

SUGGESTED PRICE FORMAT		Doc No:	PE-PF-426-555-A001	
		Rev No:	0	
		Date of issue		
NAME OF PROJECT:		1 X 660 MW PANKI TPS		
NAME OF PACKAGE:		COMPRESSED AIR SYSTEM		
TECHNICAL SPECIFICATION:		PE-TS-426-555-A001, Rev 01		
S. No.	Description	HSN/SAC CODE	UNIT	QTY
1.0	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, mandatory spares alongwith spares for erection, startup 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 work, trial run at site, carrying out Performance guarantee / Functional / Demonstration tests at site (As applicable), training of customer/client O&M staff (as applicable) 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
2.0	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 alongwith spares for erection as required, startup and commissioning spares as required, forwarding, proper packing, ,parts/spares required during warranty period (against defects in design,materials,construction and workmanship)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)	8414 40 30	Lot	1
2.2	Total lumpsum firm prices for Services part comprising of 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 (As applicable), training of customer/client O&M staff (if applicable) 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.	998732	Lot	1
2.3	Total lumpsum 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)	8414 90 90	Lot	1
Note: 1.) PG to consider and suitably incorporate taxes, duties and other commercial aspects. 2.) Bidder to quote the Prices in 'figures' along with corresponding 'words'. 3.) BHEL reserves the right to buy any or all the mandatory spares parts.				
Particulars of bidder / authorised representative				
Name	Designation	Signature	Date	Company Seal

SUGGESTED PRICE FORMAT ANNEXURE-I		Doc No:	PE-PF-426-555-A001
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S. No.	DESCRIPTION	UNIT	QTY
BREAK-UP OF SUPPLY PRICES GIVEN IN 2.1 OF MAIN SHEET.			
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 alongwith spares for erection as required, startup and commissioning spares as required, parts/spares required during warranty period (against defects in design,materials,construction and workmanship) ,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.	Lot	1
Break up prices for items covered in clause 2.1 above.			
2.1.1	Instrument air Compressors (Oil Free Screw type) each of minimum 40 NM3/Min capacity @ 8.5 kg/cm2 (min.) discharge pressure with suction filter with silencer, inter cooler and after cooler with moisture separators, automatic drain traps, instruments, control system, cable lugs, glands and other accessories but excluding electric motor drive .	Nos.	3
2.1.2	Air Drying Plants HOC type of min. 44 NM3/min. capacity for Air Compressor with all instruments, control panels, including Electronic dew point meter and other accessories as specified.	Nos.	3
2.1.3	Service air Compressors (Oil Free Screw type) each of minimum 40 NM3/Min capacity @ 8.5 kg/cm2 (min.) discharge pressure with suction filter with silencer, inter cooler and after cooler with moisture separators, automatic drain traps, instruments, control system, cable lugs, glands and other accessories but excluding electric motor drive .	Nos.	3
2.1.4	Air Receivers required for Compressed Air System of minimum 15 Cu.M capacity each with instruments, relief valve, isolation valve, drain connection with automatic trap stations (zero purge air loss type) and other accessories as specified.	Nos.	6
2.1.5	Air Receivers required for Compressed Air System of minimum 10 Cu.M capacity each with instruments, relief valve, isolation valve, drain connection with automatic trap stations (zero purge air loss type) and other accessories as specified.	Nos.	2
2.1.6	Air Receivers required for Compressed Air System of minimum 5 Cu.M capacity each with instruments, relief valve, isolation valve, drain connection with automatic trap stations (zero purge air loss type) and other accessories as specified.	Nos.	3
2.1.7	Air Receivers required for Compressed Air System of minimum 2 Cu.M capacity each with instruments, relief valve, isolation valve, drain connection with automatic trap stations (zero purge air loss type) and other accessories as specified.	Nos.	1
2.1.8	Pipes & fittings Inter connecting cooling water, compressed air piping & Drain piping up to the nearest common drain point outside compressor house as specified including fittings and valves, etc. for complete compressed air system.	Lot	1
2.1.9	Field instruments, etc as specified.	Lot	1
2.1.10	Cable, Cable lugs, glands, junction box, communication box etc for Compressed Air System equipment as specified.	Lot	1
2.1.11	Start-Up & commissioning spares and maintenance tools & tackles.	Lot	1
Note: 1.) PG to consider and suitably incorporate taxes, duties and other commercial aspects.			
Particulars of bidder / authorised representative			
Name	Designation	Signature	Date
			Company Seal

