



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

**BHARAT HEAVY ELECTRICALS LIMITED**

(A Govt. of India Undertaking)

**TCN - 01**

Ref: PSER:SCT:DDM-T1089:TCN-01

Date: 17-03-2010

Sub	Tender change notice (TCN- 01).	
Job	Erection and Commissioning of HT/LT Transformers, HT/LT Bus ducts, DG set VFD Panels etc. of unit #1 & 2 of 2 X 500 MW DSTPS Project and 2 X 500 MW Koderma Project .	
Ref	1.0	Tender no PSER:SCT:DDM-T1089:10.
	2.0	BHEL's NIT, vide reference no Ref: PSER:SCT:DDM-T1089:10 dated 10-03-2010

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

- 1.0 **BOQ cum price schedule format VOL-III PRICE SCHEDULE, REV-0** has been revised as **VOL-III-PRICE SCHEDULE, REV-1** which is enclosed herewith. As such you are requested to consider the revised BOQ/price schedule only and quote your price accordingly. Offer from bidders in superseded price schedule (Vol-III, REV-0) shall not be considered . Bidders are also requested to submit a declaration in techno-commercial offer that they have submitted their price bid in sealed envelope as per **REVISED price schedule format (VOL-III- PRICE SCHEDULE, REV-1)**
- 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

**DGM (SCT)**

Encl:

- 1.0 Revised BOQ cum price schedule format (VOL-III- PRICE SCHEDULE, REV-1)
- 2.0 Revised format of 'No deviation certificate'.

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

**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 and Commissioning of HT/LT Transformers, HT/LT Bus ducts, DG set VFD Panels etc. of unit #1 & 2 of 2 X 500 MW DSTPS Project and 2 X 500 MW Koderma Project .	
Ref	1.0	Tender no PSER:SCT:DDM-T1089:10.
	2.0	BHEL's NIT, vide reference no Ref: PSER:SCT:DDM-T1089:10 dated 10-03-2010
	03	BHEL's TCN-01, vide reference no PSER:SCT:DDM-T1089:TCN-01, dated 17-03-10.

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)

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

**Erection, testing, commissioning, handing over etc of HT/LT Transformers, HT/LT Bus-Duct ,  
DG sets, VFD panels etc of 2 x 500 MW DSTPS Project and 2 x 500 MW Koderama Project**

**TENDER NO- PSER:SCT:DDM-T1089:10**

**PREAMBLE**

- |    |  |
|----|--|
| 01 | 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 various volumes of tender as per NIT together with subsequent changes/ modifications etc thereto as applicable as on date of submission of price offer.  |
| 02 | The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions.   |
| 03 | Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.   |
| 04 | 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. |
| 05 | 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.   |
| 06 | The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.  |
| 07 | 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.  |
| 08 | The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or to be deleted altogether. The quoted/ accepted rates shall remain firm and valid as long as variation in total value of work executed under this contract (package wise) including extra items, but excluding any price escalation, remains within +/- 20% (twenty percent) of the contract price (Package wise) given in the LOI/WO.   |
| 09 | Evaluation will be done based on grand total price ( part-A + part-B ) of the summary schedule.  |

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

**Erection, testing, commissioning, handing over etc of HT/LT Transformers, HT/LT Bus-Duct , DG sets, VFD panels etc of 2 x 500 MW DSTPS Project and 2 x 500 MW Koderama Project**

**TENDER NO- PSER:SCT:DDM-T1089:10**

**SUMMARY PRICE SCHEDULE**

<b>REF. SCHEDULE</b>	<b>DESCRIPTION</b>	<b>PRICE IN RS. (Both in figure and in words)</b>
<b>PART -A</b>	Total Price for Erection, testing, commissioning, handing over etc of HT/LT Transformers, HT/LT Bus-Duct , DG sets, VFD panels etc of 2 x 500 MW DSTPS Project	
<b>PART-B</b>	Total Price for Erection, testing, commissioning, handing over etc of HT/LT Transformers, HT/LT Bus-Duct , DG sets, VFD panels etc 2 x 500 MW Koderama Project	
<b>3.0</b>	<b>GRAND TOTAL PRICE (PART-A + PART-B)</b>	
<b>NOTE :</b>	<p><b>ABOVE QUOTED GRAND TOTAL PRICE OF SUMMARY PRICE SCHEDULE (PART-A + PART-B) ONLY SHALL BE CONSIDERED FOR BID EVALUATION PURPOSE.</b></p> <p><b>Service Tax (including education cess) shall be paid extra as detailed in tender. Hence Bidder's quoted rate should be exclusive of Service Tax.</b></p> <p><b>Grand Total Price of above Summary Schedule should match with sum of break up schedules of Part-A and Part-B . In case of any mismatch the highest price quoted shall be considered for evaluation however ordering, if any shall be done based on lowest price.</b></p>	

