



BLANK PRICE BID DOCUMENT Part B (Bill of Quantity) - Job Rate Contract

S.No	Equipment/Area	Activity	UOM	FY 2019			FY 2020			FY 2021		
				Quantity	Rate per Unit	Amount	Quantity	Rate per Unit	Amount	Quantity	Rate per Unit	Amount
1	Clinker Grinder	CG PM	No	96			96			96		
		Fusible plug replacement	No							2		
		Coupling replacement	No							2		
		Spider replacement	No	8			8			8		
		Rotor Bearing replacement	No	1			1			1		
		Plummer Block replacement	No							1		
		Drive and driven sprocket replacement	No							1		
		Drive chain replacement	No							1		
		Gland replacement	No	16			16			16		
		CG Gear replacement	No							1		
		Feed sump replacement	No							2		
		Feed sump liner replacement	No				4					
		Seal water valve replacement	No	4			4			4		
		CG choke clearing work	No	200			200			200		
		Gearbox Lubrication work	No	16			16			16		
		Feed sump repairing work	No	4			4			4		
		Gland follower replacement work	No				4					
		Seal water line leakage arresting work	No	8			8			8		
2	Feed Gate	PM	No	48			48			48		
		Cylinder overhauling(Seal kit replacement)	No	2			2			2		
		Cylinder shaft replacement	No							1		
		Cylinder roller replacement	No							24		
		Jetting nozzle replacement	No	2			2			2		
		Spray Nozzle replacement	No	1			1			1		
		Gate & gate frame wear liner replacement	No				2			2		
		Top,bottom & side liner replacement	No				1			1		
		Hydraulic hose replacement	No				2			2		
		Cylinder gland and packing replacement	No	16			16			16		
		Gland follower replacement	No				8			8		
		Level Indicator rod replacement	No	16			16			16		
		safety valve replacement	No							1		
		Hydraulic valve replacement	No							1		
		Pneumatic valve replacement	No							1		
		Cylinder Barrel replacement	No				1			1		
		View glass replacement	No	8			8			8		
		Air water converter tank level Indicator replacement	No	1			1			1		
		Impingment plate replacement	No				1			1		
		Vent line gasket replacement	No	8			2			2		
Feed gate alignment work	No	8			8			8				
Discharge chute repairing work	No	8			8			8				

3	Flushing Apparatus	Nozzle replacement	No	4		4		4	
		Nozzle holder replacement	No					2	
		Valve replacement	No					4	
		Choke clearing work	No	4		4		4	
		Gasket replacement	No	2		2		2	
		Flushing apparatus cleaning work	No	8		8		8	
		Nozzle replacement	No	8		8		8	
4	Jet pump	Nozzle holder replacement	No			4		4	
		Combination tube replacement	No			4		4	
		Choke clearing work	No	4		4		4	
		Drain valve replacement/repairing work	No	1		1		1	
5	BAOF Tank	PM	No	48		48		48	
		Overhauling	No			4		4	
6	BAOF Pump	Impeller replacement	No			1		1	
		Expeller replacement	No			1		1	
		Liner replacement	No			1		1	
		Bearing replacement	No	2		2		2	
		Shaft replacement	No					1	
		Sleeve replacement	No	2		2		2	
		Gland replacement	No	2		2		2	
		Labyrinth replacement	No	2		2		2	
		Bearing seal replacement(oil seal)	No	2		2		2	
		Sealing nozzle replacement	No	2		2		2	
		Pulley replacement	No			1		1	
		V Belt replacement	No	8		8		8	
		Seal water hose replacement	No			2		2	
		Strainer replacement	No	1		1		1	
		Valves replacement/repairing(Suction,discharge,seal water)	No	2		2		2	
		Pump and pulley alignment	No	4		4		4	
		7	Common Distribution Trough	Liner replacement	No				
Valve replacement	No			2		2		2	
Nozzle replacement	No					4		4	
Choke cleaning work	No			1		1		1	