SUGGESTED PRICE FORMAT ANNEXURE-II LIST OF MANDATORY SPARES		Doc No:	PE-PF-426-555-A001
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S. No.	DESCRIPTION	Quantity for each type of equipment / instrument	
A	MECHANICAL		
1	HP Stage		
	Complete HP Stage assembly consisting of high pressure element, Bearing for male and female rotors (drive end), Bearing for male and female rotors (non-drive end), Timing gears, Graphite ring shaft for compressor chamber seals or white metal labyrinth, suction valve, discharge valve, packing set, Axial thrust bearing, Labyrinth oil seal or radial seals or double acting seals for drive shafts.	2 Sets	
2	LP Stage		
	Complete LP Stage assembly consisting of high pressure element, Bearing for male and female rotors (drive end), Bearing for male and female rotors (non-drive end), Timing gears, Graphite ring shaft for compressor chamber seals or white metal labyrinth, suction valve, discharge valve, packing set, Axial thrust bearing, Labyrinth oil seal or radial seals or double acting seals for drive shafts.	2 Sets	
3)	Motor Bearing	2 sets of each type.	
4)	HP stage Gear and Pinion	2 sets of each type.	
5)	LP stage Gear and Pinion	2 sets of each type.	
6)	Air Intake Filter Element with Gaskets	4 sets of each type.	
7)	Oil Filter Element with Gaskets & Seals	4 sets of each type.	
8)	Safety Valve Springs and Gaskets for HP stage	2 set of each type	
9)	Safety Valve Springs and Gaskets for LP stage	2 set of each type	
10)	Valves (Within compressors house and Air drying Plant)		
a)	Check Valve Flap or Disc/Kit	1 set of each type	
b)	Control Valve Disc with Internal Assembly	1 set	
c)	Control Valve Gaskets	2 sets	
d)	Control Valve gland packing	2 sets	
e)	Gate Valve, Globe Valve, ball Valve and Check Valve	1 No. of each type and size	
f)	Actuators	1 No of each type and size	
11)	Gaskets & Seals for Inter Cooler	2 Sets	
12)	Gaskets & Seals for After Cooler	2 sets	
13)	Oil Pump/Motor		
a)	Oil Pump Assembly	1 set	
b)	Impeller/Rotor with shaft	1 set	
c)	Bearings for pumps and drives	2 sets	
d)	Set of Seals	2 sets	
14)	Oil Pump Kit	2 nos	
15)	Complete Drain trap valve assembly	4 sets of each type/size.	
16)	Gaskets and seals for Oil cooler	2 sets	
17)	Moisture trap element/ assembly	4 sets of each type/size	
18)	HP Discharge silencer kit	2 sets	
19)	Air drying plant		
a)	Thermal expansion valve	2 sets of each type/size	
b)	Moisture separator	2 sets of each type/size	
c)	Refrigerant dryer filter		
	- Refrigerant dryer filter element	2 sets of each type/size	
	- Refrigerant dryer filter element seals & gasket	2 sets of each type/size	
d)	Automatic drain valve (solenoid valve) with packing kit	2 sets of each type/size	
e)	Cooling water regulator	2 sets of each type/size	
f)	Air filter (for dryer)		
	- Pre filter element (ceramic candle)	2 sets of each type/size	
	- After filter element (ceramic candle)	2 sets of each type/size	
g)	Water separator	1 sets of each type/size	
h)	Regulating valve (i.e. hot gas bypass valve)	2 sets of each type/size	
i)	Refrigerant liquid separator	2 sets of each type/size	
j)	Sight glass	2 sets of each type/size	
k)	Dew point meter	1 set	
l)	Sensor for dew point meter	1 set	
20)	Dew Point meter	1 set	
21)	Sensor for Dew Point meter	1 set	

