

VOLUME - II

Tender No.: **HY/PE&SD/E&C/ SACL-BHARUCH/MECH/001**

PRICE BID SPECIFICATION

PROJECT: E&C for Mechanical, Piping, Electrical, C&I and Material handling works for
1x60 MW STG & Auxiliaries for Shriram Alkalies & Chemicals Ltd ,Bharuch

BHARAT HEAVY ELECTRICALS LIMITED

	TENDER NO.: HY/PE&SD/E&C/ SACL-BHARUCH/MECH/001	REV-01
	Project::E&C for Mechanical, Piping, Electrical, C&I and Material handling works for 1x60 MW STG & Auxiliaries for Shriram Alkalies & Chemicals Ltd, Bharuch	
	PRICE SCHEDULE	
	Name of the Bidder ::	Price offer no and Date :
	NOTES ::	
1	This document details the price/payment schedule format for the enquiry. No other format will be entertained and evaluated.	
2	Duly signed & stamped unpriced price schedule format shall be submitted along with Technical offer by bidder as a token of his concurrence that his price schedule is to be submitted in this format & prices shall be offered for all the items appearing in this price format .	
3	Bidder shall fill up prices of all items and submit to BHEL in separate sealed cover. All prices shall be submitted including of all taxes, (except service tax which is payable separately. Please refer, chapter: VII, Part - I of TCC for details)	
4	Total of price for all the items of "Schedule of Quantities" put together shall be considered for evaluation of the financial bid and for ascertaining the L-1 bidder. Any discount offered by the bidder on overall price or at the time of reverse auction will be uniformly applied on all the individual items for execution & billing purposes.	
5	For payment purpose, final contract value will be as per clause 2.14 of GCC	
6	All the bills will be settled from BHEL, PE&SD, - Hyderabad only.	

Volume-II Price Schedule (Abstract of Cost)	
TENDER NO.: HY/PE&SD/E&C/ SACL-BHARUCH/MECH/001	REV-01
PROJECT ::E&C for Mechanical, Piping, Electrical, C&I and Material handling works for 1x60 MW STG & Auxiliaries for Shriram Alkali & Chemicals Ltd, Bharuch	
NAME OF THE BIDDER ::	PRICE OFFER No. & DATE ::

Part B :: Erection, Testing, Insulation, Painting & Commissioning of Mechanical, Piping, Electrical, C& I and Material Handling works

Ref. Sheet	Description	No. of Units	Total Price in figure (Rs.)	Total Price in Words (Rs.)
B1	Erection & Commissioning for Main Equipment	1		
B2	Pipe Fitup and Welding	1		
B3	Radiography of Piping	1		
B4	Piping Erection including Hangers and Support	1		
B5	Thermal Insulation Application	1		
B6	E & C of Electrical and C & I Items	1		
B7	Material Handling and Stacking	1		
Total E & C + Material Handling price till complete hand over to customer (In Figures & words)		Rs.		

Notes:

- 1 Bidders shall quote for all items
- 2 Total price (B) shall be considered for price evaluation on lumpsum basis i.e for finalising the L1 bidder.