**VOL-III  
PRICE SCHEDULE, REV-1**

**Erection, testing, commissioning, handing over etc of HT/LT Transformers, HT/LT Bus-Duct , DG sets, VFD panels etc of 2 x 500 MW DSTPS Project and 2 x 500 MW Koderama Project**

TENDER NO- PSER:SCT:DDM-T1089:10

(SCHEDULE-PART-A) PRICE BREAK UP FOR 2X500 2 x 500 MW DSTPS Project

SI No	ITEM DESCRIPTION	Unit	Total Qty (for two units)	UNIT RATE IN RUPEES	TOTAL AMOUNT IN RUPEES
1	TRANSFORMERS				
1.1	<u>OIL FILLED TRANSFORMERS</u>				
1.1.1	Generator Transformer (3x1 phase 200MVA, {(420/v3)/21KV}) with accessories complete (Total 3 nos transformer per set)	Sets	2		
1.1.2	Station Transformer (90/45/45 MVA, 400/11.5/11.5 KV) with NGR and accessories complete	NOS	2		
1.1.3	25 MVA 21/11.5 KV Unit Transformer (UT) with NGR and accessories complete	NOS	4		
1.1.4	16 MVA 11/3.5 KV UAT with NGR and accessories complete	NOS	4		
1.1.5	10 MVA TRANSFORMER WITH NGR & ACCESSORIES COMPLETE	NOS	2		
1.1.6	5 MVA TRANSFORMERS WITH NGR & ACCESSORIES COMPLETE	NOS	2		
1.1.7	2000 KVA TRANSFORMERS WITH NGR & ACCESSORIES COMPLETE	NOS	4		
1.1.8	1600 KVA TRANSFORMERS WITH NGR & ACCESSORIES COMPLETE	NOS	18		
1.1.9	1000 KVA TRANSFORMERS WITH NGR & ACCESSORIES COMPLETE	NOS	6		
1.1.10	70 KV/1200 Ma HVR TRANSFORMER (ERECTION IS EXCLUDED, RATE TO BE QUOTED FOR OIL FILTRATION & COMMISSIONING ONLY)	NOS	160		
1.2	<u>DRY TYPE TRANSFORMERS</u>				
1.2.1	2000 KVA 11/.433 KV DTT	NOS	4		
1.2.2	2500 KVA 11/.433 KV DTT	NOS	4		
2	<u>BUSDUCTS</u>				
2.1	<u>IP BUSDUCT (21KV, 19KA)</u>				
a)	Main Bus Duct	MTR	300		
b)	Tap Off Bus Duct	MTR	100		
c)	Delta Busduct	MTR	220		
d)	Top Chamber	NO	2		
e)	Neutral Grounding Transformer	NO	2		
f)	SPVT Cubical	SET	2		
g)	Hot Air Blowing Equip. with piping and pipe support	SET	2		

**VOL-III  
PRICE SCHEDULE, REV-1**

**Erection, testing, commissioning, handing over etc of HT/LT Transformers, HT/LT Bus-Duct , DG sets, VFD panels etc of 2 x 500 MW DSTPS Project and 2 x 500 MW Koderama Project**

