

# TENDER SPECIFICATION

NO: BHE/PW/PUR/SKT-BAL BLR U#3/1235

Collection of materials from BHEL/ client's stores/ storage yard, site and other locations; transportation to site of work; pre-erection checks, pre-assembly if necessary, erection, testing, assistances for commissioning & trial operation, handing over, assistance for performance guarantee test of Boiler and its Auxiliaries, Electrostatic Precipitator (ESP) Power Cycle Pipeline, Rotating Machines final painting etc of UNIT-3 of 250 MW at 2x250 MW Gujarat State Electricity Corporation Limited

At

GSECL Sikka TPS,

Distt. Jamnagar  
(Gujarat).

VOLUME – II

**(PRICE BID SPECIFICATION)**



**BHARAT HEAVY ELECTRICALS LIMITED**

(A GOVERNMENT OF INDIA UNDERTAKING)

POWER SECTOR : WESTERN REGION

345, KINGSWAY : NAGPUR 440 001

# TENDER SPECIFICATION

NO: BHE/PW/PUR/SKT-BAL BLR U#3/1235

Collection of materials from BHEL/ client's stores/ storage yard, site and other locations; transportation to site of work; pre-erection checks, pre-assembly if necessary, erection, testing, assistances for commissioning & trial operation, handing over, assistance for performance guarantee test of Boiler and its Auxiliaries, Electrostatic Precipitator (ESP) Power Cycle Pipeline, Rotating Machines final painting etc of UNIT-3 of 250 MW at 2x250 MW Gujarat State Electricity Corporation Limited

At

GSECL Sikka TPS,

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EARNEST MONEY DEPOSIT: Please see Special Conditions of Contract.

LAST DATE FOR  
TENDER SUBMISSION: Please see Notice Inviting Tender

THESE TENDER DOCUMENTS CONTAINING Volume-I (TECHNICAL BID SPECIFICATION) AND Volume- II: PRICE BID (ARE ISSUED TO:

M/s.....

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(TENDER DOCUMENTS ARE NOT TRANSFERABLE)

FOR BHARAT HEAVY ELECTRICALS LIMITED

AGM (Purchase)  
PLACE: NAGPUR  
DATE :

# Bharat Heavy Electricals Limited (PSWR, Nagpur)

Tender Specification no. BHE/PW/PUR/SKT-BAL BLR U-3/1235

## Volume- II: Price Bid Specification

### A : Schedule of Quantities and Applicable Rate per Unit of Measurement

Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
1.1 STRUCTURE	<b>Item Rate for Structure</b>				<b>90% of 'X'</b>
1.1 STRUCTURE	1.1.1	PRE ASSEMBLY	MT	607	20% of 1.1
	1.1.2	PLACEMENT (ERECTION)	MT	607	15% of 1.1
	1.1.3	ALIGNMENT	MT	708	15% of 1.1
	1.1.4	WELDING/BOLTING/FIXING	MT	838	15% of 1.1
	1.1.5	COMPLETION OF NON DESTRUCTIVE EXAMINATION & STRESS RELIEVING/ HEAT TREATMENT (if not applicable, then this portion to be paid along with welding)	MT	865	5% of 1.1
	1.1.6	COMPLETION OF FURNACE ALIGNMENT AND FIRE BALL CHECKING	MT	825	5% of 1.1
	1.1.7	COMPLETION OF BACK PASS ALIGNMENT	MT	825	5% of 1.1
	1.1.8	COMPLETION OF VIBERATION SNUBBERS, MECH SPCERS, CASSETTE BAFFLES, STEAM COOLED SPACERS	MT	1875	5% of 1.1
	1.1.9	COMPLETION OF SHEET COVERING FOR BOILER ROOF, BURNER ROOG LIFT SHAFT CLADDING, COMPLETION OF GUTTERS	MT	2875	3% of 1.1
	1.1.10	PAINTING	MT	2875	6% of 1.1
	1.1.11	AREA CLEANING, TEMP STRUCTURE CUTTING REMOVAL AND RETURN OF SCRAP	MT	2875	1% of 1.1
	1.1.12	PUNCH LIST POINT PENDING POINTS LIQUIDITION	MT	2875	2% of 1.1

Date:

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Signature & Official Seal of Bidder

