

Ref No.: PE/PG/KAG/E-6736/2021 /CORRIGENDA/02

Date: 30.09.2021

CORRIGENDA - 02

PROJECT: (4x210 + 3X500) MW NTPC KAHALGAON STPP FGD
PACKAGE: GYPSUM DEWATERING SYSTEM (VACCUUM BELT FILTER TYPE)
TENDER ENQUIRY NO: PE/PG/KAG/E-6736/2021 DATED 31.08.2021

Bidders to note following amendments w.r.t subject tender:

- 1) SI no. 1.03 of BoQ1 of Price Format: Discharge chute is not applicable and excluded from scope of bidder (Refer Cl no. 10.0, Sub Section-IC of Tender Technical Specification). Bidders to quote price accordingly.
- 2) Enclosed Annexure-1 may please be referred for Pre-Bid Clarification pertaining to subject tender.
- 3) MDL (Master Drawing List) has been revised as enclosed.
- 4) Due date of bid submission for subject tender is **extended up to 11-OCT-2021 (02.00 P.M)** and **Part-1 bid opening up to 11-OCT-2021 (04.00 P.M)**

Bidders to ensure the submission of bid within the tender due date and time.

With Regards,
For & on behalf of BHEL

Isha Rawat
Digitally signed by Isha Rawat
DN: cn=Isha Rawat Heavy Electricals
Limited, ou=PS PM HODIA,
postalCode=201301, st=Uttar Pradesh,
2.5.4.20=814738046012399544042
79c190ee0779dc41a810a2c3f82d79
e9a60e0,
serialNumber=2409282042c19c0b138
9153bae70462a0ada967f48eb78b268
d09553a09118, cn=Isha Rawat
Date: 2021.09.30 18:05:04 +05'30'

CORRIGENDA-02

Tender Ref No.: PE/PG/KAG/E-6736/2021 dated 31.08.2021

ANNEXURE-1				
PRE-BID CLARIFICATION SCHEDULE				
S.NO.	SECTION	CLAUSE	PAGE NO.	STATEMENT OF THE REFERRED CLAUSE
1	Guidelines for Remote Inspection of PEM BOIs			Guidelines for Remote Inspection document
2	BOQ_5316	BoQ1		Vacuum belt filters complete with accessories, maintenance platform with staircase including discharge chute, and driving motors (IE3) with VFD & inverter panel, coupling along with guard.
3	BOQ_5316	BoQ3		1.11. Hydro-cyclones (Gypsum Primary Dewatering, Secondary Waste Water and any other Hydrocyclone)
4	BOQ_5316	BoQ3		1.2 Mandatory spare - Vacuum belt filter
5	BOQ_5316	BoQ6		The total guaranteed power consumption quoted by the bidders at column no. 7 shall be loaded at the rate of INR 143944 per KW for the differential power quoted over the base aux power as mentioned at S.N. 2 above.
6	BOQ_5316	BoQ6		
7	TECHSPECPART1	2.1.1.9. ii	24 of 420	Scope of below-mentioned interconnected piping (slurry, air and water pipes) along with valves, rubber lining (wherever applicable, shall be supplied in erectable condition i.e. no rubber lining to be done at site), instruments, valves, supports, gaskets, fasteners and accessories which is non-integral to Gypsum dewatering system are limited to engineering only and supply shall be made by BHEL. Engineering includes layout & routing of pipes, preparation of isometric drawing and BOQ:
8	TECHSPECPART1	2.1.1.12	25 OF 420	Local control panel, if required

