



429-002/A

**BHARAT HEAVY ELECTRICALS LIMITED**

( A Government of India Undertaking )  
HIGH PRESSURE BOILER PLANT  
PURCHASE DEPARTMENT - FOSSIL BOILERS  
THIRUCHIRAPALLI - 620014  
TAMILNADU (INDIA)

Page  
1/2

PHONE :2577645  
GRAMS : BHARATELEC  
FAX NO: 2520719  
E-mail: srchandan@bheltry.co.in  
Web:

| Enquiry No  | Enquiry Date | Due Date for Quotation |
|---|--------------|------------------------|
| 2681400016 - 79   | 12.06.2014   | 11.07.2014             |
| Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order.<br><u>Bid should be submitted in Two Parts. 1. Techno-commercial Bid (Part-I) and 2. Price Bid (Part-II) in a separate sealed cover and both the covers must be placed in a Third Cover and Sealed. Our Enquiry No., Enq. date &amp; Enq. Due date must be written on all Three covers.</u> |              |                        |

| Item | Description   | Unit | Quantity | Delivery Quantity | Schedule Date |
|------|---|------|----------|-------------------|---------------|
| 10   | Retrofitting and reconditioning works in SB CNC 35 machine, Bay 0, Bldg 6 as per the Qualifying Criteria in ANNEXURE I and Scope of supply / work as per ANNEXURE II. | NO   | 1.000    | 1.00              | 15.10.14      |

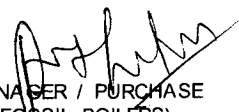
**General Note:**

1. Please submit your detailed offer in two part bid system i.e Part-I. Technical bid+ Checklist (Annexure-A) + unpriced bid with indicating taxes & duties (Annexure-B) in a sealed cover super scribing on the cover as "TECHNICAL & COMMERCIAL BID / PART-II"  
Part-II. Priced offer in another separate sealed cover super scribing on the cover as Part-II

Both the covers shall be duly super-scribed with tender reference and due date of opening. These covers shall be put in a single cover duly super-scribed with tender reference and due date of opening and addressed to us.

2. Point-to-point confirmation to BHEL's specification and commercial terms & conditions shall be provided Annexure-A. All the Annexures should be filled and submitted along with the technical bid (no row shall be left blank), else your offer is liable for rejection.
3. Offers with validity of less than 120 days and non-acceptance of LD, RP clause, PBG & Payment terms, will lead to rejection of submitted offer.
4. If the due date of tender opening happens to be a holiday, the tenders will be opened on the next working day.
5. All clarifications may be sought at least ten days prior to tender due date, from the undersigned with due written request.
6. Order shall be placed on single vendor on cumulative L1 basis
7. BHEL reserves the right to go for a reverse auction (RA) instead of

The offers should reach us 30 minutes before the time of opening of tenders. The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

Yours faithfully,  
For **BHARAT HEAVY ELECTRICALS LIMITED**  
  
MANAGER / PURCHASE  
(FOSSIL BOILERS)  
Yours faithfully, **VECTOR**



# BHARAT HEAVY ELECTRICALS LIMITED

( A Government of India Undertaking )  
HIGH PRESSURE BOILER PLANT  
PURCHASE DEPARTMENT - FOSSIL BOILERS  
THIRUCHIRAPALLI - 620014  
TAMILNADU (INDIA)

Page  
2/2

PHONE :2577645  
GRAMS : BHARATELEC  
FAX NO: 2520719  
E-mail: srchandran@bheltry.co.in  
Web:

2681400016 / 12.06.2014

opening the submitted sealed bid, which will be decided after technical evaluation. Information and general terms and conditions covering RA are given in commercial terms and conditions (Annexure-A/Point no.16)

8. Vendors are requested to avoid the loose or spiral bound bid documents

9. Corrigendum if any, with respect to this tender will be hosted only in the website <http://www.bhel.com> or <http://tenders.gov.in>. You are requested to visit the website regularly for updates.

10. BHEL will consider MSME vendor as per Government guidelines.

**List of Attachments:**


1. Qualifying Criteria Annexure-I
2. Technical Specification Annexure-II
3. Commercial Terms and Conditions - Annexure-A
4. Price Format-Annexure-B
5. CA Certificate for MSE Vendors-Annexure-III
6. Dwgs 2M08F1404638-1-0 & 3M08F1414609-0-0

**Enclosures:**

"LD clause has to be confirmed without fail."  
"Payment to vendors will be made only thro E-Payment mode"

The offers should reach us 30 minutes before the time of opening of tenders. The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

Yours faithfully,  
For **BHARAT HEAVY ELECTRICALS LIMITED**

  
MANAGER / PURCHASE  
(FOSSIL BOILERS)  
Yours faithfully,

**Retrofitting and reconditioning works in SBCNC 35 machine, Bay 0,  
Bldg 6**

**ANNEXURE I**

**QUALIFICATION CRITERIA**

| S.No | Description  | Vendor to specify details |
|------|--|---------------------------|
| 1    | Only those vendors, who have Supplied, retrofitted and commissioned CNC system (FANUC/Siemens) Multi axis with spindle of Minimum 30kW rating for at least one machine in the past five years and such machines should be working satisfactorily for a minimum period of one year after completion of commissioning/retrofitting of the system, as on the date of opening of this tender, shall be considered for evaluation. The vendor should submit following details which are necessary for qualifying their offer. |                           |
| 1.1  | Name and postal address of the customer / company where similar equipment commissioned.  |                           |
| 1.2  | Name and designation of the contact person of the customer.  |                           |
| 1.3  | Phone / FAX no / email address of the contact person of the customer.  |                           |
| 1.4  | Along with Technical offer, the Vendor should submit performance certificate from minimum <b>one</b> customer for the satisfactory performance of the same, supplied to them in the customers letter head.   |                           |
| 2    | BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false / incorrect, the offer shall be rejected.  |                           |
| 3    | The VENDOR should visit BHEL and study the nature of work involved before submitting the offer. Otherwise the supplier's offer will not be considered for evaluation.  |                           |

