



# भारत हेवी इलेक्ट्रिकल्स लिमिटेड

( भारत सरकार का उपक्रम )

## BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

**TCN - 01**

Ref: PSER:SCT:PDP-T1242:TCN-01

Date: 26/08/2011

Sub	Tender change notice (TCN) 01	
Job	Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .  Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .	
Ref	1.0	Tender no PSER:SCT:PDP-T1242:11
	2.0	BHEL's NIT, vide ref no Ref: PSER:SCT:PDP-T1242:11 Dated 18/08/2011
	3.0	Other references (if any)

With reference to above, following points , relevant to tender, may please be noted and complied with while submitting offer.

- 1.0 Due date of submission of offer is extended from 01/09/2011 to 05/09/2011 at 15-00 Hrs.
- 2.0 Price schedule format **VOLUME-IIA , Rev 00 & VOLUME-IIB , Rev 00** has been revised as **VOLUME-II A Rev 01 & VOLUME-II B , Rev 01** . Bidders are requested to submit their price in revised format only. Offer from bidders in superseded price schedules shall not be considered. Bidders are requested to furnish a declaration in techno-commercial offer that they have submitted their price bid in sealed envelope as per revised price schedule format **VOLUME-II A Rev 01 & VOLUME-IIB , Rev 01** .
- 3.0 Schedule of changes as per Annexure-B to TCN-02.
- 2.0 Revised 'No deviation certificate' is attached. Bidder to submit 'No deviation certificate' as per attached Format only.
- 3.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,  
for BHARAT HEAVY ELECTRICALS LTD

**ENGR (SCT)**

**Encl**

- 1.0 **VOLUME-II A Rev 01 & VOLUME-IIB , Rev 01** .
- 2.0 Annexure-A to TCN-01.
- 3.0 Revised 'No deviation certificate' format.

पावर सेक्टर पूर्वी क्षेत्र ( मुख्यालय )

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211798/ 1691

## ANNEXURE-A TO TCN-01

### SCHEDULE OF CHANGES

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

1. Induction heating m/c as required to be provided by BHEL free of cost.
2. Special electrode & filler wire for P91, P22 & P11 piping will be supplied by BHEL free of cost.
3. Suitable crane will be provided by BHEL for lifting of deaerator as and when required.
4. Sl no 1.2.1.1 Para a) in Vol-IF-T1242 to be read as “Package A : It consist of erection, testing and commissioning of 1 nos GT, 1 STG with all auxiliaries, 2 nos deaeratos, BFPs (8 nos- 6 nos MD BFPs and 2 nos TD BFPs), BOP components and integral & external piping.” (Bold underlined text in this Para to be deleted)
5. Sl no 1.2.2.5 in Vol-IF-T1242 to be read as “Insulation of all external piping, wherever applicable.”
6. Sl no 9. Description : “Insulation heating machine “, Qty “ as reqd” to be added in the Table after sl no 8 in Vol-II Part-I Chapter-V in tender doc Vol-IF-T1242(Table in Page no 19).
7. Note on page no 92 of VOL 1F-T1242 to be read as

## ANNEXURE-A TO TCN-01

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#### NOTE:

- ❖ **All site fabricated structures & all pipes are to be cleaned by grit blasting before application of primer & erection.**
- ❖ **Welding of some of the piping (Dia 250 mm and above) is to be carried out by orbital welding machine as per requirement.**
- ❖ **Bidder needs to deploy 2 nos of 350 KVA DG set to meet the emergency electricity need and quote for the same in price schedule.**

8. Weight schedule ,Sl no 1.11.1 to 1.11.4 ( Page 40 to Page no 59 in VOL-IF-T1242) to be revised as follows:

## VOLUME - I PART – I CHAPTER - XI WEIGHT SCHEDULE

#### 1.11.1 WEIGHT SCHEDULE SUMMARY:

Sl no	Description	Approx. Weight in MT
1	GTG components (3 nos of Frame 9)	3302
2	STG components( 2 nos of 30MW each)	760

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3	BOP components	917
	<b>TOTAL</b>	<b>4979</b>

1.11.2 WEIGHT SCHEDULE FOR BLOCK A & BLOCK B

1.11.2.1 The above total weight to be erected is divided into two blocks as detailed below: (Refer CI 26.0 of Notice Inviting Tender (NIT) in this booklet for mode of award of work to Block A & B)

No	Description	Total qty	Total wt in MT (approx)	Block A		Block B	
				qty	Wt in MT	qty	Wt in MT
1	GTG components	3 nos	3302	1nos	1100	2 no	2202
2	STG components	2 nos	760	1 no	380	1 no	380
3	BOP components		917		431		486
	<b>Total</b>		<b>4979</b>		<b>1911</b>		<b>3068</b>

1.11.2.2 The further sub division of above BOP components for the said two blocks is as follows:

No	Description	Total wt in	Wt in MT for	Wt in MT for
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**ANNEXURE-A TO TCN-01****SCHEDULE OF CHANGES**

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		MT (approx)	Block A	Block B
A	Fuel system	120	40	80
B	Refinery Gas system for GTG	99	33	66
C	Dosing systems	36	12	24
D	Blow down system	140	70	70
E	Feed water system	274	137	137
F	Make-up water system	36	18	18
G	Condensate system	20	10	10
H	Cooling water system	80	40	40
J	Black start cooling water System	2	1	1
K	Diesel Generator Set	50	50	--
L	Miscellaneous Equipment	60	20	40
	<b>TOTAL WEIGHT</b>	<b>917</b>	<b>431</b>	<b>486</b>

### 1.11.3 WEIGHT DETAILS OF GTG- 3 nos, STG-2 nos & BOP components

Description	Weight in tons	Rate schedule ID
<b>GTG</b>		
a) Gas Turbine Fr-9E Flange to Flange (3 Nos.)	690.000	GTG

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b) Accessory Package (accessory Base) (3 Nos.)	180.000	GTG
c) Exhaust Plenum (3 units)	35.000	GTG
d) Diffuser (3 Nos.)	25.000	GTG
f) Field Inter Connection Piping (3 units)	96.000	GTG
g) Enclosure Accessory, GT & Generator Compartment (3 Nos)	300.000	GTG
h) Vent Fans ( 3 units)	30.000	GTG
j) Inlet Duct (3 units)	260.000	GTG
k) Exhaust Duct (3 units)	375.000	GTG
l) Vent Ducting (3 units)	75.000	GTG
m) Piping arrangement Lube Oil Junction boxes (3 units)	36.000	GTG
n) GT inlet air filter house (3 units)	390.000	GTG
ELECTRICAL MACHINES LIKE GENERATOR, ROTOR	810.000	GTG
<b>TOTAL WEIGHT FOR 3 GTG</b>	<b>3302.000</b>	
<b>STG</b>		
TURBINE	168.100	STG
GENERATOR STATOR ROTOR, EXCITER	157.700	STG
HEAT EXCHANGER COMPONENTS	434.360	STG
<b>TOTAL WEIGHT FOR 2 STG</b>	<b>760.000</b>	

