.	20% or minimum 2 Nos. Whichever is higher	
1.7.5	Gate Valve for Make-up Drain of Air washer	Nos.	20% or minimum 2 Nos. Whichever is higher	
1.7.6	Gate valve for UAF	Nos.	40% or minimum 2 Nos. Whichever is higher	
1.8	Fan-Filter Units (i.e., Axial supply air fans with filters)			
1.8.1	Filter	Set	2 set for each FFU	
1.8.2	Fan-motor Bearing	Set	2 set for each rating of FFU	
1.8.3	Vibration Isolators	Set	2 set for each FFU	
1.8.4	Back Draft Dampers	Nos.	2 no of each size	
1.8.5	Fan motor	Set	2 sets for each rating of fan	
1.8.5	Any other spare parts recommended by the Manufacturer	-	As recommended by the Manufacturer	
1.9	Wall mounted supply/ Exhaust fan			
1.9.1	Fan-motor Bearing	Set	2 sets for each rating of fan	
1.9.2	Vibration Isolators	Set	2 sets for each fan	
1.9.3	Fan motor	Set	2 sets for each rating of fan	
2	Ventilation System (Electrical)			
2.1	Electrical Spares for panels			
2.1.1	Control Supply Transformer	Nos.	4 Nos. of each type and rating	
2.1.2	Contractor	Nos.	4 Nos. of each type and rating	
2.1.3	Coils for contractor & aux. contractor	Nos.	10 Nos. for each contractor	
2.1.4	Main & Aux. Contacts sets for contractor and Aux. Contractor	Set	10 Sets. For each contractor	
2.1.5	Air Break Switch	Nos.	2 Nos. for each rating	
2.1.6	Control, Isolating and selector switches	Nos.	10% of each type and rating	
2.1.7	MCB/ MCCB	Nos.	20% of installed quantity	
2.1.8	Circuit Breaker	Nos.	2 Nos. for each rating	
2.1.9	Indicating Lamps	Nos.	20% of installed quantity	
2.1.10	Indicating Lamps cover of different colour and holders	Nos.	10% of installed quantity	
2.1.11	Push Buttons of various colours	Nos.	20 nos. of each type and colour	
2.1.12	Terminal Blocks	Nos.	10% of installed quantity	
2.2	Electrical Spares for Motors			

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NAME OF PROJECT:		5X800 MW TSGENCO YADADRI TPS		
NAME OF PACKAGE:		VENTILATION SYSTEM		
TECHNICAL SPECIFICATION:		PE-TS-417-554-A001		
S. No.	DESCRIPTION EQUIPMENT / PACKAGE	UNIT	Qty	AMOUNT (Ex-Works)
2.2.1	Terminal plates	Nos.	20 Nos. each for small motors up to 30KW and 8 Nos. each for motors above 30KW	
2.2.2	Heaters	Set	2 Set for each motor of rating above 30KW	
2.2.3	Greasing arrangements	Set	8 sets for each type of motors	
2.2.4	Motors below 0.75 KW	Nos.	20% of the installed quantity or minimum 2 nos. whichever is higher	
2.2.5	Bearings (DE & NDE)	Nos.	8 sets of each type and rating	
2.3	Motor			
2.3.1	415 Volt Motor (above 30KW Rating upto 200KW)			
2.3.1.1	End Shield Cover Driving & Non-Driving End	Sets	2 sets. for each type and rating of Motor	
2.3.1.2	Driving End & Non-Driving End Bearing	Sets	2 sets. for each type and rating of Motor	
2.3.1.3	Cooling Fan	Nos.	2 nos. for each type and rating of Motor	
2.3.1.4	Motors Space Heater	Nos.	2 nos. for each type and rating of Motor	
2.3.1.5	Motor Terminal Block	Nos.	2 nos. for each type and rating of Motor	
2.3.1.6	Complete Set of Coupling	Set	2 Set for each Application	

