Appendix – 2 (Revised-Rev-II)

PRICE SCHEDULE – WORK
PART-A

A. EPC Works of CHP

S. No.	Work	Price	Contractor Taxes			Contract Price	
			Service Tax	Other Taxes, Cess if any	Total	Price of Work	Contractor Taxes
		INR	INR	INR	INR	INR	INR
					(4+5)	(3)	(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.00	Package-I: EPC for CHP Main Package including Start-up and Commissioning Spares & Mandatory Spares.						
2.00	Package-II: Construction of allied infrastructure						
	PRICE						

Note:

1. Price of Recommended Spares, as per Table 2 below and (d) Price of Special Tools and Tackles, as per Table 3 below will not be considered while deciding the lowest bidder. However the rate quoted by the successful bidder with be taken in account for future references / orders.
2. The Price of Coal Handling Plant includes premiums for all the insurance required for the works as per the Contract.
3. Contractor shall indicate the rate of applicable Tax and the value of each component of Tax in the Price Schedule as above.

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PART-B

B. O&M Supervisions of the CHP for 36 Months

S. No.	Work	Price	Contractor Taxes			Contract Price	
			Service Tax	Other Taxes, Cess if any	Total	Price of Work	Contractor Taxes
		INR per Month	INR	INR	INR	INR	INR
					(4+5)	(3)	(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.00	Complete Operation and Maintenance of the CHP for 1st 2 years (Comprehensive)						
2.00	Supervision of Operation and Maintenance including handhold and operational training to the supervisors of MDO						
	PRICE						

Note:

1. The Price of O&M services shall include all services as specified in the Technical Specifications, supply of spares as required in the first 2 years. For the third year, supply of spares will be in the scope of MDO
2. The Price shall include the insurances required for the personnel deployed at site.

Note: Successful bidder will be decided by Part A and Part B taken together.

Details of Taxes and Duties Included in Quoted Price (Bidder needs to submit the tax break up details for Part A (Package-I & Package-II and Part-B in the format given below Separately.) :

Sl No	Description	Unit	Rate of Tax /Duty Considered (in Percentage)		Amount of Tax / Duty included based on Rate Considered in Indian Rupees (in INR)	
1	Central Sales Tax against issue of Certificate in Form 'C'	LS				
2	Central Sales Tax without 'C'	LS				
3	Excise Duty on Materials supplied / Consigned to Owner	LS				
4	VAT on Materials Supplied / Consigned to Owner	LS				
5	Service tax on Services	LS				
6	Basic custom duty against imported materials consigned to the contractor / suppliers	LS				
7	Entry Tax on the material supplied / consigned to owner	LS				
8	BOCW (if applicable)	LS				

Detailed price break up sheet are given below. Bidders are requested to give a detailed price break up of items.

Detail Price Break Up For Mechanical Plant And Machinery									
Sl No	Equipment Details	Unit	Qty	Price	Contractor Taxes			Contract Price	
					Service Tax	Other Taxes, Cess if any	Total	Price Of Work	Contractor Taxes
				INR	INR	INR	INR	INR	INR
							(4+5)	(3)	(6)
(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)
1	Dump Hopper (DH1)								
2	Apron Feeder (AF1)								
3	Belt Conveyor (BC 1A)								
4	Flap Gate 1 (2 Way)								
5	Belt Conveyor (BC 2A)								
6	Dump Hopper (DH 2)								
7	Apron Feeder (AF 2)								
8	Belt Conveyor (BC 1B)								
9	Flap Gate (FG 2) (2 Way)								
10	Dump Hopper (DH 3)								
11	Apron Feeder (AF 3)								
12	Primary Crusher / Sizer (PC 1)								
13	Belt Conveyor (BC 1C)								
14	Secondary Crusher / Sizer (SC 1)								
15	Belt Conveyor (BC 2B)								

16	DE System (Bag Filters)								
17	Flap Gate (FG 3) (2 Way)								
18	Belt Conveyor (BC 3A)								
19	Metal Detector (MD 1)								
20	Belt Weigher (BW 1)								
21	Flap Gate (FG 4)(2 Way)								
22	Belt Conveyor (BC 3B)								
23	Metal Detector (MD 2)								
24	Belt Weigher (BW 2)								
25	Inline Magnetic Separator (ILMS 1)								
26	Belt Conveyor (BC 4A)								
27	Inline Magnetic Separator (ILMS 2)								
28	Belt Conveyor (BC 4B)								
29	Belt Conveyor (BC 5A)								
30	Belt Conveyor (BC 5B)								
31	Flap Gate (FG 5) (2 Way)								
32	Flap Gate (FG 6) (2 Way)								
33	T Conveyor (TC 1A)								
34	T Conveyor (TC 1B)								
35	Paddle Feeder (PF 1)								
36	Paddle Feeder (PF 2)								
37	Paddle Feeder (PF 3)								
38	Paddle Feeder (PF 4)								
39	Belt Conveyor (BC 6A)								
40	Belt Conveyor (BC 6B)								
41	Flap Gate (FG 7)								

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42	Belt Conveyor (BC 7A)								
43	Flap Gate (FG 8)								
44	Belt Conveyor (BC 7B)								
45	Coal Sampler Unit (CS 1)								
46	Belt Conveyor (BC 8A)								
47	Coal Sampler Unit (CS 2)								
48	Belt Conveyor (BC 8B)								
49	Coal And Moisture Analyzer (CA 1)								
50	Belt Conveyor (BC 9A)								
51	Coal And Moisture Analyzer (CA 2)								
52	Belt Conveyor (BC 9B)								
53	Flap Gate 11 (FG 11)								
54	Flap Gate 12 (FG 12)								
55	Rapid Loading System (RLS 1)								
56	Rapid Loading System (RLS 2)								
57	Dry Fog Type Dust Suspension System (without use of chemicals)								
58	Wet Type Dust Suspension System (Dust Suppression Spray Bars or Superior System as required at various places to control dust emission)								
59	Service Water Network								
60	Fire Protection System at Various Location of the CHP as per the Govt. norms including hydrant protection system, spray water system.								