CLARIFICATION REQUIRED

Not acceptable, If Vendors are not having remote inspection facility in there works then Inspection will be done by vendor standard method.	BHEL reply The inspection methodology shall be finalized during detail engineering as part of Quality Plan/ Inspection Procedure and without any cost/time implication.												
As per clause no 10.a page no 38 of 420, in Exclusion list Discharge chute is in client scope, Kindly update the BOQ sheet.	Discharge chute is not in bidder's scope.												
Only gypsum primary dewatering and secondary waste water hydrocyclones are in DELKOR scope and other hydrocyclones are excluded from DELKOR Scope).	Bidder understanding is correct inline with scope defined in clause o. 2.1 (sub section IC) of technical specification												
Mandatory spares shall be supplied as per OEM Standard. For details refer below list. <table border="1"> <thead> <tr> <th>Item Description</th><th>Quantity</th></tr> </thead> <tbody> <tr> <td>1.2 Vacuum Belt filter</td><td></td></tr> <tr> <td>1.21 Filter Cloth</td><td>4 Sets</td></tr> <tr> <td>1.22 Belt (V Belt + Wear belt)</td><td>1 Sets</td></tr> <tr> <td>1.23 Vacuum Box seals</td><td>2 Sets</td></tr> <tr> <td>1.24 Drive motor</td><td>1 Nos</td></tr> </tbody> </table>	Item Description	Quantity	1.2 Vacuum Belt filter		1.21 Filter Cloth	4 Sets	1.22 Belt (V Belt + Wear belt)	1 Sets	1.23 Vacuum Box seals	2 Sets	1.24 Drive motor	1 Nos	Bidder to supply spares as per mandatory spare list attached in BHEL technical specification. Refer annexure-II of BHEL technical specification.
Item Description	Quantity												
1.2 Vacuum Belt filter													
1.21 Filter Cloth	4 Sets												
1.22 Belt (V Belt + Wear belt)	1 Sets												
1.23 Vacuum Box seals	2 Sets												
1.24 Drive motor	1 Nos												
Column no 7 is not available in the table.	Column 7 refers to Column with heading "Power Consumption (KW)".												
Filtrate extraction pump and vertical sump pump Power consumption details are not listed in the table. Hope these values are not considered in the guaranteed power consumption calculations. Please confirm.	Bidder understanding is correct.												
Hope all the drawings required for the engineering shall be provided by BHEL (Drawings for valves, pumps and other requirements). Please confirm.	All relevant input drawings shall be made available during detailed engineering of the package												
Local control panel is not required, whereas all the signals will be connected to Junction box and further the signals will be transmitted to client DCS	Noted. However local control panel, if envisaged by bidder for their system operation, same shall be provided.												