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<b>BOP</b>		
Fuel system	120.000	BOP
Refinery Gas system for GTG	99.000	BOP
Dosing systems	36.000	BOP
Blow down system	140.000	BOP
Feed water system	274.000	BOP
Make-up water system	36.000	BOP
Condensate system	20.000	BOP
Cooling water system	80.000	BOP
Black start cooling water System	2.000	BOP
Diesel Generator Set	50.000	BOP
Miscellaneous Equipment	60.000	BOP
<b>TOTAL WEIGHT BOP</b>	<b>917.000</b>	<b>BOP</b>

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**1.11.4 WEIGHT SCHEDULE DETAILED**

**SHIPPING WEIGHTS AND DIMENSION**

PROJECT : 3 X Fr 9E, IOCL PARADIP							
A							
Doc No: GTEK/W&D/FR9/IOCLP/10							
Sl No	DESCRIPTION	Qty	Weight of shipment kg(each turbine)	Dimensions of box (Length x Width x Height) (m) / Volume m <sup>3</sup>	TOTAL WEIGHT (Kg)	Total Qty	Rate schedule ID
1	Gas Turbine Fr-9E Flange to Flange	1	230,000	13.2 x 4.6 x 5	690,000.00	3	GTG
2	Accessory Package (Accessory Base)	1	60,000	8.4 x 3.4 x 4.8	180,000.00	3	GTG
3	Exhaust Frame Blowers	1	1,000	2.2 x 1.5 x 1.5 (2 Nos.)	3,000.00	3	GTG
4	Exhaust Plenum	1	4500	6 x 4 x 5 ( 2 Nos)- TOP	13,500.00	3	GTG
		1	6500	6 x 4.5 x 4- LOWER	19,500.00	3	GTG
		1	800	2.5 x 1 x 1-Loose items	2,400.00	3	GTG
5	Base Exhaust	1	2000	6.5 x 1.2 x 1 (2 nos)	6,000.00	3	GTG

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	Plenum						
6	Diffuser	1	8500	6.5 x 6.5 x 3	25,500.00	3	GTG
7	Lube oil centrifuge (see note 1)	1	2500	2.5 x 1.5 x 1.8	2,500.00	1	GTG
8	Load Coupling with Hardware	1	2850	4.5 x 1.5 x 1.1	8,550.00	3	GTG
9	Accessory Coupling & Hardware	1	500	2.2 x 1 x 1	1,500.00	3	GTG
10	Guard Coupling Accessory	1	300	1.5 x 1 x 1	900.00	3	GTG
11	Jacking Oil Skid (EM Engg)	1	1200	2.2 x 1.5 x 1.5	3,600.00	3	GTG
12	Piping Lube Oil Flush Field -	1	1200	6.5 x 1.5 x 1.5	3,600.00	3	GTG
13	Field Inter Connection Piping	1	32000	6.5 x 1.5 x 1.1 (10 nos)	96,000.00	3	GTG
14	Enclosure Accessory GT & Generator Compartment	1	100000	250cu m (In ~22 boxes)	300,000.00	3	GTG
15	Vent Fans	1	10,000	2.5 x 2.5 x 3.5 (2Nos)		3	GTG

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		1		1.8 x 1.8 x 2.0 (2Nos)	30,000.00	3	GTG
		1		1.5 x 1.5 x 2.0(1No)		3	GTG
16	Inlet Duct						GTG
	i) Inlet Plenum Extension	1	1,500	4.5 x 2.3 x 3.0 (2 nos)	4,500.00	3	GTG
	ii) Inlet duct transition piece	1	9500	9.8x2.3x1.7	28,500.00	3	GTG
	iii) Inlet Duct Expansion Pieces	1	1,900	10 x 3.7 x 0.4 ( 2 nos.)	5,700.00	3	GTG
	iv) Inlet Duct Elbow	1	11,100	10 x 3.7 x 3.8	33,300.00	3	GTG
	v) Silencer	1	20,200	10 x 3.7 x 3.1	60,600.00	3	GTG
	vi) Duct Pieces	1	6900	10 x 2.3 x 3.1 (2 nos)	20,700.00	3	GTG
	vii) Support Structure	1	35,000	10x2.5x2.5- 4nos	105,000.00	3	GTG
17	Exhaust Duct						GTG
	i) Vertical Duct Assembly FR9N-VD-1	1	6,455	6.72 x 3.435 x 3 (2 nos)	19,365.00	3	GTG
	ii) Vertical Duct Assembly FR9N-VD-2	1	6,455	6.72 x 3.435 x 3 (1 no.)	19,365.00	3	GTG
	iii) Vertical Duct Ass	1	7,648	6.72 x 3.435 x 3.508 (1	22,944.00	3	GTG

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embly FR90-VD-3			no.)			
iv) Silencer Assembly FR9N-SLI	1	11,265	6.9 x 3.4 x 3.050 (2 nos)	33,795.00	3	GTG
v) Silencer Assembly FR9N-SL2	1	11,238	6.9 x 3.4 x 3.050 (2 nos)	33,714.00	3	GTG
vi) Transition Duct Assembly FR9N-TIL	1	4,546	3.42 x 6.87 x 2 (1 no)	13,638.00	3	GTG
vii) Transition Duct Assembly FR9N-TIR	1	4,492	3.42 x 6.87 x 2 (1 no)	13,476.00	3	GTG
viii) Transition Duct Assembly FR9N-T2	1	9,058	6.63 x 3.31 x 3.52 (2 nos)	27,174.00	3	GTG
ix) Expansion Joints	1	2,000	6 x 4 x 0.4 (3 nos)	6,000.00	3	GTG
xi) Horizontal Duct						GTG
HIU	1	9,335	6.5X3.3X4.0 I no	28,005.00	3	GTG
H I L	1	9,664	6.7X3.3X4.0 -Ino.	28,992.00	3	GTG
H 2	1	7,040	6.7X3.5X2.8 (2 no)	21,120.00	3	GTG
HO U	1	5,664	4.2X2.8X2.8 (1 no)	16,992.00	3	GTG
HOL	1	6,062	4.2X3.4X2.8 (I no)	18,186.00	3	GTG
xii) Silencer panels	1	25,000	3. 1x6.1 x0.5 (16 nos)	75,000.00	3	GTG