12	PM of Water Pumps	PM		228			228			228		
13	Eco Ash Water Pump	overhauling	No				2			2		
		Impeller replacement	No				1			1		
		Shaft sleeve replacement	No				1			1		
		Casing replacement	No							1		
		Bearing replacement	No	1				1			1	
		Suction and discharge valve replacement/repair	No	2				2			2	
		Coupling replacement	No					1			1	
		Coupling Pin bush replacement	No	1				1			1	
		Mechanical seal replacement	No	1				1			1	
		Grease nipple replacement	No	1				1			1	
14	LP Seal Water Pump	overhauling	No				2			2		
		Impeller replacement	No				1			1		
		Shaft replacement	No				1			1		
		Shaft sleeve replacement	No				1			1		
		Casing replacement	No				1			1		
		Bearing replacement	No	1				1			1	
		Suction and discharge valve replacement/repair	No	1				1			1	
		Coupling replacement	No					1			1	
		Coupling Pin bush replacement	No	1				1			1	
		Mechanical seal replacement	No	1				1			1	
14	HP Seal Water Pump	overhauling	No				2			2		
		Impeller replacement	No				1			1		
		Shaft replacement	No				1			1		
		Shaft sleeve replacement	No				1			1		
		Casing replacement	No				1			1		
		Bearing replacement	No	1				1			1	
		Suction and discharge valve replacement/repair	No	2				2			2	
		Coupling replacement	No					1			1	
		Coupling Pin bush replacement	No	1				1			1	
		Mechanical seal replacement	No	1				1			1	
15	BALP water Pump	overhauling	No				2			2		
		Impeller replacement	No				1			1		
		Shaft replacement	No				1			1		
		Shaft sleeve replacement	No				1			1		
		Casing replacement	No				1			1		
		Bearing replacement	No	1				1			1	
		Suction and discharge valve replacement/repair	No	2				2			2	
		Coupling replacement	No					1			1	
		Coupling Pin bush replacement	No	1				1			1	
		Mechanical seal replacement	No	1				1			1	
16	BAHP water Pump	overhauling	No				2			2		
		Impeller replacement	No				1			1		
		Shaft replacement	No				1			1		
		Shaft sleeve replacement	No				1			1		
		Casing replacement	No				1			1		
		Bearing replacement	No	1				1			1	
		Suction and discharge valve replacement/repair	No	2				2			2	
		Coupling replacement	No					1			1	
		Coupling Pin bush replacement	No	4				4			4	
		Mechanical seal replacement	No	1				1			1	
Grease nipple replacement	No	1				1			1			

17	DCW Pump	overhauling	No			2			2		
		Impeller replacement	No			1			1		
		Shaft replacement	No			1			1		
		Shaft sleeve replacement	No			1			1		
		Casing replacement	No			1			1		
		Bearing replacement	No	1		1			1		
		Suction and discharge valve replacement/repair	No	2		2			2		
		Coupling replacement	No			1			1		
		Coupling Pin bush replacement	No	1		1			1		
		Mechanical seal replacement	No	2		2			2		
		Grease nipple replacement	No	1		1			1		
18	Buffer Hopper(ISH)	Bag filter PM	No	48		48			48		
		Bag Filter replacement	No	4		4			4		
		ESP/Buffer hopper Fluidising pad replacement	No	40		40			40		
		Valve replacement/repair	No	4		4			4		
		Vacuum Breaker replacement	No						2		
		Air Vessel choke cleaning work	No	24		24			24		
19	ESP Fluidising Blower	Bag filter inspection	No	12		12			12		
		PM	No	96		96			96		
		overhauling	No			4			4		
		Bearing replacement	No	4		4			4		
		V Belt replacement	No	16		16			16		
		V Pulley replacement	No			2			2		
		Timing gears replacement	No			2			2		
		safety valve replacement	No	2		2			2		
		NRV replacement	No	4		4			4		
		Grease nipple replacement	No	4		4			4		
		Oil replacement	No	16		16			16		
		Valve replacement/repair	No	4		4			4		
		Suction filter replacement	No	8		8			8		
		Alignment	No	4		4			4		
20	Vacuum Pump	PM	No	144		144			144		
		overhauling	No			12			12		
		Bearing replacement	No	12		12			12		
		Shaft sleeve replacement	No	6		6			6		
		Seal water line valve replacement	No	12		12			12		
		Suction line valve replacement	No	12		12			12		
		Vacuum gauge valve replacement	No	2		2			2		
		V belt pulley replacement	No			4			4		
		V Belt replacement	No	16		16			16		
		PM	No	54		54			54		
21	Transport(Conveying) air compressor	overhauling	No			9			9		
		Suction filter replacement	No	9		9			9		
		NRV replacement	No	2		2			2		
		Coupling replacement	No						1		
		lateral Compensator replacement	No			1			1		
		Blow off pipe replacement	No			1			1		
		After cooler Strainer replacement	No			1			1		
		After cooler Drain valve replacement	No	1		1			1		
		Dryer refrigerant replacement	No	9		9			9		
		Valve replacement/repair	No	1		1			1		