CORRIGENDA-02

Tender Ref No.: PE/PG/KAG/E-6736/2021 dated 31.08.2021

ANNEXURE-1					PRE-BID CLARIFICATION SCHEDULE	
S.NO.	SECTION	CLAUSE	PAGE NO.	STATEMENT OF THE REFERRED CLAUSE	CLARIFICATION REQUIRED	BHEL reply
9	TECHSPECPART I	4.3.4	30 of 420	The complete frame of the filter and all parts in contact with gypsum shall be made of corrosion resistant material.	since frames are not in contact with gypsum slurry hence shall be made of mild steel epoxy coated and parts which are in contact with slurry are made of PP or MSRL. This is as per proven practice in similar application and same has considered.	Bidder is to follow the specification. The complete frame of the filter and all parts in contact with gypsum shall be made of corrosion resistant material or shall be provided with corrosion resistant liners of proven design. Accordingly, bidder may consider 'Corten / Weathering Steel' or 'SS 304' or any other suitable corrosion resistant material conforming to ASTM A606-4, A588, A847 etc. as applicable. The material so selected, should be meeting the strength requirement of the belt filter.
10	TECHSPECPART I	4.3.12	30 of 420	A 2 m (min.) wide platform shall be provided around each belt filter for easy approach & maintenance.	Not shown in provided Tender GA drawing. Please check & confirm the requirement. Please share Acad drawing to check the feasibility. This statement is contradicting with GA drawings where the one common platform is shown between both HBF's. Not all around. Also Client to confirm the scope of supply of Platform for both HBF and cyclone are in bidder's scope since it is not identified in Scope section.	Bidder to note that approach platform with access ladder for equipments in bidder's scope shall be provided by bidder. Regarding HBF, bidder to provide 2m (min) wide platform for each belt filter as per Clause 4.3.12, (section IC) or it may provide a common platform of 3.3m (approx.) width. The "Layout details of Gypsum Dewatering Building" attached in the specification is for reference purpose. In case, common platform for HBF is provided as mentioned above, a movable platform along with access ladder shall be provided for approaching equipment/item on other side of HBF. A 1000 mm wide platform with suitable approach shall be provided by the bidder for each hydro cyclone as per Clause 4.5.36, (section IC)
11	TECHSPECPART I	4.4.6	31 of 420	Each vacuum receiver tank(s) shall be provided with slide plate type pneumatic vacuum breaker. The plate shall be stainless steel with a min. thickness of 3 mm.	Since we are maintaining sufficient barometric height and it is enough to break the vacuum. Further bidder shall provide vacuum breaker valve in Vacuum line to prevent excess vacuum generation if require.	Bidder to follow specification
12	TECHSPECPART I	4.5	34 of 420	COMMON REQUIREMENTS FOR PUMPS (VACUUM PUMP, FILTRATE, BELT FILTER, CAKE WASH)	This clause is not applicable to vacuum pump, please confirm.	Applicable clauses for vacuum pump shall be followed (if any), however, for vacuum pump, clause no. 4.0.0 (page 31 of 576) shall be followed.
13	TECHSPECPART I	4.5	34 of 420	Impeller Tip speed to be kept in range of 13-22 m/sec.	Tip speed shall be as per vendor design standard.	Bidder to follow specification
14	TECHSPECPART I	5.6.3	36 of 420	Design condition Primary hydrocyclone capacity - 229 m ³ /hr each	As per table 5.1.K, (page no 35 of 420) Primary hydrocyclone to be sized for : 176 m ³ /hr (including 10 % margin), kindly provide the corrected design capacity values for the primary hydrocyclone.	Design condition Primary hydrocyclone capacity -176 m ³ /hr (including 10 % margin)
15	TECHSPECPART I	5.6.3	36 of 420	Design condition Secondary hydrocyclone capacity - 133 m ³ /hr each	Kindly confirm the secondary hydrocyclone design condition process details.	1. Secondary hydrocyclone to be sized for : 92 m ³ /hr. 2. Back pressure of Secondary hydro cyclones inlet shall be maintained <20 m L.C 3. 10% spare hydrocyclones shall be provided in each secondary hydrocyclone set