## Retrofitting and reconditioning works in SBCNC 35 machine, Bay 0, Bldg 6

### ANNEXURE II

| S.No  | Description  |
|-------|--|
| 1     | <b>DETAILS OF THE EXISTING MACHINE AND ITS SYSTEMS</b>   |
| 1.1   | <b>CNC SYSTEM:</b> SIEMENS Make HINUMERIK 2000 CNC controlling 2 axes and 1 spindle  |
| 1.2   | <b>X-axis</b>  |
| 1.2.1 | X AXIS SERVO MOTOR<br>MAC 112C-0-HD-2-C/130-R-2/S018<br>MdN-27 Nm, IdN - 41 A/ surface cooled MdN -29 Nm   |
| 1.2.2 | AXIS DRIVE CONTROLLER : TDM 1.2-100-300-W1-000   |
| 1.2.3 | <b>Pulse Sensor</b> : HEIDENHAIN : ROD 426A : 2500 PPR   |
| 1.3   | <b>Z-axis</b>  |
| 1.3.1 | Z AXIS SERVO MOTOR<br>MAC 112D-0-FD-4-C/130-A-0/WI534LX/S005<br>MdN-38Nm Mdn 57 Nm / IdN-56 A Idn 83 A   |
| 1.3.2 | AXIS DRIVE CONTROLLER : TDM 1.2-100-300-W1-000   |
| 1.3.3 | <b>Pulse Sensor</b> : HEIDENHAIN : ROD 426A : 2500 PPR   |
| 1.4   | <b>Spindle Motor &amp; Drive details</b>   |
| 1.4.1 | Spindle motor:<br>3 phase IM Indramat 2AD 132D B35 0LI AS03 B2N1<br>33kW, 140Nm  |
| 1.4.2 | SPL DRIVE : RAC 3.5-460-A00-W1-220   |
| 1.4.3 | <b>Pulse Sensor:</b> SPINDLE ENCODER : 1024 PPR  |
| 1.5   | Machine in-built with tool turret mechanism  |
| 1.6   | Isolation Transformer of 120kVA rating.  |
| 1.7   | <b>Stabilizer Details:</b> Rating = 120KVA   |
| 1.8   | Centralized lubrication system for the guide ways.   |
| 1.9   | <b>Hydraulic Motor</b><br>10 HP, 1430 rpm, 415V, 3ph, a.c. motor, Frame: ND132MD, Flange mounting  |
| 1.10  | <b>Chip conveyor motor</b><br>1 HP, 1400 rpm, 415V, 3ph, a.c. motor, Frame: AM80N4   |
| 1.11  | Specifications of the Hydraulic solenoid DC valves available in the machine:<br>1. Pressure Reducing valve: DGMX1 3PP AW 20 : 3No.<br>2. Single Solinoid D.C valve: DG4V 3S 2N H5 M U1 60 : 3No.<br>3. Single Solinoid D.C valve: DG4V 3S 2A H5 M U1 60 : 3No.<br>4. Double Solinoid D.C valve: DG4V 3S 6C M U2 H5 60 :1NO.<br>5. Double Solinoid D.C valve: DG4V 3S 8C M U2 H5 60 :1NO.<br>6. Pilot operated check valve :DGMPC ABK- BAK -20 : 1No. |
| 1.12  | The pressure switches existing in the machine are as follows:<br>1. HED 8 OA 1X / 50 K14 Qty 1NO.<br>2. HED 8 OA 1X / 100 K14 Qty 1NO.   |
| 1.13  | Pumps available in the machine are as below<br>1. PVQ20-B2R-A11-SSIS-21.CM<br>2. V210-11W-38C-12-214-IN-154<br>Make: Vickers   |

**Retrofitting and reconditioning works in SBCNC 35 machine, Bay 0, Bldg 6****ANNEXURE II**

| <b>2</b> | <b>SCOPE OF SUPPLY - ELECTRICAL ITEMS</b>   | <b>Vendor to Confirm</b> |
|----------|---|--------------------------|
| 2.1      | <p>Supply of CNC system for controlling of 2 axes and a spindle.</p> <p>CNC PACKAGE: Latest version of SIEMENS 828D or FANUC Oi series CNC system with min 10.4" Colour display package only.</p> <p>The CNC system offered shall have the following features.</p> <ol style="list-style-type: none"><li>1. Full Alphanumeric Keyboard and Colour Display (TFT/LCD monitor) of 10.4" or more.</li><li>2. MCP and other Operator controls having necessary Push Buttons with Indicating Lamps and Selector / Toggle Switches.</li><li>3. PLC configuration having at least 96 Inputs and 64 Outputs with necessary I/O cards.</li><li>4. Graphic Machining Simulation of tool paths in part programs with Dynamic Graphic Display.</li><li>5. Compact Flash card / Memory Key card 2GB minimum.</li><li>6. Foreground / Background editing</li><li>7. Manual measurement and automatic storage of tool offsets in tool offset memory.</li><li>8. Manual measurement and automatic storage of settable zero offsets (G54-G59 or equivalent) in zero offset memory.</li><li>9. All necessary features for Turning, Threading, Milling, Drilling, Tapping and Grooving operations</li><li>10. Program Editing Operations</li><li>11. Optional Block Skip</li><li>12. RS232, USB, Ethernet interface for data input/output</li></ol> |                          |
| 2.2      | <p>Supply of AC servo motors of suitable capacity for X axis with Built-in Brake.</p> <p>Torque and speed to match with the parameters of the existing A.C. servo motor mentioned above and suitable to be interfaced with the CNC system offered.</p> <p>Any mechanical interfacing arrangement required to match the new motor with the existing mechanical drive system should be included in the offer. The type number / model of the motor selected should be indicated in the offer and the technical leaflet should be enclosed.</p>  |                          |
| 2.3      | <p>Supply of AC servo motors of suitable capacity for Z axis with Built-in Brake.</p> <p>Torque and speed to match with the parameters of the existing A.C. servo motor mentioned above and suitable to be interfaced with the CNC system offered.</p> <p>Any mechanical interfacing arrangement required to match the new motor with the existing mechanical drive system should be included in the offer. The type number / model of the motor selected should be indicated in the offer and the technical leaflet should be enclosed.</p>  |                          |
| 2.4      | <p>Supply of external encoders for X and Z axes<br/>Make: Heidenhain/Fanuc/Siemens only acceptable, PPR: 2500</p>   |                          |
| 2.5      | <p>Supply of AC digital servo amplifier modules for X and Z axes.</p> <p>The rating of the drive modules selected should support the selected servo motors. The type number / model of the drive module selected should be indicated in the offer and the technical leaflet should be enclosed.</p>   |                          |