TENDER NO- PSER:SCT:DDM-T1089:10

(SCHEDULE-PART-A) PRICE BREAK UP FOR 2X500 2 x 500 MW DSTPS Project

SI No	ITEM DESCRIPTION	Unit	Total Qty (for two units)	UNIT RATE IN RUPEES	TOTAL AMOUNT IN RUPEES
2.2	<u>SP BUSDUCT(11KV&amp;3.3 KV)</u>				
a)	SP Busduct (11KV),	MTR	620		
b)	SP Busduct ( 3.3 KV)	MTR	680		
2.3	<u>LT BUSDUCTS</u> (each set comprising tentatively of following : Straight Run - approx. 2M, 90 degree bend - 2 nos., Flexible Copper at Transformer end - 1 set, Flexible at Switchgear end - 1 set, Adapter - 1 no., Expansion joint - 1 no., phase cross over - 1 no., hardware at Transformer & SWBD end - 1 set)				
a)	3000A	SET	12		
b)	2500A	SET	18		
c)	1600A	SET	6		
3.0	ITEMS OF VFD				
3.1	2KV / 4 KV AIR / WATER COOLED MEDIUM VOLTAGE BRIDGE	NOS	8		
3.2	AIR / WATER COOLED MVB THYRISTOR MODULES	NOS	8		
3.3	LOAD COMMUTED INVERTOR	NOS	8		
3.4	GATE DRIVER ISOLATION TRANSFORMER	NOS	8		
3.5	VOLTAGE FEEDBACK ATTENUATOR CARD & GATE DRIVER CARD	NOS	8		
3.6	AIR / WATER COOLED MVB SIGNAL DISTRIBUTION BOARD	NOS	8		
3.7	EXCITATION VOLTAGE CONTROLLER	NOS	8		
3.8	CONTROL MODULES FOR VFD	NOS	8		
3.9	AIR CORE DC LINK REACTOR FOR LOAD COMMUTATED INVERTER	NOS	8		
3.10	ELECTRONIC CONTROL PANEL	NOS	8		
3.11	VACUUM CIRCUIT BREAKER PANEL	NOS	8		
3.12	FLEXIBLE COUPLING FOR VFDs	NOS	4		
3.13	ADAPTOR PANEL	NOS	8		
3.14	COMMON CONTROL PANEL	NOS	4		
3.15	O & M PANEL	NOS	2		
3.16	12-WAY JUNCTION BOX	NOS	6		
3.17	COOLING DUCT	NOS	8		

**VOL-III  
PRICE SCHEDULE, REV-1**

**Erection, testing, commissioning, handing over etc of HT/LT Transformers, HT/LT Bus-Duct , DG sets, VFD panels etc of 2 x 500 MW DSTPS Project and 2 x 500 MW Koderama Project**

TENDER NO- PSER:SCT:DDM-T1089:10

(SCHEDULE-PART-A) PRICE BREAK UP FOR 2X500 2 x 500 MW DSTPS Project

SI No	ITEM DESCRIPTION	Unit	Total Qty (for two units)	UNIT RATE IN RUPEES	TOTAL AMOUNT IN RUPEES
4.0	<u>DG SETS</u>				
4.1	2500 KVA DG SETs along with Accoustic enclosure, Fuel tank, fuel oil piping, exhaust piping, Installation of Generator terminal adaptor, Current transformer, instruments, Power JB, Control JB, cleaning of radiator tubes (cleaning agent to be supplied by BHEL), replacement of engine oil and its filter, lub. oil filter, radiator coolant (Diesel for commissioning, engine oil & its filter, lub. oil filter, coolant being supplied by BHEL) Cabling, earthing, etc. complete .	SETS	3		
4.2	<u>PANELS, BATTERY ETC</u>				
4.2.1	AMF PANEL	SETS	3		
4.2.2	AUXILLARY DISTRIBUTION BOARD	SETS	3		
4.2.3	CRANKING BATTERY WITH STAND [24V,400AH], including acid filling (acid to be supplied by vendor as per BHEL engineers' instruction) and 1st charging of the same after purging acid by the charger other than plant charger	SETS	3		
4.2.4	CONTROL SUPPLY BATTERY WITH STAND [24V, 120AH] (acid to be supplied by vendor as per BHEL engineers' instruction) and 1st charging of the same after purging acid by the charger (charger to be provided by vendor) other than plant charger to be in the scope of the vendor.	SETS	3		
4.2.5	BATTERY CHARGERS	SETS	3		
4.2.6	FUEL TRANSFER PUMP	NOS	2		
4.2.7	PRE-LUB. OIL PUMP	NOS	2		
4.2.8	ELECTRONIC CONTROL PANEL	NOS	1		
4.2.9	INSULATION & CLADDING etc	MT	60		
5.0	SUPPORT STRUCTURE (FOR BUS DUCT, DG SET PIPING ETC) (supply of fabricated support structure is in the scope of BHEL Units. Aissembly ,erection,alignment , welding etc is in the scope of contractor)	MT	290		
6.0	Unloading of Generator Transformer (1X1 phase) from Traylor and transporting / dragging it to the place of storage / erection.	NOS	6		
7.0	Unloading of Station Transformer from Traylor and transporting / dragging it to the the place of storage / erection.	NOS	2		
<b>TOTAL PRICE - SCHEDULE-PART-A</b>					
NOTE	Above total price should match with PART-A of summary price schedule. In case of any mismatch the highest price quoted shall be considered for evaluation however ordering, if any shall be done based on lowest price.				