61	2 Nos 100T Pit Less Type Weigh Bridge & 1 No. control Room								
62	Any other items required to complete the CHP which has not been included above.								
62.1									
62.2									
63	Charges towards Erection, Commissioning and testing of all mechanical equipments as per the scope.	Man Days							

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Detail Price Break Up For Electrical Items

Sl No	Equipment Details	Unit	Qty	Price	Contractor Taxes			Contract Price	
					Service Tax	Other Taxes, Cess if any	Total	Price Of Work	Contractor Taxes
				INR	INR	INR	INR	INR	INR
							(4+5)	(3)	(6)
(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)
1	Construction of CHP Main Substation & Control Room as per the drawing								
2	CHP Receiving Pit Substation as per the drawing								
3	CHP RLS Substation as per the drawing								
4	Construction of Mining Substation as per the drawing								
5	Inter Plant Cable Routing as required through cable trays / racks / underground routing inter connecting various equipments.								
6	Distribution Transformers as required								

7	HT & LT switch gears, DB, Control & Protection Panel, Isolating switches etc as required to complete the system. (Other than those present in above substations)								
8	AC / DC Motors, VVVF Drives and Actuators as required to compete the system								
9	Illumination System as required as per the drawing to maintain the minimum Lux Level as per the BIS Norms								
10	Complete grounding and lightning protection system within the CHP area								
11	Batteries, Battery Charges, UPS System and DC Distribution system as required for CHP including cabling required for interfacing with the equipment.								
12	Electrical relay, protection and metering systems required for entire CHP circuit.								
13	DG Set Back up for emergency power for CHP as per the technical specification.								

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14	Any other electrical / field items required to complete the CHP power supply and distribution system which has not been included above.								
14.1									
14.2									
15	Charges towards Erection, Commissioning and testing of all electrical equipments as per the scope.								

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Detail Price Break Up For C & I Equipments

Sl No	Equipment Details	Unit	Qty	Price	Contractor Taxes			Contract Price	
					Service Tax	Other Taxes, Cess if any	Total	Price Of Work	Contractor Taxes
				INR	INR	INR	INR	INR	INR
							(4+5)	(3)	(6)
(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)
1	Field Instrument								
2	Instrumentation & Control Cables								
3	PLC system for CHP with required I/Os and operating stations with large displays, field remote cameras and integration with the PLC.								
4	UPS								
5	CCTV System for CHP								
6	Public Address System coving CHP area								
7	EPABX System and Field Telephones								

8	Any other field control equipments required to complete the CHP power supply and distribution system which has not been included above.								
8.1	Recording of weighment data in a protected PC / Server system								
8.2									
9	All field instrument cables supply and cabling, supply of large display units, mimic panel etc. as required.								
10	Supply of works stations								
11	Charges towards Erection, Commissioning and testing of all C & I equipments as per the scope.								

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Detail Price Break Up For Civil Work

Sl No	Equipment Details	Unit	Qty	Price	Contractor Taxes			Contract Price	
					Service Tax	Other Taxes, Cess if any	Total	Price Of Work	Contractor Taxes
				INR	INR	INR	INR	INR	INR
							(4+5)	(3)	(6)
(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)
1	Dump Hopper (DH 1 to DH 3) and receiving pit as per the drawing along with RCC retaining wall.								
2	Transfer House (TH1 to TH 6)								
3	Bunker with storage capacity 30,000 MT								
4	Foundation for all the equipments including installation of anchor bolts, sleeves and embedded fixtures.								
5	Installation of grounding and lightening protection mat for all equipments, buildings, sub grids,								

	down conductors, shielding masts etc as required during detailed engineering,								
6	Fabrication and erection of all types of steel and structural works, platforms, stair cases, walk ways, ladders and supports etc.								
7	Construction of MCC control room.								
8	Construction of Boundary wall of CHP and over ground bunkers.								
9	Area grading for CHP conveyor routing area.								
10	Construction of administrative block (CEO Office Building) as per the drawing.								
11	Development of road and drainage and other infrastructural facilities including landscaping and gardening								
12	Construction of Dumper platform with RCC paving								

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13	Portable water pipe line to mine colony								
14	Construction of Water Reservoir and pump house and Water Treatment Plant								
15	Construction of Over Head Tanks for Service Water and Portable Water.								
16	Construction of substation building.								
17	Construction of fire station building								
18	Construction of canteen building								
19	Construction of Mine Gate Complex (Main Gate)								
20	Construction of compressor house								
21	Construction of maintenance work shop for CHP								
22	Construction of Railway Loading System								
23	Inplant road and drainage								

24	Construction of Substation and control building								
25	Construction of Crusher / Sizer House								
26	Construction of Transfer House								
27	Construction of CHP Control Room								
28	Construction of 2 Nos 100 T Capacity Road Weigh Bridge (Pit Less Type) with 1 No Common Control Room.								
29	RLS system foundation, structure, weigh bin, storage bin and control room								
30	Construction of Two wheeler and car parking shed								
31	Construction of Rain water harvesting pond								
32	Construction of Coal sampling Room								

33	Construction of Security Office (Receiving Pit)								
34	Ventilation and air conditioning system including all equipment piping, false ceiling, insulation, ducting etc as required for the CHP								
35	Fire Protection system for buildings including portable fire extinguishers at all the strategic locations								
36	Supply of cranes, hoists and lifting devices for handing of equipments								
38	Service air and instrument air system for CHP								
39	Fire fighting arrangement for CHP								
40	Construction of Laboratory for coal analysis.								
41	Supply of all consumables required for the work								
42	Construction of 100 tonne capacity bridge Over Garia Nalla as per the								

	drawing-2 Nos								
43	Construction of Administrative Building (CEO Office Building)								
44	Construction of Pit head toilets separately for Ladies and Gents								
45	Construction of First Aid Room								
46	Construction of Rest Shelter								
47	Construction of training center								
48	Construction of Security Barrack								
49	Construction of Settling pond-2 nos								
50	Construction of CHP Store Shed & Store Office								
51	Construction of DG Room								
52	Construction of Bridge / Fly over Over Railway Track – 02 Nos								
53	Barbed wire fencing around water reservoir								

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54	Barbed wire fencing around bulb area and substation building								
55	Construction of Box Culvert of internal size of 4m x 4m below haul road-02 Nos								
56	Construction of Time & Security office.								
57	Construction of Watch Tower								
58	CHP Office								
59	Elevated Table for Compacted Earth								
60	Any other Infrastructure mentioned in the Scope of Work, but not included in Price Schedule above.								
61.1									
62.2									
63.3									

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Table 1: Mandatory Spares for Coal Handling Plant

Sl. No	Equipment	Quantity	Price (INR Million)
1	2	3	4
A	**Mechanical Packages**		
1	**Stacker-Reclaimer- Not Used**	Nil	
2	**Idlers**		
2.1	Trough carrying Idlers complete with base boards & mounting brackets etc.		
2.1.1	1800 mm. Belt Width (35^0 troughing angle)	80 nos.	
2.2	Return idlers complete with 10 deg. Troughing mounting base boards & brackets		
2.2.1	1800 mm. Belt Width	30 nos.	
2.3	Impact Idlers complete with mounting base boards and brackets etc.		
2.3.1	1800 mm. Belt Width (35^0 troughing angle)	40 nos.	
2.4	Trough carrying training idlers complete as 1-above.		
2.4.1	1800 mm. Belt Width (35^0 troughing angle)	10 nos	

Sl. No	Equipment	Quantity	Price (INR Million)
2.5	Transition idlers complete with base boards & mounting brackets etc.		
2.5.1	1800 mm. Belt Width	10 nos.	
2.6	Rubber discs for impact idlers	10% of the Rubber disc as fitted on the Impact Idlers	
2.7	Rollers for the above idlers	20% of the Installed Quantity	
3	**Elevator**		
3.1	Brake		
3.1.1	Tool to brake	1 no.	
3.1.2	Fan	1 no.	
3.1.3	Magnet coil with housing pads	2 nos.	
3.1.4	Brake pads	6 nos.	
3.1.5	Adjusting sleeve	2 nos.	
3.1.6	Fixed brake disc	2 nos.	
3.2	Worm Gear		
3.2.1	Worm gear	1 no.	