## Retrofitting and reconditioning works in SBCNC 35 machine, Bay 0, Bldg 6

### ANNEXURE II

|      |  |  |
|------|--|--|
| 2.6  | Supply of AC spindle motor of suitable capacity to replace the old spindle motor.<br>The parameters of the offered motor to match with the existing servo motor and suitable to be interfaced with the CNC system offered. The type number / model of the motor selected should be indicated in the offer and the technical leaflet should be enclosed.  |  |
| 2.7  | Supply of external encoder with sufficient cable length for spindle.<br>Make: Heidenhain/Fanuc/Siemens only acceptable, PPR: 1024  |  |
| 2.8  | Supply of latest digital servo amplifier module for spindle.<br>The rating of the drive module selected should support the selected servo motor. The type number / model of the drive module selected should be indicated in the offer and the technical leaflet should be enclosed.   |  |
| 2.9  | Necessary line filter and reactor unit for the drive modules   |  |
| 2.10 | Supply of motor power cable, command signal cable, external encoder feedback cables of sufficient length with end connectors for axes and spindle.   |  |
| 2.11 | Supply of necessary 24V SMPS units of sufficient rating.   |  |
| 2.12 | Supply of new operating pendant for mounting the new CNC system and keyboard.  |  |
| 2.13 | Supply of new Electrical panel for mounting the drives, power supply units and other switchgears. The panel should have the following features.<br><br>1. The panel shall be metal enclosed, indoor, floor mounting and free-standing type of Rittal make (or any other make acceptable to BHEL). The panel shall be free from flaws, dents and undulations.<br>2. All mating surfaces shall be provided with neoprene gaskets. Panel shall be provided with three point locking arrangement. Hardware used shall be chrome/ nickel - plated. The anti-vibration pad shall be of hard rubber.<br>3. Panel shall be coated with two coat of anti- rust paint (primer) and two coat of acid alkali resisting epoxy based paint suitable for working in saline and corrosive atmosphere.<br>Exterior : Apple green shade 281 of IS-5/1994.<br>Finish : Semi glossy<br>Interior : Brilliant White<br>Finish : Glossy<br>4. Degree of protection of panel enclosure: IP 55<br>5. Removable cable entry shall be provided.<br>6. The bottom surface of the control panel should be free and no components should be mounted on it. |  |
| 2.14 | Supply of air conditioning unit for the Electrical panel and operating panel of sufficient rating. Air conditioner shall be of following makes only.<br>i. M/s Advance Cooling System pvt ltd<br>ii. M/s Werner Finley pvt ltd<br>iii. Sunbeam<br>iv. Rittal   |  |
| 2.15 | Supply of Hand Held Unit along with 5 metres cable and adapter as required.  |  |
| 2.16 | Supply of suitable ratings of MCB, MPCB, contactors, relays, fuses and other control elements for all the auxiliary motors / equipments in the machine.  |  |
| 2.17 | Supply of new limit switches, pressure switches, proximity switches for the replacement of old sensors in the machine.   |  |
| 2.18 | Supply of isolation transformer and stabilizer of rating 120 KVA.<br>Isolation Transformer & Stabilizer shall be of NEEL, AEI, POWER AID, DELTA, Servo max, KRYGARD, Consul or any other makes acceptable to BHEL.   |  |

