



# भारत हेवी इलेक्ट्रिकल्स लिमिटेड

( भारत सरकार का उपक्रम )

## BHARAT HEAVY ELECTRICALS LIMITED

( A Govt. of India Undertaking )

TCN - 05

Ref: PSER:SCT:ABJ-T1353:TCN-05

Date: 12-07-2012

Sub	Tender change notice (TCN) 05	
Job	Erection, testing, Commissioning, etc of Steam turbine & auxiliaries, generator & auxiliaries, pumps, piping, misc equipments, insulation, painting etc for 2 x 270 MW (Unit#1&2), Phase-II, Abhijeet Infrastructure Limited, Chandwa, Jharkhand	
Ref	1.0	Tender no PSER:SCT:ABJ-T1353:12.
	2.0	BHEL's NIT, vide reference no PSER:SCT:ABJ-T1353:2837, dated 02-06-12.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:ABJ-T1353:TCN-01, dated 13-06-2012
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:ABJ-T1353:TCN-02, dated 22-06-2012.
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:ABJ-T1353:TCN-03, dated 02-07-2012.
	6.0	BHEL's TCN-04, vide reference no PSER:SCT:ABJ-T1353:TCN-04, dated 11-07-2012.
	7.0	All other pertinent issues till date.

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

1.0 Please note that the clause no. 32.3 of VOLUME-IF (TCC), is to be read as given below

32.3	Interim payment shall be limited to 95 % of the gross value of interim bill in line with the billing schedule. Balance 5% will be retained from each RA bill which will be released on completion of guarantee period of 12 months. The security deposit will be refunded as per GCC. All admissible recoveries / adjustments etc shall be made from the interim payable amount.
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- 2.0 Revised Billing Schedule as per attached Annexure-A to this TCN, superseding the previous billing Schedule i.e. Annexure-B of VOLUME-IF (TCC).
- 3.0 Revised Price Schedule, Volume-III A, Rev-1 attached. Bidder shall quote as per this revised Volume-III A, Rev-1 only. Price quoted against earlier Price schedule, Volume-III A, R-0 shall not be considered.
- 4.0 Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
- 5.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,  
for BHARAT HEAVY ELECTRICALS LTD

ENGR (SCT)

Encl

1.0 As above.

पावर सेक्टर पूर्वी क्षेत्र ( मुख्यालय )

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

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796

JOB	Erection, testing, Commissioning, etc of Steam turbine & auxiliaries, generator & auxiliaries, pumps, piping, misc equipments, insulation, painting, etc for 2 x 270 MW (Unit#1&2), Phase-II, Abhijeet Infrastructure Limited, Chandwa, Jharkhand
TENDER NO	Tender no PSER:SCT:ABJ:T1353:12

### BILLING SCHEDULE

SI No.	Description of activity	Percent allocated
1.0	CONDENSER	
1.1	Foundation preparation	1.00%
1.2	Assembly of condenser parts.	
1.2.1	Completion of box assly including welding.	1.00%
1.2.2	Erection & welding of tube support plates.	1.50%
1.2.3	Erection & welding of dome walls.	0.50%
1.2.4	Erection of stiffeners/ bracing pipes of dome walls.	0.75%
1.2.5	Welding of stiffeners/ bracing pipes.	0.75%
1.2.6	Erection and welding of stiffeners etc of condenser.	0.50%
1.3	Insertion of tube & tube expansion.	
1.3.1	Insertion of tubes.	3.00%
1.3.2	Trimming, expansion & bell mousing, cutting of tubes.	0.50%
1.3.3	Water fill test.	0.50%
1.3.4	Assembly of water boxes.	1.00%
1.4	Hyd test of condenser spring adjustment & final setting.	
1.4.1	Hydraulic test of condenser tubes & water box.	0.50%
1.4.2	Spring adjustment & final setting and condenser neck erection & welding.	0.50%
1.4.3	Erection of water box handling arrangement.	0.50%
1.4.4	Condenser vacuum leak test.	0.50%
1.5	Inside painting of condenser.	0.50%
2.0	TURBINE	
2.1	Placement, centering, leveling & grouting of brg pedestal & base plates.	1.25%
2.2	Erection of LP turbine.	
2.2.1	Installation of LPT outer casing B/H.	0.50%
2.2.2	Installation of LPT inner outer casing B/H.	0.50%
2.2.3	Placement of LP rotor, radial & axial clearance setting in LPT top & bottom casing.	0.50%
2.2.4	Roll check and fitting of final axial & radial keys.	0.50%
2.2.5	Erection & welding of LP inlet bellows and bracing pipes.	0.50%
2.2.6	Erection & welding of LP top cover.	0.50%
2.2.7	Boxing up of turbine & erection of CAP.	1.00%
2.3	Placement & positioning of HP & IP turbine.	
2.3.1	Placement, positioning of HPT & IPT.	1.75%
2.3.2	Taking HP & IP rotor load on bearing and preliminary alignment of HP - IP & IP - LP coupling.	1.50%
2.3.3	Assly of elbows & breech nut in HPT & in IPT.	0.50%
2.3.4	Horn drop & roll check of HPT & IPT.	0.50%
2.3.5	Fitting of axial & radial key in HPT & IPT.	0.50%
2.4	Alignment.	
2.4.1	Alignment of HP-IP & IP-LP coupling.	1.75%
2.4.2	Reaming, honing & coupling bolt fitting.	0.75%