Volume-II Price Schedule (B1 ERECTION,TESTING COMMISSIONING AND PAINTING APPLICATION)					
TENDER NO.: HY/PE&SD/E&C/ SACL-BHARUCH/MECH/001			REV- 01		
PROJECT ::E&C for Mechanical, Piping, Electrical, C&I and Material handling works for 1x60 MW STG & Auxiliaries for Shriram Alkali & Chemicals Ltd ,Bharuch					
NAME OF THE BIDDER ::		PRICE OFFER No. & DATE ::			
B1. ERECTION OF MAIN EQUIPMENT					
Sl.No	Description	Quantities		Total Wt	Amount
		No of Items	Wt (in kgs)	In Kgs	
B1.1	Inner casing assembly	1	3,000	3,000	
B1.2	Guide blade carrier-1	1	1,000	1,000	
B1.3	Guide blade carrier-2	1	1,700	1,700	
B1.4	Guide blade carrier-3	1	2,600	2,600	
B1.5	Guide blade carrier-4	1	4,600	2,600	
B1.6	Guide blade carrier-5	1	4,500	4,600	
B1.7	Rear bearing housing Assembly	1	4,300	4,300	
B1.8	Front bearing housing Assembly	1	9,900	9,900	
B1.9	Rotor Assembly	1	18,700	18,700	
B1.10	Upper part of outer casing & ex hood(bolted condition)	1	30,550	30,550	
B1.11	Lower part of outer casing & Ex hood	1	30,400	30,400	
B1.12	Gov. Oil Accumulator Assembly	1set	600	600	
B1.13	Oil purification unit	1	1,000	1,000	
B1.14	Acoustic Enclosure	1set	7,500	7,500	
B1.15	Control valve	17	200	3,400	
B1.16	QCNRV's	10	310	3,100	
B1.17	Gear Box Assembly	1	15,200	15,200	
B1.18	Generator + Rotor splitted	1	1,25,000	1,25,000	
B1.19	Generator Foundation + Duct items	1 set	10,000	10,000	
B1.20	Brusherless exciter	1	2,000	2,000	
B1.21	Pilot Exciter	1	2,000	2,000	
B1.22	Lube oil tank	1	4,500	4,500	
B1.23	Overhead Lube Oil tank	1	1,700	1,700	
B1.24	Duplex filters	1set	250	250	
B1.25	Main / Aux. Lube Oil Pump Assembly	2	1,500	3,000	
B1.26	Emergency Oil Pump Assembly	1	900	900	
B1.27	Jacking Oil Pump Assembly	1set	2,000	2,000	
B1.28	Lube Oil Accumulators	2set	600	1,200	
B1.29	Oil Vapour Extn Fan	2	100	200	
B1.30	Lube Oil Centrifuge	1	1,000	1,000	
B1.31	Transfer Oil Pump	1	100	100	
B1.32	Drain Oil Tank	1	1,150	1,150	
B1.33	Gov. Oil Console	1	1,500	1,500	
B1.34	Valves	1 Set	11,000	11,000	
B1.35	Gland Steam Condenser	1	1,400	1,400	
B1.36	Structural	1 Set	10,000	10,000	
B1.37	Flash Tank (HP)	1	4,700	4,700	
B1.38	Warm Up vent Silencer	1	500	500	
B1.39	LP Steam Vent Silencer	1	1,300	1,300	
B1.40	MP Steam Vent Silencer	1	950	950	
B1.41	Surface condenser (splitted)	1	1,10,000	1,10,000	
B1.42	Steam Jet Air Ejector	1	7,500	7,500	
B1.43	Drain Cooler	1	1,500	1,500	
B1.44	LP heater #1	1	6,550	6,550	
B1.45	LP Heater# 2	1	6,600	6,600	
B1.46	HP Heater# 1	1	13,300	13,300	
B1.47	HP Heater# 2	1	12,500	12,500	
B1.48	Steam turbine Oil Cooler	2	3,100	6,200	
B1.49	STG Air Cooler	8	1,000	8,000	
B1.50	CENT Ex Fan	2	50	100	
Total Weight (in Kgs)				4,98,750	
Total Amount (in figures) :					
Total Amount (in words) :					

Notes:

1 Bidders shall quote the rate for the total scope of this equipment.

2 The rate quoted shall remain firm for variation in weight up to $\pm 15\%$. NO extra will be paid on this account .

Volume-II Price Schedule (B2 Pipe fit up and welding)	
TENDER NO.: HY/PE&SD/E&C/ SACL-BHARUCH/MECH/001	REV - 01
PROJECT ::E&C for Mechanical, Piping, Electrical, C&I and Material handling works for 1x60 MW STG & Auxiliaries for Shriram Alkalies & Chemicals Ltd ,Bharuch	
NAME OF THE BIDDER ::	PRICE OFFER No. & DATE ::