## Retrofitting and reconditioning works in SBCNC 35 machine, Bay 0, Bldg 6

### ANNEXURE II

|   |   |  |
|---|---|--|
| 2.19  | Supply of necessary cables, single/multi core wires, glands, sleeves, ferrules etc for complete rewiring of the m/c.  |  |
| 2.20  | Supply of new hydraulic motor and chip conveyer motor to replace the old ones in the machine  |  |
| <b>3 SCOPE OF SUPPLY - MECHANICAL ITEMS</b> |   |  |
| 3.1   | Supply of suitable brackets for mounting the new AC servo motors for axes and spindle.  |  |
| 3.2   | Supply of new Hydraulic oil chiller unit for the machine of CAPACITY: 4500 K/CAL<br>Chiller unit shall be of following makes.<br>i. M/s Advance Cooling System pvt ltd<br>ii. M/s Werner Finley pvt ltd<br>iii. Sunbeam<br>iv. Rittal   |  |
| 3.3   | Supply of new Centralized lubrication system ALU-03 (CENLUB) or equivalent with distributors and copper tubing for the guide ways.  |  |
| 3.4   | Supply of complete set of Hyd. solenoid valves to replace the old ones. The new solenoid valves should be of Rexroth / Vickers make only.   |  |
| 3.5   | Supply of pressure switches equivalent to the existing ones in the machine.<br>Any modification required for mounting the pressure switches to be carried out by the vendor. Any other pressure switch existing in the machine not included in the list above to be studied by the supplier during their visit to BHEL and to be included in the offer. |  |
| 3.6   | Supply of new ball screw rod and nut for X and Z axis as per the drawings.<br>X axis: 2M-08F14-04638<br>Z axis: 3M-08F14-14609  |  |
| 3.7   | Supply of new pumps for the hydraulic system and cooling circuit equivalent to the existing pumps as mentioned above. The new pumps shall be of Vickers or Rexroth makes only.  |  |

|        |   |  |
|--------|---|--|
| 4      | <b>SCOPE OF WORK FOR RETROFITTING OF CNC SYSTEM, DRIVES AND MOTORS</b>  |  |
| 4.1    | <b>DESIGN &amp; PREPARATION:</b>  |  |
| 4.1.1  | Preparation of new circuit diagram for complete electrical systems with the new CNC/ Drives/ Motor.   |  |
| 4.1.2  | Designing and preparation of brackets for X/Z and spindle motors.   |  |
| 4.1.3  | Preparation of machine dependent PLC software flow Diagram/Ladder diagram for all the machine functions.  |  |
| 4.2    | <b>DISMANTLING:</b><br>Disconnect existing CNC system/drives/motors/electrical elements and other accessories.  |  |
| 4.3    | <b>ASSEMBLY:</b>  |  |
| 4.3.1  | Assembly of servo motors for X, Z and spindle with suitable mounting brackets.  |  |
| 4.3.2  | Erection and commissioning of the new Electrical Panel and Interfacing the machine control elements like limit switches, pressure switches, level switches, pushbuttons etc, with necessary wiring materials. |  |
| 4.3.3  | Erection of the operating pendent and mounting the CNC system on it.  |  |
| 4.3.4  | Assembly of AC Drives and other switchgears in the new Electrical Panel.  |  |
| 4.3.5  | Mounting of X-Axis Rotary encoder, Z-Axis Rotary encoder and spindle Encoder.   |  |
| 4.3.6  | Replacing the limit switches, pressure switches, solenoid valves and other sensors in the machine.  |  |
| 4.3.7  | Complete electrical rewiring of the machine with new wiring materials.  |  |
| 4.3.8  | Installation of new ball screw rods and nuts for the axes.  |  |
| 4.3.9  | Replacement of existing hydraulic motor and pump system with new ones.  |  |
| 4.3.10 | Installation of new oil chiller unit and lubrication system.  |  |

## Retrofitting and reconditioning works in SBCNC 35 machine, Bay 0, Bldg 6

### ANNEXURE II

|       |  |  |
|-------|--|--|
| 4.4   | <b>CNC INTERFACING AND PROVE OUT:</b>  |  |
| 4.4.1 | Interfacing the CNC system, drives, motors, lubrication system and other accessories to establish the complete functioning of the machine.   |  |
| 4.4.2 | X-Axis Rotary encoder, Z-Axis Rotary encoder and spindle Encoder to be replaced and interfaced with the new CNC system with necessary cables and connectors.   |  |
| 4.4.3 | Complete wiring of the machine to establish all the existing machine functions.  |  |
| 4.4.4 | Developing and prove out of PLC software to incorporate all the existing machine functions.  |  |
| 4.4.5 | Optimizing the drives parameters for X, Z and spindle  |  |
| 4.5   | <b>CALIBRATION AND TRIALS.</b>   |  |
| 4.5.1 | Calibration of X and Z axis for positioning accuracy and repeatability Using Laser interferometer before and after work.   |  |
| 4.5.2 | The complete system will be integrated and proved out for performance with a standard test piece and also regular production components.   |  |
| 4.5.3 | All the existing machine functions to be proved out.   |  |
| 4.6   | <p><b>DOCUMENTATION:</b></p> <p>Three sets of the following documents to be supplied along with the retrofitting packages.</p> <ol style="list-style-type: none"> <li>1) Original CNC system manual, drives manual, motor catalogues and also for the other bought out items.</li> <li>2) Original programming manual for the CNC system</li> <li>3) Original CNC Interfacing/ Installation/ Diagnostics Manuals.</li> <li>4) Drives commissioning/ Trouble Shooting manuals for spindle and feeds.</li> <li>5) Complete Electrical and Electronics wiring diagram as per retrofitting / modification.</li> <li>6) Hardcopy of CNC parameter list, PLC programs / machine Data / Alarm Text messages.</li> </ol> <p>Supply of</p> <ol style="list-style-type: none"> <li>a) Three sets of manuals for the CNC system, servo motors, spindle motor, drives and manuals of bought-out components.</li> <li>b) Three sets of Electrical drawings for entire machine.</li> <li>c) Three sets of PLC program</li> </ol> |  |
| 4.7   | <p><b>BACK UP:</b></p> <p>The back up of PLC program and parameters to be given in CD as well as in flash card compatible with the CNC system.</p>   |  |
| 4.8   | <b>TRAINING:</b>   |  |
| 4.8.1 | Training shall be given for 2 Maintenance personels on CNC Maintenance & for 3 Production personels on CNC Operation / Programming at the OEM's works for 5 days.  |  |
| 4.8.2 | Training to be imparted to BHEL personels on operation, programming and maintenance of the CNC machine at BHEL for 5 days.   |  |
| 4.9   | <b>GENERAL:</b>  |  |
| 4.9.1 | The equipments should be suitable for 415V, 3ph, 50Hz, a.c. supply   |  |
| 4.9.2 | The vendor should complete the retrofitting work within 45 days.   |  |
| 4.9.3 | The CNC package, electrical panel and other materials shall be kept ready for inspection before despatch.  |  |
| 4.9.4 | The VENDOR should visit BHEL and study the nature of work involved before submitting the offer. Otherwise the supplier's offer will not be considered for evaluation.  |  |
| 4.9.5 | The vendor shall stand warranty for the material supplied and work done for a period of 18 months from the date of delivery of material or 12 months from the date of commissioning and acceptance of the machine, whichever is later. Any material (supplied by the party) found defective within warranty period will be replaced free of cost by the party.   |  |