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18	Gas Valve Module	1	7000	3.6x2.4x 4	21,000.00	3	GTG
19	CO2 Rack - Frames	1	4,000	3.5 x 1 x 2.5 (4 RACKS nos.)	12,000.00	3	GTG
	CO2 Cylinders	1	12000	0.5x0.5x2.0- (79 nos)	36,000.00	3	GTG
20	Lube Oil Demister	1	3,000	2.5 x 1,6 x 2.5 (1 no)	9,000.00	3	GTG
21	Vent ducting	1	25000	1.6x1.2x6 – 8 boxes	75,000.00	3	GTG
22	Portable lube oil drain pump (see note 1)	1	2000	1.6 x1.4x1.2- 1 no	2,000.00	1	GTG
23	Compressor Water Wash Skid (see note 1)	1	7000	8x3.5 x 3.2	7,000.00	1	GTG
24	Piping Arrangement Lube oil Junction Boxes	1	2000	6.0 x 1.5 x 1.1 (4 nos)	6,000.00	3	GTG
25	Piping Arrangement Lube oil Junction Boxes	1	12000	6.5x 1.2x 1 (3No.s)	36,000.00	3	GTG
		1		6.0x 1.5x 1.1 (2No.s)		3	GTG
26	Anchoring, Base Plates Positioning Blocks (Foundation Hardware-Concrete	1	3350	1.2 x 1.5 x 3.5	10,050.00	3	GTG

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	Embedments)						
27	Anchoring, Base Plates Positioning Blocks (Foundation Hardware Shims, Guide block etc)	1	1900	0.5 x 0.5 x 1.5	5,700.00	3	GTG
28	Anchoring, Base Plates Positioning Blocks (Angle 75x75x45000)	1	425	6 x 0.175 x 0.325 (7 nos)	1,275.00	3	GTG
		1		3 x 0.175 x 0.325 (1 no)	1,275.00	3	GTG
29	GT inlet air Filter house	1	130000	10 X 3.5 X 3.5 (16Boxs)	390,000.00	3	GTG
30	GT Auxiliary panel	1	300	1 X 1 X 2.5	900.00	3	GTG
31	Radiation shield assy.	1	200	0.8 x 0.8 x 0.6	600.00	3	GTG
	<b>SUBTOTAL</b>				<b>2,636,416.00</b>		<b>GTG</b>
<p><b>NOTE:</b>  1. These item are common for all GTs (i.e Only 1 No. of each of these is being supplied for the whole project)</p>							

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B							
WEIGHT & DIMENSION SCHEDULE (STEAM TURBINE & AUXILIARIES)							
PROJECT:IOCL- PARADIP REFINERY 350 MW CPP 2X30 STG							
TURBINE TYPE :EHNK 50/56-3							
S.N.NO. GA004							
M/C.Nos :T-0950, T-0951							
Sl no	DESCRIPTION	Qty	Total Weigh t(Kg)	Dimensions of box (Length x Width x Height) (mm)	TOTAL WEIGHT (Kg)	Tot al Qty	Rate schedule ID
1	Turbine Assembly	1	58000	5800x5200x4800	116,000.00	2	STG
2	Lube Oil pump assembly	2	1600	2200x900x1050	3,200.00	4	STG
3	Emergency lube oil pump assembly	1	1200	2100x1600x650	2,400.00	2	STG
4	Jacking Oil pump assembly	1	400	1800x1800x1500	800.00	2	STG
5	Lube Oil accumulator	1 set	500	1500x500x1765	1,000.00	2 set	STG
6	Lube Oil Purifier	1	1400	2000x2000x1800	2,800.00	2	STG
7	Main Lube Oil Tank	1	6000	4550x2700x4000	12,000.00	2	STG

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8	Duolex Filter	1	950	2500x750x2000	1,900.00	2	STG
9	Overhead Lube Oil Tank	1	3000	3500x3500x3300	6,000.00	2	STG
10	Governing Console	1	500	1600x1600x1400	1,000.00	2	STG
11	Gear Box	1	10000	2200x2100x2000	20,000.00	2	STG
12	Coupling	1	500	1000x600x600	1,000.00	2	STG
	<b>SUBTOTAL</b>				<b>168,100.00</b>		

C		WEIGHTS & DIMENSION SCHEDULE ELECTRICAL MACHINES ENGINEERING					
PRODUCT: 3 X FR-IX, G.T.G		TYPE: TARI 1080-36P					
WORK ORDER-1029430600							
Sl no	DESCRIPTION	Qty	Total Weight (Kgs)	Dimensions of box (Length x Width x Height) (mm)	TOTAL WEIGHT (Kgs)	Total Qty	Rate schedule ID
1	Generator package	1	210000	9000X4100X4700	630,000.00	3	GTG
2	FOUNDATION ITMES(Loose Items)	1	8000		24,000.00	3	GTG
3	GENERATOR ENCLOSURE	1	8000	12600X5600X5100	24,000.00	3	GTG

**ANNEXURE-A TO TCN-01**

**SCHEDULE OF CHANGES**

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

4	EXCITER	1	7000	4600X2020X1803	21,000.00	3	GTG
	SUBTOTAL				699,000.00		

D	WEIGHTS & DIMENSION SCHEDULE ELECTRICAL MACHINES ENGINEERING						
	PRODUCT 30 MW STG			TYPE: TARI 800-20P			
	PROJECT: 2X30MW STG, IOCL, PARADIP						
Sl No	DESCRIPTION	Qty	Total Weight (Kgs)	Dimensions of box (Length x Width x Height) (mm)	TOTAL WEIGHT (Kg)	Total Qty	Rate schedule ID
1	GENERATOR STATOR	1	52000	4500X3500X3300	104,000.00	2	STG
2	GENERATOR ROTOR	1	12000	6600X1000X1000	24,000.00	2	STG
3	FOUNDATION ITEMS (Loose Items)	1	5650		11,300.00	2	STG
4	BEARINGS	1	3200	1900X550X1250	6,400.00	2	STG
5	EXCITER	1	5000	3000X2000X2000	10,000.00	2	STG
	SUBTOTAL				155,700.00		

