

**Request for Proposal
for**

**Boiler and ESP Package for Overhaul of GMDC's 2X125 MW
Akrimota Thermal Power Station (ATPS), Gujarat**

Answer to Pre-Bid Queries and Corrigendum – III



**Gujarat Mineral Development Corporation Limited
Khanij Bhavan, 132-Ring Road, Gujarat University Ground,
Vastrapur, Ahmedabad- 380052**

Pre-Bid Meeting Date: 23rd August 2023

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Responses to pre-bid queries

Sr. No.	Clause No	Description of clause	Pre-bid query/clarification	Response / Addendum / Corrigendum (If any)
1.	5.1, Part 3	Pre-qualification criteria	<p>We understand that the supporting documents required should belong to the bidder or the third party hired by the bidder for site repair/replacement work.</p> <p>Bidder request to amend clauses as follows: Valid Special Grade Boiler <u>Manufacturer / Repairer / Erector License</u> under the purview of Indian Boiler Regulations, 1950 issued by the Directorate of Boilers, Gujarat, or statutory authorities of any other states of India.</p>	<p>Bidder must submit supporting documents issued to them as Valid Special Grade Boiler <u>Manufacturer / Repairer / Erector License</u> under the purview of Indian Boiler Regulations, 1950 issued by the Directorate of Boilers, Gujarat, or statutory authorities of any other states of India.</p> <p>Successful Bidder shall submit an undertaking that sub-contractors shall have valid licenses issued by the Directorate of Boilers, and submit the relevant documents at the time of overhaul execution.</p>
2.	5.1, Part 3	Pre-qualification criteria	<p>Bidder request to amend clauses as follows: Minimum one project undertaken involving design, engineering, supply or overhauling of boilers above 120 kg/cm² for coal/lignite thermal power plants.</p>	<p>Pre-qualification criteria amended as follows: Minimum one project undertaken involving design, engineering, supply or overhauling of boilers above 120 kg/cm² for coal/lignite thermal power plants. Bidder shall submit relevant supporting documents as defined in the RfP.</p>
3.	5.1, Part 3	Pre-qualification criteria	<p>We understand that for pre-qualification similar works definition also includes Boiler with capacity of 200 TPH or higher for any process industry.</p>	Yes
4.	5.1.4, Part 2	Quantity Variance Mechanism	<p>Please note that bidder will supply the material as per BOQ mentioned in Annexure 2 under Category 2. Quantity variation on minus side is not acceptable as the bidder would have supplied the material prior to overhauling.</p>	As per RfP

Sr. No.	Clause No	Description of clause	Pre-bid query/clarification	Response / Addendum / Corrigendum (If any)
5.	5.1, Part 2	Quantity Variance Mechanism	Please clarify for Category B items.	Correction, point 4 of Clause 5.1 to be read as follows: Quantity variance shall be applicable on Category 2 items up to a limit of 15% (fifteen percent) of the lumpsum price for supply of material and lumpsum price of execution of Overhaul for Category 2 items / activities (both on plus and minus side)
6.	5.2, Part 2	Quantity Variance Mechanism	Quantity variation on minus side is not acceptable as the bidder would have supplied the material prior to overhauling.	As per RfP
7.	7.2, Part 2	Desired Outcome Parameters	Bidder is not carrying out any design related work and only supplying material as per customer provided specifications / drawings therefore performance related clause is not applicable for Boiler.	As per RfP
8.	7.2, Part 2	Desired Outcome Parameters	Guarantees for So2 and Nox are related to Boiler design and hence no performance related clause is applicable for this. Mercury content is not mentioned in the fuel analysis as well as there is no system installed / requested in the bid for controlling mercury.	The revised outcome parameters for ESP have been detailed in Annexure 2 of this corrigendum.
9.	9.1.2, Part 2	Performance-based KPIs	For limestone consumption: Bidder is not carrying out any design related work and only supplying material as per customer provided specifications/ drawings therefore guarantee of Limestone consumption is not applicable.	The Successful Bidder shall be given a tolerance of 5 TPH, i.e., up to 60 TPH; Liquidated damages of INR 18 Lakhs per 1 TPH increase in limestone consumption over and above 60 TPH.
10.	Annexure 2	Spares for Boiler Overhaul	Drawings required for loop seal bellow, furnace nozzle, 2 nd pass inlet bellow, cyclone inlet bellow, cyclone outlet bellow, vortex, refractory, duct	Drawings / documents / specifications have been attached as part of Annexure 1 of this Corrigendum

Sr. No.	Clause No	Description of clause	Pre-bid query/clarification	Response / Addendum / Corrigendum (If any)
11.	Annexure 2	Spares for Boiler Overhaul	Design temperature and pressure required for Aux Boiler startup vent and MS line	Drawings / documents / specifications have been attached as part of Annexure 1 of this Corrigendum
12.	Annexure 2	Spares for Boiler Overhaul	Design specifications required for bag filters, mill balls, screw pumps, HAG burner, along with GADs, P&ID, flow diagram, etc.	Drawings / documents / specifications have been attached as part of Annexure 1 of this Corrigendum
13.	Annexure 2	Spares for Boiler Overhaul	Detailed specifications required for Hot Water Pump motor (Plan 13)	Hot Water Pump Motor: 3- ϕ squirrel cage induction motor, KW-69, 415Volt, 50HZ, Full Load Current-112Amp., RPM-2975, Frame size-1LA6 280 - 2AC90 Z 280S, Mounting - Foot mounted, COS Phi-0.90, IP 55, Make-Siemens make (One to one replacement)
14.	Annexure 2	Spares for Boiler Overhaul	Data sheet required for heat tracing ckt cable (Plan 16)	As per RfP
15.	Annexure 2	Spares for Boiler Overhaul	Makes, specifications, and data sheets required for field instruments (Plan 17)	The revised BOQ for Plan 17: C&I has been detailed in Annexure 3 of this corrigendum.
16.	Annexure 3	Spares for ESP	Makes, specifications, and data sheets required for ESP	<p>The Successful Bidder shall design, supply, install, and commission all internal components of the ESP to meet the desired outcome parameters defined in Section 7.2 of the RfP.</p> <p>The make, specifications, etc. shall be as per the Successful Bidder's choice. An indicative list of spares has been provided in Annexure 3 of the RfP.</p>
17.	3.1.2.3	Overhaul Plan	Supply of material shall be considered only as per Annexure 2 and not as per clause 3.1.2.3.	Supply of material shall be as per Annexure 2. Provision of services shall be as per Clause 3.1.2.3
18.	7	Performance Guarantee Testing	1. As we are not changing the design of Boiler we would exclude guarantee on Boiler efficiency & other parameters as mentioned in Boiler section	As per RfP

Sr. No.	Clause No	Description of clause	Pre-bid query/clarification	Response / Addendum / Corrigendum (If any)
			<p>of clause 7.2.</p> <p>2. Inlet parameters shall be considered as a design basis and if any change in the same is observed our guarantees shall be varied accordingly for ESP.</p> <p>3. As we are not changing the design of Boiler we would exclude auxiliary power consumption.</p>	
19.	7.3	Notice of test	Parameters can be only noted in presence of our engineer.	As per RfP
20.	–	–	Data required shall be provided by client in soft/hard copy. No site visit for missing data shall be carried out. If any data is missing or not available which needs to be supplied as per scope or indirectly required, must be provided by clients and is his responsibility. Any delays in providing data shall impact the project schedule and delay shall be informed accordingly.	As per RfP
21.	–	–	Any obsolete component part which is not available in market which calls for complete replacement of equipment shall inform to client. Any specification to be prepared for the same is in client's scope. These items shall be excluded from bidder's scope.	As per RfP
22.	–	–	Any proprietary item of OEM shall be excluded from bidder's scope.	As per RfP
23.	Annexure 2	Spares for Boiler Overhaul	Kindly confirm the qty mentioned are for one unit or both units.	Quantity mentioned are for both units.