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Sl. No	Equipment	Quantity	Price (INR Million)
3.2.3	'O' ring	2 nos. of each type	
3.2.4	Sealing ring	2 nos. of each type	
3.3	Door Front		
3.3.1	Bearing	2 nos.	
3.3.2	Roller	3 nos.	
3.3.3	Bushing	2 nos.	
3.4	Limit Cams		
3.4.1	Sensor	1 no.	
3.4.2	Switch	2 nos.	
3.4.3	Switch arm	2 nos.	
3.5	CAD		
3.5.1	Guide roller	50% of the total ones installed each type or minimum 1 no. whichever is higher	
3.5.2	Switch	1 no.	

Sl. No	Equipment	Quantity	Price (INR Million)
3.6	Sliding Door		
3.6.1	Rollers	4 nos. of each type	
3.7	Machinery		
3.7.1	Guide roller	2 nos.	
3.7.2	Pinion	1 no.	
3.7.3	Rubber inserts	6 nos.	
3.7.4	Grove ring	6 nos.	
3.7.5	Brake motor	1 no.	
3.8	Cable trolley		
3.8.1	Ball bearing	2 nos. of each type	
3.9	Electrical Items.		
3.9.1	Contactors	4 no. of each type	
3.9.2	Auxiliary Transformer, control transformer	1 no. of each type & rating	
3.9.3	Relays	4 no. of each type & rating	

Sl. No	Equipment	Quantity	Price (INR Million)
3.9.4	Resistor	6 nos. of each type & rating	
3.9.5	Switch	1 no. of each type	
3.9.6	Rectifier	10 nos.	
3.9.7	Limit switch	4 nos. of each type	
3.10	Trailing Cable		
3.10.1	Power Cable	100% length of cable used for one Paddle Feeder	
3.10.2	Control Cable	100% length of cable used for one Paddle Feeder	
4	**Conveyor Belt**		
4.1	Belt	30% length of each type & rating of belt or thickness or one full length of the lowest conveyor whichever is higher.	
4.2	Gear Box		
4.2.1	Gear box internals complete including input, output shafts and gears etc.	1(One) set of each type & rating for right hand & left hand	
4.2.2	Oil Seal	2(two) sets of each type & rating	

Sl. No	Equipment	Quantity	Price (INR Million)
4.2.3	Bearings	2(two) sets of each type & rating	
4.2.4	Hold Back	1(one) set of each type & rating	
4.3	Conveyor Drive System		
4.3.1	Coupling (Flexible)	1no. of each type & rating.	
4.3.2	Coupling bolts(Pins with bushes)	2sets of each type & rating.	
4.3.3	Fluid Coupling		
4.3.3.1	Complete set of Fluid Coupling	1set for each type and size	
4.3.3.2	Multi Disc Assembly	1no.for each type and size	
4.3.3.3	Resilient Driving Plate	1no.for each type and size	
4.3.3.4	Fusible Plug and corrugated spacer rings	5nos. for each type and size	
4.3.4	Brakes		
4.3.4.1	Complete Brakes	1 no. for each type and size	
4.3.4.2	Brake Shoes	2 sets for each type and size	

Sl. No	Equipment	Quantity	Price (INR Million)
4.4	Pulley Complete with Shaft (excluding bearing & Plummer Block)	1 no. for each size of Pulley & Shaft Diameter	
4.5	Plummer block complete with bearing	2 nos. for each type and size	
4.6	Rubber/nylon strip for belt cleaners and skirt board	25% of total quantity used	
4.7	Complete Belt Scrapper (Primary & Secondary)	1 set for each Conveyor	
4.8	Electrical Items		
4.8.1	Drive Motor	1 no. for each type and size	
4.8.2	Pull Cord Switches	20% of installed quantity	
4.8.3	Belt Sway Switches	20% of installed quantity	
4.8.4	Zero Speed Switches	20% of installed quantity	
4.8.5	Local Control Station	20% of installed quantity subject to minimum 1 no. for each type	
5	**Flap Gate**		
5.1	Actuator	1 no. for each type/ Stroke Length and Torque rating	
5.2	Position Limit/Torque Switch	15 nos.	

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Sl. No	Equipment	Quantity	Price (INR Million)
5.3	Local Control Station	1 no.	
6	**Belt Weigher**		
6.1	Load Cell	1 no. for each rating/size	
6.2	Tacho Unit	1 no.	
6.3	Electronic Modules/Card for Feed Rate Controller	1 no. each Card/Modules used in the system	
6.4	Special Fuse	2 nos. each type and rating	
6.5	Calibration equipment	1 set	
7	**Magnetic Separator**		
7.1	Drive Gear Box Complete unt	1 set	
7.2	V-belt	1 set	
7.3	Cleated rubber belts	4 nos.	
7.4	Drive & Non-drive Pulley	1 no. each type	
7.5	Bearing of Drive & Non-drive Pulley	1 set for each type & size	
7.6	Cooling Oil Pump	1 no.	

Sl. No	Equipment	Quantity	Price (INR Million)
7.7	Cooling Oil flow control Valve	1 no.	
7.8	SS Cleat	10 nos.	
7.9	SS Bolt for Cleat	100 nos.	
7.10	Electrical Items		
7.10.1	Drive Motor	1 no.	
7.10.2	Insulating Stud of the Magnet	1set (2 nos.)	
7.10.3	Power Diode for the Bridge Rectifier	2 nos.	
7.10.4	Semi-conductor Fuse for Power Diode	6 nos.	
7.10.5	Other Electrical Spares as applicable as per the Electrical List	Item & Quantity same as indicated in Electrical/ Electronic & Instrumentation list.	
8	**Primary & Secondary Crusher**		
8.1	Plummer block assembly (complete with bearing and seal etc.)	2 sets for each	
8.2	Shaft seal	1set for each	
8.3	Liner Plates	2 sets (for complete	

Sl. No	Equipment	Quantity	Price (INR Million)
		replacement) for each	
8.4	Fluid Coupling		
8.4.1	Complete set of Fluid Coupling	1 no. for each.	
8.4.2	Bearing	1 no. (each type and size) for each.	
8.4.3	Sealing	1 no. (each type and size) for each.	
8.4.4	Multi Disc Assembly	1 no. for each.	
8.4.5	Resilient Driving Plate	1 no. for each.	
8.4.6	Fusible Plug	4 nos. for each.	
8.5	Electrical/Electronic Items		
8.5.1	Drive Motor	1 no. for each.	
8.5.2	Vibration Monitoring Unit	1 no. for each.	
8.5.3	Vibration Pickup	1 no. for each.	
8.5.4	Zero Speed Switch	1 no. for each.	
8.5.5	Local Control Station	1 no. for each.	