CORRIGENDA-02

Tender Ref No.: PE/PG/KAG/E-6736/2021 dated 31.08.2021

ANNEXURE-1					PRE-BID CLARIFICATION SCHEDULE	
S.NO.	SECTION	CLAUSE	PAGE NO.	STATEMENT OF THE REFERRED CLAUSE	CLARIFICATION REQUIRED	BHEL reply
16	TECHSPECPART1	10.0.e	38 of 420	Exclusions - 3D Modeling	There is no 3d modeling inputs/deliverables from Bidder. DELKOR will provide only 2D drawings as an Input for GDS and for bought out items drawing shall be as per vendor standard.	BHEL specification is clear.
17	TECHSPECPART1	7.03.01	44 of 420	Each set of primary dewatering hydro-cyclone shall be sized to dewater the gypsum slurry produced by all the units operating at Design point with an additional 10% margin.	DELKOR understand that primary hydrocyclone design condition is 176 M3/Hr (including 10% margin) and as per specification additional 10% margin means, primary hydrocyclone shall be designed at 195 M3/Hr capacity, please confirm the capacity.	Design condition Primary hydrocyclone capacity -176 m3/hr.(including 10 % margin)
18	TECHSPECPART1	7.07.00	46 of 420	Waste Water System	Excluded from DELKOR scope.	BHEL specification is clear regarding scope demarcation. Refer PIDs.
19	TECHSPECPART1	12.02.00	51 of 420	All the pipes handling slurry shall be provided with replaceable rubber lining of proven quality. The Contractor can provide slurry pipes size up to 400NB made up of FRP material as per ASTM 2310 and testing as per ASTM B2583 (silicon carbide coating on slurry exposed surface) if it has previous experience of providing the same. Outer surface of the pipes should be fire retardant.	As per TECH SPEC PART2 clause no 1.0.III.a) page no 139 of 158, The slurry pipes shall be lined with replaceable wear resistant natural rubber lining of minimum 6 mm thickness. Additional thickness of 2 mm in rubber lining shall be provided at bends. The bidder can provide slurry pipes of size lower than 300 NB made up of FRP material (silicon carbide coating on slurry exposed surface). Kindly clarify the size range need to consider for FRP material pipes.	The Contractor can provide slurry pipes size up to 400NB made up of FRP material as per ASTM 2310
20	TECHSPECPART1	14.02.00	53 of 420	Equipments requiring monitoring during regular operation shall be approachable from the ground floor through staircase. Staircase with minimum width of 1200 mm shall be provided for approach to elevated structures at 5m height from the nearest platform. Below this height a vertical ladder with minimum clear width of 600 mm may also be acceptable.	As per enquiry document, platforms and staircase for Hydrocyclone and HBF are in bidder scope, others platform and staircase is in client scope, please confirm.	Refer reply at sl no. 10 above.
21	TECHSPECPART1	11.00.00	99 of 420	A cast iron or welded steel base plate shall be provided for all rotating equipment which is to be installed on a concrete base,	Base frames for all pumps and vacuum pumps shall be MS Fabricated painted.PI confirm Also the Hold down/Anchor fasteners for foundations shall be MS painted.PI confirm	Noted. Bidder to meet the system requirement.
22	TECHSPECPART1	19.00.00	102 of 420	COLOUR CODE FOR ALL EQUIPMENTS/ PIPINGS/ PIPE SERVICES	Vendor bought out equipments shall be as per vendor standards of colour coding and painting specs?.PI confirm	Details shall be finalized during detailed engineering
23	TECHSPECPART1	28.00.00	117 of 420	TRAINING OF EMPLOYER'S PERSONNEL	Excluded from DELKOR scope.	Bidder to follow specification
24	TECHSPECPART1	7.15.00	181 of 420	The size and number of cables (for HT motors) to be intimated to the successful Contractor during detailed engineering and the Contractor shall provide terminal box suitable for the same.	It will be decided by manufacturer according to the frame size	During detail engineering bidder will inform the size and number of cables as per their equipment rating/s. BHEL shall select the cable size as available from the procured lot and inform the same. Bidder shall provide terminal box suitable for the same.
25	TECHSPECPART1	9	221 OF 420	All transmitters shall be suitably grouped together and mounted inside (i) Local Instruments Enclosures (LIEs) in case of open areas of the plant and (ii) In Local Instrument Racks (LIRs) in case of covered areas.	Pressure and Flow transmitters are mounted on LIE/LIR. Level transmitters are not applicable	Noted.
26	TECHSPECPART2		5 of 158	In the layout drawing, Filtrate extraction pump is directly connected to the Vacuum receiver and in Page no 5 of 158 filtrate extraction pump is connected to vacuum receiver tank.	Bidder will propose seal pot (vacuum receiver tank arrangement as shown in Scheme No.: PE-FEP-00 of Page No (19 of 158) in the ground floor and filtrate extraction pump arrangement as shown in the Bidder layout.	Same shall be decided during detail engineering.
27	TECHSPECPART2		21 of 158	ANNEXURE-V. MASTER DRAWING LIST WITH SCHEDULE OF SUBMISSION	Document submission to client will be as per DELKOR VDR sheet only. (please refer VDR Sheet attachment)	Applicable list of drawings/documents for submission during detail engineering has been enclosed. Bidder to follow the same.