B2 Pipe fit up and welding

SI No	Description	Material Type	Material	Unit Rate (in Rs.)	Amount (in Rs.)
			Wt (kgs)		
B2.01	GOV Oil Piping For QCNRV	SS	200		
B2.02	GOV OIL PPG FOR ESV	SS	140		
B2.03	GOV OIL PPG FOR SERVO MOTOR	SS	310		
B2.04	CEP SUCTION PIPING	SA106GRB	1890		
B2.05	CEP DIS UPTO LCV&RECIR PIPING	SA106GRB	7130		
B2.06	LUBE OIL PIPING	SS	6920		
B2.07	OIL PURIFICATION PIPING	SS	190		
B2.08	JACKING OIL PIPING	SS	540		
B2.09	GOVERNING OIL PIPING	SS	390		
B2.10	PIPES FOR EQPT MOUNTED INSTR	SS	110		
B2.11	LO COOLER & FILTER VENT PIPING	SS	250		
B2.12	LUB OIL SPECIAL MATERIALS	SS	190		
B2.13	OIL VAPOUR FAN PIPING	SA106GRB	470		
B2.14	GLAND STEAM PIPING	SA106GRB,	4610		
B2.15		SA335GRP11			
B2.16	GL STEAM TO GSC & EXHAUST PIPING	SA106GRB,	1680		
B2.17		SA335GRP11			
B2.18	EXHAUST PIPING (SRV,EJECT ETC)	SA106GRB	2760		
B2.19	AIR EVACUATION PIPING	SA106GRB	1340		
B2.20	VALVES GLANDS SEALING PIPING	SA106GRB	450		
B2.21	TURBINE DRAINS PIPING	SA106GRB,	940		
B2.22		SA335GRP11			
B2.23	EQUIPMENTS DRAINS TO CONDENSER	SA106GRB	1130		
B2.24	SUSPENSIONS & SUPPORTS	SA106GRB	6200		
B2.25	GSC-IBR Piping	SA106GRB	310		
	Total Weight (kgs)		38150		
Total Amount (in figures)					
Total Amount (in words)					

Notes:

- 1 Bidders shall quote for all items
- 2 The item rates will be used for Billing Purpose .

Volume-II Price Schedule (B3 Radiography of piping)					
TENDER NO.: HY/PE&SD/E&C/ SACL-BHARUCH/MECH/001				REV-01	
PROJECT ::E&C for Mechanical, Piping, Electrical, C&I and Material handling works for 1x60 MW STG & Auxiliaries for Shriram Alkalies & Chemicals Ltd ,Bharuch					
NAME OF THE BIDDER ::			PRICE OFFER No. & DATE ::		
B3	Radiography of piping				
SI No	Description		Material	Unit Rate (in Rs.)	Amount (in Rs.)
		Material Type	Wt (kgs)		
B3.01	GOV Oil Piping For QCNRV	SS	200		
B3.02	GOV OIL PPG FOR ESV	SS	140		
B3.03	GOV OIL PPG FOR SERVO MOTOR	SS	310		
B3.04	CEP SUCTION PIPING	SA106GRB	1890		
B3.05	CEP DIS UPTO LCV&RECIR PIPING	SA106GRB	7130		
B3.06	LUBE OIL PIPING	SS	6920		
B3.07	OIL PURIFICATION PIPING	SS	190		
B3.08	JACKING OIL PIPING	SS	540		
B3.09	GOVERNING OIL PIPING	SS	390		
B3.10	PIPES FOR EQPT MOUNTED INSTR	SS	110		
B3.11	LO COOLER & FILTER VENT PIPING	SS	250		
B3.12	LUB OIL SPECIAL MATERIALS	SS	190		
B3.13	OIL VAPOUR FAN PIPING	SA106GRB	470		
B3.14	GLAND STEAM PIPING	SA106GRB,	4610		
B3.15		SA335GRP11			
B3.16	GL STEAM TO GSC & EXHAUST PIPING	SA106GRB,	1680		
B3.17		SA335GRP11			
B3.18	EXHAUST PIPING (SRV,EJECT ETC)	SA106GRB	2760		
B3.19	AIR EVACUATION PIPING	SA106GRB	1340		
B3.20	VALVES GLANDS SEALING PIPING	SA106GRB	450		
B3.21	TURBINE DRAINS PIPING	SA106GRB,	940		
B3.22		SA335GRP11			
B3.23	EQUIPMENTS DRAINS TO CONDENSER	SA106GRB	1130		
B3.24	SUSPENSIONS & SUPPORTS	SA106GRB	6200		
B3.25	GSC-IBR Piping	SA106GRB	310		
	Total Weight (in kgs)		38150		
Total Amount (in figures)					
Total Amount (in words)					

Notes:

- 1 Radiography to be done as per the product specification
- 2 Bidders shall quote for all items
- 3 The item rates will be used for Billing Purpose .