**BHARAT HEAVY ELECTRICALS LIMITED TIRUCHIRAPALLI**  
**CAPITAL PURCHASE**

Annexure-A

**ACCEPTANCE OF COMMERCIAL TERMS AND CONDITIONS BY THE VENDORS.**

(This should be essentially filled in and sent along with the techno-commercial offer without fail. If this check list is not filled and submitted along with techno-commercial offer (Part I) or if the vendor does not confirm acceptance to the terms and conditions proposed herein, BHEL reserves the right to reject such offers)

**CHECK-LIST FOR VENDORS**

| SI No | DESCRIPTION   |
|-------|---|
| 1.    | <p>The Bidders shall submit their offer in <b>TWO INNER ENVELOPES</b> as indicated below which shall be sealed in one outer envelope.</p> <ul style="list-style-type: none"><li>❖ <b>Envelope I:</b> This sealed envelope should contain all the copies of technical bid together with un-priced commercial bid. This envelope should be clearly marked "<b>Part I - Technical and commercial bid</b>", indicating Enquiry No., Due Date and Address &amp; Reference of the Bidder.</li><li>❖ <b>Envelope II:</b> This sealed envelope should contain <b>price details</b>. This envelope should be clearly marked "<b>Part II - Price bid</b>", indicating Enquiry No., Due Date and Address &amp; Reference of the Bidder. This part should contain the schedule of price particulars and must be co-related to the technical details provided in Part I.</li></ul> <p>All the two envelopes (Part I&amp;II) shall be put in one cover, duly sealed, super scribing as "<b>Part I and Part II of Enquiry No., due date of opening</b>" and the address and reference of the Bidder. The offer received without the above guidelines, will not be considered for opening.</p> <p>The above offer should reach this office on or before the due date by 14.00 Hrs (IST). Late offers will not be considered. Tender should not be addressed to any Individual's name but only by designation to:</p> <p style="text-align: center;"><b>DGM / CAPITAL PURCHASE / MFG</b><br/><b>24 BUILDING, 4TH FLOOR</b><br/><b>BHARAT HEAVY ELECTRICALS LIMITED</b><br/><b>HIGH PRESSURE BOILER PLANT</b><br/><b>TIRUCHIRAPALLI - 620 014</b><br/><b>TAMIL NADU, INDIA</b></p> <p>Tenders should be free from <b>CORRECTIONS AND ERASURES</b>. Corrections if any, must be attested. All amounts shall be indicated both in words as well as in figures. In case of any difference between amount quoted in words and figures, amount quoted in words shall prevail.</p> <p>Offers should be in <b>ENGLISH</b> and accompanied by detailed technical literature, catalogue and detailed dimensional drawings in <b>ENGLISH</b> or otherwise, the offers will not be considered.</p> |
| 2.    | <p><b><u>OPENING OF TENDERS</u></b></p> <p>The Part I- Technical &amp; commercial bid would be opened on the Tender opening date.</p> <p>Part-II, Price bid of technically suitable Bidders alone would be opened after complete evaluation of Part-I. Hence the Bidders are required to submit their best competitive price in the price bid in a sealed cover (Part-II). In case of necessity BHEL reserves the right to go for a reverse auction (RA) instead of opening the submitted sealed bid, which will be decided after technical evaluation. Information and general terms and conditions covering RA are given in this Annexure- I (Point no.16).</p> <p>Date and time of Price Bid (Part-II) opening / RA conducting date shall be intimated to the technically and commercially acceptable bidders only. Clarifications if any required by BHEL for Technical evaluation would be sought from bidders before opening of Part II - Price Bid/ RA</p>   |
| 3.    | <p><b><u>TAXES AND DUTIES :</u></b></p> <p>All Taxes and Duties payable as extra to the quoted price should be specifically stated in offers along with CST &amp; TIN No / Tariff No. etc., failing which the purchaser will not be liable for payment of such Taxes and Duties. Our TIN No. 33243560005, TNGST No. 3560005, CST. No. 239383 Dt. 11-06-1991 &amp; BHEL ECC No. AAACB4146PXM012, Service Tax Reg No (STC)- AAACB4146PST006. Assessment circle Tiruverambur.</p> <p><b>Cenvat credit &amp; VAT credit</b> (for Indian Bidders only): If any Excise Duty is payable, the chapter head / sub-head reference and the rate of the duty should be quoted. If the tenderer is availing <b>CENVAT</b> credit for his input materials, the effect of proforma credit should be passed on to the purchaser</p> <p><b>Income Tax applicable</b><br/>Any service charges payable towards supervision of E&amp;C, training, performance prove-out etc., will be released after deduction of Income Tax as per Indian Income Tax Act / as per the Govt. of India rules and TDS certificate will be issued by BHEL for such deductions. Applicable service tax on E&amp;C charges will be payable extra. The liability of depositing the same to the Govt. will be of the supplier</p>  |