**ANNEXURE-A TO TCN-01**

**SCHEDULE OF CHANGES**

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

HEAT EXCHANGERS ENGINEERING PROJECT:IOCL PARADIP CPP							
S n o	DESCRIPTION	Qty	Dry Weight (Kg)	Dimensions of box (Length x Width x Height) (mm)	TOTAL WEIGHT (Kg)	Total Qty	Rate sched ule ID
1	Surface Condenser (Per 30MW STG)						STG
a	Shell Assly (with shell, tube sheet, support plates, spacers etc)	1	35000	7100X4000X4300	70,000.00	2	STG
b	Hot Well Assly	1	3000	2000X2400X1900	6,000.00	2	STG
c	Tubes	7200 nos	25020	OD 19.05 x 16BWG x L 4500	50040.00	14400	STG
d	Misc (Stand pipes, surge pipes etc)	1	2000	NA	4,000.00	2	STG
2	<i>Steam Jet Air ejector (Per 30MW STG)</i>						
a	ASSEMBLY	2 nos	3600	6100 x 1000 x 1500	7,200.00	4	STG

**ANNEXURE-A TO TCN-01**

**SCHEDULE OF CHANGES**

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

b	Misc ( Starting ejector)	1 nos	300	NA	600.00	2	
3	Gland Steam Condenser Assly (For STG) (Per 30MW STG)						
a	Gland steam Condenser	1 nos	1400	Ø 500 x L 2300	2,800.00	2	STG
b	GSC Ejector assly	1 nos	300	2700 x1200 x1200	600.00	2	STG
4	ST oil Cooler (Per 30MW STG)						
a	Per Cooler	2 nos	3700	Ø 610 x L 4600	7,400.00	4	STG
5	STG Air Cooler (Per 30MW STG)						
a	Per Element	7 nos	960	4300 x 700 x 450	1,920.00	14	STG

**ANNEXURE-A TO TCN-01**

**SCHEDULE OF CHANGES**

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

6	Spray cum Tray Deaerator (Total 2 nos required)				2,85,000.00		
	SUBTOTAL				4,35,560.00		

**CONNECTED BOP PACKAGES.**

The approximate detailed weights of ONLY some of the BOP components are listed in the following table.

HEAT EXCHANGERS ENGINEERING PROJECT:IOCL PARADIP CPP							
SI No	DESCRIPTION	Qty	Dry Weight (Kg)	Dimensions of box (Length x Width x Height) (mm)	TOTAL WEIGHT (Kg)	Total Qty	Rate schedule ID
1	<i>Water to Water Heat Exchanger</i>						
A	Per Cooler	1 nos	4000	L 5400 x W 700 x H 1100	12,000.00	3	BOP
2	<i>HP Heater</i>						

**ANNEXURE-A TO TCN-01**

**SCHEDULE OF CHANGES**

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

A	Per Cooler	1 nos	18000	Dia 1400 x L 7100	18,000.00	1	BOP
3	<i>HPH Flash tank</i>						
A	Per tank	1 nos	6600	Dia 2000 x H 4000	6,600.00	1	BOP
	SUBTOTAL				36,600.00		

SIZE AND WEIGHT SCHEDULE OF MAJOR COMPONENTS OF BFP & BP							
SI No	DESCRIPTION	Qty	UNIT WEIGH T(Kg)	Dimension of box (Length x Width x Height) (mm)	Total Weight (Kg)	Total Qty	
(a)	HRSG Boiler Feed Pump & HRSG Booster Pump with Motor						
1	BFP Skid (Pump Assly. + Base Plate + tubing + Seal Coolers)	1	5770	2250 x 1000 x1050	23,080.00	4	BOP
2	BP Skid (Pump Assly. + Base Plate + tubing)	1	2550	1650 x 1200 x 950	10,200.00	4	BOP

**ANNEXURE-A TO TCN-01**

**SCHEDULE OF CHANGES**

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

3	Gear Box (DD).	1	1200	1150 x 1000 x 860	4,800.00	4	BOP
4	Suction Strainer at BP Suction (DD)	1	800	900 x 800 x 1400	3,200.00	4	BOP
5	BFP Recirculation valve (DD)	1	350	1800 x 550 x 1400	1,400.00	4	BOP
6	Loose Items		2400	NA	3,000.00		BOP
	<b>SUBTOTAL</b>				<b>45,080.00</b>		
b	UB MD BFP& UB MD Booster Pump						
SL NO	DESCRIPTION	Qty	UNIT WEIGH T(Kg)	Dimension of box (Length x Width x Height) (mm)	Total Weight (Kg)	Total Qty	
1	BFP Skid (Pump Assly. + Base Plate + tubing + Seal Coolers)	1	5770	2250 x 1000 x1050	23,080.00	4	BOP
2	BP Skid (Pump Assly. + Base Plate + tubing)	1	2550	1650 x 1200 x 950	10,200.00	4	BOP
3	Gear Box (DD).	2	1200	1150 x 1000 x 860	2,400.00	4	BOP

**ANNEXURE-A TO TCN-01**

**SCHEDULE OF CHANGES**

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

4	Suction Strainer at BP Suction (DD)	1	800	900 x 800 x 1400	3,200.00	4	BOP
5	BFP Recirculation valve (DD)	1	350	1800 x 550 x 1400	1,400.00	4	BOP
6	Loose Items		2400	NA	3,000.00		BOP
	<b>SUBTOTAL</b>				<b>42,680.00</b>		

SIZE AND WEIGHT SCHEDULE OF MAJOR COMPONENTS FOR FUEL SYSTEM SKIDS							
	DESCRIPTION	Qty	Weight (Kgs)	Dimension of box (Length x Width x Height) (m)	Total Weight (Kg)	Total Qty	
1	HSD 25 micron FILTER SKID	3 nos	3000	4X3X3	9,000.00	9	BOP
2	NAPHTHA 25 micron FILTER SKID	3 nos	3000	4X3X3	9,000.00	9	BOP
3	HSD 6 micron FILTER SKID	3 nos	3000	4X3X3	9,000.00	9	BOP

**ANNEXURE-A TO TCN-01**

**SCHEDULE OF CHANGES**

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

4	NAPHTHA 6 micron FILTER SKID	3 nos	3000	4X3X3	9,000.00	9	BOP
5	HSD 2.0 cubic meter FALSE START DRAIN TANK	3 nos	5000	0.9m (Dia)X 5 m(L)	15,000.00	9	BOP
6	NAPHTHA 2 cubic meter PURGE DRAIN TANK	3 nos	5000	0.9m (Dia)X 5 m(L)	15,000.00	9	BOP
7	LUBRICITY ADDITIVE DOSING SKID	3 nos	4000	4X3X3	12,000.00	9	BOP
8	HSD/NAPHTHA ACCUMULATORS	18 nos	1000	0.5(Dia) X 2 m(L)	3,000.00	54	BOP
9	LOOSE ITEMS PIPING			NA	25,000.00		BOP
	<b>SUBTOTAL</b>				<b>106,000.00</b>		