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Sl. No	Equipment	Quantity	Price (INR Million)
9	**Apron Feeder**		
9.1	Oil seals for Gear box	2 Sets.	
9.2	Pin & Rubber Bushes for Coupling	1 Set.	
9.3	Apron Pan	10% of the total quantity for one Machine.	
9.4	Return Rollers	5% of the total quantity.	
9.5	Carrying rollers	10% of the total quantity.	
9.6	Sprocket Sector	1 Set.	
10	**Belt Weigher**		
10.1	Load Cell	1 no. for each rating/size	
10.2	Tacho Unit	1 no.	
10.3	Electronic Modules/Card for Feed Rate Controller	1 no. each Card/Modules used in the system	
10.4	Special Fuse	2 nos. each type and rating	
11	**Dust Extraction System**		
11.1	Fan bearing	1set of each type.	

Sl. No	Equipment	Quantity	Price (INR Million)
11.2	V-belt	1set of each size.	
11.3	Rotary air lock valve with drive	1set	
11.4	Filter bags	10% of the total quantity used in the system for each types of bags.	
11.5	Drive Motor	1no for each rating	
11.6	Complete Solenoid valve	10% of the total quantity used in the system for each types or minimum 2 nos. whichever is higher	
11.7	Coils for Solenoid Valve	2 nos. of each type & rating	
11.8	Local Control Station	1no. for each type	
11.9	Other Electrical Spares as applicable as per the Electrical List		
11.10	Component spares for Drive Motor		
12	**Service Water & Drinking Water System**		
12.1	Pump impeller with key and nut	2 sets of each type and size	
12.2	Pump shaft	2 Nos. of each type and size.	

Sl. No	Equipment	Quantity	Price (INR Million)
12.3	Bearings	2 sets of each type and size	
12.4	Wearing rings	2 sets of each type and size	
12.5	Shaft Sleeve	2 sets of each type and size	
12.6	Bushings	2 sets of each type and size	
12.7	Coupling bolts & nuts (with bushes)	2 sets	
12.8	Drive Motor for Pump	1no for each rating	
13	**Ventilation System**		
13.1	Fan bearings	1set of each size	
13.2	Bearings for pumps	1set of each size	
13.3	V-Belt	1set of each type.	
13.4	Pre-filter of pressurizing fans	5 sets of each type	
13.5	Foundation Rubber pads	2 sets of each type and size	
13.6	Plummer blocks	2 sets of each type and size	
13.7	Drive Motor	1no for each rating	

Sl. No	Equipment	Quantity	Price (INR Million)
13.8	Component spares for Drive Motor	Refer Annexure-A of E0.	
13.9	Nozzles	10% of each size.	
13.10	Other Electrical Spares as applicable as per the Electrical List		
14	**Electrical Hoist**		
14.1	Bearings	1 set of each type & size	
14.2	Brake lining	1 set of each size	
14.3	Brake Coil	2 nos. of each type & size	
14.4	Limit switch	2 nos. of each type & size	
14.5	Local Control Station	1 no. each type.	
14.6	Other Electrical Spares as applicable as per the Electrical List	Item & Quantity same as indicated in Electrical/Electronic & Instrumentation list.	
15	**Fire Fighting System**		
15.1	Spindle for Hydrant	6 nos.	

Sl. No	Equipment	Quantity	Price (INR Million)
15.2	Seat Washer for Hydrant Valve	2 nos.	
15.3	Spring for Hydrant Valve	6 nos.	
15.4	Wheel for Hydrant Valve	6 nos.	
15.5	Nozzle for Brabchpipe	6 nos.	
15.6	Branch pipe, complete	2 nos.	
15.7	Hydrant Valve, complete	2 nos.	
15.8	Glass for Hose Box	6 nos.	
15.9	Keys for Hose Box	6 nos.	
15.10	Wheel for Gate Valve	2 nos. for each type.	
15.11	Spanner for fire extinguisher	4 nos.	
15.12	Horn for carbon-di-Oxide, Extinguisher	4 nos.	
15.13	Pressure Guage	2 nos.	
15.14	Pressure Switch	2 nos.	
15.15	Push button for Control Panel	2 nos.	

Sl. No	Equipment	Quantity	Price (INR Million)
15.16	LHS Cable 250 mtr	250 mtr.	
15.17	IR Detector	2 nos.	
15.18	Heat Detector	2 nos.	
15.19	Hooter	2 nos.	
15.20	Spray Nozzle	20 nos.	
	Electrical Packages		
1.0	**Bus Duct**		
1.1	415 V Bus Duct		
1.1.1	Bus Support insulator	10% of installed quantity.	
1.1.2	Aluminum Flexible connector	1 set for each type and Rating	
1.1.3	Copper Flexible connector	1 set for each type and Rating	
1.1.4	Expansion below	2 sets for each type and Rating	
2.0	**6.6 KV System**		
2.1	LT Transformer		

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Sl. No	Equipment	Quantity	Price (INR Million)
2.1.1	Door Limit Switch	5Nos.	
2.1.2	Temperature Indicator/Gauge	5Nos.	
2.1.3	Bushing		
2.1.3.1	HV	3Nos. of each voltage rating	
2.1.3.2	LV	3Nos.	
2.1.4	Temperature controller	2 Nos.	
2.2	HT Switch Gear		
2.2.1	Trip Coil	10% of the total number	
2.2.2	Closing Coil	10% of the total number	
2.2.3	Spring Charging Motor with complete Mechanism	20% of the total number of breakers	
2.2.4	Spring Charging Limit Switch	10% of the total number of breakers	
2.2.6	Breaker Complete Pole Assembly (Bottle)	10% of total no of breakers	
2.2.7	Breaker Auxiliary (A & B) Contact Assembly	5Nos	
2.2.8	Breaker Auxiliary (C & D) Contact Assembly	5Nos	

Sl. No	Equipment	Quantity	Price (INR Million)
2.2.09	Plug Socket with Prefab cable	5Nos	
2.2.10	Position Limit Switch	10 Sets	
2.2.11	Surge Arrester	5Nos.	
2.2.12	Cluster type LED Indicating Lamps complete assembly	10% of each colour installed	
2.2.13	CT	2Nos for each type and Rating	
2.2.14	Transducer	5 Nos. for each type and Rating	
2.2.15	Breaker Control Switch		
2.2.15.1	Trip / Neutral / close Switch	. 10% of installed quantity	
2.2.15.2	Swgr / Trial / Normal Switch	5Nos. for each type and Rating. 10% of installed quantity	
2.2.15.3	AC Supply On / Off Switch	5Nos. for each type and Rating. 10% of installed quantity	
2.2.15.4	DC Supply On / Off Switch	5Nos. for each type and Rating. 10% of installed quantity	
2.2.15.5	Motor Heater On /Off Switch	1No. for each type and Rating. 10% of installed quantity.	
2.2.15.6	DC Supply Source Selector Switch (3-position)	3Nos. for each type and Rating. 10% of installed quantity.	