22	Instrument air compressor	PM	No	24			24			24			
		overhauling	No					2			2		
		Oil filter replacement	No	4					4		4		
		Air filter replacement	No	8					8		8		
		relief valve & safety valve replacement	No	1					1		1		
		NRV replacement	No	1					1		1		
		Disc Coupling replacement	No						1		1		
		Intercooler replacement	No						1		1		
		Dryer refrigerant replacement	No	2					2		2		
		Strainer replacement	No	1					1		1		
		1st stage air block replacement	No						1		1		
		2nd stage air block replacement	No						1		1		
		Manifold replacement	No						1		1		
		Oil Pump replacement	No						1		1		
		Oil replacement	No	2					2		2		
		Oil pump coupling replacement	No						1		1		
		Maintenance kit replacement	No	2					2		2		
		Dryer after filter replacement	No	6					6		6		
		Heat exchanger replacement	No						1		1		
		Valve replacement/repair	No	1					1		1		
Intercooler flushing & cleaning	No	2					2		2				
Aftercooler flushing & cleaning	No	2					2		2				
Manifold flushing & cleaning	No	2					2		2				
23	HCSD LP Water Pump	overhauling	No					1		2			
		Impeller replacement	No					1		1			
		Shaft replacement	No							1			
		Shaft sleeve replacement	No	1					1		1		
		Inter stage bush & sleeve replacement	No	1					1		1		
		Casing replacement	No						1		1		
		Bearing replacement	No	1					1		1		
		Suction and discharge valve replacement/repair	No	2					2		2		
		NRV replacement	No	2					2		2		
		Coupling replacement	No						1		1		
		Coupling Pin bush replacement	No	1					1		1		
		Mechanical seal replacement	No	2					2		2		
		Grease nipple replacement	No	1					1		1		
		Pump Alignment	No	2					2		2		
24	Dust conditioner(Paddle Feeder)	PM	No	36				36		36			
		overhauling	No						3		3		
		Gearbox Overhauling	No						3		3		
		Bearing replacement	No	1					1		1		
		Plummer Block replacement	No								1		
		Coupling replacement	No						1		1		
		Gearbox replacement	No						1		1		
		Spur Gear replacement	No						1		1		
		Water Sprinkler nozzle replacement	No	1					1		1		
		Oil replacement	No	3					3		3		
		Grease nipple replacement	No	1					1		1		
		Valve replacement/repair	No	1					1		1		
		Gearbox and paddle feeder alignment	No	3					3		3		
		25	Screw Feeder(Dosing Screw)	PM	No	36				36		36	
overhauling	No								3		3		
Gearbox overhauling	No								3		3		
Gearbox replacement	No								3		3		
Bearing replacement	No			1					1		1		
Plummer Block replacement	No										1		
Grease nipple replacement	No			1					1		1		
Oil replacement	No			3					3		3		
Gearbox Lubrication work	No			6					6		6		
Alignment	No			3					3		3		