Annexure 1: General Arrangement Drawings and Technical Data Sheets

Bidders can refer to the drawings uploaded in the below link to access the documents, drawings, and technical data sheets for Boiler and ESP.

Link:

https://gmdcltd-my.sharepoint.com/:f/g/personal/jndave_gmdcltd_onmicrosoft_com/EuSHBcaKEVdLI0u5m8XqRn_wBj9axsAOlsuW7ifx5vmvqw?e=JRczf8

Annexure 2: Desired Outcome Parameters – ESP

The revised set of desired outcome parameters for ESP as per Clause 7.2 of the RfP are detailed below:

S. No	Parameter	Desired outcome (For each Unit)	Tolerance
ESP			
1	Particulate matter (with limestone feeding in operation)	30 mg/Nm ³	
2	ESP efficiency <i>(At design inlet dust load of 205 gm/Nm³ and emission of 30 mg/Nm³, (wet basis, actual O₂%)</i>	99.985%	- 0.01%
3	Auxiliary Power Consumption <i>(Including SIR and TR corona power, hopper heater power, rapping motor power, insulator purge system power)</i>	525 KW	+ 2%
4	Pressure drop across ESP	20 mmWC	+ 2%
5	Air leakage across ESP	2.6 m ³ /sec (1% of design inlet gas flow)	+ 5%

Annexure 3: Spares for Boiler Overhaul (Plan 17: C&I)