2.4.3	Coupling bolt stretching & swing check.	0.50%
2.5	Erection of stop & control valves and governing control system.	
2.5.1	Erection of MS & RH stop cum control valves.	0.80%
2.5.2	Erection of Gov Control rack & LPBP rack.	0.50%
2.5.3	Erection of LP bypass valves.	0.50%
2.6	Boxing up of bearing pedestal.	1.50%
2.7	Erection of turbine integral piping with oil pump etc.	3.50%
3.0	GENERATOR.	
3.1	Preparation of foundation and matching of base plates	1.00%
3.2	Levelling, positioning and alignment of stator.	2.00%
3.3	Rotor insertion.	2.00%
3.4	Alignment of generator rotor with turbine rotor and coupling.	1.00%
3.5	Generator box up.	1.00%
3.6	Erection of excitation system.	1.00%
3.7	Erection of hydrogen filling system.	1.00%
3.8	Erection of misc integral piping.	1.50%
4.0	ROTATING AUXILIARIES ALONGWITH INTEGRAL PIPING & ACCESSORIES	
4.1	Erection of BFP (3 nos).	4.50%
4.2	Erection of CEP (2 nos).	3.00%
4.3	Erection of Misc Pump (1 LOT).	2.00%
4.4	Erection of other rotating aux with associated auxiliaries.	3.00%
5.0	STATIC AUXILIARIES	
5.1	Erection of LP Heaters 1, 2 & 3.	1.20%
5.2	Erection of HP heaters 1&2.	1.20%
5.3	Erection of ejectors/ vacuum pumps, drain coolers & gland steam condenser.	0.75%
5.4	Erection of deaerator and feed storage tanks.	2.50%
5.5	Erection of flash tanks, flash boxes, other tanks and other static aux.	1.75%
6.0	MISC EQUIPMENT	
6.1	Erection of HP & LP dosing system.	0.25%
6.2	Erection of self cleaning strainers/ debris filters.	1.00%
6.3	Erection of plate heat exchanger, BF valves etc.	0.75%
7.0	ERECTION, WELDING, TESTING, NDT ETC OF TG PIPINGS WITH H&S, VALVES ETC	12.00%
8.0	INSULATION OF PIPE & EQUIPMENT	5.00%
9.0	COMMON SYSTEM EQUIPMENT & AUXILIARIES	
9.1	FINISH PAINTING (TO BE RELEASED ON PRO-RATA BASIS)	1.50%
10.0	PRE-COMMISSIONING & COMMISSIONING	
11.0	Starting of TG oil flushing.	1.50%
11.1	Completion of TG oil flushing & TG on barring gear.	2.00%
11.2	Generator air leakage test & dry out.	1.00%
11.3	Commissioning of 3 nos.BFPs.	1.00%
11.4	Commissioning of CEPs.	0.60%
11.5	Commissioning of misc pumps packages.	1.00%
11.6	Rolling & synchronisation.	1.00%
11.7	Full loading.	1.00%
11.8	Trial run.	2.50%
11.9	PG test.	0.70%
11.10	Attending to punch points	3.00%
12.0	Handing over of the unit to customer.	0.50%
13.0	<b>TOTAL.</b>	<b>100.00%</b>