| <b>No row shall be left blank. Please indicate NA, in case the item is “not applicable”</b> |  | <b>Vendor's confirmation</b> |
|---|--|------------------------------|
|   | <b>Validity:</b> Validity of the offer should be <b>120 days</b> from the date of tender opening.  |                              |
| <b>4.</b>   | <p><b>Release of Purchase Order:</b></p> <ul style="list-style-type: none"> <li>➤ Purchase Orders (separate for supply and I&amp;C portion if applicable) will be released on the successful vendor (L1 vendor)</li> <li>➤ Order shall be placed on single vendor on cumulative L1 basis.</li> <li>➤ This tender is composite in nature and cannot be split-up to more than one vendor. Hence the entire work will be awarded to only lowest bidder of the tender. Work cannot be split-up and given to MSE vendor if they are L2 or above ranking in the tender.</li> </ul>   |                              |
| <b>5.</b>   | <p><b>Payment terms for Supply Portion</b><br/>80% Payment after receipt and acceptance of material and balance 20% within 45-90 days after receipt, acceptance and commissioning of supply material against submission of 10%PBG for order value.</p> <p><b>Installation &amp; Commissioning Portion (if applicable only):</b><br/>100% of the Erection / commissioning charges (in case contract involves erection /commissioning) shall be paid only on completion of such erection / commissioning at BHEL</p> <p style="color: red;">Any deviation in the above payment term will attract loading as mentioned below.<br/>“Base rate of SBI (as applicable on the date of bid opening. Techno-commercial bid opening in case of two part bids) + 6% shall be considered for loading for the period of relaxation sought by bidders.</p>   |                              |
| <b>6.</b>   | <p><b>Performance Bank Guarantee (PBG):</b> The Bidder, in the event of an order, should furnish a Bank Guarantee from an Indian Bank approved by BHEL, at no extra cost in a format prescribed by BHEL, along with the order, for an amount equivalent to <b>10% (Ten percent)</b> of the value of the contract. The PBG shall be valid for a period of 18 months from the date of dispatch or <b>12 months</b> from the date of receipt / acceptance / commissioning of the equipment at BHEL, Tiruchi whichever is more, with a claim period of two months.</p> <p>The Performance Bank Guarantee shall be obtained from any one of the following banks which is a member bank in our consortium of banks.</p> <p><b>LIST OF CONSORTIUM BANKS</b><br/>1.DEUTSCHE BANK 2.HDFC BANK 3.ANZ GRINDLAYS BANK 4.CITI BANK 5.STANDARD CHARTERED BANK 6.BANK OF AMERICA 7.ABN AMRO BANK 8.IDBI LTD 9.ICICI BANK LTD 10.THE HONGKONG AND SHANGHAI BANKING .CORPORATION LTD.</p> <p><b>LIST OF NATIONALISED BANKS</b><br/>1.ALLAHABAD BANK 2.ANDHRA BANK 3.BANK OF INDIA 4.BANK OF BARODA 5.BANK OF MAHARASTRA 6.BHARATH OVERSEAS BANK 7.CANARA BANK 8.CENTRAL BANK OF INDIA 9.CORPORATION BANK 10.DENA BANK 11.INDIAN BANK 12.INDIAN OVERSEAS BANK 13.OREINTAL BANK OF COMMERCE 14.PUNJAB NATIONAL BANK 15.PUNJAB &amp; SIND BANK 16.STATE BANK OF INDIA 17.STATE BANK OF TRAVANCORE 18.STATE BANK OF MYSORE 19.STATE BANK OF BIKANER &amp; JAIPUR 20.STATE BANK OF HYDERABAD 21.STATE BANK OF PATIALA 22.STATE BANK OF MAHARASTRA 23.STATE BANK OF SOURASTRA(SBI-13.09.08) 24.SYNDICATE BANK 25.UCO BANK 26.UNION BANK OF INDIA 27.UNITED BANK OF INDIA 28.VIJAYA BANK</p> <p><u>If PBG is issued by a Foreign counter part of the BHEL consortium Indian Bank, in case of claim against the PBG , it will be lodged in any one of the Indian counters of the Foreign Bank which issued the PBG.</u></p> |                              |
| <b>7.</b>   | <p><b>Liquidated damages (LD):</b><br/>The delivery of the goods specified in the purchase order should be made within the time prescribed. LD for delay in ‘Supply’ and/or ‘I&amp;C’ will be applicable to the delays attributed to vendor. LD will be considered separately for ‘Delivery’ and ‘I &amp;C’. Where the seller supplies or dispatches the goods, beyond the delivery period Liquidated damages shall be applicable 0.5% of the total order value per week or part thereof subject to a maximum of 10% of the total order value.</p> <p>The rate of LD for delayed E&amp;C shall be @ 0.5% per week of delay of total PO value (Supply + I &amp;C) in I &amp;C subject to a maximum of 10% of total PO value (Supply + I&amp;C).</p> <p>For staggered delivery schedule, LD shall be 0.5% of the undelivered portion per week of the delay or part thereof subject to a maximum of 10% of the total order value.</p> <p>Any deviation from the above LD clause, loading will be applied to the extent to which it is not agreed by the bidder (at offered value).</p>  |                              |
| <b>8.</b>   | <p><b>Risk Purchase:</b><br/>Alternatively the purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated as aforesaid or if the same were not available from the best and the nearest available substitute. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases.</p>  |                              |
| <b>9.</b>   | <p><b>Delivery terms and evaluation process:</b><br/>Indian Bidders should submit their offer on <b>FOR BHEL, Tiruchy</b> basis. Packing &amp; Forwarding and Freight &amp; Insurance charges from works to BHEL, Tiruchy to be indicated separately if extra from basic rate. Applicable % of ED &amp; Sales Tax , Commissioning Charges should be clearly indicated.</p> <p style="background-color: yellow;"><b>Evaluation of offers shall be on the basis of delivered cost (Net cash outflow to BHEL)</b></p>   |                              |