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
1	Gravimetric feeder-2A	Load cell	LOAD CELL ACCESSORIES (DRAGLINK ACCESSORIES), STOCK OR EQUIVALENT LOAD CELL FOR STOCK GRAVIMETRIC FEEDER LPG32, STOCK PART NO.: C18305-5, MAKE: STOCK EQUIPMENT COMPANY	Nos	2	Unit 2	Y	
2	Gravimetric feeder	Speed sensor	SPEED SENSOR FOR STOCK GRAVIMETRIC FEEDER LPG32, STOCK PART NO.: FE13045, MAKE: STOCK EQUIPMENT COMPANY	Nos	2	Unit 1 and 2	Y	
3	Ash cooler phe	PHE temp control valve positioner	ELECTROPNEUMATIC POSITIONER, TYPE:2 WIRE SINGLE ACTING, MODEL: 6DR5010-ONG00-0AA0, INPUT: 4 TO 20 MADC, OUTPUT: 3 TO 15 PSI, SUPPLY: 1.4 TO 7BAR, PNEUMATIC CONNETION: G1/4", ELECTRICAL CONNECTION:M20X1.5, WEATHERPROOF IP65MAKE: SIEMENS WITH FEEDBACK CARD	Nos	2	Unit 1 and Unit 2	Y	
4	Lignite draglink	Lignite draglink conveyor speed sensor	ENCODER FOR SPEED MEASUREMENT, MODEL NO.:RO-0360-I24/N1U, ID. NR. 315 161-06, RO6343, SUPPLY 10V...30 VDC / 360 PULSES EQUIVALENT NO.: 10 659 727A , MAKE: IFM ELECTRONICS, APPLICATION: LIGNITE DRAGLINK	Nos	2	Unit 1 and Unit 2	Y	
5	TAPH	Thermocouple	THERMOCOUPLE, TYPE: MINERAL INSULATED DUPLEX K- TYPE, CLASS II AS PER IEC 584, WITH 2.8MM DIA INCONEL 600 SHEATH. OPEN END PROVIDED WITH A CRIMP ON POT & PTFE INSULATION LEAD WIRES, 7X0.2MM, INDIVIDUALLY & OVERALL PTFE INSULATED,AND SS FLEXHOSE, LENGTH: 5MTR,	Nos	20	Unit 1 and Unit 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			UNGROUNDING HOT JUNCTION, PROCESS CONNECTION:1/2"NPT(M),ROUTE LENGTH RL=5000MM, LEAD WIRE LENGTH: 5000MM, CODE: 100 SERIES 2-K-2.8-INC 600-CJT 201-RL-B-P-OP 30, MAKE: PYROELECTRIC ,GOA/ EQUIVALENT					
6	Control valve	Control Valve (Reheater and superheater valve)	PROXIMITY SWITCH FOR POSITION TRANSMITTER MODEL RMGPSCAM-2090150, MAKE:RMG	Nos	10	Unit 1 and 2	Y	
7	Control valve	Gland sealing and BFP RC control valve	INTELLIGENT POSITIONER , MODEL NO : TZID-C , TYPE : VI 8345- 101021001, SR. NO : 527824, SUPPLY PRESSURE : 1.4 TO 6 BAR, INPUT : 4 - 20 MA, MAKE: ABB WITH FEEDBACK CARD	Nos	5	Unit 1 and 2	Y	
8	PRDS station	PRDS high pressure side pressure and BFP discharge pressure transmitter.	PRESSURE TRANSMITTER , MODEL: EJA440E-JCS5J-912EB , MEASUREMENT SPAN : 50 to 320 BAR , MAKE : YOKOGAWA	Nos	4	Unit 1 and 2	Y	
9	FRS station	FRS DP transmitter	PRESSURE TRANSMITTER , MODEL:EJA110E-JVS5J-912EB/HG , MEASUREMENT SPAN: 1.4 to 140 BAR , MWP: 25 MPA , MAKE : YOKOGAWA	Nos	6	Unit 2	Y	
10	Feed water and steam flow	Feed water and steam flow transmitter	DP TRANSMITTER , MODEL: EJA110E-JMS5J-912EB, MEASUREMENT SPAN: 100 to 10000 MMH2O ,MWP: 16 MPA,MAKE : YOKOGAWA, Cal Range: 0 to 10000 mmh2o	Nos	6	Unit 2	Y	
11	Control valve	SH & RH attemperator control valve positioner	ELECTRO PNEUMATIC POSITIONER 3582 I POSITIONER ASSEMBLY ITEM CODE: FS3582I - 139-G1 PART NO.:P/N FS35821-53-G1 INPUT SIGNAL:4-20MA DC ACTION DIRECT OUTPUT SIGNAL:6-30PSIG NOMINAL O/P 0-33 ACTUAL TRAVEL	Nos	5	Unit 1 and Unit 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			RANGE: GREATER THAN 0-2 1/8 INCH SUPPLY GUAGE:0-60 PSIG/0-4 KG CM2 O/P GUAGES:0-60 PSIG/ 0-4 KG/CM2 HAZARDUS AREA APPROVAL ATEX/LCIE IS APPROVAL CAM A					
12	IGV	Seal kit for ID fan IGV cylinder	SEAL KIT FOR PNEUMATIC ACTUATOR, SPECIFICATION: MAKE: EL-O-MATIC, MODEL NO: PD280 , FAIL OPEN, SR. NO.:5398,5396 , APPLICATION:ID FAN IGV.	Nos	4	Unit 1 and Unit 2	Y	
13	IGV	IGV Cylinder for SA fan IGV	PNEUMATIC ACTUATORS, TYPE: DOUBLE ACTING, MODEL NO.: PD2500 , FAIL OPEN, EQUIVALENT SR. NO.:761 & 762, APPLICATION: SA FAN IGV, MAKE: EL O MATIC	Nos	4	Unit 1 and Unit 2	Y	
14	IGV	Seal kit for PA fan IGV cylinder	SEAL KIT FOR PNEUMATIC ACTUATOR ,SPECIFICATION:MAKE:EL-O- MATIC,MODEL NO:PD4000,FAIL OPEN,SR. NO.:366,367 , APPLICATION:PA FAN IGV.	Nos	4	Unit 1 and Unit 2	Y	
15	IGV	IGV Cylinder for ID fan IGV	PNEUMATIC ACTUATORS, TYPE : DOUBLE ACTING, MODEL NO.: PD280, FAIL OPEN, EQUIVALENT SR. NO.:5398 & 5396, APPLICATION: ID FAN IGV, MAKE: EL O MATIC	Nos	4	Unit 1 and Unit 2	Y	
16	IGV	Seal kit for SA fan IGV cylinder	SEAL KIT FOR PNEUMATIC ACTUATOR ,SPECIFICATION: MAKE:EL-O- MATIC,MODEL NO:PD2500,FAIL OPEN,SR. NO.:761,762 , APPLICATION:SA FAN IGV.	Nos	4	Unit 1 and Unit 2	Y	
17	IGV	IGV Cylinder for PA fan	PNEUMATIC ACTUATORS, TYPE : DOUBLE ACTING, MODEL NO.: PD4000, FAIL OPEN, EQUIVALENT SR. NO.:366 & 367, APPLICATION: PA FAN IGV, MAKE: EL O MATIC	Nos	4	Unit 1 and Unit 2	Y	
18	Control valve	SH & RH attemperator control valve I/P	I/P CONVERTOR MODEL TEI P11 18311-0- 1822101 INPUT SIGNAL :4-20 MADDC, OUTPUT: 3 TO 15 PSI, CONNECTION:	Nos	10	Unit 1 and Unit 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			1/4"NPT(F) ,IP: 65, CHARACTERISTIC : LINEAR,ACCURACY : +/- 0.5%,AMBIENT TEMP. EFFECT : < 0.05%/K, ZERO & SPAN, DEAD BAND: +/- 0.5%, CABLE ENTRY:1/2"NPT(F), ENCLOSURE: DIE CAST ALU, AIR CONSUMPTION: 0.1SCFM, AIR CAPACITY:2.4SCFM, VIBRATION:1%UP TO 10G, FREQUENCY 10 TO 80 Hz, RESPONSE SENSITIVITY: -20 TO 85 DEG C, AMBIENT TEMP EFFECT: <0.05%/K, ZERO 7 SPAN, MAKE: ABB					
19	Ash Cooler valve	Ash Cooler valve 156 cylinder	PNEUMATIC POWER CYLINDER MODEL NO. TSA/8080/M/200/UF, MAKE:NORGEN., 156 valve	Nos	4	Unit 1 and Unit 2	Y	
20	Ash Cooler valve	Ash Cooler valve 152 cylinder	PNEUMATIC POWER CYLINDER, MODEL NO. TSA/8100/M/300/UF, MAKE:NORGEN', for 152 valve	Nos	4	Unit 1 and Unit 2	Y	