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B	CONTROL & INSTRUMENTATION		
1.0	Measuring & Field Instruments		
1.1	Indicators, Recorders, Electrical Metering and Skid Mounted Instruments		
a	Indicators, recorders and meters offered from each model for the project. These instruments shall be supplied with three sets of blank scales.	10 % of Installed of each type/Model or a minimum of one number for each model and type, whichever is more.	
b	For skid mounted instruments	10% of total number of instruments for each Type and model or a minimum of one number for each model and type, whichever is more	
c	Panel and Wall mounted Indicators	10% of total number of instruments or a minimum of one number for each type, model, range etc. whichever is more	
1.2	Temperature Elements and Thermowells		
a	Thermocouple/RTD elements	15% of flue gas temp, coal air mixture temp, boiler/TG metal temp thermocouples and 5% for other applications of total duplex thermocouple element assemblies and duplex RTD assemblies (with head assembly, terminal block and nipple) of each type and length whichever is more. The element assembly shall be suitable for direct replacement in the corresponding thermowell.	
b	Thermowells	10% for each type of temperature sensors or a minimum of one for each type & size, whichever is more	
1.3	Temperature Transmitters and Electronic Transmitters of all type, range and model no. (For Pressure, DP, Temp, Flow, Level), Process Transmitters, Radar type level transmitter, 3D type level Transmitter with local display, Magnetic/Electromagnetic flow meter with local display, mass flow meter with local display, Process meters, Junction Box, Position Transmitter, Transducer or any other instrument etc.	10% of total number of instruments/transducers offered for each model and type, rating or a minimum of one number for each model, rating and type , whichever is more.	
1.4	Process actuated switch Devices- As applicable for each package as per following: 19. Temperature Switches 20. Differential pressure Switches 21. Pressure switches 22. Flow switches 23. Level Switches 24. Safety Protection Switches	5% of total nos. or 1 no. of each make, model, range and type whichever is more	

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1.5	Local Gauges like temperature gauges, pressure gauges, differential Pressure gauges, flow gauges, flow meters with local display etc.	10% of total number of instruments/transducers offered for each model and type, rating or a minimum of one number for each model, rating and type, whichever is more.	
1.6	All type of Rota meters & Sight Flow Indicator.	1 no. of each range and type	
1.7	PD type flow transmitters with local display.	1 no. of each type and model	
1.8	Guided wave RADAR for Hot well application	1 no.	
1.9	Guided wave RADAR for LP heaters	1 no. for each of the LP heaters	
1.10	Impact head type flow element	20% or 2 nos. of each make and type, whichever is more	
1.11	Ultrasonic type flow measurement	20% or 2 nos. of each make and type, whichever is more	
1.12	Ultrasonic type level transmitter	50% of each type and length, including sensors	
1.13	Any other instruments not indicated in the tender P&ID but required for control, monitoring and operation of the equipment/plant/systems	10% or 2 nos. of each type whichever is more	
1.14	Level Gauges	a) 10% or 2 nos. whichever is more of each type of illuminators with holder and reflector. b) 20% or 5 nos. whichever is more of each type of bulb. c) 10% or 2 nos. whichever is more of each type of bi-color rollers. d) 10% or 2 nos. whichever is more of each type of glass along with pair of gaskets (cushion & wet gaskets). e) 10% or 2 nos. whichever is more of each type of gaskets for gauge cocks/valve bonnet/ packing. f) 10% or 2 nos. whichever is more of each type scale.	
1.15	Complete Electronic card/PCB assembly and Power supply card assembly.	10% of Electronic card/PCB assembly for each type, model & rating or a minimum of one number for each model, rating and type , whichever is more for each type of Transmitter, switch & Flow Meters.	
2	Microprocessor based control system		
2.1	Complete set including integral microprocessor based control system along with system & application software and special cables.	10% or 1 set of each type/model whichever is more	
3	Mandatory spares not covered above		
3.1	Bidder to supply 10% or 1 no. (whichever is more) of each type of sensor/instrument, instrumentation/mechanical fittings etc for any other electronic system, feeder control cabinets, hydrastep (EWLI), Vibration Monitoring System, CCTV, C&I Lab Instruments, On line Carbon in Ash analyser system, On line Coal mass flow/speed measurement system, On line secondary air flow measurement system Mass Flow meter, Solid flow meter, 3 D Acoustic type level transmitters, Nucleonic & non nucleonic density transmitter etc.		
Note: i) Mandatory spares listed above 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 bidders scope of supply. ii) Wherever set is mentioned, one set of the spares of that item shall be for complete replacement of that particular item for one equipment. iii) Whenever the quantity is mentioned in "sets" the bidder has to give the item details and prices of each item. iv) BHEL reserves the right to buy any or all the mandatory spares parts.			
Particulars of bidder / authorised representative			
Name	Designation	Signature & company seal	Date