<b>WEIGHTS &amp; DIMENSION SCHEDULE</b>	
<b>TD-BFP (BFP DRIVE TURBINE &amp; AUXILIARIES)</b>	
TURBINE TYPE :HNG32/23-3	
S.N.NO. GA006	
M/C.Nos :T-0948, T-0949	

**ANNEXURE-A TO TCN-01**

**SCHEDULE OF CHANGES**

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

SL NO	DESCRIPTION	Qty	Total Weight (Kg)	Dimensions of box (Length x Width x Height) (mm)	TOTAL WEIGHT (Kg)	Total Qty	
1	Steam Turbine with base plate	1	17000	4100x3500x2500	34,000.00	2	BOP
2	Gear Box	1	700	800x100x800	1,400.00	2	BOP
3	Coupling	1	100	900x320x320	200.00	2	BOP
4	Lube oil tank	1	4225	3500x2450x2500	8,450.00	2	BOP
5	Overhead oil tank	1	712	1325x2500	1,424.00	2	BOP
6	Lube oil pump assembly	1	4750	3000x3500x800	9,500.00	2	BOP
7	Duplex filter	1	124	625x600x725	248.00	2	BOP
8	Oil purification unit	1	1350	1250x1500x1100	2,700.00	2	BOP
9	Oil accumulator assembly	1	250	400x500x1800	500.00	2	BOP
10	Oil vapour Extraction fan assembly	2	100	500x400x500	200.00	4	BOP
11	Governing console	1	625	1200x1200x1400	1,250.00	2	BOP
	<b>SUBTOTAL</b>				<b>59,872.00</b>		

**ANNEXURE-A TO TCN-01**

**SCHEDULE OF CHANGES**

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Sl No	Equipment /Package Description	Qty	Dimension (each) L x B x H (M)	Weight (each) Tons	
1.	<b>PUMPS</b>				BOP
a.	HP Export Feed Water Pumps				BOP
	i) 235 M <sup>3</sup> /Hr Feed Pumps For HP FW Export To Refinery (Motor driven)	2	8M x 2.5M x 2.5M	18	BOP
	ii) LO Skid for HP FW Export Pump	2	3M x 1.6M x 1M	2	BOP
	iii) 235 M <sup>3</sup> /Hr Feed Pumps For HP FW Export To Refinery (turbine driven)	1	8M x 2.5M x 2.5M	12	BOP
b.	MP Export Feed Water Pumps				BOP
	i) 125 M <sup>3</sup> /Hr Feed Pumps For MP FW Export To Refinery (Motor driven)	2	5M x 2M x 2M	12	BOP
	ii) LO Skid for MP FW Export Pump	2	3M x 1.6M x 1M	2	BOP
	iii) 125 M <sup>3</sup> /Hr Feed Pumps For MP FW Export To Refinery (Turbine driven)	1	5M x 2M x 2M	9	BOP
c.	395 M <sup>3</sup> /Hr MUH Transfer Pumps with Motors	3	5M x 2M x 1M	4	BOP

**ANNEXURE-A TO TCN-01**

**SCHEDULE OF CHANGES**

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

d.	74 M <sup>3</sup> /Hr Condenser Extraction Pumps with Motors	4	0.75M x 0.75M x 5M	2	BOP
e.	600 M <sup>3</sup> /Hr Condensate Transfer Pumps (Motor driven)	2	4M x 2.5M x 1M	5	BOP
f.	600 M <sup>3</sup> /Hr Condensate Transfer Pumps (Turbine driven)	1	4M x 2.5M x 1M	2	BOP
g.	350 M <sup>3</sup> /Hr Black Start ACW Pumps (Motor Driven)	1	2M x 1M x 1M	2	BOP
h.	Blow Down Transfer Pumps with motors	10	0.75M x 0.75M x 5.5M	0.5	BOP
i.	Dewatering Pumps	4	0.5M x 0.5M x 0.55M	0.15	BOP
2.	<b>Dosing Systems</b>				
a.	HP Dosing System (Tri-Sodium Phosphate) for HRSGs	3	4M x 2.5M x 3.5M	6	BOP
b.	LP Dosing System (Hydrazine) for De-aerator	1	4M x 2.5M x 3.5M	6	BOP
c.	LP Dosing System (Ammonia) for De-aerator	1	4M x 2.5M x 3.5M	6	BOP
d.	LP Dosing System (Ammonia) for Condensate Storage Tank	1	4M x 2.5M x 3.5M	6	BOP

## ANNEXURE-A TO TCN-01

### SCHEDULE OF CHANGES

**JOB:-** Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .

3.	Electric hoists for material handling in miscellaneous areas	7	Capacity – 3T each		BOP
4.	Under-slung single girder crane	1	Capacity – 3T		BOP
5.	Chain Pulley Blocks for material handling in miscellaneous areas	5	Capacity- 3T - 1 no Capacity- 2T- 2nos Capacity- 5T- 2nos		BOP
6	Steam Turbine Driven UB BFP	2			BOP

**FORMAT FOR NO DEVIATION CERTIFICATE**  
**(To be submitted in the bidder's letter head)**

BHARAT HEAVY ELECTRICALS LIMITED,  
Power Sector - Eastern Region,  
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,  
Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	Package A:- Erection, Testing & Commissioning of 1 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs , 2 Nos of De-Aerators , 8 Nos of BFPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .  Package B:- Erection, Testing & Commissioning of 2 Nos of Fr. 9 GTG , 1 Nos of 30 MW STG , Associated BOPs and Related IBR & Non IBR Piping at 366 MW Combined Cycle Power Project , Paradip Refinery Project , Orissa .	
Ref	1.0	Tender no PSER:SCT:PDP-T1242:11
	2.0	BHEL's NIT, vide ref no Ref: PSER:SCT:PDP-T1242:11 Dated 18/08/2011
	3.0	BHEL's TCN-01 vide ref. no. PSER:SCT:PDP-T1242:TCN-01 Dated 26/08/2011
	4.0	Other references (if any).

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized  
representative of the bidder)

पावर सेक्टर पूर्वी क्षेत्र ( मुख्यालय )

POWER SECTOR EASTERN REGION DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691/ 1798

VOL-II A REV-01 PACKAGE-A PRICE SCHEDULE	
ERECTION, TESTING & COMMISSIONING OF 3 NOS OF FR. 9 GTG , 2 NOS OF 30 MW STG , ASSOCIATED BOPS , 2 NOS OF DE-AERATORS , 8 NOS OF BFPS AND RELATED IBR & NON IBR PIPING AT 366 MW COMBINED CYCLE POWER PROJECT , PARADIP REFINERY PROJECT , ORISSA .	
TENDER NO. PSER:SCT:PDP-T1242:11	
PREAMBLE	
1.0	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with other volumes of tender as applicable.
2.0	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.
3.0	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4.0	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, taxes, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the tender document and this schedule.
5.0	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same.
6.0	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
7.0	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted.
8.0	The tender shall be deemed to have studied the specifications, details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
9.0	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.