|     |   |  |
|-----|---|--|
| 10. | <p><b>Guarantee:</b><br/>Vendors shall provide a guarantee for a period of 12 months from the date of commissioning of the equipment or 18 months from date of supply, whichever is earlier. The date of B/L or AWB shall be taken as the date of supply. Also, a PBG has to be given which shall cover the guarantee period (with additional 2 months as claim period). Normally No deviation permitted and the deviated offers are liable for rejection.</p>  |  |
| 11. | <p><b>Short shipment / Warranty replacement:</b><br/>In case of any short shipment in the main equipment / spares, Customs Duty levied on such supplies, shall be borne by the supplier. Any warranty replacement during the warranty period shall be on FOR, BHEL, Tiruchirappalli, basis.</p>   |  |
| 12. | <p><b>Inspection &amp; Testing:</b><br/>All goods shall be subject to inspection by BHEL or its authorized representatives at supplier's works or at BHEL stores or at any other place in India indicated by BHEL as the case may be. The supplier will not charge for the facilities provided for inspection of goods. In case of machine tools, the machine would be inspected and proved at supplier's works prior to dispatch however, final inspection and acceptance of the machine will be carried after installation of the machine at BHEL, Tiruchirappalli.</p>   |  |
| 13. | <p><b>Test certificates / Operating and Maintenance manuals:</b><br/>The Bidders shall clearly mention in their offer, that Test Certificates and Operating Maintenance Manuals, etc., as called for in the Technical Specification, in the required number of copies will be provided at no extra cost.</p>  |  |
| 14. | <p>Payment through Bank is not preferred. In case of Payment through Bank is opted by Supplier, BHEL prefers documents submission through bank with copy of LR and door delivery of Goods to Site/Stores with Consignee copy attached. In this case Loading will be 3% on the offered value.<br/>Offers of indigenous Suppliers with payment terms as LC/Advance Payment are liable for rejection.</p>  |  |
| 15. | <p><b>BHEL will consider the ranking after the loading is applied as referred above wherever deviations are observed.</b></p>   |  |
| 16. | <p><b>Reverse Auction (RA):</b><br/>BHEL reserves the right to conduct on-line internet Reverse Auction ie. ONLINE BIDDING (THROUGH A SERVICE PROVIDER) for finalizing the Tender. This decision will be communicated to the technically qualified vendors after technical evaluation. Details / General terms / guidelines for conduct of RA are shown below<br/>Vendors are requested to confirm their acceptance for BHEL proceeding with RA route for finalization of the enquiry.</p> <ol style="list-style-type: none"> <li>1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.</li> <li>2. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.</li> <li>3. BHEL will inform the vendor in writing in case of reverse auction, the details of Service Provider to enable them to contact &amp; get trained.</li> <li>4. Business rules like event date, time, start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.</li> <li>5. Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to participate in the event.</li> <li>6. BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing &amp; forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms &amp; conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction</li> <li>7. Reverse auction will be conducted on scheduled date &amp; time.</li> <li>8. At the end of Reverse Auction event, the lowest bidder value will be known on the network.</li> <li>9. The lowest bidder has to Fax/e-mail the duly signed Filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of Auction without fail.</li> <li>10. Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHEL as per prevailing procedure.</li> <li>11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price Bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.</li> <li>12. BHEL reserves the right to negotiate if need be, with the "L1" vendor of the Reverse Auction</li> <li>13. <u>BHEL reserves the right not to consider offers from vendors not complying with the RA process for finalization of the enquiry.</u></li> <li>14. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.</li> </ol> <p>In case BHEL decides to go for reverse auction, the H1 bidder(s) (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.</p> |  |
| 17. | <p><b><u>Special Provisions for Micro and Small Enterprises (MSE)</u></b></p> <p>MSE suppliers can avail the intended benefits only if they submit along with offer, attested copies of either EM II (Entrepreneur Memorandum Part II) certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed as per <b>Annexure - III</b>) applicable for the relevant financial year (latest audited), certifying quantum of investment in plant and machinery within the permissible limit as per the act for relevant status (Micro or small) where the deemed validity of EM II is over. Date to be reckoned for determining the deemed validity will be the last date of technical bid submission. Offer/s received without these documents will lead to consideration of their offer at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier.</p>   |  |

