

Ref. Enquiry No.: PE/PG/WAN/E-5059/2015 Dated: 15/10/15										
1 X 800 MW WANAKBORI TPS Rev 00 15/10/15										
PRICE SCHEDULE FOR INDIAN BIDDER - COMPRESSED AIR SYSTEM PACKAGE										
Sl.No	DESCRIPTION OF EQUIPMENT / ITEM	SUPPLY					E&C(Erection & Commissioning) Charges			Total Lumpsum price FOR site (INR)
		Total Ex-works Duly Packed (INR)	ED @...% (for self manufactured items only) (INR)	CST @ ....% Against C-form & E1/E2 or VAT @ ....% Whichever is applicable (INR)	FREIGHT (including service tax, if any) @ ....% of total ex-works price	TOTAL F.O.R SITE PRICE (INR)	E & C (INR)	SERVICE TAX @ _____% (INR) on E&C Charges	E & C INCLUDING SERVICE TAX (INR)	
1	2	3	4	5	6	7 = 3+4+5+6	8	9	10 = 8+ 9	11=10+7
1.0.0	Total lumpsum firm prices for the supply of equipment & services as specified, Comprising Design, Engineering, Manufacture, Inspection & Testing at Manufacturer's Works, Painting at Manufacturer's Works, Duly packed for Transportation, Delivery to Site, loading, unloading & storage at site, supply of erection materials, consumables, start-up & commissioning spares, and mandatory spares as required to complete the compressed air system including service part for unloading, storage & handling at site, erection, commissioning, trial run, carrying out performance tests at site, handing over to customer in line with drawings/ documents/ test procedures approved by BHEL/ customer, for the total scope defined in technical specification (spec.No. PE-TS-408-555-A001) and terms & conditions of tender, taking into account all clarifications, confirmations and agreements till date for Compressed Air System for 1 X 800 MW WANAKBORI TPS.									
2.0.0	CIF Content : Total CIF content for supply portion (imported content) as required, for total scope defined as per technical specification and terms & conditions of tender taking into account all clarifications, confirmations and agreements till date, to be indicated along with currency.	1) Currency : ..... Value: .....								
NOTES	Bidder to note that total price indicated above at 1.0.0 shall be considered for evaluation and hence should be complete in all respect for the full scope defined and considering all terms and conditions agreed.									
a	Any item not included in the price quoted above and shown separately will not be taken cognizance of and the offer shall be liable for rejection.									
b	Total Lumpsum price in Column-11 should match with summation of total prices as in [Column (9) of 1.0.0 of Annexure- I + Column (9) of A of Annexure - II + Column (5) of 1.0.0 of Annexure- III .									
c	Total erection & commissioning charges including PG Test and handing over charges (including service tax), if applicable, should be minimum 20% of the total quoted package (excluding mandatory spares but including all taxes & freight), failing which the break-up of price shall be adjusted accordingly for ordering.									
d	All deviations should be marked in Cost of withdrawal sheet (Annexure-V) only. Deviations marked elsewhere other than schedule of deviation shall not be taken into cognizance.									
e	Bidder must submit prices in the Pro Forma duly filled in signed and stamped on every page without any ambiguity. The price shall be written against each item. Term such as "refer covering letter" etc. are not acceptable. Price format shall not be changed by the bidder as the bidder may get disqualified by doing so.									
	Bidder's / bidder's representative signature					Company seal				