CORRIGENDA-02**Tender Ref No.: PE/PG/KAG/E-6736/2021 dated 31.08.2021**

ANNEXURE-1					
PRE-BID CLARIFICATION SCHEDULE					
S.NO.	SECTION	CLAUSE	PAGE NO.	STATEMENT OF THE REFERRED CLAUSE	CLARIFICATION REQUIRED
28	TECHSPECPART2	3	25 of 158	Only manual calculation with authentic supporting literature (e.g. extracts of hand Book/ standard/codes) shall be acceptable. All design calculations and drawings shall be in SI system only.	BHEL reply Noted. However, all calculations shall be with authentic supporting literature (e.g. extracts of hand Book/standard/codes) shall be acceptable. All design calculations and drawings shall be in SI system only.
29	TECHSPECPART2	1.0.II	137 of 158	Design and construction of various components of the pumps shall conform to the following general specifications. For material of construction of the components, data sheets shall be referred to.	Please refer clause no. 4.0.0 (page 32 of 576) regarding MOC of vacuum pump.
30	TECHSPECPART2	V.C	140 of 158	The slurry pumps shall be provided with motorized suction and discharge valves. In addition, flushing water lines with motorized valves shall be provided for each pump for automatic flushing of the pump after each shut down.	Pneumatic valves are acceptable.
31				Approved Vendor List	Sub-vendor list submitted by bidder after placement of order shall be reviewed and shall be subjected to end customer approval.

Name of the Bidding Firm / Company :															
ANNEXURE-I : MAIN SUPPLY															

PRICE SCHEDULE NOTES:
1) Bidder to note that above BOQ for this tender has to be read in conjunction with tender specification. Any item, if not mentioned in above BOQ but indicated in tender specification and required for completion of the system shall deemed to be included in above price.
2) Referring to Clause no. 2.1.1.9 (ii) sheet 4 & 5 of 19, Sub-section-C1, Section-I of the Specification; Interconnected piping (slurry, air and water pipes) along with valves, rubber lining (wherever applicable), supports, gaskets, fasteners and accessories which is non integral to Gypsum dewatering system are limited to engineering only and supply shall be made by BHEL. Engineering includes layout & routing of pipes, preparation of isometric drawing and BOQ.