Sl. No	Equipment	Quantity	Price (INR Million)
2.2.15.7	Ammeter Selector Switch	1 No. for each type and Rating. 10% of installed quantity	
2.2.15.8	Voltmeter Selector Switch	1 No. for each type and Rating 10% of installed quantity	
2.2.16	Voltmeter	1 No. for each type and Rating	
2.2.17	Ammeter	1 No. for each type and Rating	
2.2.18	Breaker Jaw Contact (Bus-end & Breaker- end) assembly	1 Set for each type and Rating	
2.3	Energy Meter	1No. For each type &rating	
2.4	Annunciator	1 no of each type & rating	
3.0	**415V System**		
3.1	**Air Circuit Breaker**		
3.1.1	Trip Coil	10% of the total number	
3.1.2	Closing Coil	10% of the total number	
3.1.3	Spring Charging Motor with complete Mechanism	10% of the total number	
3.1.4	Spring Charged Limit Switch	10% of the total number	
3.1.6	Breaker Contact		

Sl. No	Equipment	Quantity	Price (INR Million)
3.1.6.1	Main Contact (Fixed and moving) assembly	5Sets for each type and rating	
3.1.6.2	Arcing Contact (Fixed and moving) assembly	5Sets for each type and rating	
3.1.6.3	Breaker Jaw Contact (Bus-end & Breaker- end) assembly	5Sets. for each type and Rating	
3.1.6.4	Sliding Contact (Fixed & Moving)	3Sets.	
3.1.6.5	Breaker Auxiliary Contact Block	5Nos.	
3.1.7	Arcing Chute	3Sets for each type and rating	
3.1.8	Plug Socket with Prefab cable	5Nos	
3.1.9	Position Limit Switch	10Sets	
3.1.10	Cluster type LED Indicating Lamps complete assembly	10% of each colour installed	
3.1.11	CT	2Nos. for each type and Rating	
3.1.12	Transducer	5 Nos. for each type and Rating	
3.1.13	Breaker Control Switch		
3.1.13.1	Trip / Neutral / close Switch	5Nos. for each type and Rating	
3.1.13.2	Swgr / Trial / Normal Switch (Local/Remote)	5Nos. for each type and Rating	

Sl. No	Equipment	Quantity	Price (INR Million)
3.1.13.3	AC Supply On / Off Switch	5Nos. for each type and Rating	
3.1.13.4	DC Supply On / Off Switch	5Nos. for each type and Rating	
3.1.13.5	Motor Heater On /Off Switch	1No. for each type and Rating	
3.1.13.6	DC Supply Source Selector Switch (3-position)	3Nos. for each type and Rating	
3.1.13.7	Ammeter Selector Switch	5 Nos. for each type and Rating	
3.1.13.8	Voltmeter Selector Switch	5Nos. for each type and Rating	
3.1.14	Voltmeter	1 No. for each type and Rating	
3.1.15	Ammeter	1 No. for each type and Rating	
3.1.16	Auxiliary Control Contactor		
3.1.16.1	Auxiliary Control Contactor DC complete	5Nos.	
3.1.16.2	Auxiliary Control Contactor DC spare kits	10Nos.	
3.1.16.3	Auxiliary Control Contactor DC Coils	10Nos.	
3.1.16	Energy meter	1 No. for each type and Rating	
3.2	**PMCC/MCC/ACDB**		

Sl. No	Equipment	Quantity	Price (INR Million)
3.2.1	**Contactor**		
3.2.1.1	Power Contactor (AC)		
3.2.1.1.1	Power Contactor Complete Assembly	3Nos.for each type and rating	
3.2.1.1.2	Power Contactor spare kits	5Sets for each type and rating	
3.2.1.1.3	Power Contactor AC Coils	5Nos. Coils for each type and rating	
3.2.1.2	Auxiliary Control Contactor (AC)		
3.2.1.2.1	Auxiliary Control Contactor Complete Assembly	20Nos.for each type and rating	
3.2.1.2.2	Auxiliary Control Contactor spare kits	25Setsfor each type and rating	
3.2.1.2.3	Auxiliary Control Contactor AC Coils	25Nos.for each type and rating	
3.2.2	MCCB (Power Circuit)	2Nos. for each type and rating	
3.2.3	MCB (Control Circuit)	15Nos.for each type and rating	
3.2.4	Switch		
3.2.4.1	Local / Remote Selector Switch	10Nos.	

Sl. No	Equipment	Quantity	Price (INR Million)
3.2.4.2	MCCB Status (On/off) Monitoring Switch/Contact	5Nos.	
3.2.4.3	Trial / Normal /MCC Selector Switch	10Nos.	
3.2.4.4	MCC module Service Position Limit Switch	5Nos.	
3.2.5	Thermal Overload Relay	2Nos. for each type and rating	
3.2.6	Sliding Contact (Fixed & Moving)	25Sets	
3.2.7	Bus bar to MCC module Lira Contact Assembly (Bus-end & MCC Module-end)	5Sets for each type and rating	
3.2.8	Cluster type LED Indicating Lamps complete assembly	10% of each colour installed	
3.2.9	Push Button (On/Off) Complete Assembly	10Sets	
3.2.10	CT	2No.for each type and rating	
3.2.11	Ammeter	1No. for each type and rating	
3.2.12	Control Transformer	1No. for each type and rating	
3.2.13	Off Delay/ On Delay Timer	5Nos.for each type and rating	
3.2.14	Terminal Block		
3.2.14.1	Power Terminal Block	10% of total nos. for each type and rating used in the system	