21	Ash Cooler valve	Ash Cooler valve 152 cylinder seal kit	SEAL KIT FOR PNEUMATIC POWER CYLINDER , MODEL: TSA/8100/00, MAKE: NORGREN	Nos	4	Unit 1 and Unit 2	Y	
22	Ash Cooler valve	Ash Cooler valve 156 cylinder seal kit	SEAL KIT FOR PNEUMATIC POWER CYLINDER , MODEL: TSA/8080/00, MAKE:NORGREN	Nos	4	Unit 1 and Unit 2	Y	
23	ID fan	ID Fan scoop positioner	PNEUMATIC POSITIONER FOR POWER CYLINDER MODEL - HTP ,POSITIONER MODEL: PCP001, MAKE: INSTRUMENTATION LTD.	Nos	4	Unit 1 and Unit 2	Y	
24	Bed Material Feeding System Valve	Bed Material Feeding System Valve Passing Seal Kit	SEAL KIT FOR PNEUMATIC CYLINDER MODEL: RA/8200/320/SER.B.,Q-200 mm --- 320MM 83DD, P 1-16 BAR, TMAX 80 DEG C MAKE: NORGREN APPLICATION : BED MATERIAL FEEDING SYSTEM VALVE	Nos	1	Unit 1 and Unit 2	Y	
25	Furnace	Pressure Transmitter	PRESSURE TRANSMITTER, RANGE : 0 TO 10 BAR R, CODE: 51GB295B312112, SUPPLY : 12 TO 24 VDC, OUTPUT: 4 TO 20	Nos	4	Unit 1 and 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			MA DC, CABLE LENGTH:- 3 METER,TRANSMITTER CONNECTION:1/2:NPT(M), MOUNTING: DIRECT,MAKE : ABB					
26	Drum and Main steam Pressure	Drum Pressure and main steam pressure transmitter	PRESSURE TRANSMITTER , MODEL: EJA440E-JCS5J-912EB , MEASUREMENT SPAN : 50 to 320 BAR , MAKE : YOKOGAWA	Nos	4	Unit 1 and 2	Y	
27	Burner system	Burner 1 igniter SOV	SOLENOID VALVE WITH COIL, MODEL: MFH/VL-5-1/815E6 (MFH5-1/8), CHAPTER ID - 84799090, PART NO. - 9982 CONNECTION : 1/8" BSP (F), COIL VOLTAGE : 24VDC, 4.5W, COIL MODEL : MSFG-24/42-50/60, 4527, MAKE : FESTO	Nos	20	Unit 1 and 2	Y	
28	Burner system	Igniter cylinder	AIR CYLINDER 600 MM EXPANSION, MODEL NO.:D-VE-562-11/024DC/N, SUPPLY:24WDC/6VA, IP 65, TEMP : -5 TO 50 DEG 'C, APPLICATION : IGNITOR ROD, MAKE : DURAG	Nos	2	Unit 1 and 2	Y	
29	Burner system	Igniter cylinder seal kit	GASKET KIT FOR RETRACTION UNIT, MODEL : D VE-562-11/024DC/N, PART NO : BVE500DI, MAKE DURAG	Nos	5	Unit 1 and 2	Y	
30	Burner system	Oil gun cylinder	SEAL KIT FOR OILGUN CYLINDER	Nos	5	Unit 1 and 2	Y	
31	Burner system	Oil gun cylinder seal kit	UNIVERSAL CYLINDER, MODEL NO.: DUJ 80/400 ,J 111000 / 800400, APPLICATION: BURNER OIL GUN MAKE: JOYNER	Nos	5	Unit 1 and 2	Y	
32	Burner system	Burner 1 oil gun SOV	SOLENOID VALVES, MODEL NO : 9601430082702400, VOLTAGE : 24 VDC, MAKE: NORGREN	Nos	20	Unit 1 and 2	Y	
33	Burner system	Burner 1 oil valve SOV	SOLENOID VALVES, MODEL NO : 0000000 303202400, MAKE: NORGREN	Nos	20	Unit 1 and 2	Y	
34	Burner system	Burner 1 steam valve SOV	SOLENOID VALVE , MODEL :2622200.0000.000.00, MAKE: NORGREN	Nos	20	Unit 1 and 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
35	Burner system	Ignitor	DURAG MAKE HIGH ENERGY IGNITION DEVICE, MODEL: D-HG 500-50-C-230 WITH 3.0M CABLE ,POWER SUPPLY: 230 VAC	Nos	4	Unit 1 and 2	Y	
36	Burner system	Ignitor tips	HIGH TEMP IGNITOR TIP , LENGTH: 593MM ,MODEL : BHG 400 ZUNSPHT , HIGH TEMPERATURE VERSION UP TO 1000 DEG C, MAKE: DURAG/DYNAMIC ENGINEERING WITH SR. NO. MUST BE ENGRAVED ON THE BODY OF THE TIP.	Nos	10	Unit 1 and 2	Y	
37	Burner system	Burner 8 gas flame scanner	IR FLAME SCANNER, OPERATIONAL MODE: CONTINUES ENCLOSURE G, AXIAL PPLUG TYPE M1, MODEL: D-LE 603 UA, PROTECTION CLASS:IP67, 1.5MTR. SILICON CABLE FOR BURNERS, APPLICATION: SUITABLE FOR LPG GAS, OIL AND LIGNITE, MAKE- DURAG.	Nos	1	Unit 2	Y	
38	Burner system	HFO flame scanner	IR FLAME SCANNER WITH SPECTRAL RANGE 300-1100NM, ENCLOSURE G, AXIAL PPLUG TYPE M1, MODEL: D-LE 603 IS - P, PROTECTION CLASS:IP67, 1.5MTR. SILICON CABLE FOR BURNERS, MAKE- DURAG.	Nos	6	Unit 1 and 2	Y	
39	Burner system	HFO flame scanner	ELECTROPNEUMATIC POSITIONER, TYPE:2 WIRE DOUBLE ACTING, MODEL: 6DR5020-ONG00-0AA0, INPUT: 4 TO 20 MADC, OUTPUT: 3 TO 15 PSI, SUPPLY: 1.4 TO 7BAR, PNEUMATIC CONNETION:G1/4", ELECTRICAL CONNECTION:M20X1.5, WEATHERPROOF IP65MAKE: SIEMENS WITH FEEDBACK CARD	Nos	5	Unit 1 and 2	Y	
40	Damper spare	Burner-6, Ash cooler flow control damper positioner	ELECTROPNEUMATIC POSITIONER, TYPE:2 WIRE DOUBLE ACTING, MODEL: 6DR5020-ONG00-0AA0, INPUT: 4 TO 20 MADC, OUTPUT: 3 TO 15 PSI, SUPPLY: 1.4 TO 7BAR, PNEUMATIC CONNETION:G1/4",	Nos	10	Unit 1 and 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			ELECTRICAL CONNECTION:M20X1.5, WEATHERPROOF IP65MAKE: SIEMENS WITH FEEDBACK CARD					
41	Damper spare	Burner flow control damper positioner for Burner 6	DOUBLE ACTING RELAY MODULE FOR SIEMENS MAKE POSITIONER, MODEL NO: 6DR5020-0NG00-0AA0 PART NO. C73451-A430- D81	Nos	4	Unit 2	Y	
42	Air flow control damper spare	Burner-1,3, 4 and 7 flow control damper positioner	New installation DOUBLE ACTING RELAY MODULE FOR SIEMENS MAKE POSITIONER, MODEL NO: 6DR5020-0NG00-0AA0 PART NO. C73451-A430- D81	Nos	4	Common	Y	
43	HFO and LDO system	HFO tank	New installation Dia:14 mtrs. Hight-10 mtrs. Capacity- 1500 kl density-0.951 mt/kl ,radar type		4	Common	Y	
44	HFO and LDO system	LDO tank	Dia- 9 mtr,ht-8 mtrs,radar type; Make: Electrical Equipment Corporation	Nos	2	Common	Y	
45	Lime Handling System	Pull Cord Switch	FLP PULL CORD SWITCH (MANUAL RESET TYPE) CONTACT -2NO+2NC , Rating- 10Amp., 550V, TYPE-EPC-1; Make: Electrical Equipment Corporation	Nos	116	Common	Y	
46	Lime Handling System	Belt Sway Switch	FLP BELT SWAY SWITCH (AUTO RESET TYPE) CONTACT -2NO+2NC ,RATING- 10Amp., 550V, TYPE- BSS-1	Nos	86	Common	Y	