VOL-II A REV-01  
PACKAGE-A PRICE SCHEDULE

ERECTION, TESTING & COMMISSIONING OF 3 NOS OF FR. 9 GTG , 2 NOS OF 30 MW STG , ASSOCIATED BOPS , 2 NOS OF DE-AERATORS , 8 NOS OF BFPS AND RELATED IBR & NON IBR PIPING AT 366 MW COMBINED CYCLE POWER PROJECT , PARADIP REFINERY PROJECT , ORISSA .

TENDER NO. PSER:SCT:PDP-T1242:11(SCHEDULE-01)

Item No.	DESCRIPTION OF WORK	Quantity	Rate against each item	Lumpsum Amount in Rs
1	Handling at Site Store / Storage Yard, Transportation to Site of Work, Erection, Testing and Commissioning of Fr. IX Gas Turbine, Gas turbine generator and Auxiliaries with associated equipment, integral & external piping, complete systems- (Approximate Weight : 1171 MT) as per tender specification	1 SET		
2	Handling at Site Store / Storage Yard, Transportation to Site of Work, Erection, Testing and Commissioning of 30 MW Steam Turbine, Steam Turbine Generator and Auxiliaries with associated equipment, integral & external piping, complete systems - (Approximate Weight: 380 MT)- as per tender specification	1 SET		
3	Handling at Site Store / Storage Yard, Transportation to Site of Work, Erection, Testing and Commissioning of Plant ( BOP ) components (Approximate Weight: 431 MT)	1 LOT		
4	Providing serviceable DG sets of following capacity for continuation of work in emergencies			
4.1	350 KVA DG Set (2 Nos)	26 DG MONTH		
5.1	Handling at Site Store / Storage Yard, Transportation to Site of Work, Erection, Testing and Commissioning of BFPS (6 Nos MD BFP and 2 Nos TD BFP)	8 SET		
5.2	Handling at Site Store / Storage Yard, Transportation to Site of Work, Erection, Testing and Commissioning of deaerator (including welding of shells)	2 SET		

VOL-II A REV-01  
PACKAGE-A PRICE SCHEDULE

ERECTION, TESTING & COMMISSIONING OF 3 NOS OF FR. 9 GTG , 2 NOS OF 30 MW STG , ASSOCIATED BOPS , 2 NOS OF DE-AERATORS , 8 NOS OF BFPS AND RELATED IBR & NON IBR PIPING AT 366 MW COMBINED CYCLE POWER PROJECT , PARADIP REFINERY PROJECT , ORISSA .

TENDER NO. PSER:SCT:PDP-T1242:11(SCHEDULE-01)

6	Erection, Testing ,commissioning & completion of trial operations of the complete piping, Stainless Steel, Carbon Steel, Alloy Steel and buried piping together with valves, fittings hangers & supports etc. as per the detailed description and nature of work enumerated in the Tender specification, supply and application of primer, final painting , insulation whichever applicable including supply of consumables, tools and tackles except the T & P supplied by BHEL, all handling and transportation from BHEL / Customer's stores and other incidental works during the pre-assembly, Erection, Testing and Commissioning works as detailed in the Tender specification. including any extra work of modification / rectification that may arise during the erection, testing and commissioning works which is incidental to normal erection works. Grid blasting followed by primer painting prior to erection is also included in the scope. The buried piping works involves supply and application of coal tar coating and application of fibre glass wrapping material as specified in the tender specification / drawings.	1 LOT PIPING ( SL NO 6.1 TO 6.52)		
7.0	Erection, Testing ,commissioning & completion of trial operations of temporary piping together with valves, fittings hangers & supports , insulation wherever applicable etc. as per the detailed description and nature of work enumerated in the Tender specification	3 NOS		
<b>TOTAL PACKAGE-A</b>				
<b>NOTE:</b>				
01	The joints indicated do not include site routed pipe joints of 2" and below & equipment integral piping like tube oil piping , fuel lines etc.			
02	Total price at sl.no. 6.66 of SCHEDULE-2 i.e. summation of 6.01 to 6.65 should match with item no. 6. of SCHEDULE-1			
03	1st Gas Turbine, and Generator Stator has already been placed in position (for which no payment will be made). Rotor insertion is to be done by vendor. Payment against clause no. A TO clause no.F of 1.7.1.1 (GAS TURBINE) and clause no. A & clause no.B of 1.7.3.1 (GAS TURBINE GENERATOR ) of payment terms for GT & ST shall not be considered.			

VOL-II A REV-01  
PACKAGE-A PRICE SCHEDULE

ERECTION, TESTING & COMMISSIONING OF 3 NOS OF FR. 9 GTG , 2 NOS OF 30 MW STG ,  
ASSOCIATED BOPS , 2 NOS OF DE-AERATORS , 8 NOS OF BFPS AND RELATED IBR & NON IBR  
PIPING AT 366 MW COMBINED CYCLE POWER PROJECT , PARADIP REFINERY PROJECT , ORISSA .

TENDER NO. PSER:SCT:PDP-T1242:11 (SCHEDULE-02)

Item No.	DESCRIPTION OF SPECIFICATION OF PIPE	Quantity of Joint in Nos.	Rate against each Joint	Lumpsum Amount in Rs
6.1	OD 711 x 45 SA 335 P91	96		
6.2	OD 559 x 35 SA 335 P91	8		
6.3	OD 406.4 x 38 SA 335 P91	94		
6.4	OD 355.6 x 29 SA 335 P91	88		
6.5	OD 323.9 x 31 SA 335 P91	66		
6.6	OD 273 x 35 SA 335 P91	10		
6.7	OD 610 x 20 SA 335 P22	12		
6.8	OD 508 x 25 SA 335 P22	54		
6.9	OD 457 x 25 SA 335 P22	55		
6.10	OD 406.4 x 17.5 SA 335 P22	68		
6.11	OD 273 x 9.27 SA 335 P22	43		
6.12	OD 219.1 x 6.35 SA 335 P22	38		
6.13	OD 168.3 x 27.5 SA 335 P22	64		
6.14	OD 168.3 x 7.11 SA 335 P22	87		
6.15	OD 114.3 x 20 SA 335 P22	53		
6.16	OD 88.9 x 7.62 SA 335 P22	98		
6.17	OD 88.9 x 5.49 SA 335 P22	33		
6.18	OD 60.3 x 5.54 SA 335 P22	59		
6.19	OD 48.3 x 5.08 SA 335 P22	54		
6.20	OD 21.3 x 4.78 SA 335 P22	19		
6.21	OD 711 x 20 SA 106 Gr C	152		
6.22	OD 610 x 14.27 SA 106 Gr C	17		
6.23	OD 610 x 14.07 SA 106 Gr C	10		
6.24	OD 457.2 x 12.7 SA 106 Gr C	26		
6.25	OD 368 x 40 SA 106 Gr C	76		
6.26	OD 273 x 32 SA 106 Gr C	119		
6.27	OD 219.1 x 25 SA 106 Gr C	323		
6.28	OD 168.3 x 21.95 SA 106 Gr C	111		
6.29	OD 168.3 x 13.49 SA 106 Gr C	12		
6.30	OD 114.3 x 13.49 SA 106 Gr C	102		