Sl. No	Equipment	Quantity	Price (INR Million)
3.2.14.2	Control Terminal Block	10% of total nos. for each type and rating used in the system	
3.2.14.3	End Plate for Power & Control Terminal Block	Each type 25Nos.	
3.3	Energy Meter	1No. For each type & rating	
3.4	Annunciator	1 No for each type & rating	
4.0	**DC Starter Panel/DCDB**		
4.1	DC Power Contactor complete assembly	1No. for each type and Rating	
4.2	Power Contact Spare Kit	2Sets for each type and rating	
4.3	Coil for Power Contactor	2Nos.	
4.4	Control Contactor complete assembly	5Nos.	
4.5	Control Contact Spare Kit	5Sets for each type and rating	
4.6	Coil for Control Contactor	5Nos.	
4.7	On/Off Delay Timer	1No. for each type and Rating	
4.8	Cluster type LED Indicating Lamps complete assembly	10% of each colour installed	
4.9	Push Button (On/Off) Complete Assembly	2Nos.for each colour	

Sl. No	Equipment	Quantity	Price (INR Million)
4.10	MCCB	1No. for each type and Rating	
4.11	Power Fuse	3Nos. for each type and Rating	
4.12	Control Fuse	5Nos each type and rating	
4.13	Thermal Over Load Relay	1No. each type and rating	
4.14	Ammeter	1No. each type and rating	
4.15	Switch Fuse Unit	5Nos.for each type and rating	
4.16	Any other Electronic Components/PCB used in the system	10% of installed quantity	
4.16	Terminal Block		
4.16.1	Power Terminal Block	10% of total nos. for each type and rating used in the system	
4.16.2	Control Terminal Block	10% of total nos. for each type and rating used in the system	
4.16.3	End Plate for Power & Control Terminal Block	Each type 25Nos.	
4.17	Annunciator	1 No of each type & rating	
5.0	**Protective Relaying system**		
5.1	**6.6 KV System**		

Sl. No	Equipment	Quantity	Price (INR Million)
5.1.1	Numerical Relay		
5.1.1.1	Feeder/Transformer Protection	2Nos.each type and rating	
5.1.1.2	Motor Protection	5Nos.each type and rating	
5.1.2	Conventional (Electromagnetic/Static type) Relay	10% for each type and	
5.2	**415V System**		
5.2.1	Numerical Relay		
5.2.1.1	Feeder/Transformer Protection	2Nos.each type and rating	
5.2.1.2	Motor Protection	5Nos.each type and rating	
5.2.2	Conventional (Electromagnetic/Static type) Relay	10% for each type and rating	
6.0	**UPS**		
6.1	UPS for PLC System (applicable only for 5 KVA rating & below)	One Complete set	
6.2	UPS for PLC System (applicable only for rating above 5 KVA)		
6.2.1	Fuse	3 (Three) times of total quantity of each type of fuses used in the system (for Two Units)	

Sl. No	Equipment	Quantity	Price (INR Million)
6.2.2	SCR	10% of total quantity of each type used in the system or minimum 2(two) nos. whichever is more.	
6.2.3	Diode	10% of total quantity of each type used in the system or minimum 2(two) nos. whichever is more.	
6.2.4	IGBT	4 (four) nos.	
6.2.5	Electronic Module/ PCB		
6.2.5.1	Static Switch	2(two) nos. each type of Electronic Card/PCB/modules used in the system	
6.2.5.2	Inverter	2(two) nos.. each type of Electronic Card/PCB/modules used in the system	
6.2.5.3	Static voltage Regulator	2(two) nos. each type of Electronic Card/PCB/modules used in the system	
6.2.5.4	Charger	2(two) nos. each type of Electronic Card/PCB/modules used in the system	
7.0	**UPS Battery**		

Sl. No	Equipment	Quantity	Price (INR Million)
7.1	Battery Cell (Uncharged, Dry)	8 nos.	
7.2	Inter connecting cell strips	10 nos.	
7.3	Cell lifting puller	1 no.	
8.0	**Control Panel/Desk Mounted Items**		
8.1	Push Button		
8.1.1	Complete assembly	5Nos for each colour	
8.1.2	Contact Element (1NO + 1NC) Block	20Nos.	
8.2	Selector Switch	10Nos. for each type and rating	
8.3	Meter (Analog or Digital)		
8.3.1	Ammeter	1No. for each type and range	
8.3.2	Voltmeter	1No. for each type and range	
8.3.3	Frequency	1No. for each type and range	
8.3.4	MW	1No. for each type and range	
8.3.5	MVAR	1No. for each type and range	

Sl. No	Equipment	Quantity	Price (INR Million)
8.3.6	Power Factor	1No. for each type and range	
8.3.7	Synchroscope	1No. for each type and range	
8.4	LED Indicating Lamps complete assembly	10Nos. for each Colour and type	
8.5	Mimic Lamps	10Nos. for each Colour and type	
8.6	MCB	2Nos. for each type and rating	
8.7	Door Limit Switch	2Nos.	
8.8	Annunciation system		
8.8.1	Lamp Box with Facia & Lamps (LED type)	25Nos.	
8.8.2	Hooter	1No.	
8.8.3	Each type of PCB (for non-PLC driven system)	1(one) no.	
9.0	**Actuator**		
9.1	Complete set of Actuator	1No. for each type and rating	
9.2	Limit Switch	2 Nos each type and rating	
9.3	Torque Switch	2 Nos each type and rating	

Sl. No	Equipment	Quantity	Price (INR Million)
9.4	Auxiliary Contact	1 no each type and rating	
9.5	Motor	1 no each type and rating	
9.6	Complete Seal kit	1Set for each type and rating	
9.7	Complete O-Ring Set	1Set	
10.0	**Illumination**		
10.1	LED fixtures complete set	10% of installed quantity for each type	
10.2	LED fixture Ballast	20% of installed quantity for each type	
10.3	HPSV & HPMV fixtures complete assembly	10% of installed quantity for each type	
10.4	Lamp, capacitor, ballast of HPSV & HPMV fixtures	20% of installed quantity for each type	
10.5	Clockswitch type Time Switch	10% of installed quantity	
10.6	Miniature Circuit Breakers (M.C. Bs)	10% of installed quantity for each type & rating	
11.0	**Cable & Accessories**		
11.1	6.6KV Grade HT Power Cable	500Mtrs of each type, size & rating of Cables	

Sl. No	Equipment	Quantity	Price (INR Million)
11.2	LT Power Cable	500Mtrs of each type, size & rating of Cables	
11.3	Control Cable	500Mtrs of each type, size & rating of Cables	
11.4	Trailing Cable		
11.4.1	Elevator	One set of full length of each size/type of cables as used for each type of Elevator	
11.4.2	Electrical Hoist	One set of full length of each size/type of cables as used for each type of Electrical Hoist	
11.5	Gland & lugs	20% of each type, size & rating	
13.0	**220V DC System**		
13.1	Battery		
13.1.1	Battery Cell (Uncharged, Dry)	5 nos for each type and rating	
13.1.2	Inter connecting cell strips	10 nos for each type and rating	
13.1.3	Vent plug	10 nos	
13.1.4	Teak wood cable clamps with hardware	2 Nos.	