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NAME OF PACKAGE:		VENTILATION SYSTEM		
TECHNICAL SPECIFICATION:		PE-TS-417-554-A001		
S. No.	DESCRIPTION	UNIT	Qty	AMOUNT (Ex-Works)
	EQUIPMENT / PACKAGE			
2.3.2	415 Volt Motor (Upto 30KW Rating)			
2.3.2.1	Driving End & Non-Driving End Bearing	Set	6 Set for each type and rating of Motor	
2.3.2.2	Cooling Fan	Nos.	4 nos. for each type and rating of Motor	
2.3.2.3	Motor Terminal Block	Nos.	10 nos. for each type and rating of Motor	
2.3.2.4	Complete Set of Coupling	Set	2 Set for each Application	
3	Ventilation System (C&I)			
3.1	Transmitters/ Gauges/Switches etc. along with relevant accessories	Nos.	20% of total or at least four (whichever is higher) for each type along with accessories.	
3.2	Temperature Element (RTD/Thermo-couple) with thermowell	Nos.	20% of each type , range and immersion length . Minimum 10 nos.	
3.3	Junction Box			
3.3.1	Junction box	Nos.	20% of total quantity for each size but minimum 4 nos.	
3.3.2	Terminals in Terminal blocks	Nos.	20 nos. of each type	
3.6	Process Connection Piping (Impulse piping/tubing, sampling piping / tubing & air supply piping as applicable)			
3.6.1	Valves of all types	Nos.	20% of each type, class, size & model	
3.6.2	Valve Manifolds (2 way/3 way/5 way)	Nos.	20% of each type, class, size & model	
3.6.3	Fittings	Nos.	20% of each type, class, size & model	
3.6.4	Filter Regulators	Nos.	40% of each model	
3.7	Dampers			
3.7.1	Actuator Diaphragm	Set	2 set for each damper	
3.7.2	O-Ring set	Nos.	4 nos. of each size for positioner	
3.7.3	Feedback Linkage	Nos.	2 nos. for each type	
3.7.4	Packing & gasket	Nos.	2 nos. for each type	
3.8	Solenoid Valves			
3.8.1	Solenoid Valve Coil	Nos.	4 nos. of each rating & insulation	
3.8.2	Plunger	Nos.	2 nos. of each type	
3.8.3	Seat	Nos.	4 no. of each type & size	
3.8.4	Gaskets	Set	4 sets of each type & size	
3.8.5	O-Ring set	Set	10 sets of each type & size	
3.9	Actuator			
3.9.1	Complete set of Actuator	Nos.	2Nos. for each type and rating	
3.9.2	Limit Switch	Nos.	6 Nos each type and rating	
3.9.3	Torque Switch	Nos.	6 Nos each type and rating	
3.9.4	Auxiliary Contact	Nos.	2 nos. each type and rating	
3.9.5	Motor	Nos.	2 nos. each type and rating	
3.9.6	Complete Seal kit	Set	2 Set for each type and rating	
3.9.7	Complete O-Ring Set	Set	2 Sets	
3.9.8	Electronic Card	Nos.	Two(2) for each type/make	
3.9.9	Feedback Assembly (4-20mA) for Inching type	Nos.	Two(2) for each type/make	
4.0	Control Valves			
4.1	Pneumatic Control Valves & Block Valves			
4.1.1	Plot Relay	Set	2 sets for each valve	
4.1.2	Actuator Diaphragm	Nos.	2 nos. for each valve	
4.1.3	Feedback Linkage	Nos.	2 nos. for each valve	
4.1.4	Smart Positioners	Nos.	20% of total quantity of each model/type	
4.1.5	I/P Converters (If any)	Nos.	20% of total quantity or minimum 30 nos.	
4.1.6	Complete Consumables for Valve Viz. O-ring, Gland Packing, Packing Ring, Bonnet Seal etc.	Sets	4 Sets each size, rating, type	
4.1.7	Valve Disc	Sets	4 Sets each size, rating, type	
4.1.8	Valve Spindle	Sets	4 Sets each size, rating, type	
4.1.9	Valve Seat	Sets	4 Sets each size, rating, type	
4.1.10	Bush	Sets	4 Sets each size, rating, type	
4.1.11	Guide	Sets	4 Sets each size, rating, type	
4.1.12	Guide Bush	Sets	4 Sets each size, rating, type	
4.1.13	Coupling Nut	Sets	4 Sets each size, rating, type	
4.1.14	Actuator Piston with Rod & Seal	Sets	4 Sets each size, rating, type	
4.1.15	Control valve stem packing and spare operator moulded rubber diaphragms	Sets	2 sets for each size, rating, type	