# Bharat Heavy Electricals Limited (PSWR, Nagpur)

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Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
	1.1.13	MATERIAL RECONCILIATION	MT	2875	2% of 1.1
	1.1.14	COMPLETION OF CONTRACTUAL OBLIGATION	MT	2875	1% of 1.1
<b>1.2 PRESSURE PART</b>	<b>Item Rate for Pressure Parts</b>				<b>115% of 'X'</b>
<b>1.2 PRESSURE PART</b>	1.2.1	ON PRE-ASSEMBLY	MT	366	20% of 1.2
	1.2.2	PLACEMENT IN POSITION	MT	366	10% of 1.2
	1.2.3	ALIGNMENT	MT	799	15% of 1.2
	1.2.4	WELDING/BOLTING/FIXING	MT	571	20% of 1.2
	1.2.5	COMPLETION OF NDE & STRESS RELIEVING/HT	MT	705	10% of 1.2
	1.2.6	COMPLETION OF ATTACHED WELDING, FIN WELDING, SUPPORTS	MT	905	5% of 1.2
	1.2.7	COMPLETION OF ROOF SKIN CASING	MT	1655	5% of 1.2
	1.2.8	COMPLETION OF AIR & GAS TIGHTNESS TEST FOR FURNACE	MT	2905	2% of 1.2
	1.2.9	BOILER HYDRAULIC TEST (DRAINABLE)	MT	1705	2% of 1.2
	1.2.10	BOILER HYDRAULIC TEST (NON DRAINABLE)	MT	2905	1% of 1.2
	1.2.11	RE HEATER COIL HT	MT	2905	2% of 1.2
	1.2.12	BOILER LIGHT UP	MT	2905	1% of 1.2
	1.2.13	ABO	MT	2905	1% of 1.2
	1.2.14	SVF	MT	2905	2% of 1.2
	1.2.15	Area cleaning, temporary structures cutting/removal and return of scrap	MT	2905	1% of 1.2
	1.2.16	Punch List points/pending points liquidation	MT	2905	1% of 1.2
	1.2.17	Material Reconciliation	MT	2905	1% of 1.2

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Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
	1.2.18	Completion of Contractual Obligation	MT	2905	1% of 1.2
<b>1.3 NON PRESSURE PART</b>	<b>Item Rate for Non Pressure Parts</b>				<b>95% of 'X'</b>
<b>1.3 NON PR PART</b>	1.3.1	ON PRE-ASSEMBLY	MT	740	25% of 1.3
	1.3.2	PLACEMENT IN POSITION	MT	740	10% of 1.3
	1.3.3	ALIGNMENT	MT	1231	10% of 1.3
	1.3.4	WELDING/BOLTING/FIXING	MT	1003	15% of 1.3
	1.3.5	HANGERS & SUPPORTS ETC WHEREVER NECESSARY CHECKING	MT	1295	25% of 1.3
	1.3.6	AIR & GAS TIGHTNESS TEST	MT	1295	5% of 1.3
	1.3.7	ABO	MT	1295	1% of 1.3
	1.3.8	STEAM BLOWING	MT	1295	2% of 1.3
	1.3.9	COAL FIRING	MT	1295	2% of 1.3
	1.3.10	PAINTING	MT	1295	1% of 1.3
	1.3.11	Area cleaning, temporary structures cutting/removal and return of scrap	MT	1295	1% of 1.3
	1.3.12	Punch List points/pending points liquidation	MT	1295	1% of 1.3
	1.3.13	Material Reconciliation	MT	1295	1% of 1.3
	1.3.14	Completion of Contractual Obligation	MT	1295	1% of 1.3
<b>2.1 ROTATING PART</b>	<b>Item Rate for Rotating Parts</b>				<b>60% of 'X'</b>
<b>2.1 ROTATING PARTS</b>	2.1.1	ON PRE-ASSEMBLY	MT	253	15% of 2.1
	2.1.2	PLACEMENT IN POSITION	MT	253	20% of 2.1
	2.1.3	ALIGNMENT	MT	680	20% of 2.1
	2.1.4	WELDING/BOLTING/FIXING	MT	649	20% of 2.1
	2.1.5	EQUIPMENT TRIAL OPERATION	MT	855	10% of 2.1

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Signature & Official Seal of Bidder

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## Volume- II: Price Bid Specification

Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
	2.1.6	CLEAN AIR FLOW TEST	MT	855	1% of 2.1
	2.1.7	BOILER LIGHT UP	MT	855	1% of 2.1
	2.1.8	ABO	MT	855	1% of 2.1
	2.1.9	STEAM BLOWING	MT	855	1% of 2.1
	2.1.10	COAL FIRING	MT	855	2% of 2.1
	2.1.11	FULL LOAD	MT	855	1% of 2.1
	2.1.12	TRIAL OPERATION OF UNIT	MT	855	2% of 2.1
	2.1.13	PAINTING	MT	855	2% of 2.1
	2.1.14	AREA CLEANING TEMP STR CUTTING REMOVAL AND RETURN OF SCRAP	MT	855	1% of 2.1
	2.1.15	Punch List points/pending points liquidation	MT	855	1% of 2.1
	2.1.16	MATERIAL RECONCILIATION	MT	855	1% of 2.1
	2.1.17	Completion of Contractual Obligation	MT	855	1% of 2.1
	<b>2.2 ROTATING PART HANDLING EQUIPMENTS</b>	<b>Item Rate for Rotating Parts HANDLING EQUIPMENTS</b>			
<b>2.2 ROTATING HANDLING EQUIPMENTS</b>	2.2.1	ON PRE-ASSEMBLY	MT	12.5	15% of 2.2
	2.2.2	PLACEMENT IN POSITION	MT	12.5	20% of 2.2
	2.2.3	ALIGNMENT	MT	12.5	20% of 2.2
	2.2.4	WELDING/BOLTING/FIXING	MT	12.5	20% of 2.2
	2.2.5	EQUIPMENT TRIAL OPERATION	MT	12.5	10% of 2.2
	2.2.6	CLEAN AIR FLOW TEST	MT	12.5	1% of 2.2
	2.2.7	BOILER LIGHT UP	MT	12.5	1% of 2.2
	2.2.8	ABO	MT	12.5	1% of 2.2
	2.2.9	STEAM BLOWING	MT	12.5	1% of 2.2
	2.2.10	COAL FIRING	MT	12.5	2% of 2.2

**Bharat Heavy Electricals Limited (PSWR, Nagpur)**  
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**Volume- II: Price Bid Specification**

Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
	2.2.11	FULL LOAD	MT	12.5	1% of 2.2
	2.2.12	TRIAL OPERATION OF UNIT	MT	12.5	2% of 2.2
	2.2.13	PAINTING	MT	12.5	2% of 2.2
	2.2.14	AREA CLEANING TEMP STR CUTTING REMOVAL AND RETURN OF SCRAP	MT	12.5	1% of 2.2
	2.2.15	Punch List points/pending points liquidation	MT	12.5	1% of 2.2
	2.2.16	MATERIAL RECONCILIATION	MT	12.5	1% of 2.2
	2.2.17	Completion of Contractual Obligation	MT	12.5	1% of 2.2
<b>3.1 ESP</b>	<b>Item Rate for ESP</b>				<b>65% of 'X'</b>
<b>3.1 ESP</b>	3.1.1	ON PRE-ASSEMBLY	MT	545	15% of 3.1
	3.1.2	PLACEMENT IN POSITION	MT	544	20% of 3.1
	3.1.3	ALIGNMENT	MT	812	15% of 3.1
	3.1.4	WELDING/BOLTING/FIXING	MT	669	20% of 3.1
	3.1.5	COMPLETION OF HOPPER ALONG WITH ALL DOORS, HEATING ELEMENTS, POKING DOORS ETC	MT	669	5% of 3.1
	3.1.6	COMPLETION OF INNER OUTER ROOF INSULATOR HOUSING, RECTIFIER TRANSFORMER, PENT HOUSE MONO RAILS HOISTS ETC	MT	1565	5% of 3.1
	3.1.7	ERECTION OF EMITING AND COLLECTING RAPPING SYSTEM WITH ALL DRIVERS	MT	1565	5% of 3.1
	3.1.8	AIR & GAS TIGHTNESS TEST	MT	669	1% of 3.1
	3.1.9	GAS DISTRIBUTION TEST	MT	2365	1% of 3.1
	3.1.10	CHARGING OF ESP FIELDS	MT	2365	4% of 3.1
	3.1.11	COAL FIRING	MT	2365	2% of 3.1
	3.1.12	TRIAL OPERATION OF UNIT	MT	2365	1% of 3.1