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

NUMBER #	TEXT #	Item Description	NUMBER #	TEXT #	NUMBER #	TEXT #	UNIT EX-PRICE (To be entered by the Indian Bidder in INR) OR UNIT C&F CHENNAI PRICE (To be entered by Foreign Bidder in foreign currency)	NUMBER #	FREIGHT RATE (To be entered by the Indian Bidder only) OR TOTAL C&F CHENNAI PRICE	NUMBER #	FREIGHT AMOUNT	TEXT #	GST RATE (To be entered by the Indian Bidder only) OR (For Foreign Bidder= TOTAL C&F CHENNAI PRICE)	NUMBER #	GST AMOUNT	NUMBER #	TOTAL AMOUNT Without Taxes (For Indian Bidder=TOTAL EX-WORKS + FREIGHT) OR (For Foreign Bidder= TOTAL C&F CHENNAI PRICE)	NUMBER #	TOTAL AMOUNT With Taxes	TEXT #	TOTAL AMOUNT In Words
1	2	BREAK-UP OF MAIN SUPPLY ITEMS	4	5	7	12	13	14	15	16	18	20	21	53	54	55					
1.01		Primary hydro cyclone comprising of hydrocyclone clusters, anchor bolts, nuts and washers, flanges for inlet and overflow, a variety size of vortex finders for all the hydro cyclone, accessory piping within the said to make the system complete.	2.00	SET	INR			0.0000		0.0000			0.0000		0.0000		0.0000		0.0000	INR Zero Only	
1.02		Secondary hydro cyclone comprising of hydrocyclone clusters, anchor bolts, nuts and washers, companion flanges for inlet and overflow, variety size of vortex finders for all the hydro cyclone & accessory piping within the said to make the system complete.	2.00	SET	INR			0.0000		0.0000			0.0000		0.0000		0.0000		0.0000	INR Zero Only	
1.03		Vacuum belt filter complete with accessories, maintenance platform with staircase, holding-discharge-chute and driving motor (IE3) with VFD & inverter panel, coupling along with guard.	2.00	NOS	INR			0.0000		0.0000			0.0000		0.0000		0.0000		0.0000	INR Zero Only	
1.04		Vacuum receivers with anchor bolts, nuts and washers.	2.00	NOS	INR			0.0000		0.0000			0.0000		0.0000		0.0000		0.0000	INR Zero Only	
1.05		Vacuum pumps with drive (IE3 motor) along with all connecting bolts/nuts/washers, foundation bolts for installation, coupling along with guard, required instruments and safety device (as required).	2.00	NOS	INR			0.0000		0.0000			0.0000		0.0000		0.0000		0.0000	INR Zero Only	
1.06		Vent fan including enclosure along with drive motor (IE3), coupling along with guard	2.00	NOS	INR			0.0000		0.0000			0.0000		0.0000		0.0000		0.0000	INR Zero Only	
1.07		Complete arrangement for cloth and cake washing arrangement, cloth and cake wash pumps with motors (IE3), coupling along with guard, associated piping, valves, spray nozzles & accessories	1.00	LOT	INR			0.0000		0.0000			0.0000		0.0000		0.0000		0.0000	INR Zero Only	
1.08		Complete arrangement of Filtrate extraction pumps with motors (IE3), coupling along with guard, suction and discharge valves, instrumentation etc. to make system complete.	1.00	LOT	INR			0.0000		0.0000			0.0000		0.0000		0.0000		0.0000	INR Zero Only	
1.09		Complete arrangement of Vacuum pump seal water sump pumps with motors (IE3), valves, coupling along with guard(as applicable), instrumentation etc. to make system complete.	1.00	LOT	INR			0.0000		0.0000			0.0000		0.0000		0.0000		0.0000	INR Zero Only	
1.10		Complete interconnected piping (slurry, air and water pipes) along with valves, rubber lining (wherever applicable), supports, gaskets, fasteners and accessories which is integral to Gypsum dewatering system as defined in technical specification, Section I, Sub-section-IC, Clause no. 2.1.1.9 (i).	1.00	LOT	INR			0.0000		0.0000			0.0000		0.0000		0.0000		0.0000	INR Zero Only	
1.11		Complete instruments associated with equipment and integral piping as defined at 1.10 above for Gypsum Dewatering System	1.00	LOT	INR			0.0000		0.0000			0.0000		0.0000		0.0000		0.0000	INR Zero Only	
Total In Figures																	0.0000		0.0000	Zero Only	
Quoted Rate in Words																	0.0000		0.0000	Zero Only	

Tender Inviting Authority: BHEL-PEM

Name of Work: GYPSUM DEWATERING SYSTEM (VACCUUM BELT FILTER TYPE)

Tender Ref No: PE/PS/KAG/E-6736/2021 Dt. 31.08.2021

Name of the Bidding Firm / Company :

Coulmn 7 refers to coulumn with heading "Power Consumption (KW)" .

GUARANTEED POWER CONSUMPTION FORMAT

NOTES:

1) Power consumption (KW) of motors shall be measured at motor input terminals when the system operating at the rated capacity. For this purpose, the drives of standby equipment shall not be considered.

2) Base aux power is 283.2 KW.

3) The total guaranteed power consumption quoted by the bidders at column no. (7) shall be loaded at the rate of INR 143844 per KW for the differential power quoted over the base aux power as mentioned at S.N. 2 above.