Sl. No	Equipment	Quantity	Price (INR Million)
13.1.5	Hydrometer	1 No.	
13.1.6	Rubber gloves	1 pair	
13.1.7	Voltmeter for measuring cell voltage (Center zero type)	1 no.	
13.1.8	Insulated socket spanner with handle	1 no.	
13.1.9	Thermometer	1 no.	
13.1.10	Inter row connector	5 sets of each rating	
13.1.11	Insulators	10 nos	
13.1.12	Hexagonal studs+nuts	10 nos	
13.2	Float –cum- Boost Charger		
13.3			
1.	3 phase incoming switches	5 Nos.	
2.	A/C contactor float chargers	5 Nos.	
3.	A/C contactor float/boost chargers	5 Nos.	
4.	DC contactors	5Nos.	

Sl. No	Equipment	Quantity	Price (INR Million)
5.	AC contactor coils	5 Nos.	
6.	DC contactor coils	5 Nos.	
7.	Push buttons	5 Nos.	
8.	Indication LEDs	10 Nos.	
9.	Output ammeters	5 Nos.	
10.	Load ammeters	5 Nos.	
11.	Battery ammeters	5Nos.	
12.	Input voltmeters	5 Nos.	
13.	Output and load voltmeters	5 Nos.	
14.	Input ammeters (FC)	1 each type	
15.	Input ammeters (FCBC)	1 each type	
16.	Battery earth leakage ammeters	2 Nos.	
17.	Input fuses (FC)	5 nos. for each changer	
18.	Input fuses (FCBC)	5 Nos. for each changer	

Sl. No	Equipment	Quantity	Price (INR Million)
19.	Rectifier fuses (semi conductor)	5 Nos. for each changer	
20.	Thermal O/L relays (FC)	1 each/rating	
21.	Thermal O/L relays (FCBC)	1each/rating	
22.	Charger ON switches	5 Nos.	
23.	Mode selector switches	5 Nos.	
24.	Voltmeter selector switches	5 Nos.	
25.	Ammeter selector switches	5 Nos.	
26.	Output MCCB	2 each/rating	
27.	Thyristors (FC)	1 set each type	
28.	Thyristors (FCBC)	1set each type	
29.	Free wheeling diodes (FC)	1set each type	
30.	Free wheeling diodes (FCBC)	1 set each type	
31	All cards	2 sets	
14	**Motor**		

Sl. No	Equipment	Quantity	Price (INR Million)
14.1	**HT Motor**		
14.1.1	Driving End Bearing	1No. (or 1Set as applicable) for each type and rating of Motor	
14.1.2	Non-Driving End Bearing	1No. (or 1Set as applicable) for each type and rating of Motor	
14.1.3	Cooling Fan Internal & External	1Set for each type and rating of Motor	
14.1.4	Bearing Temperature Gauge Driving & Non-Driving End	1Set for each type and rating of Motor	
14.1.5	Phase-Segregated Terminal Box	1Set for each type and rating of Motor	
14.1.6	Neutral End Terminal Bushing with Fasteners	1No. for each type and rating of Motor	
14.1.7	RTD for Bearing/winding Temperature	2 Nos. for each type and rating of Motor	
14.1.8	Motor Space Heater	1No. for each type and rating of Motor	
14.1.9	Complete Set of Coupling	1Set for each Application	
14.2	**415 Volt Motor (above 30KW Rating)**		
14.2.1	End Shield Cover Driving & Non-Driving End	1Set for each type and rating of Motor	
14.2.2	Driving End & Non-Driving End Bearing	1Set for each type and rating of Motor	

Sl. No	Equipment	Quantity	Price (INR Million)
14.2.3	Cooling Fan	1No. for each type and rating of Motor	
14.2.4	Motor Space Heater	1No. for each type and rating of Motor	
14.2.5	Motor Terminal Block	1No. for each type and rating of Motor	
14.2.6	Complete Set of Coupling	1Set for each Application	
14.3	**415 Volt Motor (Upto 30KW Rating)**		
14.3.1	Driving End & Non-Driving End Bearing	1Set for each type and rating of Motor	
14.3.2	Cooling Fan	1No. for each type and rating of Motor	
14.3.3	Motor Terminal Block	1No. for each type and rating of Motor	
14.3.4	Complete Set of Coupling	1Set for each Application	
C	**I&C Packages**		
1.0	**PLC System**		
1.1	Communication Processor Module	1 No. for each type	
1.2	Binary Input Card	10% of total nos. used in the system or minimum 4 (four)	

Sl. No	Equipment	Quantity	Price (INR Million)
		nos. whichever is more.	
1.3	Analog Input Card (4 to 20 mA type)	10% of total nos. used in the system or minimum 2 (two) nos. whichever is more.	
1.4	Analog Input Card (RTD input type)	10% of total nos. used in the system or minimum 2 (two) nos. whichever is more.	
1.5	Binary Output Card for contact	10% of total nos. used in the system or minimum 4 (four) nos. whichever is more.	
1.6	Binary Output Card for Voltage (24VDC)	10% of total nos. used in the system or minimum 4 (four) nos. whichever is more.	
1.7	Analog Output Card (4 to 20 mA type)	10% of total nos. used in the system or minimum 2 (two) nos. whichever is more.	
1.8	Interposing Relay	10% of total nos. used in the system or minimum 4 (four) nos. whichever is more.	
1.9	Output Relay modules / Relay Board & Auxiliary Relay	10% of total nos. used in the system or minimum 4 (four) nos. whichever is more.	

Sl. No	Equipment	Quantity	Price (INR Million)
1.10	Communication Modules	1 No. for each type	
1.11	Prefab-cable with connector for CPU, Communication Card and I/O racks	1 No. for each type	
1.12	Networking Modules / Components / Switch	1 No. for each type	
1.13	Power Supply Units for CPU, Communication Card, I/O racks and field IO interrogation.	10% of total nos. used in the system or minimum 2 (two) nos. whichever is more for each type and rating.	
1.14	RAM Backup Battery	2 (two) nos.	
1.15	MCB	1 No. for each type and rating	
1.16	Special Fuse for the Cards	Each type/ rating of fuse, 25% of total nos. used in the system or minimum 25 nos. whichever is more.	
1.17	Fuse	10% of total no.s for each type and rating.	
2.0	**Cables**		
2.1	Instrumentation & Control cables (Type wise)	1 (one) Km of each type, size & rating of cable	