15/10/15

1 X 800 MW WANAKBORI

ANNEXURE-I

MAIN SUPPLY FOR INDIAN BIDDER- PRICE SCHEDULE FOR COMPRESSED AIR SYSTEM PACKAGE

Sl.No	DESCRIPTION OF EQUIPMENT / ITEM	QUANTITY	UNIT PRICE		TOTAL PRICE				REMARKS
			Ex-works price Duly packed	Total Ex-works price	ED @ ...% (for self manufactured items only) (INR)	CST @ ...% Against C-form & E1/E2 or VAT @ ...% Whichever is applicable (INR)	FREIGHT (including service tax, if any) @ ...% of total ex-works price	Total Lumpsum price FOR site (INR)	
1	2	3	4	5	6	7	8	9	
1.0.0	Total lumpsum firm prices for the supply of equipment & services as specified, Comprising Design, Engineering, Manufacture, Inspection & Testing at Manufacturer's Works, Painting at Manufacturer's Works, Duly packed for Transportation, Delivery to Site, loading, unloading & storage at site, supply of erection materials, consumables, start-up & commissioning spares, and mandatory spares as required to complete the compressed air system for the total scope defined in technical specification (spec.No. PE-TS-408-555-A001) and terms & conditions of tender, taking into account all clarifications, confirmations and agreements till date for Compressed Air System for 1 X 800 MW Wanakbori TPS.								
2.0.0	Break up prices for items covered in clause 1.0 above. Prices for design, manufacture, inspection & testing at								
2.1.0	Instrument Air Compressor (oil free Screw) Each of 30 NM3/Minute capacity at 8.5 kg/cm2 (g) consisting Electric motor to drive the compressor with accessories, Suction filter and silencer, Inter Cooler, After Cooler with moisture separators, automatic drain traps, instruments, Control panel etc.	3	Nos						Column (9) of this clause shall be within 30-33 % of Total price at Column (9) of 1.0.0
2.2.0	Service Air Compressor (oil free Screw) Each of 30 NM3/Minute capacity at 8.5 kg/cm2 (g) consisting Electric motor to drive the compressor with accessories, Suction filter and silencer, Inter Cooler, After Cooler with moisture separators, automatic drain traps, instruments, Control panel etc.	3	Nos						Column (9) of this clause shall be within 30-33 % of Total price at Column (9) of 1.0.0
2.3.0	Air Dryer (Refrigerant Type) Air Drying Plant of 33 NM <sup>3</sup> /min and to match instrument air compressor with all instruments and controls including Electronic Dew point meter as specified.	3	Nos						Column (9) of this clause shall be within 10-17 % of Total price at Column (9) of 1.0.0
2.4.0	Air receivers Air receiver at Compressor house of 16 M3 capacity with each having Pressure gauges, Temperature gauges, Relief valve, Drain connection with zero purge type automatic trap stations and other accessories as specified.	8	Nos						Column (9) of this clause shall be within 6-8 % of Total price at Column (9) of 1.0.0
2.5.0	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.	1	Lot						Column (9) of this clause shall be within 10-12 % of Total price at Column (9) of 1.0.0
2.6.0	Field instruments including temperature scanners, sequential panel, PLC interface module for the overall control of the compressed air system through DDCMIS as specified.	1	Lot						Column (9) of this clause shall be within 3-5 % of Total price at Column (9) of 1.0.0
2.7.0	Cable, Cable lugs, glands, junction box etc for Compressed Air System equipment as required.	1	Lot						
2.8.0	Total lump sum prices for Maintenance Tool & Tackles (as specified in the Annexure-IV, Volume-II of the technical specification PE-TS-408-555-A001)	1	Lot						
2.9.0	Total lump sum prices for Start-Up & commissioning spares (as specified in the Annexure-XII, Volume-II of the technical specification PE-TS-408-555-A001)								Column (9) of this clause shall be within 1-2 % of Total price at Column (9) of 1.0.0
3.0.0	Total of 2.0 (Total of 2.1 to 2.9) (Should match with 1.0). However, the break up prices indicated under this head are for internal use only & NOT for any comparison purpose & or making adjustment for scope variation.)								
	Bidder's / bidder's representative signature								Company seal

*Handwritten signature and date: 15/10/15*

## 1 X 800 MW WANAKBORI TPS

## ANNEXURE II

## PRICE SCHEDULE FOR INDIAN BIDDER MANDATORY SPARES OF COMPRESSED AIR SYSTEM PACKAGE

Sl.no	Description	Qty.	Qty. Offered	Unit Ex-works price	Total ex-works price	ED @ ...% (for self manufactured items only) (INR)	CST @ ....% Against C-form & E1/E2 or VAT @ ....% Whichever is applicable (INR)	FREIGHT (including service tax, if any) @ ....% of total ex-works price	Total Lumpsum price FOR site (INR)
1	2		3	4	5	6	7	8	9
	<b>X. Mechanical</b>								
	<b>SCREW COMPRESSOR</b>								
1.1	HP Stages of Compressor								
	(i) HP element	One (1) Set							
	(ii) Packing Set	Four (4) Sets							
	(iii) Axial thrust brg.	Two (2) Sets							
	(iv) Labyrinth oil seal or radial seals or double acting seals for drive shaft	Four (4) Sets							
	v) Bearing for male & female rotors (DE & NDE)	Two (2) each							
	vi) Timing Gears	One (1)							
	vii) Suction & discharge valves	Two (2) each							
1.2	LP Stages of Compressor								
	(i) LP element	One (1) Set							
	(ii) Graphitic ring shaft seals for compressor chamber or whitemetal labyrinth seals	Four (4) Sets							
	(iii) Packing Set	Four (4) Sets							
	(iv) Axial thrust Bearing	Two (2) Sets							
	v) Bearing for male & female rotors (DE & NDE)	Two (2) each							
	vi) Timing Gears	One (1)							
	vii) Suction & discharge valves	Two (2) each							
1.3	Main Bearing	Two (2) each							
1.4	Set up gear/pinion	One (1)							
1.5	Air intake filter element with gaskets	Eight (8)							
1.6	Oil filter element with gaskets & seals	Eight (8)							
1.7	Safety valve springs & gaskets	Four (4)							
1.8	One set of inbuilt automatic drain valve	Four (4)							
1.9	Gearcase breather filterelement	One (1)							
1.10	Drain valve kit	One (1)							
1.11	Compressors Coolers								
	l) Gaskets & seals for inter cooler and after cooler	Four (4)							