4) Guaranteed Power Consumption in this Format shall be submitted in sealed envelope along with price bid as part of techno commercial offer. However along with unpriced format bidder shall submit a statement of Power Consumption in this Format along with the bid.

5) Power quoted by bidder shall be termed as "Guaranteed Power consumption" (GPC) and bidder shall be liable to demonstrate compliance to GPC value during PQ test/ Demonstration test at site. If the actual power consumption exceeds the quoted guaranteed power consumption, then the contractor shall carry out all necessary modifications and/or replacements to make the equipments/system comply with the guaranteed power consumption at no extra cost to the NTPC/BHEL and reconduct the performance guarantee test with NTPC/BHEL consent.

6) In case the actual power consumption during performance test still does not meet the guaranteed power consumption within 30 days or a reasonable time period allowed by NTPC/BHEL, NTPC/BHEL shall have the right to reject the equipment and recover from the successful bidder the payments already made or

a) Accept the equipment/system/plant after levying Liquidated damages at the rate of INR 143844 per KW excess power consumption over the guaranteed power consumption indicated by the bidder in his bid. Such liquidated damages may be recovered by BHEL by deduction from the contract price or by enforcing the contract performance guarantee or in any other manner deemed fit by BHEL.

b) Additional cost required to be incurred by BHEL for replacement of vacuum belt filter, complete system, or any other equipment shall be borne by the bidder.

c) GPC "Vacuum Belt Filter" shall be as per their proven design to meet complete operations and is operating on continuous basis, shall be considered under S.N. 1 in the format.

(This template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender.

Bidders are allowed to enter the Bidder Name and Values only)

NUMBER #	TEXT #	NUMBER #	NUMBER #	NUMBER #	NUMBER #	TEXT
Sl. No.	Item Description	Quantity (Working)	Standby	Duty Factor	Power Consumption (KW) (at motor input terminal)	Power Consumption (KW)
1	Vacuum Belt Filter	4	6	7	13	53
		1.00	1.0000	1		0.0000
2	Vacuum Pump	1.00	1.0000	1		0.0000
3	Cake Wash Pump	1.00	3.0000	1		0.0000
4	Belt Filter Wash Pump	1.00	3.0000	1		0.0000
5	Belt Filter Vent Fan	1.00	1.0000	1		0.0000
Total in Figures						0.0000
Quoted Rate in Words						