Volume-II Price Schedule (B4 PIPING ERECTION INCLUDING SPRING HANGERS, SUPPORTS, HYDRAULIC TESTING AND PAINTING)

TENDER NO.: HY/PE&SD/E&C/ SACL-BHARUCH/MECH/001	REV 01
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PROJECT ::E&C for Mechanical, Piping, Electrical, C&I and Material handling works for 1x60 MW STG & Auxiliaries for Shriram Alkalies & Chemicals Ltd, Bharuch

NAME OF THE BIDDER ::	PRICE OFFER No. & DATE ::
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B4. PIPING ERECTION INCLUDING SPRING HANGERS, SUPPORTS, HYDRAULIC TESTING AND PAINTING

SI No	Description		Material	Unit Rate (in Rs.)	Amount (in Rs.)
		Material Type	Wt (kgs)		
B4.01	GOV Oil Piping For QCNRV	SS	200		
B4.02	GOV OIL PPG FOR ESV	SS	140		
B4.03	GOV OIL PPG FOR SERVO MOTOR	SS	310		
B4.04	CEP SUCTION PIPING	SA106GRB	1890		
B4.05	CEP DIS UPTO LCV&RECIR PIPING	SA106GRB	7130		
B4.06	LUBE OIL PIPING	SS	6920		
B4.07	OIL PURIFICATION PIPING	SS	190		
B4.08	JACKING OIL PIPING	SS	540		
B4.09	GOVERNING OIL PIPING	SS	390		
B4.10	PIPES FOR EQPT MOUNTED INSTR	SS	110		
B4.11	LO COOLER & FILTER VENT PIPING	SS	250		
B4.12	LUB OIL SPECIAL MATERIALS	SS	190		
B4.13	OIL VAPOUR FAN PIPING	SA106GRB	470		
B4.14	GLAND STEAM PIPING	SA106GRB,	4610		
B4.15		SA335GRP11			
B4.16	GL STEAM TO GSC & EXHAUST PIPING	SA106GRB,	1680		
B4.17		SA335GRP11			
B4.18	EXHAUST PIPING (SRV,EJECT ETC)	SA106GRB	2760		
B4.19	AIR EVACUATION PIPING	SA106GRB	1340		
B4.20	VALVES GLANDS SEALING PIPING	SA106GRB	450		
B4.21	TURBINE DRAINS PIPING	SA106GRB,	940		
B4.22		SA335GRP11			
B4.23	EQUIPMENTS DRAINS TO CONDENSER	SA106GRB	1130		
B4.24	SUSPENSIONS & SUPPORTS	SA106GRB	6200		
B4.25	GSC-IBR Piping	SA106GRB	310		
	Total Weight		38150		
Total Amount (in figures)					
Total Amount (in words)					

Notes:

- 1 Bidders shall quote for all items
- 2 The item rates will be used for Billing Purpose .

Volume-II Price Schedule (B5. Thermal Insulation Application)						
TENDER NO.: HY/PE&SD/E&C/ SACL-BHARUCH/MECH/001				REV 01		
PROJECT ::E&C for Mechanical, Piping, Electrical, C&I and Material handling works for 1x60 MW STG & Auxiliaries for Shriram Alkalies & Chemicals Ltd, Bharuch						
NAME OF THE BIDDER ::			PRICE OFFER No. & DATE ::			
B5. Thermal Insulation Application						
Sl.No.	Line Number	Pipe Size(in)	Insulation Thk. (mm)	Pipe Length(mt)	Unit Rate(in Rs.)	Amount (in Rs.)
B5.01						

Notes:

- 1 Bidders shall quote for all items
- 2 The item rates will be used for Billing Purpose .

Volume-II Price Schedule (B6. Electrical, Control & Instrumentation Items)	
TENDER NO.: TENDER NO.: HY/PE&SD/E&C/ SACL-BHARUCH/MECH/001	REV-01
PROJECT ::E&C for Mechanical, Piping, Electrical, C&I and Material handling works for 1x60 MW STG & Auxiliaries for Shriram Alkali & Chemicals Ltd ,Bharuch	
NAME OF THE BIDDER ::	PRICE OFFER No. & DATE ::

B6. Electrical, Control & Instrumentation Items

7.1.5.1 LOCAL / FIELD MOUNTED INSTRUMENTS

SI.No.	Description	Qty (Nos)	Unit Rate (in Rs.)	Amount (in Rs.)
1	Pressure Gauges	57		
2	Temperature Gauges MIS	31		
3	Level Gauges	5		
4	Differential Pressure Indicator	2		
5	Differential Pressure Switch	3		
6	Differential Pressure Transmitters	3		
7	Pressure Switches	19		
8	Level Switches	10		
9	Magnetic Pickups (WWG-Speed Probes)	2		
10	Vibration, Axial Displacement, Speed & Diff. Expansion Probes	16		
11	Solenoid Valve	12		
12	Bearing Thermo elements	10		
13	Thermo element T/C	13		
14	Electronic Pressure Transmitters Smart	31		
15	RTDs	12		
16	Proximitors	16		
17	Thermowells	63		
18	Flow Nozzle in Main Steam Inlet line	1		
19	Flow Orifice in Condensate Line	1		
20	Bimetallic Thermometers	10		
21	GWR Level Transmitter	1		
22	Air Flow Rotameters	2		