15/10/15

## 1 X 800 MW WANAKBORI TPS

## ANNEXURE II

## PRICE SCHEDULE FOR INDIAN BIDDER MANDATORY SPARES OF COMPRESSED AIR SYSTEM PACKAGE

Sl.no	Description	Qty.	Qty. Offered	Unit Ex-works price	Total ex-works price	ED @ ...% (for self manufactured items only) (INR)	CST @ .....% Against C-form & E1/E2 or VAT @.....% Whichever is applicable (INR)	FREIGHT (including service tax, if any) @ .....% of total ex-works price	Total Lumpsum price FOR site (INR)
1	2		3	4	5	6	7	8	9
1.12	ii) Inter cooler drain check valve	One (1)							
	Oil Pump/Motor								
	i) Oil pump complete assembly	One (1)							
	ii) Pump impeller/rotor with shaft	One (1)							
	iii) Set of bearings	Two (2) Sets							
	iv) Oil pump motor bearing	Two (2)							
1.13	Shaft driven oil pump								
	i) Drive gear with shaft	One (1)							
	ii) Driven gear with shaft	One (1)							
1.14	Drain tap elements	Four (4)							
1.15	Moisture tap elements	Four (4)							
1.16	Oil cooler gaskets and seals	Four (4)							
1.17	Seal Washer	Two (2)							
1.18	Mass flow Meter	One (1)							
1.19	Air Drying Plant								
	i) Pre filter element (ceramic candle)	Two (2)							
	ii) After filter element (ceramic candle)	Two (2)							
	iii) Heater element ( if required)	Two (2)							
	iv) Blower bearing (if required)	Two (2)							
	v) Blower motor bearing (if required)	Two (2)							
	vi) Valve actuators	Two (2)							
	vii) Inlet & Outlet valve for Dryer	One (1) Set							
	viii) Automatic drain valves (No air loss type)	One (1) Set							
	ix) Expansion valves	One (1) Set							
	x) Filter Dryer	One (1) Set							
	xi) Air cooler condenser fan	One (1) Set							
Y.	Electrical								
	PMCC/MCC/ACDB (As applicable)								
2.1	Contactor								
2.1.1	Power Contactor (AC)								
2.1.1.1	Power Contactor Complete Assembly	4 Nos.for each type and rating							
2.1.1.2	Power Contactor spare kits	10Sets for each type and rating							
2.1.1.3	Power Contactor AC Coils	10Nos. Coils for each type and rating							
2.1.2	Auxiliary Control Contactor (AC)								
2.1.2.1	Auxiliary Control Contactor Complete Assembly	30 Nos.for each type and rating							
2.1.2.2	Auxiliary Control Contactor spare kits	40 Sets for each type and rating							
2.1.2.3	Auxiliary Control Contactor AC Coils	35 Nos.for each type and rating							