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	EQUIPMENT / PACKAGE			
4.1.16	Valve trim (including cage, plug, stem, seat rings, guide bushings etc.) for each of the control valves as offered.	Sets	2 sets for each size, rating, type	
4.1.17	Solenoid valves, position transmitters, limit switches, I/P convertors, positioners etc. of each type	Nos.	20% of total quantity spare with minimum 2 no. for each size, rating, type	

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				Date of issue	APR 2020
NAME OF PROJECT:		5X800 MW TSGENCO YADADRI TPS			
NAME OF PACKAGE:		VENTILATION SYSTEM			
TECHNICAL SPECIFICATION:		PE-TS-417-554-A001			
S. No.	DESCRIPTION	UNIT	Qty	AMOUNT (Ex-Works)	
	EQUIPMENT / PACKAGE				
Notes:					
a)	Mandatory spares listed in Price Schedule are 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)	"One (1) Set" and "One (1) set of each type & rating" is defined as total numbers as required for one complete replacement for one equipment of similar size & capacity.				
c)	In case any spare indicated in the specification is "not applicable" for particular equipment, then suitable applicable alternate spare shall be supplied by the bidder without any financial implication."				
d)	For quantities indicated in percentage, fractions are to be rounded-off to next higher integer.				
e)	Bidder to write "Quoted / Not Applicable" against all items. 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.				
f)	Any cell left blank in the unpriced schedule shall be treated as "Quoted" and is included in total price.				
g)	Bidder to note that even though there may be some spares which are repetitive at various sl.no mentioned above, bidder to ensure that prices are quoted against each sl.no. In case any cell is left blank in the unpriced schedule shall be treated as "quoted" and included in total price.				
Particulars of bidder / authorised representative					
	Name	Designation	Signature	Date	Company Seal

SUGGESTED PRICE FORMAT ANNEXURE -III (FOR SWITCHYARD AREA)					Doc No:	PE-PF-417-554-A001	
					Rev No:	0	
					Date of issue	APR 2020	
NAME OF PROJECT:			5X800 MW TSGENCO YADADRI TPS				
NAME OF PACKAGE:			VENTILATION SYSTEM				
TECHNICAL SPECIFICATION No:			PE-TS-417-554-A001				
SL NO	DESCRIPTION OF EQUIPMENT/ ITEM	Qty	UNIT	SUPPLY	ERECTION AND COMMISSIONING		
				AMOUNT (Ex-Works)	AMOUNT (Ex-Works)		
A	Ventilation Fans						
i*	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). Capacity 7,500 CMH for LT Switchgear room	4	Nos.*				
ii*	Axial flow exhaust fans (Bifurcated type, spark proof construction, wall mounted) complete with casing, flame proof motor & mounting frame, MS rain protection cowl, bird screen and all other accessories epoxy painted (suitable for 415V/ 3-phase supply). Capacity 7,500 CMH for Battery room	6	Nos.*				
iii*	Axial flow exhaust fans (wall mounted) complete with casing, motor & mounting frame, MS rain protection cowl, bird screen and all other accessories (suitable for 415V/ 3-phase supply). Capacity 7,500 CMH for Cable cellar room	6	Nos.*				
B*	Wall mounted panel	3	Nos.*				
NOTES							
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 and no separate unit rates shall be quoted. Unit rates shall be valid throughout the contract.						
2	Any other item not indicated above, but required to make the system complete in all respects, as per the technical specification, shall be supplied without any cost implication to BHEL.						
3	Any cell left blank in the unpriced schedule shall be treated as "Quoted" and is included in total price.						
Particulars of bidder / authorised representative							
Name	Designation			Signature		Date	Company Seal