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Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
	3.1.13	PAINTING	MT	2365	2% of 3.1
	3.1.14	AREA CLEANING, TEMPORARY STRUCTURES CUTTING/REMOVAL AND RETURN OF SCRAP	MT	2365	1% of 3.1
	3.1.15	PUNCH LIST POINTS/PENDING POINTS LIQUIDATION	MT	2365	1% of 3.1
	3.1.16	MATERIAL RECONCILIATION	MT	2365	1% of 3.1
	3.1.17	COMPLETION OF CONTRACTUAL OBLIGATION	MT	2365	1% of 3.1
<b>3.2 NPP-ESP</b>	<b>Item Rate for NPP-ESP</b>				<b>95% of 'X'</b>
<b>3.2 NPP-ESP</b>	3.2.1	ON PRE-ASSEMBLY	MT	524	15% of 3.2
	3.2.2	PLACEMENT IN POSITION	MT	534	10% of 3.2
	3.2.3	ALIGNMENT	MT	624	15% of 3.2
	3.2.4	WELDING/BOLTING/FIXING	MT	593	30% of 3.2
	3.2.5	HANGERS & SUPPORT ETC WHEREVER NECESSARY AS PER DRG	MT	562	15% of 3.2
	3.2.6	AIR & GAS TIGHTNESS TEST	MT	880	5% of 3.2
	3.2.7	ABO	MT	880	1% of 3.2
	3.2.8	Coal Firing	MT	880	2% of 3.2
	3.2.9	TRIAL OPERATION	MT	880	2% of 3.2
	3.2.10	Painting	MT	880	1% of 3.2
	3.2.11	Area cleaning, temporary structures cutting/removal and return of scrap	MT	880	1% of 3.2
	3.2.12	Punch List points/pending points liquidation	MT	880	1% of 3.2
	3.2.13	Material Reconciliation	MT	880	1% of 3.2
	3.2.14	Completion of Contractual Obligation	MT	880	1% of 3.2

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## Volume- II: Price Bid Specification

Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
<b>4.1 PIPING - P91</b>	<b>Item Rate for PIPING -P91 (Along with associated fittings,flow nozzles etc.)</b>				<b>365% of 'X'</b>
<b>4.1 PIPING - P91 (Along with associated fittings,flow nozzles etc.)</b>	4.1.1	ON PRE-ASSEMBLY	MT	73	20% of 4.1
	4.1.2	PLACEMENT IN POSITION	MT	81	20% of 4.1
	4.1.3	ALIGNMENT	MT	90	10% of 4.1
	4.1.4	WELDING/BOLTING/FIXING	MT	76	15% of 4.1
	4.1.5	COMPLETION OF NDE & STRESS RELIEVING/HEAT TREATMENT	MT	90	5% of 4.1
	4.1.6	HANGERS&SUPPORTS ETC WHEREEVER NECESSARY	MT	90	10% of 4.1
	4.1.7	HYDRAULIC TEST OR PNEUMATIC TEST	MT	90	3% of 4.1
	4.1.8	FLOATING OF LINES,FINAL ADJUSTMENT OF SUPPORTS FOR COLD AND HOT VALUES.	MT	90	2% of 4.1
	4.1.9	BOILER LIGHT UP	MT	90	1% of 4.1
	4.1.10	ABO	MT	90	1% of 4.1
	4.1.11	STEAM BLOWING	MT	90	1% of 4.1
	4.1.12	SVF	MT	90	1% of 4.1
	4.1.13	FULL LOAD	MT	90	1% of 4.1
	4.1.14	TRIAL OPERATION OF UNIT	MT	90	2% of 4.1
	4.1.15	COMPLETION OF ALL DRAINS VENTS TO RESPECTIVE LOCATIONS AND PLACEMENTS OF INSTRUMENT SENSORS AFTER STEAM BLOWING.	MT	90	2% of 4.1
	4.1.16	PAINTING	MT	90	2% of 4.1
	4.1.17	AREA CLEANING,TEMPORARY STRUCTURES CUTTING/REMOVAL AND RETURN OF SCRAP	MT	90	1% of 4.1

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Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
	4.1.18	PUNCH LIST POINTS/PENDING POINTS LIQUIDATION	MT	90	1% of 4.1
	4.1.19	MATERIAL RECONCILIATION	MT	90	1% of 4.1
	4.1.20	COMPLETION OF CONTRACTUAL OBLIGATION	MT	90	1% of 4.1
<b>4.2 PIPING- AS</b>	<b>Item Rate for PIPING-AS (Along with associated fittings,flow nozzles etc.)</b>				<b>280 % of 'X'</b>
<b>4.2 PIPING- AS (Along with associated fittings,flow nozzles etc.)</b>	4.2.1	ON PRE-ASSEMBLY	MT	120	20% of 4.2
	4.2.2	PLACEMENT IN POSITION	MT	125	20% of 4.2
	4.2.3	ALIGNMENT	MT	230	10% of 4.2
	4.2.4	WELDING/BOLTING/FIXING	MT	152	15% of 4.2
	4.2.5	COMPLETION OF NDE & STRESS RELIEVING/HEAT TREATMENT	MT	152	5% of 4.2
	4.2.6	HANGERS&SUPPORTS ETC WHEREEVER NECESSARY	MT	230	10% of 4.2
	4.2.7	HYDRAULIC TEST OR PNEUMATIC TEST	MT	230	3% of 4.2
	4.2.8	FLOATING OF LINES,FINAL ADJUSTMENT OF SUPPORTS FOR COLD AND HOT VALVES.	MT	230	2% of 4.2
	4.2.9	BOILER LIGHT UP	MT	230	1% of 4.2
	4.2.10	ABO	MT	230	1% of 4.2
	4.2.11	STEAM BLOWING	MT	230	1% of 4.2
	4.2.12	SVF	MT	230	1% of 4.2
	4.2.13	FULL LOAD	MT	230	1% of 4.2
	4.2.14	TRIAL OPERATION OF UNIT	MT	230	2% of 4.2