26	Agitator Retention Tank (ART)	PM	No	36			36			36					
		Gearbox overhauling	No					3			3				
		Agitator overhauling	No					3			3				
		Gearbox replacement	No								1				
		Agitator replacement	No								1				
		Top Blade replacement	No					3			3				
		Bottom Blade replacement	No					3			3				
		Coupling replacement	No					1			1				
		Coupling bush replacement	No	1				1			1				
		Shaft replacement	No								1				
		Baffle replacement	No						1		1				
		Gearbox oil replacement	No	3				3			3				
		Drain valve replacement	No	1				1			1				
		Bearing replacement	No	3				3			3				
		Baffle repair	No	3				3			3				
		27	Charge Pump	PM	No	36			36			36			
Overhauling	No							2			2				
Impeller replacement	No			1				1			1				
Internals replacement(Volute,Liner,Casing replacement)	No			1				1			1				
Shaft replacement	No			1				1			1				
Shaft sleeve replacement	No			1				1			1				
Bearing replacement	No			1				1			1				
Suction and discharge valve replacement/repair	No			2				2			2				
NRV replacement	No			2				2			2				
Gland packing replacement	No			1				1			1				
V belt pulley replacement	No							1			1				
V Belt replacement	No			2				2			2				
Pump Alignment	No			1				1			1				
28	HCSD / GEHO Pump			PM	No	36			36			36			
				Gearbox overhauling	No								1		
				Geho 2/2 way valve overhauling	No					3			3		
		Suction strainer mesh replacement	No					3			3				
		Suction strainer replacement	No								1				
		Geho Suction Header replacement	No								1				
		Geho Discharge Header replacement	No								1				
		NRV replacement	No								1				
		NRV Internals replacement	No	3				3			3				
		NRV Insert seal replacement	No	12				12			12				
		Main Diaphragm replacement	No	1				1			1				
		Pulsation dampener dipahragm replacement	No	1				1			1				
		Discharge valve replacement	No	1				1			1				
		Gearbox,Power end,Gearbox & fluid coupling oil replacement	No					6			6				
		Fluid coupling replacement	No								1				
		Coupling replacement	No								1				
		Filters replacement	No	6				6			6				
		Slurry liner bend/laterals replacement	No	3				3			3				
		Nitrogen filling	No	6				6			6				
		Suction vessel repairing work	No								1				
Slurry line de choking work	No	9				9			9						
Slurry line rotation	No	3				3			3						
29	Rotary Vane feeders	PM	No	60			60			60					
		Overhauling	No					15			15				
		Coupling replacement	No					1			1				
		Coupling bush replacement	No	10				10			10				
		Gearbox replacement	No								1				
		Pillow block bearing replacement	No	1				1			1				
		Adjustible wear tips replacement	No								5				
		Vane feeder alignment	No	5				5			5				
		Greasing work	No	15				15			15				
		Choke clearing work	No	10				10			10				