15/10/15

## 1 X 800 MW WANAKBORI TPS

ANNEXURE II  
PRICE SCHEDULE FOR INDIAN BIDDER MANDATORY SPARES OF COMPRESSED AIR SYSTEM PACKAGE

Sl.no	Description	Qty.	Qty. Offered	Unit Ex-works price	Total ex-works price	ED @ ...% (for self manufactured items only) (INR)	CST @ ....% Against C-form & E1/E2 or VAT @.....% Whichever is applicable (INR)	FREIGHT (including service tax, if any) @ .....% of total ex-works price	Total Lumpsum price FOR site (INR)
1	2		3	4	5	6	7	8	9
2.2	MCCB (Power Circuit)	5 Nos. for each type and rating							
2.3	MCB (Control Circuit)	25 Nos. for each type and rating							
2.4	Switch								
2.4.1	Local / Remote Selector Switch	10Nos.							
2.4.2	MCCB Status (On/off) Monitoring Switch/Contact	5Nos.							
2.4.3	Trial / Normal /MCC Selector Switch	15Nos.							
2.4.4	MCC module Service Position Limit Switch	5Nos.							
2.5	Thermal Overload Relay	5Nos. for each type and rating							
2.6	Sliding Contact (Fixed & Moving)	25Sets							
2.7	Bus bar to MCC module Lira Contact Assembly ( Bus-end & MCC Module)	5Sets for each type and rating							
2.8	Indicating Lamps complete assembly								
2.8.1	Red	30Sets							
2.8.2	Amber	30Sets							
2.8.3	Green	30Sets							
2.9	Push Button (On/Off) Complete	20Sets							
2.1	CT	1No. for each type and rating							
2.11	Ammeter	1No. for each type and rating							
2.12	Control Transformer	1No. for each type and rating							
2.13	Off Delay/ On Delay Timer	5Nos. for each type and rating							
2.14	Switch Fuse Unit	5Nos. for each type and rating							
2.15	Terminal Block								
2.15.1	Power Terminal Block	10% of total nos. for each type and rating used in the system or minimum one (1) no. whichever is more							
2.15.2	Control Terminal Block	10% of total nos. for each type and rating used in the system or minimum one (1) no. whichever is more							
2.15.3	End Plate for Power & Control Terminal Block	Each type 25Nos.							
2.3	Energy Meter	1No. For each type & rating							
2.4	Control Panel/Desk Mounted Items								
2.4.1	Push Button								
2.4.1.1	Complete assembly	5Nos for each colour							
2.4.1.2	Contact Element (1NO + 1NC) Block	20Nos.							
2.4.2	Selector Switch	10Nos. for each type and rating							
2.4.3	Meter (Analog or Digital)								
2.4.1	Ammeter	10% for each type and range or minimum one (1) no. whichever is more							
2.4.2	Voltmeter	10% for each type and range or minimum one (1) no. whichever is more							
2.4.3	Frequency	10% for each type and range or minimum one (1) no. whichever is more							
2.4.4	MW	10% for each type and range or minimum one (1) no. whichever is more							
2.4.5	MVAR	10% for each type and range or minimum one (1) no. whichever is more							
2.4.6	Power Factor	10% for each type and range or minimum one (1) no. whichever is more							

*AK*  
15/10/15

## 1 X 800 MW WANAKBORI TPS

ANNEXURE II  
PRICE SCHEDULE FOR INDIAN BIDDER MANDATORY SPARES OF COMPRESSED AIR SYSTEM PACKAGE

Sl.no	Description	Qty.	Qty. Offered	Unit Ex-works price	Total ex-works price	ED @ ...% (for self manufactured items only) (INR)	CST @ ....% Against C-form & E1/E2 or VAT @.....% Whichever is applicable (INR)	FREIGHT (including service tax, if any ) @ ....% of total ex-works price	Total Lumpsum price FOR site (INR)
1	2		3	4	5	6	7	8	9
2.4.7	Synchroscope	10% for each type and range or minimum one (1) no. whichever is more							
2.5	Indicating Lamps complete assembly	10Nos. for each Colour and type							
2.6	Mimic Lamps	10Nos. for each Colour and type							
2.7	MCB	2Nos. for each type and rating							
2.8	Door Limit Switch	2Nos.							
2.9	Annunciation system								
2.9.1	Lamp Box with Facia & Lamps (LED type)	25Nos.							
2.9.2	Hooter	1No.							
2.9.3	Each type of PCB (for non-PLC driven system)	1(one) no.							
2.1	Actuator								
2.10.1	Complete set of Actuator	1No. for each type and rating							
2.10.2	Limit Switch	2 Nos each type and rating							
2.10.3	Torque Switch	2 Nos each type and rating							
2.10.4	Auxiliary Contact	1 no each type and rating							
2.10.5	Motor	1 no each type and rating							
2.10.6	Complete Seal kit	1Set for each type and rating							
2.10.7	Complete O-Ring Set	1Set							
Z	C&I								
3.1	Field Instruments (Transmitters/temperature elements (TC / RTD) / Gauges / Switches etc. along with relevant accessories)	10 (ten) percent of total of each type or at least one (whichever is higher) of each type along with accessories.							
3.2	Control System (DCS, PLC etc.)								
3.2.1	keyboard and cursor control devices.	2 (two) numbers each							
3.2.2	LCD TFT (24") Monitors.	2 (two) numbers							
3.2.3	Spare interface cables with connecting plugs	10 (ten) sets for each type of peripherals & I / O hardware.							
3.2.4	Power supply modules	10 (ten) percent for each type or 4 (four) numbers, whichever is higher.							
3.2.5	Electronic modules (I / O)	10 (ten) percent of the total qty. offered for each type or 5 (five) numbers of each electronic type of module, whichever is higher.							
3.2.6	Bus couplers and communication interface cards	10 (ten) percent of total of each type or 2 (two) numbers of bus couplers and communication interface cards whichever is higher.							
3.2.7	Controllers for DCS, Control panel ST, Boiler control system, Balance	10% of each type(at least 1 no. of each type) whichever is higher.							
3.3	Valves, Actuators & Accessories								
3.3.1	Control Valves								
3.3.1.1	Control valve stem packing , as offered.	2 (two) sets for each of the control valves							
3.3.1.2	of spare valve trim (including cage, plug, stem, seat rings,	1 (one) set for both the units for each of the control valves, as offered.							
3.4	Actuators								
3.4.1	Actuators with drive	1 (one) set of each type and rating.							
3.4.2	Valve positioners	10 (ten) percent of each type.							
3.4.3	Position transmitters	10 (ten) percent of each type.							
3.4.4	Limit switches/torque switches	10 (ten) percent of each type.							
A	Total Lumpsum price of Mandatory Spares								