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Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
	4.2.15	COMPLETION OF ALL DRAINS VENTS TO RESPECTIVE LOCATIONS AND PLACEMENTS OF INSTRUMENT SENSORS AFTER STEAM BLOWING.	MT	230	2% of 4.2
	4.2.16	PAINTING	MT	230	2% of 4.2
	4.2.17	AREA CLEANING, TEMPORARY STRUCTURES CUTTING/REMOVAL AND RETURN OF SCRAP	MT	230	1% of 4.2
	4.2.18	PUNCH LIST POINTS/PENDING POINTS LIQUIDATION	MT	230	1% of 4.2
	4.2.19	MATERIAL RECONCILIATION	MT	230	1% of 4.2
	4.2.20	COMPLETION OF CONTRACTUAL OBLIGATION	MT	230	1% of 4.2
<b>4.3 PIPING - CS (HP)</b>	<b>Item Rate for PIPING -CS (HP) (Along with associated fittings, flow nozzles etc.)</b>				<b>245 % of 'X'</b>
<b>4.3 PIPING - CS (HP) (Along with associated fittings, flow nozzles etc.)</b>	4.3.1	ON PRE-ASSEMBLY	MT	188	20% of 4.3
	4.3.2	PLACEMENT IN POSITION	MT	217	20% of 4.3
	4.3.3	ALIGNMENT	MT	285	10% of 4.3
	4.3.4	WELDING/BOLTING/FIXING	MT	196	15% of 4.3
	4.3.5	COMPLETION OF NDE & STRESS RELIEVING/HEAT TREATMENT	MT	196	5% of 4.3
	4.3.6	HANGERS&SUPPORTS ETC WHEREEVER NECESSARY	MT	285	10% of 4.3
	4.3.7	HYDRAULIC TEST OR PNEUMATIC TEST	MT	285	3% of 4.3
	4.3.8	FLOATING OF LINES, FINAL ADJUSTMENT OF SUPPORTS FOR COLD AND HOT VALUES.	MT	285	2% of 4.3

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	4.3.9	BOILER LIGHT UP	MT	285	1% of 4.3
	4.3.10	ABO	MT	285	1% of 4.3
	4.3.11	STEAM BLOWING	MT	285	1% of 4.3
	4.3.12	SVF	MT	285	1% of 4.3
	4.3.13	FULL LOAD	MT	285	1% of 4.3
	4.3.14	TRIAL OPERATION OF UNIT	MT	285	2% of 4.3
	4.3.15	COMPLETION OF ALL DRAINS VENTS TO RESPECTIVE LOCATIONS AND PLACEMENTS OF INSTRUMENT SENSORS AFTER STEAM BLOWING.	MT	285	2% of 4.3
	4.3.16	PAINTING	MT	285	2% of 4.3
	4.3.17	AREA CLEANING, TEMPORARY STRUCTURES CUTTING/REMOVAL AND RETURN OF SCRAP	MT	285	1% of 4.3
	4.3.18	PUNCH LIST POINTS/PENDING POINTS LIQUIDATION	MT	285	1% of 4.3
	4.3.19	MATERIAL RECONCILIATION	MT	285	1% of 4.3
	4.3.20	COMPLETION OF CONTRACTUAL OBLIGATION	MT	285	1% of 4.3
	<b>4.4 PIPING - CS (LP)</b>	<b>Item Rate for PIPING -CS (LP)</b>			
<b>4.4 PIPING - CS (LP)</b>	4.4.1	ON PRE-ASSEMBLY	MT	0	20% of 4.4
	4.4.2	PLACEMENT IN POSITION	MT	0	20% of 4.4
	4.4.3	ALIGNMENT	MT	1	10% of 4.4
	4.4.4	WELDING/BOLTING/FIXING	MT	0	15% of 4.4
	4.4.5	COMPLETION OF NDE & STRESS RELIEVING/HEAT TREATMENT	MT	22.5	5% of 4.4
	4.4.6	HANGERS&SUPPORTS ETC WHEREEVER NECESSARY	MT	22.5	10% of 4.4