47	Lime Handling System	Zero Speed Switch	FLAME PROOF ELECTRONIC SPEED SWITCH TYPE: RMP211/NITD/2FP,IP65, SUPPLY : 240 VAC,50Hz,INITIAL TIME DELAY:1-20SECS, NUISANCE TIME DELAY:1-20 SECS,O/P CONTACT: 1NO+1NC, CONTACT RATING: 5 AMP,SPEED RANGE: 20-200rpm, NO. OF FLAGS: 2IMP/REV, b) SENSOR PROBE TYPE: SP8.5B30,SUPPLY: 8.5 VDC, ENCLOSURE: SS, IP67, PROBE SIZE:M30X1.5PX65L, SENSING	Nos	12	Common	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			RANGE:9MM+/-10%(EFFECTIVE), 15MM +/-10%(NOMINAL), CABLE : 2CORE,0.4SQMM, 2MTR LONG PVC FLEX, MAKE: Scientific Controls Pvt Ltd					
48	Lime Handling System	Lime Impactor HT motor temperature gauge	TEMPERATURE GAUGE FOR HT MOTOR,RANGE: 0-120 DEG C, DIAL SIZE:150MM, BULB DIA /STEM : AISI316, 12MM OD / 87 MM LONG WITH 60MM IMERTION LENGTH COLLAR OD: 17 MM,CAPILLARY :3 MTR,	Nos	6	Common	Y	
49	Lime Handling System	Belt Sway And Pull Card Rope	ATPS ITEM CODE:0086766 WIRE,MULTI STANDARD FLEXIBLE ROPE ,WITH PVC	Nos	1000	Common	Y	
50	Lime ball valve	Seal kit	SEAL KIT FOR ACTUATOR ,MODEL ES 100 SET 6 , FAIL TO OPEN, MAKE: EL O MATIC	Mtr	2	Unit 1 and Unit 2	Y	
51	Lime ball valve	SOV	SOLENOID VALVES & COIL FOR LIME GATE VALVES,TYPE- 5/3 WAY CETER OFF DOUBLE, MODEL : 51408-6-2R + 220VDC-16-H COIL,ORIFICE - NW - 6MM, PRESSURE : 2 TO 10 BAR, WORK ORDER NO : 10785, TYPE : DOUBLE ACTING , NO. OF COILS : 2 NOS, PROCESS CONNECTION : 1/4" NPT(F), COIL VOLTAGE : 220VDC, SIZE : I, POWER CONSUMPTION : 8WATT, PROTECTION CLASS : IP67, POWER CONSUMPTION - 8 TO 9 WATTMAKE : ROTEX	Set	4	Unit 1 and Unit 2	Y	
52	Lime ball valve	Actuator	EL-O-MATIC MAKE BALL VALVE WITH ACTUATOR + LIMIT SWITCHES, OPEN SINGLE ACTING RACK & PINION, TYPE : ES100/3/A, EQUIVALENT TO SERIAL NO : 18319,SIZE : 1 1/2", CLASS 6, BALL VALVE SPESIFICATION - BODY : A351 GR. CF8, BALL/DISK : A351 GR. CF8, SEAT PTFE, SHAFT : SS304, RATING 150#, FULL BORE,	Nos	2	Unit 1 and Unit 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			SUITABLE FOR MOUNTING BETWEEN FLANGES AS PER ANSI B165, LEAKAGE CLASS- VI, 2 PIECE BODY FLOATING BALL , SCOPE - AUTMATION, ACTUATOR HARD ANODIZED ALUMINIUM, TYPE - RACK & PINION, AIR SUPPLY : 4.5 BAR, FAIL SAFE CONDITION - NORMALLY CLOSE, ACTUATOR SIZING - PRESSURE AS 15 BAR SOLENOID VALVE : 3/2 WAY NAMUR MOUNTING WEATHER PROOF, SOLENOID COIL VOLTAGE : 24 VDC, LIMIT SWITCH FOR OPEN & CLOSE : SPDT5A, 230 VAC					
53	Lime daybin	Level transmitter	ULTRASONIC LEVEL TRANSMITTER, MODEL : SC22 PT, MAKE : KISTLER MORSE	Nos	1	Unit 1	Y	
54	Lime mill lop	D.P. Gauge	DP gauge make: H.Guru South 0-2.5 bar model:120-s-0-0-p-c(Switzer)	Nos	3	Unit 1 and Unit 2	Y	
55	Lime mill lop	Pressure switch	Pressure Switch, GM 204 QM PBB 32, Range : 1.5 TO 4 KGS, Make: Switzer	Nos	2	Unit 1 and Unit 2	Y	
56	HAG system - 1	Air filter regulator	Air filter regulator , size:1/4 inch,model no : fpr – 3s,with ss drain; MAKE: Scientific Controls Pvt Ltd	Nos	2	Unit 1	Y	
57	Lime day bin- 1	Pressure Gauge	Pressure gauge , type: bourden tube, dial size: 150mm, range:0-10 kg/cm2 , process connection:1/2" npt(m),mounting: local,dial: white alluminium with black lettering,case material: ss304>window ; MAKE: Scientific Controls Pvt Ltd	Nos	2	Unit 1	Y	
58	Lime mill- 1 DE lop system	Pressure Gauge	Pressure gauge , type: bourden tube, dial size: 150mm, range:0-10 kg/cm2 , process connection:1/2" npt(m),mounting: local,dial: white alluminium with black lettering,case material: ss304>window; MAKE: Scientific Controls Pvt Ltd	Nos	2	Unit 1	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
59	Mill motor- 1 NDE	Temperature Gauge	Temperature gauge range: 0-120 deg c, case: heavy duty die cast alu , dial size:150mm,,junction box provided withtb at bottom entry of case,bulb dia /stem : aisi316, 12mm od / 87 mm long with 60mm imertion lengthwith collar fixed at 60mm form bottom of the bulb,capillary :3 mtr, sensor connection:- aisi ss 316, connection:1/4" bsp(m); MAKE: Scientific Controls Pvt Ltd	Nos	2	Unit 1	Y	
60	Lime mil- 1 DE / NDE	RTD	Rtd assembly,type-2,sheath length:300 mm,series:art 1003,head:cast aluminium,weather proof,black epoxy powder coated with screwed cover,chain & gasket as per ip-65,instrument entry:1/2"npt(f); MAKE: Scientific Controls Pvt Ltd	Nos	2	Unit 1	Y	
61	Lime mil- 1 DE / NDE	Temperature Gauge	Temperature gauge,type : bourden tube, model: 6hdsuw1, size : 150 mm, range : 0 - 120 deg c, stem length::200mm, stem dia:10mm, connection:1/2"bsp(m) adjustable,	Nos	2	Unit 1	Y	
62	Screw pump 1A	Speed sensor and controller	Electronic Speed Switch Type: RMP211/TP/CD/11/M30,Duty: Under Speed,IP65, Supply : 240 VAC,50Hz,Initial Time Delay:1-20secs, Nuisance Time Delay:1-20 secs,O/P Contact: 1NO+1NC, contact rating: 5 amp,Speed Range: 5-50rpm, No. Of Flags: 4imp/Rev, b) sensor probe type: SP8.5B30,Supply: 8.5 vdc, enclosure: SS, IP67, Probe Size:M30X1.5PX65L, Sensing Range:9mm+/-10%(effective), 15mm +/- 10%(nominal), cable : 2core,0.4sqmm, 2mtr long pvc flex, Make:Jayashree/Equivalent	Nos	2	Unit 1	Y	
63	Lime compressor conveying pressure	Pressure transmitter	Pressure transmitter, power supply:2 wire 24 vdc,loop powered, process connection: 1/2" npt(f) on manifolds, calibration range:-0 to 10bar,Output 4-20 mA, Make	Set	1	Unit 1 and Unit 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
	transmitter		Yokogawa/Emerson					