|   |  |                 |
|---|--|-----------------|
| <b>18.</b>  | <ul style="list-style-type: none"> <li>➤ Point to point confirmation for the Technical Specification enclosed to be provided. If there are any deviations, the same should be clearly specified. Offers received without confirmation to our specifications will be liable for rejection. If needed additional sheets shall be used.</li> <li>➤ Equipment offered shall be "New". Re-built / Re-conditioned / Used equipment's will not be accepted. Incomplete offers will not be considered for further processing Fixed price:</li> <li>➤ BHEL reserves its right to reject a tender due to unsatisfactory past performance in the execution of a contract at any of BHEL projects / units.</li> <li>➤ BHEL shall be at liberty to reject or accept any tender, part or in full, at their own discretion and any such action is not liable for any question or claim against BHEL.</li> <li>➤ All Equipment's / Services including concerned personnel for carrying out the erection and commissioning of the equipment shall be arranged by the vendor. If any Services are availed from BHEL, it is only on chargeable basis unless otherwise specified.</li> <li>➤ The vendor shall provide necessary drawings, Test Certificates and Operating Maintenance Manuals etc., as called for in the Technical Specification, in the required number of copies at no extra cost</li> <li>➤ The Supplier shall arrange for securely protecting and packing the stores to avoid loss or damages during transit.</li> </ul> |                 |
| <b>19.</b>  | <b>Company Details &amp; Contact</b>   |                 |
|   | Full Address of the company for future correspondence. (Copy of address proof & PAN card shall be attached along with Part-I)  |                 |
|   | Company Email ID:  | Phone No.:      |
|   | Fax No   | PAN No          |
|   | CST /TIN No  | Service Tax No. |
|   | Name of the contact perrson:   | Mobile No.:     |
|   | e-mail ID  |                 |
| <b>20.</b>  | <b>TO BE CONFIRMED BY VENDOR</b>   |                 |
|   | Country of origin:   |                 |
|   | Station of dispatch/Port of Shipment   |                 |
|   | Delivery Terms<br>(For destination or Ex-works )   |                 |
| <b>21.</b>  | <b>Packing &amp; Forwarding Charges, if any ( in % or Lumpsum) ie. extra from basic rate</b>   |                 |
|   | % of Excise Duty with cess   |                 |
|   | % of TAX (CST/VAT) (TNGST with FORM-17 or CST with C-FORM)   |                 |
|   | <b>(If applicable only)</b>  |                 |
|   | Installation & commissioning charge is inclusive (or) exclusive on basic rate  |                 |
|   | Service tax applicable extra or not  |                 |
|   | <b>Freight &amp; Transit Insurance</b> charges (if any, in Lumpsum (or) percentage) from Dispatching station to BHEL Tiruchirappalli,<br>(Note:If the delivery terms is Ex Works the materials has to be sent through BHEL approved carrier only, in this case the Freight & Insurance will be borne by BHEL)  |                 |
| <b>22.</b>  | Delivery from the date of Letter of Intent / Purchase Order.<br><b>(This should be inclusive of Order acceptance, drawing approval and time period required for dispatch (B/L or AWB date) etc.,</b>   |                 |
| <b>23.</b>  | <b>Weight &amp; Cubage of package:</b><br>Approximate Net weight of the total consignment:<br>Approximate Gross weight of the total consignment:<br>Approximate volume of the total consignment:   |                 |
| <p><b>For any queries / clarifications the bidders may contact us through our FAX NO. +91 431 2520719 or through e-mail &lt;pgavictor@bheltry.co.in&gt;</b></p> |  |                 |

**NOTE**

- a) Your specific acceptance to our Payment terms, LD, Risk Purchase Clause & Submission of PBG for 10% of the order value are essential for consideration of your offer. Otherwise your offer is liable for rejection.
- b) No row shall be left blank. Please indicate NA, in case the item is "not applicable"

**Declaration:-**

I/We have gone through and understood the 'General guidelines & instructions to bidders for submitting offer' enclosed as a part of the Tender and confirm that our offer has been made in line with the same.

Name:

Signature with date:

(AFFIX OFFICIAL SEAL HERE)

Designation:

(PLEASE AFFIX YOUR SIGNATURE WITH SEAL ON EACH PAGE)

**MODEL PRICE BID FORMAT FOR INDIAN BIDDERS**

Enquiry No. &amp; Date:

Bidder's Offer No. &amp; Date:

| Sl No | Description of item  | Unit (SET /No) | QTY | Rate /Qty in Rs. (excluding of all taxes) | VAT/CST in % (TNGST with FORM-17 or CST with C-FORM) | ED in % | Service Tax in % | Total Value in Rs. (inclusive of all taxes) |
|-------|--|----------------|-----|---|--|---------|------------------|---|
|       | <b>Supply portion</b>  |                |     |   |  |         |                  |   |
|       | Service portion- if exclusive from basic price (available in scope only)   |                |     |   |  |         |                  |   |
|       | Packing & Forwarding charges (if any) in percentage (or) Lumpsum   |                |     |   |  |         |                  |   |
|       | FOR Dispatching station value in Rs.   |                |     |   |  |         |                  |   |
|       | Percentage of Freight & transit insurance charges, if any (Lumpsum or %) Freight & Insurance charges from Dispatching station to BHEL, Tiruchirappalli (Note:If the delivery terms is Ex Works the materials has to be sent through BHEL approved carrier only, in this case the freight & Insurane will be borne by BHEL) |                |     |   |  |         |                  |   |
|       | Approximate Net weight of the total consignment  |                |     |   |  |         |                  |   |
|       | Approximate Gross weight of the total consignment  |                |     |   |  |         |                  |   |
|       | Approximate Dimensions of the Consignment  |                |     |   |  |         |                  |   |

Signature &amp; Seal of Vendor

**The price bid should be submitted only as per the above format. No row shall be left blank. Please indicate NA, in case the item is "not applicable"**

**Certificate by Chartered Accountant on letter head**

This is to Certify that M/S .....  
(hereinafter referred to as 'company') having its registered office at  
..... is registered under MSMED Act 2006, (Entrepreneur  
Memorandum No (Part-II) ..... dtd:.....,  
Category: ..... (Micro/Small)). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as on  
date..... as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No.S.O.1722(E) dated October 5, 2006 :  
Rs.....Lacs
2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:  
Rs.....Lacs

The above investment of Rs.....Lacs is within permissible limit of  
Rs.....Lacs for .....Micro / Small (**Strike off which is not applicable**)  
Category under MSMED Act 2006.

Date:

(Signature)

Name -

Membership number -

Seal of Chartered Accountant