Sl. No	Equipment	Quantity	Price (INR Million)
2.2	Fiber Optic Cables for PLC Remote I/O Bus / MMI Network	500 meter of each type, size of cable	
2.3	Interface cables with connecting plug for each type of peripherals or I/O hardware	10% of quantity for each type	
3.0	**Field Instrument**		
3.1	Electronic Level Transmitters all types	10% of total nos. used in the system or minimum 1 (one) no. whichever is more for each type and range.	
3.2	Switch (Pressure, Differential Pressure, Level, Flow, Temperature etc.)	10% or 1 (One) no. whichever is higher of each type & model / range used in the system	
3.3	Solenoid Valve		
3.3.1	Complete Solenoid Valve Assembly	2 Nos. for each type and rating used in the system	
3.3.2	Coil (single or double coil type)	10% of total nos. used in the system or minimum 5 (five) Nos. whichever is more for each type and rating.	
3.4	Gauge (Pressure, Differential Pressure, Temperature, Level, Flow)	10% of total nos. used in the system or minimum 1 (one)	

Sl. No	Equipment	Quantity	Price (INR Million)
		no. whichever is more for each type and range.	
	Belt controller system	2 nos	
3.5	Load cell of belt weighing system with its mounting accessories and cable	4 nos.	
4.0	**Control Panel And Local / Remote Control Desk (As applicable)**		
4.1	Mosaic / Conventional Type Push button Station	10% of total quantity used in the system or minimum 2 (two) nos. whichever is more for each type and model.	
4.2	Mosaic Type Push button Station with LED Indication	10% of total quantity used in the system or minimum 2 (two) nos. whichever is more for each type and model.	
4.3	Mosaic Type LED Indication Station	10% of total quantity used in the system or minimum 2 (two) nos. whichever is more for each type and model.	
5.0	**Annunciation System (As applicable)**		
5.1	Lamp Box with Facia & Lamps (LED type)	10% or 2 nos. whichever is higher	

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Sl. No	Equipment	Quantity	Price (INR Million)
5.2	Electronic Module	10% of minimum 1 (one) no. whichever is more	
5.3	Hooter	1(one) No.	
6.0	**Vibration Monitoring System**		
6.1	Vibration Sensor	10% of total quantity	
6.2	Vibration Monitor Card	10% of total quantity for each type	
6.3	Power Supply	10% of total quantity for each type and rating or two (2) nos. whichever is higher	
7.0	**Load Cells for Road Weigh Bridge including the bearings.**	2 Nos	
7.1	Controller for the Weigh Bridge	Complete Set	
7.2	Signal Cables	50 Mtr	
	Price of Mandatory Spares of Coal Handling Plant		

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Table 2: Recommended Spares

Sl. No	Equipment	Quantity	Price (INR Million)
1	2	3	4

Table 3: Special Tools and Tackles

Sl. No	Equipment	Quantity	Price (INR Million)
1	2	3	4
1.	**Mechanical Packages**		
1.1.1.	50 MT & 10 MT Hydraulic Jack	1 no. each	
1.1.2.	100 MT Hydraulic Jack	2 nos.	
1.2.	4 inch flexible grinder	1 no.	
1.3.	Platform trolley for transportation of spare parts 2 MT	1 no.	

	cap.		
1.4.	Extendable aluminium ladders	2 nos.	
1.5.	10 inch size flat, round, half round bastard/fine files	2 nos.	
1.6.	Outside micrometers, range upto & 150mm	1 set each.	
1.7.	Inside micrometers, range upto 250mm & 150mm	1 set each.	
1.8.	Vernier calipers (with digital display Upto 150mm)	2 nos.	
1.9.	Filler gauges (full set)	2 nos.	
1.10.	Universal spirit levels	2 nos.	
1.11.	Torque wrenches to suit CHP equipment	2 nos	
1.12.	Standard ring spanners (full range in mm & inch.)	2 sets for each.	
1.13.	Standard DE spanners (full range in mm & inch.)	2 sets for each.	
1.14.	Adjustable spanner sets (full range)	2 sets	
1.15.	Tabular box spanner sets (full range)	2 sets	
1.16.	Socket hood spanner set (box spanner set)	2 sets	
1.17.	Ball peen hammers (in different sizes)	6 nos	

1.18.	Nylon faced hammers	10 nos.	
1.19.	Sledge hammers of 5 Kg. & 10 Kg.	4 nos. each	
1.20.	Dial gauges digital type with magnetic base (0-10mm with least count 0.01)	4 nos.	
1.21.	Steel tapes (3m, 6m) & steel scales (1m, 0.5m & 0.3m), steel wired tape – 20m	10 sets each	
1.22.	Internal and external calipers (0.15m, 0.3m, 0.5m, 1m)	4 sets each	
1.23.	Hacksaw frame 18” with one dozen hacksaw blades	10 nos.	
1.24.	Tri-square (6”, 9” & 12”)	6 nos. each type.	
1.25.	Screw operated coupling & bearing pullers; - 12" size - 18" size	 4 nos. 4 nos.	
1.26.	2 MT cap rope pull lift	4 nos.	
1.27.	5 MT cap rope pull lift	4 nos.	
1.28.	Oil seal extractors, circlip extractors, bearing extractors	4 nos.	
1.29.	Screw drivers of each size (6" to 12")	10 sets	

1.30.	Slings with eye bolts and D. shackles	6 nos.	
1.31.	Plumb bobs	3 nos.	
1.32.	Belt pullers	4 nos.	
1.33.	Pliers with insulation covered arm size 7 inch.	6 nos.	
1.34.	Adjustable pliers	6 nos.	
1.35.	Vice grip (suitable for 2", 6" & 12")	2 sets	
1.36.	Three legged tripod stand 10 ft. height	2 nos.	
1.37.	Cable jointing kit	2 nos.	
1.38.	Marking punches	4 sets	
1.39.	Scribers	6 nos.	
1.40.	Grease gun	4 nos.	
1.41.	Bucket grease gun	4 nos.	
1.42.	1/2 inch dia portable wolf drilling machine	2 nos.	
1.43.	Avometers	4 nos.	

1.44.	Insulation teser - 2500 V - 500V - 5000V	 1 no. 2 nos. 1 no.	
1.45.	Vibration Monitor/Metering equipment	2 nos.	
1.46.	Tongue testers & multimeter	3 nos. each	
1.47.	Phase sequence meter	1 No	
1.48.	Portable emergency lights	8 nos.	
1.49.	Cherry picker/ Elevated platform mechanized for lighting & over head line work minimum reach of 13 meter height.	1 no	
1.50.	Hand lamp sets with flexible wire, 50m each	12 nos.	
1.51.	10 MT Chain Pulley Block	1 no.	
1.52.	5 MT Chain Pulley Block	2 nos.	
1.53.	Induction heater (suitable for all size bearings used)	1 no.	
1.54.	Bearing Pullers	1 Lot	

Note: Bidder to include any other special tools / tackles that may be required for safe and efficient operation and maintenance of the CHP.