64	Lime compressor conveying pressure gauge	Pressure Gauge	Pressure gauge , type: bourden tube, dial size: 150mm, range:0-10 kg/cm2 , process connection:1/2" npt(m),mounting: local,dial: white alluminium with black lettering,case material: ss304>window	Nos	1	Unit 1 and Unit 2	Y	
65	Lime ball valve	Seal kit	Seal kit, make: elomatic, model:es1600	Nos	2	Unit 1 and Unit 2	Y	
66	Lime ball valve	SOV	SOV make: rotex, type:30310-3,5-2G-M1 coil-220 vdc	Set	4	Unit 1 and Unit 2	Y	
67	Lime ball valve	Actuator	Actuator double acting with sov make:elomatic, model:es1600,sov , make rotex,(one input-three output) type:30310 3,5-2g-m1 coil-220 vdc. Actuator not working condition;	Nos	2	Unit 1 and Unit 2	Y	
68	Lime daybin	Level transmitter	Level transmitter make: kistler-morse automation (ultra wave) sr.no.63-1232,63-1240	Nos	1	Unit 2	Y	
69	Lime weigh feeder-2	Tacho Sensor Assembly	TACHO SENSOR FOR LIME WF 141.75 MM JOB NO. 50.465,MAKE: FLSMIDTH,	Nos	1	Unit 2	Y	
70	Lime mill – 2 lop system	Pressure switch	Pressure Switch, GM 204 QM PBB 32, Range : 1.5 TO 4 Kgs, Make: Switzer	Nos	32	Unit 2	Y	
71	Lime mill – 2 lop system	Diff. Pressure switch	Differential pressure switch cum guage, power supply:240 vac, process connection: 1/4" npt(f) on manifolds fluid:oil, range:0 to 4 bar, make: switzer, model no:120s-0-0-p-c	Nos	3	Unit 2	Y	
72	Lime mill – 2 lop system	Pressure gauge	PRESSURE GAUGE(GLYCERINE FILLED),TYPE: BOURDON TUBE ,RANGE :- 0 TO 10 KG/CM2,CASE MAERIAL:SS 304, DIAL SIZE:100MM, CONNECTION:3/8"NPT(M) ,ACCURACY: +/- 1% FSD,	Nos	10	Unit 2	Y	
73	Lime mill – 2 lop system	Temperature gauge	TEMPERATURE GAUGE,TYPE : BOURDEN TUBE, MODEL: 6HDSUW1, SIZE : 150 MM,	Nos	5	Unit 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			RANGE : 0 - 120 DEG C, STEM LENGTH::200MM, STEM DIA:10MM, CONNECTION:3/4"BSP(M) ADJUSTABLE, ACCURACY:+/-1%FSD, BODY MATERIAL:SS316,					
74	Hag system	Ignitor set	Ignition electrode, application:hot air generator, cbl job no.:01948, make: Coen Bharat Ltd.	Nos	1	Unit 2	Y	
75	Hag system	Flame scanner	Iscan flame scanner (2653-213-12), non-flame proof with plug in cable, :hot air generator, cbl job no.:01948, make: Coen Bharat Ltd.	Set	1	Unit 2	Y	
76	Hag jack shaft actuator	Positioner	PNEUMATIC POSITIONER FOR POWER CYLINDER MODEL - HTP ,POSITIONER MODEL: PCP001, MAKE: INSTRUMENTATION LTD.	Nos	1	Unit 2	Y	
77	Bag filter purging system	Solenoid valve	SOLENOID VALVE,TYPE:5/2 WAY DIRECT ACTING NORMALLY CLOSED SINGLE SOLENOID, MODEL NO.:51400-6-2G-B2+220V-50Hz-15-H, END CONNECTION:1/4"BSP(F),MEDIA: AIR, OP.PR. 2-10 BAR, ORIFICE:NW=6MM,FLOW FACTOR:12LIT/MIN, SOLENOID COIL INSULATION CLASS:H, NO. OF SOLENOID:1,COIL SIZE:I,COIL VOLTAGE:220VAC, 6W,SEAT MOC: NBR, BODY MOC:BRASS, SOLENOID ENCLOSURE: TERMINAL BOX IP67, MANUAL OVERRIDE:PUSH TYPE, MAKE: ROTEX	Nos	10	Unit 2	Y	
78	Lime daybin	Pressure gauge	Pressure gauge , type: bourden tube, dial size: 150mm, range:0-10 kg/cm2 , process connection:1/2" npt(m),mounting: local,dial: white alluminium with black lettering,case material: ss304>window	Nos	1	Unit 2	Y	
79	Hag system	Copper tube	Copper tube, type: pvc coated,od:6mm ,	Mtr	20	Unit 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			id:4mm, moc: copper					
80	Hag system	Air filter regulator	Air filter regulator , size:1/4 inch,model no : fpr – 3s,with ss drain & adj. Screw make : Placka	Nos	1	Unit 2	Y	
81	Chain conveyor speed	Speed switch	Electronics speed controller, type : rm 2211/22/cc, sr. No : 56127, oa no : 8538, supply voltage : 110 vac, 50 hz, speed sensing range : rpm 50 to 500, range calibrated for 2 imp/rev, o/p contact rating : 6 amp, 240v, o/p contacts : 1no + 1nc, make : Jayshree Electron Pvt. Ltd.	Nos	1	Unit 2	Y	
82	Bag filter control damper	Air filter regulator	Air filter regulator , size:1/4 inch,model no : fpr – 3s,with ss drain & adj. Screw	Nos	1	Unit 2	Y	
83	Bag filter purging system	Pressure gauge	Pressure gauge , type: bourden tube, dial size: 150mm, range:0-10 kg/cm2 , process connection:1/2" npt(m),mounting: local,dial: white alluminium with black lettering,case material: ss304,window	Nos	1	Unit 2	Y	
84	RC fan control damper	I/P convertor	I/P CONVERTOR MODEL TEI P11 18311-0-1822101 INPUT SIGNAL :4-20 MADc, OUTPUT: 3 TO 15 PSI, CONNECTION: 1/4"NPT(F) ,IP: 65, CHARACTERISTIC : LINEAR,ACCURACY : +/- 0.5%,AMBIENT TEMP. EFFECT : < 0.05%/K, ZERO & SPAN, DEAD BAND: +/- 0.5%, CABLE ENTRY:1/2"NPT(F), ENCLOSURE: DIE CAST ALU, AIR CONSUMPTION: 0.1SCFM, AIR CAPACITY:2.4SCFM, VIBRATION:1%UP TO 10G, FREQUENCY 10 TO 80 Hz, RESPONSE SENSITIVITY: -20 TO 85 DEG C, AMBIENT TEMP EFFECT: <0.05%/K, ZERO 7 SPAN, MAKE: ABB	Nos	1	Unit 2	Y	
85	Lime mill DE lop	Pressure gauge	Pressure gauge(glycerine filled),type: bourdon tube ,range :- 0 to 10 kg/cm2,case maerial:ss 304, dial size:100mm, connection:3/8"npt(m)	Nos	1	Unit 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			,accuracy: +/- 1% fsd,					
86	Lime mill DE lop	Diff. Pressure gauge	DP gauge make: H.Guru South 0-2.5 bar model:120-s-0-0-p-c(Switzer)	Nos	1	Unit 2	Y	
87	Lime mill DE lop	Pressure switch	Pressure switch make: switzer pressure switch, 0 -7 Bar	Nos	2	Unit 2	Y	
88	Mill motor DE temp	Temperature gauge	Temperature gauge,type : bourden tube, model: 6hdsuw1, size : 150 mm, range : 0 - 120 deg c, stem length::200mm, stem dia:10mm, connection:1/2"bsp(m) adjustable,	Nos	1	Unit 2	Y	