VOL-II A REV-01  
PACKAGE-A PRICE SCHEDULE

ERECTION, TESTING & COMMISSIONING OF 3 NOS OF FR. 9 GTG , 2 NOS OF 30 MW STG ,  
ASSOCIATED BOPS , 2 NOS OF DE-AERATORS , 8 NOS OF BFPS AND RELATED IBR & NON IBR  
PIPING AT 366 MW COMBINED CYCLE POWER PROJECT , PARADIP REFINERY PROJECT , ORISSA .

TENDER NO. PSER:SCT:PDP-T1242:11 (SCHEDULE-02)

6.31	OD 88.9 x 11.13	SA 106 Gr C	76	
6.32	OD 60.3 x 11.07	SA 106 Gr C	73	
6.33	OD 48.3 x 7.14	SA 106 Gr C	78	
6.34	OD 33.4 x 6.35	SA 106 Gr C	540	
6.35	OD 21.3 x 4.78	SA 106 Gr C	232	
6.36	OD 508 x 12.7	SA 106 Gr B	36	
6.37	OD 406.4 x 9.53	SA 106 Gr B	112	
6.38	OD 355.6 x 9.53	SA 106 Gr B	96	
6.39	OD 323.9 x 9.53	SA 106 Gr B	143	
6.40	OD 323.3 x 9.53	SA 106 Gr B	8	
6.41	OD 273 x 6.35	SA 106 Gr B	269	
6.42	OD 219.1 x 6.35	SA 106 Gr B	501	
6.43	OD 168.3 x 7.11	SA 106 Gr B	140	
6.44	OD 114.3 x 7.11	SA 106 Gr B	12	
6.45	OD 114.3 x 6.02	SA 106 Gr B	153	
6.46	OD 114.1 x 6.02	SA 106 Gr B	83	
6.47	OD 88.9 x 11.03	SA 106 Gr B	30	
6.48	OD 88.9 x 5.49	SA 106 Gr B	129	
6.49	OD 60.3 x 5.54	SA 106 Gr B	183	
6.50	OD 48.3 x 5.08	SA 106 Gr B	70	
6.51	OD 33.4 x 4.55	SA 106 Gr B	297	
6.52	OD 21.3 x 3.73	SA 106 Gr B	33	
6.53	OD 1626x14	SA 106 Gr B	30	
6.54	OD 1422X14	SA 106 Gr B	30	
6.55	OD 1016X12	SA 106 Gr B	36	
6.56	OD 914X12	SA 106 Gr B	24	
6.57	OD 813X12	SA 106 Gr B	24	
6.58	OD 711X12	SA 106 Gr B	20	
6.59	OD 610X10	SA 106 Gr B	20	
6.60	OD 508X10	SA 106 Gr B	25	
6.61	OD 457X8	SA 106 Gr B	24	
6.62	OD 355.6X8	SA 106 Gr B	24	
6.63	OD 323.9X8	SA 106 Gr B	24	
6.64	OD 273X8	SA 106 Gr B	30	
6.65	OD 219.1X8	SA 106 Gr B	30	
6.66	<b>TOTAL PRICE</b>			

VOL-II A REV-01  
PACKAGE-A PRICE SCHEDULE

ERECTION, TESTING & COMMISSIONING OF 3 NOS OF FR. 9 GTG , 2 NOS OF 30 MW STG ,  
ASSOCIATED BOPS , 2 NOS OF DE-AERATORS , 8 NOS OF BFPS AND RELATED IBR & NON IBR  
PIPING AT 366 MW COMBINED CYCLE POWER PROJECT , PARADIP REFINERY PROJECT , ORISSA .

TENDER NO. PSER:SCT:PDP-T1242:11 (SCHEDULE-02)

NOTE:				
01	The joints indicated do not include site routed pipe joints of 2" and below & equipment integral piping like tube oil piping , fuel lines etc.			
02	Total price at sl.no. 6.66 of SCHEDULE-2 i.e. summation of 6.01 to 6.65 should match with item no. 6. of SCHEDULE-1			
03				

VOL-II B REV-01 PACKAGE-B PRICE SCHEDULE	
ERECTION, TESTING & COMMISSIONING OF 3 NOS OF FR. 9 GTG , 2 NOS OF 30 MW STG , ASSOCIATED BOPS , 2 NOS OF DE-AERATORS , 8 NOS OF BFPS AND RELATED IBR & NON IBR PIPING AT 366 MW COMBINED CYCLE POWER PROJECT , PARADIP REFINERY PROJECT , ORISSA .	
TENDER NO. PSER:SCT:PDP-T1242:11	
PREAMBLE	
1.0	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully in rates for various items. Clauses under this preamble shall be read in conjunction with other volumes of tender as applicable.
2.0	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.
3.0	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4.0	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, taxes, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the tender document and this schedule.
5.0	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same.
6.0	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
7.0	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted.
8.0	The tender shall be deemed to have studied the specifications, details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
9.0	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.

VOL-II B REV-01  
PACKAGE-B PRICE SCHEDULE

ERECTION, TESTING & COMMISSIONING OF 3 NOS OF FR. 9 GTG , 2 NOS OF 30 MW STG ,  
ASSOCIATED BOPS , 2 NOS OF DE-AERATORS , 8 NOS OF BFPS AND RELATED IBR & NON IBR  
PIPING AT 366 MW COMBINED CYCLE POWER PROJECT , PARADIP REFINERY PROJECT , ORISSA .