7.1.5.2 PANELS AND CUBICLES:

SI.No	Description	Weight (Kgs)	Qty		
1	Turbine Control Panel	1200	1		
2	Local Gauge Rack	200 each	2		
3	Governing Console Board	200	1		
4	DC Starter Cubicles	400 each	2		
5	Generator Control & relay panel	2000	1		
6	Automatic voltage Regulator panel	1000	1		
7	DCSC for EOP	400	1		
8	DCSC for JOP	400	1		
9	Adopter Box	1000	1		
10	Cable Panel	1000	1		
11	LAVT Cubicle	3000	1		
12	NGR Cubicle	1000	1		
13	CT,VT,BUS DUCT ,Loose item & Associate Assessories		1Set		

7.1.5.3 PANEL MOUNTED INSTRUMENTS:					
Sl.No	Description	Qty	Weight (Kgs)		
1	TSI Rack 3500 Series Bentley Nevada Make	1	30		
2	Electronic Governor (WWG 505)	1	100		
7.1.5.4 IMPULSE TUBING AND FITTINGS.					
Sl No	Description	Length in Meters			
1	Tube SS 12.7 X 2.1	510			
2	Pipe SS 21.3 X 3.7	210			
3	Pipe (SMLS)- 21.3 X3.73 CS	885			
4	PIPE(SMLS) 21.3X 3.73 AS	450			
5	Pipe(SMLS)- 60.3X 3.91 CS	100			
6	Channel 100X50	30.6			
7	Angle EQL 50X50X6 IS2062	27.9			
8	Sheet 4.0 CS Hot Rolled	28.8			
9	Plate 10 IS2062	4.5			
7.1.5.5 PNEUMATIC TUBING:					
Sl.No.	Description	Length (mtr)			
1	Pipe SS 6 X 1.0	310			
2	Pipe SS 33.4 X 3.4	200			
3	Pipe SS 21.3 X 2.8	150			
7.1.5.6 JUNCTON BOXES:					
Sl.No.	Description	Quantity			
1	Electrical Junction Boxes	33 nos			
2	Proximitior Housings	9 nos			
7.1.5.7 ERECTION, TERMINATION & TESTING OF CABLES & CABLE TRAYS UPTO JB:					
Sl.No.	Description	Length (mtr)			
1	1P x 1.5 sq.mm Signal Cable	2600			
2	1P Thermocouple Extension Cable KX Type	230			
3	1T x 1.5 sq. mm Shielded Cable	200			
4	Perforated Cable Tray,W50MM, F25MM, C=0MM, L2.5M	712			
5	Perforated Cable Tray,W150MM, F50MM, C25, L2.5 M	64			
6	Cover for Cable Tray, W=50 MM, L=2.55 M	712			
7	Cover for Cable Tray, W=150 MM, L=2.55 M	64			
7.1.5.8 GENERATOR AUXILLARIES CONTROL CABLES					
Sl no	Description	Length (Mtr)			
1	10Tx1.5 sq.mm	1200			
2	10Cx2.5 sq.mm	1000			
3	5Cx2.5 sq.mm	15000			
4	3Cx4 sq.mm	2000			
5	3Cx6 sq.mm	1500			
6	2Cx0.75 sq.mm	200			
Total Amount (in figures)					
Total Amount (in words)					

Notes:

- 1 Bidders shall quote for all items
- 2 The item rates will be used for Billing Purpose .

Volume-II Price Schedule (B7. MATERIAL UNLOADING AND STACKING)	
TENDER NO.: HY/PE&SD/E&C/ SACL-BHARUCH/MECH/001	REV 01
PROJECT :: E&C for Mechanical, Piping, Electrical, C&I and Material handling works for 1x60 MW STG & Auxiliaries for Shriram Alkali & Chemicals Ltd ,Bharuch	
NAME OF THE BIDDER ::	PRICE OFFER No. & DATE ::

B7. MATERIAL HANDLING, UNLOADING, STACKING & PRESERVATION

SI no	Description	Weight (Tons)	Unit Rate (in Rs.)	Amount (in Rs.)
B7	Material Handling and Stacking	630		
Total Amount (in figures)				
Total Amount (in words)				

Notes:

- 1 Bidders shall quote for all items
- 2 The item rates will be used for Billing Purpose .