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	4.4.7	HYDRAULIC TEST OR PNEUMATIC TEST	MT	22.5	3% of 4.4
	4.4.8	FLOATING OF LINES,FINAL ADJUSTMENT OF SUPPORTS FOR COLD AND HOT VALUES.	MT	22.5	2% of 4.4
	4.4.9	BOILER LIGHT UP	MT	22.5	1% of 4.4
	4.4.10	ABO	MT	22.5	1% of 4.4
	4.4.11	STEAM BLOWING	MT	22.5	1% of 4.4
	4.4.12	SVF	MT	22.5	1% of 4.4
	4.4.13	FULL LOAD	MT	22.5	1% of 4.4
	4.4.14	TRIAL OPERATION OF UNIT	MT	22.5	2% of 4.4
	4.4.15	COMPLETION OF ALL DRAINS VENTS TO RESPECTIVE LOCATIONS AND PLACEMENTS OF INSTRUMENT SENSORS AFTER STEAM BLOWING.	MT	22.5	2% of 4.4
	4.4.16	PAINTING	MT	22.5	2% of 4.4
	4.4.17	AREA CLEANING,TEMPORARY STRUCTURES CUTTING/REMOVAL AND RETURN OF SCRAP	MT	22.5	1% of 4.4
	4.4.18	PUNCH LIST POINTS/PENDING POINTS LIQUIDATION	MT	22.5	1% of 4.4
	4.4.19	MATERIAL RECONCILIATION	MT	22.5	1% of 4.4
	4.4.20	COMPLETION OF CONTRACTUAL OBLIGATION	MT	22.5	1% of 4.4
<b>4.5 PIPING - SS</b>	<b>Item Rate for PIPING -CS (LP)</b>				<b>435 % of 'X'</b>
<b>4.5 PIPING - SS</b>	4.5.1	ON PRE-ASSEMBLY	MT	0.6	20% of 4.5
	4.5.2	PLACEMENT IN POSITION	MT	0.6	20% of 4.5
	4.5.3	ALIGNMENT	MT	0.6	10% of 4.5
	4.5.4	WELDING/BOLTING/FIXING	MT	0.6	15% of 4.5

# Bharat Heavy Electricals Limited (PSWR, Nagpur)

Tender Specification no. BHE/PW/PUR/SKT-BAL BLR U-3/1235

## Volume- II: Price Bid Specification

Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
	4.5.5	COMPLETION OF NDE & STRESS RELIEVING/HEAT TREATMENT	MT	0.6	5% of 4.5
	4.5.6	HANGERS&SUPPORTS ETC WHEREEVER NECESSARY	MT	0.6	10% of 4.5
	4.5.7	HYDRAULIC TEST OR PNEUMATIC TEST	MT	0.6	3% of 4.5
	4.5.8	FLOATING OF LINES,FINAL ADJUSTMENT OF SUPPORTS FOR COLD AND HOT VALUES.	MT	0.6	2% of 4.5
	4.5.9	BOILER LIGHT UP	MT	0.6	1% of 4.5
	4.5.10	ABO	MT	0.6	1% of 4.5
	4.5.11	STEAM BLOWING	MT	0.6	1% of 4.5
	4.5.12	SVF	MT	0.6	1% of 4.5
	4.5.13	FULL LOAD	MT	0.6	1% of 4.5
	4.5.14	TRIAL OPERATION OF UNIT	MT	0.6	2% of 4.5
	4.5.15	COMPLETION OF ALL DRAINS VENTS TO RESPECTIVE LOCATIONS AND PLACEMENTS OF INSTRUMENT SENSORS AFTER STEAM BLOWING.	MT	0.6	2% of 4.5
	4.5.16	PAINTING	MT	0.6	2% of 4.5
	4.5.17	AREA CLEANING,TEMPORARY STRUCTURES CUTTING/REMOVAL AND RETURN OF SCRAP	MT	0.6	1% of 4.5
	4.5.18	PUNCH LIST POINTS/PENDING POINTS LIQUIDATION	MT	0.6	1% of 4.5
	4.5.19	MATERIAL RECONCILIATION	MT	0.6	1% of 4.5
	4.5.20	COMPLETION OF CONTRACTUAL OBLIGATION	MT	0.6	1% of 4.5