TENDER NO. PSER:SCT:PDP-T1242:11(SCHEDULE-01)

Item No.	DESCRIPTION OF WORK	Quantity	Rate against each item	Lumpsum Amount in Rs
1	Handling at Site Store / Storage Yard, Transportation to Site of Work, Erection, Testing and Commissioning of Fr. IX Gas Turbine, Gas turbine generator and Auxiliaries with associated equipment, integral & external piping, complete systems- (Approximate Weight : 1171 MT each set) as per tender specification.	2 SET		
2	Handling at Site Store / Storage Yard, Transportation to Site of Work, Erection, Testing and Commissioning of 30 MW Steam Turbine, Steam Turbine Generator and Auxiliaries with associated equipment, integral & external piping, complete systems - (Approximate Weight: 380 MT) as per tender specification.	1 SET		
3	Handling at Site Store / Storage Yard, Transportation to Site of Work, Erection, Testing and Commissioning of Plant ( BOP ) components (Approximate Weight: 486 MT)	1 LOT		
4	Providing serviceable DG sets of following capacity for continuation of work in emergencies			
4.1	350 KVA DG Set (2 nos)	26 MONTH	DG-	

VOL-II B REV-01  
PACKAGE-B PRICE SCHEDULE

ERECTION, TESTING & COMMISSIONING OF 3 NOS OF FR. 9 GTG , 2 NOS OF 30 MW STG ,  
ASSOCIATED BOPS , 2 NOS OF DE-AERATORS , 8 NOS OF BFPS AND RELATED IBR & NON IBR  
PIPING AT 366 MW COMBINED CYCLE POWER PROJECT , PARADIP REFINERY PROJECT , ORISSA .

TENDER NO. PSER:SCT:PDP-T1242:11(SCHEDULE-01)

5	Erection, Testing ,commissioning & completion of trial operations of the complete piping, Stainless Steel, Carbon Steel, Alloy Steel and buried piping together with valves, fittings hangers & supports etc. as per the detailed description and nature of work enumerated in the Tender specification, supply and application of primer, final painting including supply of consumables, tools and tackles except the T & P supplied by BHEL, all handling and transportation from BHEL / Customer's stores and other incidental works during the pre-assembly, Erection, Testing and Commissioning works as detailed in the Tender specification. including any extra work of modification / rectification that may arise during the erection, testing and commissioning works which is incidental to normal erection works. Grid blasting followed by primer painting prior to erection is also included in the scope. The buried piping works involves supply and application of coal tar coating and application of fibre glass wrapping material as specified in the tender specification / drawings.	1 LOT PIPING SL NO 5.1 TO 5.31)		
6	Erection, Testing ,commissioning & completion of trial operations of temporary piping together with valves, fittings hangers & supports , insulation wherever applicable etc. as per the detailed description and nature of work enumerated in the Tender specification	4 NOS		
<b>TOTAL PACKAGE-B</b>				
NOTE				
1	The joints indicated do not include site routed pipe joints of 2" and below & equipment integral piping like tube oil piping , fuel lines etc.			
2	Total price at sl.no. 5.32 of SCHEDULE-02 i.e. summation of 5.01 to 5.31 should match with item no. 5. of SCHEDULE-01			

VOL-II B REV-01  
PACKAGE-B PRICE SCHEDULE

ERECTION, TESTING & COMMISSIONING OF 3 NOS OF FR. 9 GTG , 2 NOS OF 30 MW STG ,  
ASSOCIATED BOPS , 2 NOS OF DE-AERATORS , 8 NOS OF BFPS AND RELATED IBR & NON IBR  
PIPING AT 366 MW COMBINED CYCLE POWER PROJECT , PARADIP REFINERY PROJECT , ORISSA .

TENDER NO. PSER:SCT:PDP-T1242:11(SCHEDULE-02)

Sl.No.	DESCRIPTION & SPECIFICATION OF PIPES	Quantity of Joint in	Rate against each Joint	Total Amount in Rs
5.1	OD 508 x 12.7 SA 106 Gr.B	46		
5.2	OD 406.4 x 9.53 SA 106 Gr.B	106		
5.3	OD 355.6 x 9.53 SA 106 Gr.B	34		
5.4	OD 323.9 x 9.53 SA 106 Gr.B	65		
5.5	OD 273 x 6.35 SA 106 Gr.B	374		
5.6	OD 219.1 x 6.35 SA 106 Gr.B	380		
5.7	OD 168.3 x 7.11 SA 106 Gr.B	405		
5.8	OD 114.3 x 7.11 SA 106 Gr.B	354		
5.9	OD 88.9 x 5.49 SA 106 Gr.B	112		
5.10	OD 60.3 x 5.54 SA 106 Gr.B	20		
5.11	OD 33.4 x 4.55 SA 106 Gr.B	250		
5.12	OD 219.1 x 25 SA 106 Gr C	157		
5.13	OD 168.3 x 21.95 SA 106 Gr C	233		
5.14	OD 168.3 x 14.27 SA 106 Gr C	40		
5.15	OD 33.4 x 6.35 SA 106 Gr C	245		
5.16	OD 219.1 X12.7 SA 335 P22	41		
5.17	OD 168.3 x 27.5 SA 335 P22	44		
5.18	OD 168.3 x 7.11 SA 335 P22	43		
5.19	OD 114.3 x 20 SA 335 P22	41		
5.20	OD 114.3 x 6.02 SA 335 P22	99		
5.21	OD 88.9 x 5.49 SA 335 P22	107		
5.22	OD 60.3 x 12.5 SA 335 P22	10		
5.23	OD 60.3 x 5.54 SA 335 P22	29		
5.24	OD 48.3 x 5.08 SA 335 P22	35		
5.25	OD 33.4 x 6.35 SA 335 P22	20		
5.26	OD 33.4 x 4.55 SA 335 P22	10		
5.27	OD 368X40 SA 106 GR-C	105		
5.28	OD 323.9X36 SA 106 GR-C	12		
5.29	OD 273X32 SA 106 GR-C	130		
5.30	OD 219.1X25 SA 106 GR-C	214		
5.31	OD 114.3X13.49 SA 106 GR-C	56		

VOL-II B REV-01  
PACKAGE-B PRICE SCHEDULE

ERECTION, TESTING & COMMISSIONING OF 3 NOS OF FR. 9 GTG , 2 NOS OF 30 MW STG ,  
ASSOCIATED BOPS , 2 NOS OF DE-AERATORS , 8 NOS OF BFPS AND RELATED IBR & NON IBR  
PIPING AT 366 MW COMBINED CYCLE POWER PROJECT , PARADIP REFINERY PROJECT , ORISSA .

TENDER NO. PSER:SCT:PDP-T1242:11(SCHEDULE-02)

5.32	<b>TOTAL PRICE</b>			
NOTE				
1	The joints indicated do not include site routed pipe joints of 2" and below & equipment integral piping like tube oil piping , fuel lines etc.			
2	Total price at sl.no. 5.32 of SCHEDULE-02 i.e. summation of 5.01 to 5.31 should match with item no. 5. of SCHEDULE-01			