30	Telescopic Unloading spout	PM	No	18			18			18			
		Gearbox replacement	No								1		
		Discharge cone repairing	No	3				3			3		
32	Clarifloculator	PM	No	12			12			12			
		Carriage Drive gearbox overhauling	No					1			1		
		Flocculator Gearbox overhauling	No					1			1		
		Carriage Drive chain replacement	No					1			1		
		Carriage drive gearbox replacement	No					1			1		
		Drive Sprocket replacement	No					1			1		
		Coupling replacement	No					1			1		
		Gearbox oil replacement	No	2				2			2		
		Slip ring bearing replacement	No	1				1			1		
		Flocculator Paddles replacement	No					1			1		
		Scrapper blade replacement	No					1			1		
		Telescopic valve replacement/repair	No	1				1			1		
		Carriage wheel drive & idler wheel replacement	No								1		
		Flocculator shaft replacement	No								1		
		Carriage wheel drive plummer block replacement	No								1		
		Flocculator V Belt pulley replacement	No								1		
		Flocculator V Belt replacement	No	4				4			4		
		Super structure strengthening work	No	1				1			1		
Alignment	No	2				2			2				
33	Flash Mixer	PM	No	12			12			12			
		Gearbox overhauling	No					1			1		
		Gearbox replacement	No								1		
		Coupling replacement	No					1			1		
		Impeller replacement	No					1			1		
		Bearing replacement	No	1				1			1		
		Alignment	No	1				1			1		
		PM	No	8				8			8		
34	Lime Recirculation cum feed Pump	overhauling	No				2			2			
		Impeller replacement	No				1			1			
		Shaft sleeve replacement	No	1				1			1		
		Casing replacement	No					1			1		
		Bearing replacement	No	1				1			1		
		Suction and discharge valve replacement/repair	No	2				2			2		
		NRV replacement	No	2				2			2		
		Coupling replacement	No					1			1		
		Coupling Pin bush replacement	No	1				1			1		
		Mechanical seal replacement	No	2				2			2		
		Grease nipple replacement	No	1				1			1		
		Pump Alignment	No	2				2			2		
35	Dosing Tank with agitator(Lime,Alum & Polyelectrolyte)	PM	No	36			36			36			
		Gearbox overhauling	No								3		
		Gearbox replacement	No								3		
		Coupling replacement	No								1		
		Impeller replacement	No								3		
		Bearing replacement	No	3				3			3		
		Alignment	No	6				6			6		
37	Dosing Pump(Alum & Polyelectrolyte)	Overhauling	No				2			2			
		Oil replacement	No	4				4			4		
		Diaphragm replacement	No	4				4			4		
		Valve & NRV replacement	No	4				4			4		

40	Sludge Pump (Clarriflocculator)	PM	No	24			24			24			
		Overhauling	No					2			2		
		Mechanical seal replacement	No	1				1			1		
		Hose replacement	No	1				1			1		
		Universal joint replacement	No	1				1			1		
		Alignment	No	2				2			2		
		Screw repair work	No	1				1			1		
41	Bottom Ash Hopper	Ejector Nozzle replacement	No	1			1			1			
		Cooling Nozzle replacement	No	2				2			2		
		Manhole door replacement	No					1			1		
		View glass replacement	No	8				8			8		
		Refractory work	No					1			1		
42	Seal Trough	Flushing nozzle replacement	No	2			2			2			
		Drain Valve replacement	No	2				2			2		
43	Fly Ash Vacuum Type De-ashing	Bellow replacement	No	6			6			6			
		Gasket replacement	No	24				24			24		
		Sleeve coupling replacement	No	4				4			4		
		Flange replacement	No	6				6			6		
		U clamp replacement	No	6				6			6		
		Valve replacement/repair	No	1				1			1		
		Bends/laterals replacement	No	6				6			6		
		Hopper De choking	No	24				24			24		
		Thickness survey	No	18				18			18		
44	Silo	Silo vent fan & filter PM	No	1			1			1			
		Vent filter bag/cage replacement	No								3		
		Silo fluidizing pad replacement	No								1		
		Valve/NRV replacement	No	1				1			1		
		Vent fan bearing replacement	No	1				1			1		
		Vent Fan plummer block replacement	No					1			1		
		safety valve replacement	No	6				6			6		
		Silo de choking	No								6		
		PM	No	6				12			12		
45	AWRS Recycle Ash Water Pump	overhauling	No							3			
		Strainer replacement	No							3			
		Coupling replacement	No								3		
		PM	No	4				8			8		
46	AWRS Recirculation Pump	overhauling	No							2			
		Strainer replacement	No							2			
		Coupling replacement	No								2		
		PM	No	4				8			8		
47	AWRS Sludge Pump	overhauling	No							2			
		Coupling replacement	No							2			
		PM	No	2				2			2		
48	AWRS Portable Pump	PM	No	4			8			8			
		overhauling	No							2			
49	AWRS Potable water Pump	Strainer replacement	No							2			
		Coupling replacement	No							2			
		PM	No							2			