**VOL-III  
PRICE SCHEDULE, REV-1**

**Erection, testing, commissioning, handing over etc of HT/LT Transformers, HT/LT Bus-Duct , DG sets, VFD panels etc of 2 x 500 MW DSTPS Project and 2 x 500 MW Koderama Project**

TENDER NO- PSER:SCT:DDM-T1089:10

(SCHEDULE-PART-B ) PRICE BREAK UP FOR 2X500 MW KODERMA TPS

SI No	ITEM DESCRIPTION	Unit	Total Qty (for two units)	UNIT RATE IN RUPEES	TOTAL AMOUNT IN RUPEES
1	<b>TRANSFORMERS</b>				
1.1	<u>OIL FILLED TRANSFORMERS</u>				
1.1.1	Generator Transformer (3x1 phase 200MVA, {(420/√3)/21KV}) with accessories complete(Total 3 nos transformer per set)	Sets	2		
1.1.2	Station Transformer (90/45/45 MVA,400/11.5/11.5 KV) with NGR and accessories complete	NOS	2		
1.1.3	25 MVA 21/11.5 KV UnitTransformer (UT)with NGR and accessories complete	NOS	4		
1.1.4	16 MVA 11/3.5 KV UAT with NGR and accessories complete	NOS	4		
1.1.5	10 MVA TRANSFORMER WITH NGR & ACCESSORIES COMPLETE	NOS	2		
1.1.6	5 MVA TRANSFORMERS WITH NGR & ACCESSORIES COMPLETE	NOS	2		
1.1.7	2000 KVA TRANSFORMERS WITH NGR & ACCESSORIES COMPLETE	NOS	4		
1.1.8	1600 KVA TRANSFORMERS WITH NGR & ACCESSORIES COMPLETE	NOS	18		
1.1.9	1000 KVA TRANSFORMERS WITH NGR & ACCESSORIES COMPLETE	NOS	6		
1.1.10	70 KV/1200 Ma HVR TRANSFORMER(ERECTION IS EXCLUDED , RATE TO BE QUOTED FOR OIL FILTRATION & COMMISSIONING ONLY)	NOS	160		
1.2	<u>DRY TYPE TRANSFORMERS</u>				
1.2.1	2000 KVA 11/.433 KV DTT	NOS	4		
1.2.2	2500 KVA 11/.433 KV DTT	NOS	4		
2	<u>BUSDUCTS</u>				
2.1	<u>IP BUSDUCT(21KV,19KA)</u>				
a)	Main Bus Duct	MTR	300		
b)	Tap Off Bus Duct	MTR	100		
c)	Delta Busduct	MTR	220		
d)	Top Chamber	NO	2		
e)	Neutral Grounding Transformer	NO	2		
f)	SPVT Cubical	SET	2		
g)	Hot Air Blowing Equip. with piping and pipe support	SET	2		
2.2	<u>SP BUSDUCT(11KV&amp;3.3 KV)</u>				
a)	SP Busduct (11KV),	MTR	620		
b)	SP Busduct ( 3.3 KV)	MTR	680		

**VOL-III  
PRICE SCHEDULE, REV-1**

**Erection, testing, commissioning, handing over etc of HT/LT Transformers, HT/LT Bus-Duct, DG sets, VFD panels etc of 2 x 500 MW DSTPS Project and 2 x 500 MW Koderama Project**