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Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
<b>4.6 PIPING- HANGERS &amp; SUPPORT</b>	<b>Item Rate for PIPING -CS (LP)</b>				<b>125 % of 'X'</b>
<b>4.6 PIPING- HANGERS &amp; SUPPORT</b>	4.6.1	ON PRE-ASSEMBLY	MT	93	20% of 4.6
	4.6.2	PLACEMENT IN POSITION	MT	93	20% of 4.6
	4.6.3	ALIGNMENT	MT	94	10% of 4.6
	4.6.4	WELDING/BOLTING/FIXING	MT	93	15% of 4.6
	4.6.5	COMPLETION OF NDE & STRESS RELIEVING/HEAT TREATMENT	MT	95	5% of 4.6
	4.6.6	HANGERS&SUPPORTS ETC WHEREEVER NECESSARY	MT	95	10% of 4.6
	4.6.7	HYDRAULIC TEST OR PNEUMATIC TEST	MT	95	3% of 4.6
	4.6.8	FLOATING OF LINES,FINAL ADJUSTMENT OF SUPPORTS FOR COLD AND HOT VALUES.	MT	95	2% of 4.6
	4.6.9	BOILER LIGHT UP	MT	95	1% of 4.6
	4.6.10	ABO	MT	95	1% of 4.6
	4.6.11	STEAM BLOWING	MT	95	1% of 4.6
	4.6.12	SVF	MT	95	1% of 4.6
	4.6.13	FULL LOAD	MT	95	1% of 4.6
	4.6.14	TRIAL OPERATION OF UNIT	MT	95	2% of 4.6
	4.6.15	COMPLETION OF ALL DRAINS VENTS TO RESPECTIVE LOCATIONS AND PLACEMENTS OF INSTRUMENT SENSORS AFTER STEAM BLOWING.	MT	95	2% of 4.6
	4.6.16	PAINTING	MT	95	2% of 4.6
	4.6.17	AREA CLEANING,TEMPORARY STRUCTURES CUTTING/REMOVAL AND RETURN OF SCRAP	MT	95	1% of 4.6

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## Volume- II: Price Bid Specification

Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
	4.6.18	PUNCH LIST POINTS/PENDING POINTS LIQUIDATION	MT	95	1% of 4.6
	4.6.19	MATERIAL RECONCILIATION	MT	95	1% of 4.6
	4.6.20	COMPLETION OF CONTRACTUAL OBLIGATION	MT	95	1% of 4.6
<b>4.7 PIPING- TEMPORARY (STEAM BLOWING)</b>	<b>Item Rate for PIPING-TEMPORARY (STEAM BLOWING)</b>				<b>80 % of 'X'</b>
	4.7.1	INSTALLATION OF TEMPORARY PIPING	MT	25	60% of 4.7
<b>4.7 PIPING- TEMPORARY (STEAM BLOWING)</b>	4.7.2	DISMANTLING OF TEMP PIPNG, EDGE PREPARATION AND RETURN TO BHEL STORE AREA CLEANING	MT	25	25% of 4.7
	4.7.3	MATERIAL RECONCILIATION	MT	25	15% of 4.7
<b>4.8 PIPING- TEMPORARY (CHEMICAL CLEANING)</b>	<b>Item Rate for PIPING TEMPORARY (CHEMICAL CLEANING)</b>				<b>80 % of 'X'</b>
	4.8.1	INSTALLATION OF TEMPORARY PIPING	MT	20	60% of 4.8
<b>4.8 PIPING- TEMPORARY (CHEMICAL CLEANING)</b>	4.8.2	DISMANTLING OF TEMP PIPNG, EDGE PREPARATION AND RETURN TO BHEL STORE AREA CLEANING	MT	20	25% of 4.8
	4.8.3	MATERIAL RECONCILIATION	MT	20	15% of 4.8
<b>5.1 AIR PRE- HATER (APH)</b>	<b>Item Rate for AIR PRE-HATER (APH)</b>				<b>115% of 'X'</b>
	5.1.1	Completion of Support steel squareness and levelling, Expansion	MT	0	11% of 5.1

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**Volume- II: Price Bid Specification**

Rate Schedule SI N	SI No	Description of work	Unit	Balance Quantity	Applicable Rate per Unit of measurement
<b>5.1 AIR PRE- HATER (APH)</b>		arrangement, Housing panel erection and alignment, Erection, alignment and welding of			
	5.1.2	Completion of Erection, alignment and welding of Support Bearing, Guide Bearing, Rotor post, Bottom and Top centre sections, Hot and cold end connecting	MT	39	14% of 5.1
	5.1.3	Completion of erection and alignment of modules	MT	162	15% of 5.1
	5.1.4	Completion of erection, alignment and welding of Pin Rack assembly and Drive assembly	MT	293	12% of 5.1
	5.1.5	Completion of seals setting	MT	349	17% of 5.1
	5.1.6	Erection, alignment and welding of Lube oil systems, Cleaning Device, Fire sensing device, Deluge and water wash lines, Observation port and lighting	MT	486	13% of 5.1
	5.1.7	Completion of PGMA	MT	540	1% of 5.1
	5.1.8	Air preheater Trial Run	MT	540	2% of 5.1
	5.1.9	BOILER LIGHT UP	MT	540	2% of 5.1
	5.1.10	ABO	MT	540	2% of 5.1
	5.1.11	STEAM BLOWING	MT	540	1% of 5.1
	5.1.12	SVF	MT	540	2% of 5.1
	5.1.13	COAL FIRING	MT	540	2% of 5.1
	5.1.14	PAINTING	MT	540	1% of 5.1
	5.1.15	AREA CLEANING, TEMPORARY STRUCTURES CUTTING/REMOVAL AND RETURN OF SCRAP	MT	540	1% of 5.1
	5.1.16	PUNCH LIST POINTS/PENDING POINTS LIQUIDATION	MT	540	2% of 5.1
	5.1.17	MATERIAL RECONCILIATION	MT	540	1% of 5.1
	5.1.18	COMPLETION OF CONTRACTUAL OBLIGATION	MT	540	1% of 5.1