KAHALGAON TPP FGD		ANNEXURE-V MASTER DRAWING LIST			
Vendor Drawing / Documents for Gypsum Dewatering System (GDS)					
SN	Doc / Dwg No.	Drawing Title	Remarks		No. of weeks from LOI
			Type*		
1	PE-V0-481-571-A901	Sub-Vendor List of Components for GDS.	Primary	Basic Engineering drawings/ Documents (Primary dwg/docs)	4
2	PE-V0-481-571-A902	Manufacturing Quality plan of GDS	Primary		4
3	PE-V0-481-571-A903	P & I Diagram with Bill of quantity (BOQ) of GDS.	Primary		3
4	PE-V0-481-571-A904	Control Philosophy of GDS.	Primary		6
5	PE-V0-481-571-A905	Design Philosophy of complete GDS.	Primary		3
6	PE-V0-481-571-A906	General Arrangement Drawing of Gypsum Dewatering System	Primary		6
7	PE-V0-481-571-A907	Sizing calculations of (a) VBF, (b) Vacuum Receiver, (c) Vacuum Pump, (d) Belt Wash Pump, (e) Cake wash Pumps, (f) Drives and (g) other Accessories for GDS.	Primary		3
8	PE-V0-481-571-A908	General Arrangement Drawings of VBF including cross-sectional details, foundation plan and load details.	Primary		6
9	PE-V0-481-571-A909	Datasheet of Vacuum Belt Filter & all accessories of GDS.	Primary		8
10	PE-V0-481-571-A910	Piping Layout (Integral-Vendor Scope) with supports & fixing arrangement with BOQ for GDS.	Primary		10
11	PE-V0-481-571-A911	Piping Layout (Non Integral - BHEL Scope) with supports & fixing arrangement with BOQ for GDS.	Primary		10
12	PE-V0-481-571-A912	Instrument schedule along with GA & Data sheet for GDS.	Secondary		
13	PE-V0-481-571-A913	Data Sheet of Instruments of GDS	Secondary		
14	PE-V0-481-571-A914	Valve schedule for GDS.	Secondary		
15	PE-V0-481-571-A915	GA & Data sheet of Valves for GDS.	Secondary		
16	PE-V0-481-571-A916	Piping Isometric (Integral-Vendor Scope) with supports & fixing arrangement with BOQ for GDS.	Secondary		
17	PE-V0-481-571-A917	Piping Isometric (Non Integral - BHEL Scope) with supports & fixing arrangement with BOQ for GDS.	Secondary		
18	PE-V0-481-571-A918	Block logic diagram & Inter-Connection drawing of GDS.	Secondary		
19	PE-V0-481-571-A919	General Arrangement Drawings of (a) Vacuum Pump, (b) Vacuum Receiver, (c) Hydrocyclones (Primary & Secondary), (d) Belt Wash Pump, (e) Cake Wash Pump & (f) Vent Fan, along with cross sectional details, foundation plan and loading details.	Secondary		
20	PE-V0-481-571-A920	Cable Schedule of GDS.	Secondary		
21	PE-V0-481-571-A921	Electrical load List for GDS.	Secondary		
22	PE-V0-481-571-A922	Local Panel Control Circuit Diagram of GDS.	Secondary		
23	PE-V0-481-571-A923	General Arrangement Drawing & Data sheet of Motors for GDS.	Secondary		
24	PE-V0-481-571-A924	T-S & Performance curves of Vacuum Pump for GDS.	Secondary		
25	PE-V0-481-571-A925	I/O List (Drives & Instruments) of GDS.	Secondary		
26	PE-V0-481-571-A926	Utility Consumption of GDS.	Secondary		
27	PE-V0-481-571-A927	Schedule for Lubrication and other Consumables.	Secondary		
28	PE-V0-481-571-A928	Painting Schedule of GDS	Secondary		
29	PE-V0-481-571-A929	Bill of Material (BOM) of complete GDS for Main Supply	Secondary		
30	PE-V0-481-571-A929	Mandatory Spare List & BBU of GDS	Secondary		
31	PE-V0-481-571-A930	Platform Drawing of GDS with detailed BOQ	Secondary		
32	PE-V0-481-571-A931	Overall space and headroom requirement with details of handling during Erection, operation & maintenance of the equipments of GDS	Secondary		
33	PE-V0-481-571-A933	Erection & Commissioning Manual of GDS including- i. Installation and assembly procedure of complete GDS ii. Pre-Commissioning Check List of GDS	Secondary		
34	PE-V0-481-571-A934	Operation & Maintenance (O&M) Manual of GDS including Transportation and Storage Specification for GDS Components	Secondary		
35	PE-V0-481-571-A935	Schedule of Start-up & Commissioning Spares for GDS	Secondary		
36	PE-V0-481-571-A936	List of Special tools & Tackles for GDS	Secondary		
37	PE-V0-481-571-A938	Monthly Progress Report for GDS	Secondary		
38	PE-V0-481-571-A939	Packing List for complete GDS	Secondary		
39	PE-V0-481-571-A941	Performance Test Procedure of GDS	Secondary		

*Manufacturing Clearance to be given to the Vendor based on approval of 'Primary' Drawings.

*All other notes indicated in BHEL technical specification PE-TS-481-571-A001

*Secondary drawings are to be submitted within 2-3 weeks after approval of relevant primary drawings.