**NOTE :**

1. THE ABOVE BILLING SCHEDULE IS APPLICABLE FOR EACH UNIT FOR SL. NO. 1 OF THE PRICE SCHEDULE. FURTHER BREAK-UP OF THE ALLOCATED % AGAINST ACTIVITIES SHALL BE DONE AT SITE FOR PROGRESSIVE PAYMENT BASED ON ACTIVITY COMPLETION.
2. 20% PAYMENT AGAINST SL. NO. 2 SHALL BE MADE ON ERECTION & ALIGNMENT OF THE TEMPORARY STRUCTURES AND BALANCE 80% ON COMPLETION OF THE STATOR LIFTING ACTIVITY.
3. TO CALCULATE THE LUMPSUM PRICE FOR EACH UNIT, THE GRAND TOTAL LUMPSUM PRICE QUOTED FOR TWO UNITS, SHALL BE DIVIDED BY 2(TWO)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691/ 23211798/ 23211796

<b>VOLUME-III A</b>	
<b>PRICE SCHEDULE, REV-1</b>	
<b>Job: Erection, testing, Commissioning, etc of Steam turbine &amp; auxiliaries, generator &amp; auxiliaries, pumps, piping, misc equipments, insulation, painting, etc for 2 x 270 MW (Unit#1 &amp;2), Phase-II, Abhijeet Infrastructure Limited, Chandwa, Jharkhand</b>	
<b>TENDER NO - PSER:SCT:ABJ:T1353:12</b>	
<b>PREAMBLE</b>	
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.
10.0	The Total lumpsum price is to be quoted in the Price Schedule for two units as per tender

**VOLUME-III A**  
**PRICE SCHEDULE, REV-1**

**Job: Erection, testing, Commissioning, etc of Steam turbine & auxiliaries, generator & auxiliaries, pumps, piping, misc equipments, insulation, painting, etc for 2 x 270 MW (Unit#1&2), Phase-II, Abhijeet Infrastructure Limited, Chandwa, Jharkhand**

**TENDER DOCUMENT NO - PSER:SCT:ABJ:T1353:12**

<b>SL NO</b>	<b>ITEM DESCRIPTION</b>	<b>TOTAL AMOUNT FOR BOTH UNITS ( PRICE IN RUPEES &amp; IN WORDS)</b>
1.0	Lumpsum Price for Providing manpower, supervision, T&P etc for identification & arranging issue & taking delivery of materials from BHEL stores / storage yard, transportation of these to pre-assembly yard/place of erection, temporary storage, preservation as required prior to erection after receipt, watch & ward, erection, chemical cleaning of piping etc, testing, commissioning, trial operation,PG test, handing over etc of steam turbine, generator, condenser, auxiliaries, pumps, piping, miscellaneous equipments, Insulation, Painting etc, as per specification, terms & conditions of tender for 2x270 MW, unit #1&2,Phase-II, at AINL,Chandwa,Dist-Latehar, Jharkhand	
2.0	Lumpsum Price for Providing manpower, supervision,arranging and erection of the temporary structure & strand jack system etc arranging all required including grouting of structure and fixing of foundation bolt for unloading & lifting the Generator Stator and placement of the same in position including design of the lifting system as per specification, terms & conditions of tender for 2x270 MW, unit #1&2,Phase-II, at AINL,Chandwa,Dist-Latehar, Jharkhand	
<b>GRAND TOTAL</b>		

**NOTE:**

**QUOTED FOR TWO UNITS, SHALL BE DIVIDED BY 2(TWO)**

**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	Erection, testing, Commissioning, etc of Steam turbine & auxiliaries, generator & auxiliaries, pumps, piping, misc equipments, insulation, painting etc for 2 x 270 MW (Unit#1&2), Phase-II, Abhijeet Infrastructure Limited, Chandwa, Jharkhand	
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	7.0	BHEL's TCN-05, vide reference no PSER:SCT:ABJ-T1353:TCN-05, dated 12-07-2012.
	8.0	All other pertinent issues till date.

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, integrity pact (if applicable) 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)

<p>पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय) POWER SECTOR EASTERN REGION DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091 फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : 23211691, 23211798, 23211796</p>
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