50	AWRS RO Reject Transfer Pump	PM	No	4		8		8		
		overhauling	No					2		
		Strainer replacement	No					2		
		Coupling replacement	No					2		
51	MRS Compressor	PM	No	6		6		6		
		overhauling	No				1		2	
		Oil filter replacement	No	6			6		6	
		Air filter replacement	No	1			1		1	
		relief valve & safety valve replacement	No	1			1		1	
		NRV replacement	No	1			1		1	
		Strainer replacement	No	2			2		2	
		Manifold replacement	No						2	
		Oil Pump replacement	No						2	
		Oil replacement	No	1			1		1	
		Oil pump coupling replacement	No				1		1	
		Maintenance kit replacement	No				2		2	
		Valve replacement/repair	No	2			2		2	
		Intercooler,Aftercooler & Manifold flushing & cleaning	No	16			16		16	
52	MRS Vent Filter	PM	No	1		1		1		
		Vent filter bag/cage replacement	No			2		2		
		Valve/NRV replacement	No	1			1		1	
		Vent fan bearing replacement	No	1			1		1	
		Vent Fan plummer block replacement	No						2	
		safety valve replacement	No	10			10		10	
		Hopper de choking	No				2		2	
53	Dyke Patrolling	Ash Dyke patrolling.	No	365		365		365		
54	Crane	PM of Under Slung Crane.	No	10		10		10		
55	Electric Hoist	PM of Electric Hoist.	No	24		24		24		
56	Slurry discharge line Sleeve coupling replacement	Slurry discharge line Sleeve coupling replacement	No	24		24		24		
		Slurry discharge line Sleeve coupling ring gaskets replacement	No	4		4		4		
57	Ash Slurry line DP changeover	Ash Slurry line Discharge Point Changeover.	No	4		4		4		
S.No	Equipment/Area	Activity	UOM	FY 2019		FY 2020		FY 2021		
59	Dismantling,Fabrication,Erection	200NB to 250NB	Mtr	50		90		150		
		< 200NB	Mtr	30		50		150		
61	Rectification of Welding Defects	Welding Carbon Steel	No	100		150		200		
		Welding MS	Mtr	50		75		50		
62	Rectification of Flange Leakage	Rectification of Flange Leakage up to 200 NB	No	50		100		100		
		Rectification of Flange Leakage >200 NB	No	50		100		100		
63	Fabrication & Erection of Steel	Fabrication	MT	15		15		15		
		Erection	MT	15		15		15		
64	Application of Paint(Enamel)	Application of paint(With cost of paint)	Sq Mtr	50		50		50		
65	Erection of scaffolding	Erection of scaffolding	Cu mtr	500		500		700		
66	Load Testing of Electrical Hoist/EOT/Chain Pulley	5T Underslung Crane for Ash Slurry Pumps	No	1		1		1		
		5T Underslung Crane for Ash Water Pumps	No	1		1		1		
		7.5T Underslung Crane for Conveying Compressor	No	1		1		1		
		15T EOT crane for HCSD Pump House	No	1		1		1		
		4T Under slung EOT crane for Clarified water Pump House	No	1		1		1		
		7.5 T Electric Hoist for Bottom Ash Crusher Area	No	2		2		2		
		2 T Electric Hoist for SILO	No	3		3		3		

67	Pressure Vessel Testing (5M3 Capacity)		No	6			6			6		
68	Bag Replacement		No	50			100			200		
69	Pipe Rotation-Size 200 -250 NB		Mtrs	100			150			200		
70	Pump Dismantling & Fixing		No	5			5			5		
71	Thickness survey		Set	13			20			20		
72	Manpower supply for unforeseen jobs(Rates should be on 8	Supervisor	Manday	60			60			60		
		MW Fitter	Manday	18			18			18		
		Fitter,Cutter,Welder,Grinder	Manday	210			210			210		
		Rigger	Manday	105			105			105		
		Helper	Manday	240			240			240		
		Total Amount										
		GST as applicable										
		Gross Total Amount										
Note:												
1. 5 % escalation shall be considered for Unit rate in 2nd year & 3rd year subsequently.												
2. Contract price shall be firm throuout the contract period irrespective of revision in daily wage rate.												