Note:

1. Rate per Unit of measurement as calculated above shall be rounded off to the nearest whole number
2. X : is the Single Notional Rate per UOM quoted by Bidder in the Price Bid

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**Example for calculating Item Rates of few items :-**

Say Rs 10,537.77 is the notional rate (“X”) in Rupees per UOM quoted by the bidder in the price bid.

The applicable rate per MT for items referred in above table shall be as calculated below:

SL.NO	Contract (Main Package)	Rate schedule Identifier	Applicable rate per MT (rounded off to nearest integer)
1.1	Boiler	Structures	90% of Rs 10,537.77 = Rs 9484/-
1.2	Boiler	Pressure Parts	115% of Rs 10,537.77 = Rs 12,118/-
1.3	Boiler	Non Pressure Parts (upto ESP inlet funnel)	95% of Rs 10,537.77 = Rs 10,010/-
2.1	RM	Rotating Machines (ID/FD/PA Fans, Mills, etc and aux)	60% of Rs 10,537.77 = Rs 6,323/-
2.2	RM	Handling Equipments of Rotating Machines	70% of Rs 10,537.77 = Rs 7,376/-
3.1	ESP	ESP	65% of Rs 10,537.77 = Rs 6,850/-
3.2	ESP	Non Pressure Parts (ESP outlet funnel to Chimney)	95% of Rs 10,537.77 = Rs 10,010/-
4.1	PIPING	Piping-P91	365% of Rs 10,537.77 = Rs 38,463/-
4.2	PIPING	Piping-AS	280% of Rs 10,537.77 = Rs 29,506/-
4.3	PIPING	Piping-CS (HP)	245% of Rs 10,537.77 = Rs 25,818/-
4.4	PIPING	Piping-CS (LP)	210% of Rs 10,537.77 = Rs 22,129/-
4.5	PIPING	Piping-SS	435% of Rs 10,537.77 = Rs 45,839/-
4.6	PIPING	Piping-Hangers and Supports	125% of Rs 10,537.77 = Rs 13,172/-
4.7	PIPING	Piping-Temporary (Steam Blowing)	80% of Rs 10,537.77 = Rs 8,430/-
4.8	PIPING	Piping-Temporary (Chemical Cleaning)	80% of Rs 10,537.77 = Rs 8,430/-
5.1	Boiler	Air pre Heater	115% of Rs 10,537.77 = Rs 12,118/-

**Bharat Heavy Electricals Limited (PSWR, Nagpur)**  
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**Volume- II: Price Bid Specification**

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**B : PRICE BID**

SN	Description / Item of Work	Single Notional Rate “X” in Rupees per MT	
		In Figures	In words
1	Erection, Testing, Assistance for Commissioning etc of Balance Boiler –Vertical Pkg as per scope of work detailed in Tender Specification BHE/PW/PUR/SKT-BAL BLR U-3/1235		

Note :

1. Notional Rate “X” shall be quoted in Rupees and shall be up to a maximum of 2 decimal places; for example Rs 10,537.77
2. After Price Bid opening, and in case of a tie among two or more bidders in L-I rates (i.e quoting exactly the same LEAST notional rate “X” in Rupees per MT), then these bidders shall be intimated separately to submit rebate in Rupees (upto a maximum of two decimal places) in a ‘SEALED ENVELOPE’. The L-I shall be the party who offers the maximum rebate and the new notional rate shall be “X” less the rebate offered.
3. In case of further tie, process of sl no 2 is repeated so as to arrive at a single L-I Notional rate
4. Total amount for the work shall be the summation of amounts obtained by multiplying respective item ‘Quantities’ to the applicable rate per MT (Obtained from single notional rate as explained in the Example above).

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