TENDER NO- PSER:SCT:DDM-T1089:10

(SCHEDULE-PART-B ) PRICE BREAK UP FOR 2X500 MW KODERMA TPS

SI No	ITEM DESCRIPTION	Unit	Total Qty (for two units)	UNIT RATE IN RUPEES	TOTAL AMOUNT IN RUPEES
2.3	<b>LT BUSDUCTS</b> (each set comprising tentatively of following : Straight Run - approx. 2M, 90 degree bend - 2 nos., Flexible Copper at Transformer end - 1 set, Flexible at Switchgear end - 1 set, Adapter - 1 no., Expansion joint - 1 no., phase cross over - 1 no., hardware at Transformer & SWBD end - 1 set)				
a)	3000A	SET	12		
b)	2500A	SET	18		
c)	1600A	SET	6		
<b>3.0</b>	<b>ITEMS OF VFD</b>				
3.1	2KV / 4 KV AIR / WATER COOLED MEDIUM VOLTAGE BRIDGE	NOS	8		
3.2	AIR / WATER COOLED MVB THYRISTOR MODULES	NOS	8		
3.3	LOAD COMMUTED INVERTOR	NOS	8		
3.4	GATE DRIVER ISOLATION TRANSFORMER	NOS	8		
3.5	VOLTAGE FEEDBACK ATTENUATOR CARD & GATE DRIVER CARD	NOS	8		
3.6	AIR / WATER COOLED MVB SIGNAL DISTRIBUTION BOARD	NOS	8		
3.7	EXCITATION VOLTAGE CONTROLLER	NOS	8		
3.8	CONTROL MODULES FOR VFD	NOS	8		
3.9	AIR CORE DC LINK REACTOR FOR LOAD COMMUTATED INVERTER	NOS	8		
3.10	ELECTRONIC CONTROL PANEL	NOS	8		
3.11	VACUUM CIRCUIT BREAKER PANEL	NOS	8		
3.12	FLEXIBLE COUPLING FOR VFDs	NOS	4		
3.1	ADAPTOR PANEL	NOS	8		
3.1	COMMON CONTROL PANEL	NOS	4		
3.2	O & M PANEL	NOS	2		
3.2	12-WAY JUNCTION BOX	NOS	6		
3.2	COOLING DUCT	NOS	8		
<b>4.0</b>	<b>DG SETS</b>				
4.1	2500 KVA DG SETs along with Accoustic enclosure, Fuel tank, fuel oil piping, exhaust piping, Installation of Generator terminal adaptor, Current transformer, instruments, Power JB, Control JB, cleaning of radiator tubes (cleaning agent to be supplied by BHEL), replacement of engine oil and its filter, lub. oil filter, radiator coolant (Diesel for commissioning, engine oil & its filter, lub. oil filter, coolant being supplied by BHEL) Cabling, earthing, etc. complete .	SETS	3		
4.2	<b>PANELS, BATTERY ETC</b>				
4.2.1	AMF PANEL	SETS	3		
4.2.2	AUXILLARY DISTRIBUTION BOARD	SETS	3		

**VOL-III  
PRICE SCHEDULE, REV-1**

**Erection, testing, commissioning, handing over etc of HT/LT Transformers, HT/LT Bus-Duct , DG sets, VFD panels etc of 2 x 500 MW DSTPS Project and 2 x 500 MW Koderama Project**

TENDER NO- PSER:SCT:DDM-T1089:10

(SCHEDULE-PART-B ) PRICE BREAK UP FOR 2X500 MW KODERMA TPS

SI No	ITEM DESCRIPTION	Unit	Total Qty (for two units)	UNIT RATE IN RUPEES	TOTAL AMOUNT IN RUPEES
4.2.3	CRANKING BATTERY WITH STAND [24V,400AH], including acid filling (acid to be supplied by vendor as per BHEL engineers' instruction) and 1st charging of the same after purging acid by the charger other than plant charger	SETS	3		
4.2.4	CONTROL SUPPLY BATTERY WITH STAND [24V, 120AH] (acid to be supplied by vendor as per BHEL engineers' instruction) and 1st charging of the same after purging acid by the charger (charger to be provided by vendor) other than plant charger to be in the scope of the vendor.	SETS	3		
4.2.5	BATTERY CHARGERS	SETS	3		
4.2.6	FUEL TRANSFER PUMP	NOS	2		
4.2.7	PRE-LUB. OIL PUMP	NOS	2		
4.2.8	ELECTRONIC CONTROL PANEL	NOS	1		
4.2.9	INSULATION & CLADDING etc	MT	60		
5.0	SUPPORT STRUCTURE (FOR BUS DUCT, DG SET PIPING ETC) (supply of fabricated support structure is in the scope of BHEL Units. Assembly ,erection,alignment , welding etc is in the scope of contractor)	MT	290		
6.0	Unloading of Generator Transformer (1X1 phase) from Trailor and transporting / dragging it to the place of storage / erection.	NOS	6		
7.0	Unloading of Station Transformer from Trailor and transporting / dragging it to the the place of storage / erection.	NOS	2		
<b>TOTAL PRICE - SCHEDULE-PART-B</b>					
NOTE	Above total price should match with PART-B of summary price schedule. In case of any mismatch the highest price quoted shall be considered for evaluation however ordering, if any shall be done based on lowest price.				