89	Lime mill inlet pressure	Pressure gauge	Pressure gauge , type: bourden tube, dial size: 150mm, range:-250 to 0 mmh2o , process connection:1/2" npt(m),mounting: local,dial: white alluminium with black lettering,case material: ss304>window	Nos	1	Unit 2	Y	
90	Screw pump – 2A	Electronic speed switch	ELECTRONIC SPEED CONTROLLER, SR NO: RM E211/R3/2K2,MAKE:JAYSHREE ELECTRON PVT LTD.APPLICATION: LIME SYSTEM	Set	1	Unit 2	Y	
91	Lime feeding rotary -2A	Electronics speed controller	ELECTRONIC SPEED CONTROLLER, SR NO: RM E211/R3/2K2,MAKE:JAYSHREE ELECTRON PVT LTD.APPLICATION: LIME SYSTEM	Nos	1	Unit 2	Y	
92	Lime bunker	Radar type level transmitter	Radar type level transmitter(Bidder needs to take dimension on site)	Nos	2	Common	Y	
93	Lime compressor – 1 A,1B & 2A,2 B.oil pressure switch	Pressure switch	Pressure switch make: Switzer Pressure Switch, 0 -7 Bar	Nos	8	Unit 1 and 2	Y	
94	Lime compressor – 1 A,1B & 2A,2B	Pressure gauge	Pressure gauge , type: bourden tube, dial size: 150mm, range:0-10 kg/cm2 , process connection:1/2" npt(m),mounting: local,dial: white alluminium with black lettering,case	Nos	8	Unit 1 and 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
	discharge pressure gauge		material: ss304>window					
95	Lime compressor – 1 A,1B & 2A,2B discharge pressure switch	Pressure switch	Pressure switch make: Switzer pressure switch, 0 -7 BAR	Nos	8	Unit 1 and 2	Y	
96	Lime compressor – 1 A,1B & 2A,2B discharge temp gauge	Temperature gauge	Temperature gauge,type : bourden tube, model: 6hdsuw1, size : 150 mm, range : 0 - 120 deg c, stem length::200mm, stem dia:10mm, connection:1/2"bsp(m) adjustable,	Nos	8	Unit 1 and 2	Y	
97	Lime compressor – 1 A,1B & 2A,2B load/unload sov na.	Load/unload sov	Make: rotex,type : NO ,B738207,type: 30206-2.5-2G,W.O.No: 5B0807 /936,ATM: 0~16,media : air,coil type : 11-240V-50 Hz-11w-01,10/2010-04/05/50,	Nos	8	Unit 1 and 2	Y	
98	Lime compressor – 1 A,1B & 2A,2B buster relay	Booster relay	Booster relay,Part No: IL100-03,Make: SMC,Size: 3/8 inch.	Nos	8	Unit 1 and 2	Y	
99	Lime compressor – 1 A,1B & 2A,2B oil pressure gauge	Pressure gauge	Pressure gauge(glycerine filled),type: bourdon tube ,range :- 0 to 10 kg/cm2,case material:ss 304, dial size:100mm, connection:3/8"npt(m) ,accuracy: +/- 1% fsd,	Nos	8	Unit 1 and 2	Y	
100	Lime compressor	Temperature gauge	Temperature gauge,type : bourden tube, model: 6hdsuw1, size : 150 mm, range : 0 -	Nos	8	Unit 1 and 2	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
	- 1 A,1B & 2A,2B oil temp gauge		120 deg c, stem length::200mm, stem dia:10mm, connection:1/2"bsp(m) adjustable,					
101	Lime compressor - 1 A,1B & 2A,2B oil temp switch	Temp. switch	Temp switch, 720 series with GM 7230GJ Q4K 33Z ,Range:30TO 200°C, Make: Switzer/ Equivalent	Nos	8	Unit 1 and 2	Y	
102	Lime compressor - 1 A,1B & 2A,2B water pressure switch	Pressure Switch	Pressure switch make: Switzer Pressure Switch, 0 -7 bar	Nos	8	Unit 1 and 2	Y	
103	Lime compressor - 1 A,1B & 2A,2B water pressure gauge	Pressure gauge	Pressure gauge , type: bourden tube, dial size: 150mm, range:0-10 kg/cm ² , process connection:1/2" npt(m),mounting: local,dial: white alluminium with black lettering,case material: ss304,window	Nos	8	Unit 1 and 2	Y	
104	Lime compressor - 1 A,1B & 2A,2B water i/l temp gauge	Temp gauge	Temperature gauge,type : bourden tube, model: 6hdsuw1, size : 150 mm, range : 0 - 120 deg c, stem length::200mm, stem dia:10mm, connection:1/2"bsp(m) adjustable,	Nos	8	Unit 1 and 2	Y	
105	Lime compressor - 1 A,1B & 2A,2B water o/l flow switch	Flow switch	New installation: Flow switch paddle type, service: water, process connection: 1/2"bsp(f) screwed , ip65 weatherproof, cable entry:1/2"npt(f),	Nos	8	Unit 1 and 2	Y	
106	Ash Cooler Pump discharge	Pressure transmitter (for discharge)	SMART (HART) GAUGE PRESSURE TRANSMITTER,MODEL - 2051TA2A2B21AB4K5M5D4Q4, CAL	Nos	3	Common	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
	pressure	pressure)	RANGE:0-6 BAR ABS,MEDIUM:STEAM,OPERATING PRESSURE:4 BAR,OP. TEMP.: 100'C,OVER PRESSURE : 10 BAR,FUNCTION:TRANSMISSION- INDICATION,ACCU:+/-0.075% OF SPAN,SUP.VOLT: 24 VDC,ELEMENT:DIAPHRAGM,EX- PROOF&INTRINSICSAFE,ENCL CLASS:IP65-NEMA4X,ELEMENT MATERIAL :316L SS,ENCLOSER MATERIAL:LOW COPPER ALUMINIUM POLYURETHANE PAINT,O/P :2 WIRE,4-20 MADC,PROCESS CONN.:1/2"NPT(F),2"PIPE MOUNTING,CABLE ENTRY:1/2"NPT(F),INT.MTR:5 DIGIT LCD,CABLE GLAND:DOUBLE COMPRESSION, MAKE: ABB/EQUIVALENT					
107	Ash Cooler Pump	Vibration probe	VIBRATION SENSOR, TYPE : PIEZO VELOCITY TRANSDUCER, TOP CONNECTOR, 100 MV/IN/SEC, PART NO : RN-AC-109-2A, SENSITIVITY : +/-10%, POWER : 18-30V DC, DYNAMIC RANGE : +/- 50 IN/SEC PEAK, VIBRATION LIMIT : +/-50G, TEMP. RANGE : -58 TO 250'F, SENSING ELEMENT : PZT CERAMIC, SENSING STRUCTURE : SHEAR MODE, CASE MATERIAL : SS316L, MOUNTING : 1/4-28 TAPPED HOLE, CONNECTOR : 2 PIN MIL-C- 5015, MOUNTING H/W : 1/4-28 STUD, CALIBRATION CERTIFICATE : CA10, MAKE: SHINKAWA FORBES MARSHALL SENSOR EXTENSION CABLE WITH SS CONDUIT, TYPE : FML-EXTCAB-020, CABLE LENGTH : 20 MTR, APPLICATION :	Nos	3	Common	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			SUITABLE FOR VIBRATION SENSOR, MODEL : RN-AC-109 2A, MAKE : SHINKAWA FORBES MARSHALL					