SUGGESTED PRICE FORMAT ANNEXURE-IV(FOR SWITCHYARD) LIST OF MANDATORY SPARES				Doc No:	PE-PF-417-554-A001
				Rev No:	0
				Date of issue	APR 2020
NAME OF PROJECT:		5X800 MW TSGENCO YADADRI TPS			
NAME OF PACKAGE:		VENTILATION SYSTEM			
TECHNICAL SPECIFICATION:		PE-TS-417-554-A001			
S. No.	DESCRIPTION	UNIT	Qty	AMOUNT (Ex-Works)	
	EQUIPMENT / PACKAGE				
1.00	Wall mounted supply/ Exhaust fan				
a	Fan-motor Bearing	Set	2 sets for each rating of fan		
b	Vibration Isolators	Set	2 sets for each fan		
c	Fan motor	Set	2 sets for each rating of fan		
Notes:					
a)	Mandatory spares listed in Price Schedule are 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)	"One (1) Set" and "One (1) set of each type & rating" is defined as total numbers as required for one complete replacement for one equipment of similar size & capacity.				
c)	In case any spare indicated in the specification is "not applicable" for particular equipment, then suitable applicable alternate spare shall be supplied by the bidder without any financial implication."				
d)	For quantities indicated in percentage, fractions are to be rounded-off to next higher integer.				
e)	Bidder to write "Quoted / Not Applicable" against all items. 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.				
f)	Any cell left blank in the unpriced schedule shall be treated as "Quoted" and is included in total price.				
Particulars of bidder / authorised representative					
	Name	Designation	Signature	Date	Company Seal

SUGGESTED PRICE FORMAT APPENDIX - A Special tools & tackles for maintenance						Doc No:	PE-PF-417-554-A001
						Rev No:	0
						Date of issue	APR 2020
NAME OF PROJECT:				5X800 MW TSGENCO YADADRI TPS			
NAME OF PACKAGE:				VENTILATION SYSTEM			
TECHNICAL SPECIFICATION No:				PE-TS-417-554-A001			
SL NO	DESCRIPTION	UNIT	Stage # 1 Qty	Stage # 2 Qty	UNIT PRICE (Ex-Works)	TOTAL AMOUNT (Ex-Works) (For Stage # 1 & 2)	
1	Measuring tape	NO	1	1			
2	Tachometer	NO	1	1			
3	Double ended spanner	SET	1	1			
4	Ring spanners	SET	1	1			
5	Gasket punch	NO.	1	1			
6	Center punch	NO.	1	1			
7	Hammer with wooden handles	NO.	1	1			
8	Scissors for sheet metal cutting	NO.	1	1			
9	Torch light (suitable for 2 cells)	NO.	1	1			
10	Multimeter	NO.	1	1			
11	Anemometer	NO.	1	1			
12	Compound pressure gauge	NO.	1	1			
13	Slide wrench 8"	NO.	1	1			
14	Slide wrench 10"	NO.	1	1			
15	Slide wrench 6"	NO.	1	1			
16	Box spanner set	SET	1	1			
17	Screw driver set	SET	1	1			
18	Align key set	SET	1	1			
19	MS tool box	NO	1	1			
1							
NOTES							
1	ABOVE IS THE MINIMUM LIST. ANY OTHER TOOL / TACKEL REQUIRED FOR THE SYSTEM SHALL ALSO BE PROVIDED BY THE VENDOR WITHOUT ANY COST IMPLICATION.						
Particulars of bidder / authorised representative							
	Name	Designation	Signature			Date	Company Seal

SUGGESTED PRICE FORMAT APPENDIX - B Commissioning spares						Doc No:		PE-PF-425-554-A001
						Rev No:		0
						Date of issue		APR 2020
NAME OF PROJECT:				5X800 MW TSGENCO YADADRI TPS				
NAME OF PACKAGE:				VENTILATION SYSTEM				
TECHNICAL SPECIFICATION No:				PE-TS-417-554-A001				
SL NO	DESCRIPTION	UNIT	Stage # 1 Qty	Stage # 2 Qty	UNIT PRICE (Ex-Works)	TOTAL AMOUNT (Ex-Works) (For Stage # 1 & 2)		
1	FAN BELTS (For each type & size)	SET	1	1				
2	PRESSURE GAUGE (for each type and range)	NO	1	1				
3	TEMPERATURE GAUGE (for each type and range)	NO	1	1				
4	FILTER FOR AXIAL FANS (for each type)	SET	1	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.							
Particulars of bidder / authorised representative								
	Name	Designation	Signature			Date	Company Seal	