Notes

A- 15/10/15

Ref. Enquiry No.: PE/PG/WAN/E-5059/2015 Dated: 15/10/15 PRICE SCHEDULE FOR INDIAN BIDDER - COMPRESSED AIR SYSTEM PACKAGE Rev 00 15/10/15

**1 X 800 MW WANAKBORI TPS**

**ANNEXURE-III  
ERECTION & COMMISSIONING - PRICE SCHEDULE FOR INDIAN BIDDER COMPRESSED AIR SYSTEM PACKAGE**

SI.No	DESCRIPTION OF EQUIPMENT / ITEM	E & C (INR)	SERVICE TAX @ _____% (INR)	E & C INCLUDING SERVICE TAX (INR)
1	2	3	4	5 = 3+ 4
1.0.0	Total lumpsum firm prices for the services as specified, comprising of service part for unloading, storage & handling at site, erection, commissioning, trial run, carrying out performance tests at site, handing over to customer in line with drawings/ documents/ test procedures approved by BHEL/ customer, for the total scope defined in technical specification (spec.No. PE-TS-408-555-A001) and terms & conditions of tender, taking into account all clarifications, confirmations and agreements till date for Compressed Air System for 1 X 800 MW WANAKBORI TPS.			
<b>NOTE:</b>				
1	As per cl. no. 3.0 of GCC Rev-06, Total erection & commissioning charges including service tax should be minimum 20% (or as specified in NIT) of the total quoted package price (excluding mandatory spares but including all taxes and freight), failing which the break-up of prices shall be adjusted accordingly for ordering.			
	Bidder's / bidder's representative signature	Company seal		

*A = 15/10/15*

**PRICE SCHEDULE FOR INDIAN BIDDER - COMPRESSED AIR SYSTEM PACKAGE**

Rev 00

15/10/15

Ref. Enquiry No.: PE/PG/WAN/E-5059/2015 Dated: 15/10/15

**1 X 800 MW WANAKBORI TPP**

**ANNEXURE-IV**

**GUARANTEED POWER CONSUMPTION - PRICE SCHEDULE FOR INDIAN BIDDER COMPRESSED AIR SYSTEM PACKAGE**

**Guaranteed Power Consumption For Air Compressor System Shall be as per Following :**

S.No. (1)	Description of Equipments (2)	Nos. of Equipments (3)		Total Guaranteed Power Consumption for Each Equipment at Motor Input Terminals & control Panel (4)	Duty Factor (5)	Total (KW) (6) = (3A)*(4)*(5)
		Working (3A)	Standby (3B)			
1	Serve Air Compressor (Oil free Screw type) 30 NM3/min at 8.5 Kg/cm2 pressure	2	1		1	
2	Instrument Air Compressor (Oil free Screw type) 30 NM3/min at 8.5 Kg/cm2	2	1		1	
3	Air Drying Plant Unit (Refrigerant type )	2	1		1	
					<b>TOTAL</b>	

Note :

1	Estimated Power Consumption Figure for the compressed air system (For Working Drives Only) considered is <b>1100 KW</b> (For station)
2	Bidders Guaranteed power consumption at motor input terminals ( Not Shaft Power) including power for control panel as furnished in guranteed schedule shall be demonstrated by the successful bidder during performance testing at works/site.
3	The price quoted by the bidder shall be loaded @ (INR)200000/- for every additional kW increase in consumption from the base figure indicated at Note no. 1.0 above.
4	In case the successful bidder fails to establish / prove the guaranteed values of power consumption (base figure of auxiliary power consumption) on actual performance testing at the manufacturing works / site, penalty @ (INR)200000/- per kW increase in power consumption figure shall be levied.

*15/10/15*