108	Ash Cooler Pump DE/NDE bearing temperature	RTD	RTD ASSEMBLY,TYPE-4,SHEATH LENGTH:625 MM,SERIES:ART 1003,HEAD:CAST ALUMINIUM,WEATHER PROOF,BLACK EPOXY POWDER COATED WITH SCREWED COVER,CHAIN & GASKET AS PER IP-65,INSTRUMENT ENTRY:1/2"NPT(F),INSET TYPE:PT- 100,DUPLEX,3 WIRE,INSULATION:MINERAL INSULATED(COMPACT MGO),ACCURACY:DIN 43760 CLASS "A",SHEATH MATERIAL:SS316,SHEATH DIA:06 MM,TERMINAL:NICKEL PLATED BRASS TERMINAL MOUNTED ON STEATITE GRADE CERAMIC BLOCK WITH SPRING LOADED SCREW FIXED ON SS BASE,PROCESS CONN:1/2"NPT(M) MADE UP-SS,MAKE:ALTOP	Nos	3	Common	Y	
109	Ash Cooler motor	Vibration probe	VIBRATION SENSOR, TYPE : PIEZO VELOCITY TRANSDUCER, TOP CONNECTOR, 100 MV/IN/SEC, PART NO : RN-AC-109-2A, SENSITIVITY : +/-10%, POWER : 18-30V DC, DYNAMIC RANGE : +/- 50 IN/SEC PEAK, VIBRATION LIMIT : +/-50G, TEMP. RANGE : -58 TO 250°F, SENSING ELEMENT : PZT CERAMIC, SENSING STRUCTURE : SHEAR MODE, CASE MATERIAL : SS316L, MOUNTING : 1/4-28 TAPPED HOLE, CONNECTOR : 2 PIN MIL-C- 5015, MOUNTING H/W : 1/4-28 STUD, CALIBRATION CERTIFICATE : CA10, MAKE: SHINKAWA FORBES MARSHALL SENSOR EXTENSION CABLE WITH SS	Nos	3	Common	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			CONDUIT, TYPE : FML-EXTCAB-020, CABLE LENGTH : 20 MTR, APPLICATION : SUITABLE FOR VIBRATION SENSOR, MODEL : RN-AC-109 2A, MAKE : SHINKAWA FORBES MARSHALL					
110	Fans	Vibration probe	VIBRATION SENSOR, TYPE : PIEZO VELOCITY TRANSDUCER, TOP CONNECTOR, 100 MV/IN/SEC, PART NO : RN-AC-109-2A, SENSITIVITY : +/-10%, POWER : 18-30V DC, DYNAMIC RANGE : +/- 50 IN/SEC PEAK, VIBRATION LIMIT : +/-50G, TEMP. RANGE : -58 TO 250°F, SENSING ELEMENT : PZT CERAMIC, SENSING STRUCTURE : SHEAR MODE, CASE MATERIAL : SS316L, MOUNTING : 1/4-28 TAPPED HOLE, CONNECTOR : 2 PIN MIL-C-5015, MOUNTING H/W : 1/4-28 STUD, CALIBRATION CERTIFICATE : CA10, MAKE: SHINKAWA FORBES MARSHALL SENSOR EXTENSION CABLE WITH SS CONDUIT, TYPE : FML-EXTCAB-020, CABLE LENGTH : 20 MTR, APPLICATION : SUITABLE FOR VIBRATION SENSOR, MODEL : RN-AC-109 2A, MAKE : SHINKAWA FORBES MARSHALL	Nos	22	Common	Y	
111	BFP pumps	Vibration probe	VIBRATION SENSOR, TYPE : PIEZO VELOCITY TRANSDUCER, TOP CONNECTOR, 100 MV/IN/SEC, PART NO : RN-AC-109-2A, SENSITIVITY : +/-10%, POWER : 18-30V DC, DYNAMIC RANGE : +/- 50 IN/SEC PEAK, VIBRATION LIMIT : +/-50G, TEMP. RANGE : -58 TO 250°F, SENSING ELEMENT : PZT CERAMIC, SENSING STRUCTURE : SHEAR MODE, CASE MATERIAL : SS316L, MOUNTING : 1/4-28	Nos	12	Common	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			TAPPED HOLE, CONNECTOR : 2 PIN MIL-C-5015, MOUNTING H/W : 1/4-28 STUD, CALIBRATION CERTIFICATE : CA10, MAKE: SHINKAWA FORBES MARSHALL SENSOR EXTENSION CABLE WITH SS CONDUIT, TYPE : FML-EXTCAB-020, CABLE LENGTH : 20 MTR, APPLICATION : SUITABLE FOR VIBRATION SENSOR, MODEL : RN-AC-109 2A, MAKE : SHINKAWA FORBES MARSHALL					
112	Hot Water pumps	Vibration probe	VIBRATION SENSOR, TYPE : PIEZO VELOCITY TRANSDUCER, TOP CONNECTOR, 100 MV/IN/SEC, PART NO : RN-AC-109-2A, SENSITIVITY : +/-10%, POWER : 18-30V DC, DYNAMIC RANGE : +/- 50 IN/SEC PEAK, VIBRATION LIMIT : +/-50G, TEMP. RANGE : -58 TO 250°F, SENSING ELEMENT : PZT CERAMIC, SENSING STRUCTURE : SHEAR MODE, CASE MATERIAL : SS316L, MOUNTING : 1/4-28 TAPPED HOLE, CONNECTOR : 2 PIN MIL-C-5015, MOUNTING H/W : 1/4-28 STUD, CALIBRATION CERTIFICATE : CA10, MAKE: SHINKAWA FORBES MARSHALL SENSOR EXTENSION CABLE WITH SS CONDUIT, TYPE : FML-EXTCAB-020, CABLE LENGTH : 20 MTR, APPLICATION : SUITABLE FOR VIBRATION SENSOR, MODEL : RN-AC-109 2A, MAKE : SHINKAWA FORBES MARSHALL	Nos	12	Common	Y	
113	Flue gas analyzer	SO2/NOX/CO ANALYSER	New installation: MODEL: CODEL GCEM 4000,SO2/NOX TRANSCEIVER UNIT WITH 10.MTR CABLE,TEMP TRANSMITTER WITH 3 MTR. CABLE,PRESSURE ,SS316 PROBE(1.8	Nos	2	Common	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
			MTR.) INSERTION LENGTH.TRANSMITTER WITH 3 MTR. CABLE					
114	Flue gas analyzer	GC-4 CG4 PANEL FOR SOX NOX CO ANALYSER	New installation: CODE 4000349 ALONGWITH SC4, PS4, AIR AL DRYER AND TERMINAL COIL WITH ROTOMETER CALIBRATION CORD	Nos	2	Common	Y	
115	Flue gas analyzer	Zirconia Oxygen Analyzer:	ABB make Endura AZ20 series - with internal Automatic Calibration Hardware Model No. : AZ20/.1.2.2.1.2.2.3.4.1.1.1.21.0.0.E./STD + Abrasive Shield	Nos	4	Common	Y	
116	TAPH	TAPH O2 Outlet Analyzer	OXYGEN ANALYZER FOR CFBC BOILER TAPH, SENSOR:ZIRCONIA O2, TYPE:IN-SITU, O2 RANGE:0-25% PROGRAMMABLR, PROBE LENGTH:2 MTR, PROBE DIA:54MM, OP. TEMP:0-750DEG C, SUPPLY VOLTAGE:240VAC,50Hz, PROBE HEATER OWER CONS:175WATT, ELECTRONIC:10VDC (NOMINAL) O/P:4-20MADC, RELAY O/P CONTACT:1C/O, ACCURACY:0.75% READING, LINEARITY:+/-1% FSD, RESPONSE TIME<3SEC INITIAL & , 8SEC FOR T90, ELECTRONIC: MP BASED,CALIBRATION:MANUAL, CABLE ENTRY:1/2"NPT(F).	Nos	2	Unit 1 and Unit 2	Y	
117	Lime Bag filter compressor	Compressor controller, sensor and internal cable supply, installation, and commissioning work	Electronikon II, SENSOR CABLES ETC.,Make Atlas Copco.	Sets	2	Common	Y	
118	Lime weigh feeder – 2	TUC-6 Controller supply, installation, and commissioning	TUC 6 CONTROLLER FOR WEIGH FEEDER WITH 24VDC POWER PACK 220/24VDC @ 2.2 AMP / SHORT CIRCUIT PROOF SMPS, I/P 230 VAC, O/P 24VDC @ 2.2 AMP AND	Nos	1	Common	Y	

S. No	Component	Item	Description	UOM	Quantity	Unit 1/Unit 2	Cat 1	Cat 2
		work	NECESSARY ACCESSORIES					
119	Lime compressor 1B and 2A Control panel	Control panel	Supply, installation, wiring and commissioning work for lime compressor 1B and 2A as per RfP	Nos	2	Unit 1 and 2	Y	