



New Products – Purchase
Bharat Heavy Electricals Limited
Boiler Auxiliaries Plant
RANIPET – 632 406, Tamil Nadu, India

Open Tender for MB System, Degasser System & Accessories for RPCL - Yeramarus Project

Enquiry No.: **7730563E**

Due on: **12.08.2013**

To All Indigenous manufacturers only.

Dear Sir,

Please submit your lowest quotation on **FIRM PRICE**, in duplicate subject to our terms & conditions in the various annexures attached and herein for the below listed materials so as to reach us on or before the due date by **2.00 p.m.**

Requirement with Delivery date:

Sl. No.	Material Code	Item	Unit	Qty.	Delivery Date
1	RWT301100001	MSRL DEGASSER TOWER WITH INTERNALS & ACCESSORIES.	ST	2	31.01.2014
2	RWT301100002	DEGASSER BLOWER WITH MOTOR, DUCTS, AIR FILTERS (SUCTION), INLET AND OUTLET CONTROLS FROM BLOWERS & ACCESSORIES.	ST	4	31.01.2014
3	RWT301100003	MB VESSEL WITH INTERNAL LATERALS AND ACCESSORIES.	ST	3	31.01.2014
4	RWT301100004	MIXED BED (MB) FEED PUMPS WITH DRIVE MOTORS AND ALL ACCESSORIES.	ST	3	31.01.2014
5	RWT301100005	MB REGENERATION PUMP WITH DRIVE MOTORS AND ALL ACCESSORIES.	ST	2	31.01.2014
6	RWT301100006	MB BLOWER WITH DRIVE MOTORS, AIR CONNECTING PIPES & ACCESSORIES.	ST	2	31.01.2014
7	RWT301100007	ACID MEASURING TANK (AMT) 2 NOS. & ALKALI MEASURING TANK (CDT) 2 NOS. WITH AGITATOR, EJECTOR AND ACC. FOR REGENERATION SYSTEM.	ST	1	31.01.2014
8	RWT301100008	MB SYSTEM FRONTAL PIPING WITH PNEUMATIC OPERATED DIAPHRAGM VALVES ETC.,	ST	3	31.01.2014
9	RWT301100009	INTERCONNECTING PIPINGS, DUCTING BETWEEN EQUIPMENTS AND VALVES & ACCESSORIES AS PER P&ID.	ST	1	31.01.2014
10	RWT301100010	MB RESIN (CATION & ANION FOR 3 NOS. OF MB VESSELS)	ST	1	31.01.2014
11	RWT301100011	1 SET OF FOUNDATION BOLTS, APPLICABLE FASTERS, GASKETS, LADDERS, COMMON PLATFORM FOR MB, SUPPORTS (FOR PIPING & VALVES) AND MISCELLANIOUS ITEMS.	ST	1	31.01.2014
12	RWT301100012	1 SET OF ELECTRICAL, CONTROLS & INSTRUMENTS AS PERTECH. SPEC. NO. ROS:4053 REV.00&IN LINE WITH P&ID 1-WT-220-00248 REV.00.	ST	1	31.01.2014
13	RWT301100013	COLLECTION OF MATERIALS FROM SITE STORES,ERECTION,COMMISSIONING, TRAIL RUN/ OPERATION & PG TEST OF MB SYSTEM	ST	1	2 months from supply completion or 2 months from site readiness whichever is later
14	RWT301100014	O&M FOR 3 MONTHS FROM THE DATE OF PG TEST	ST	1	3 months after PG test.



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BIDDERS SHALL CAREFULLY READ THE FOLLOWING ANNEXURES / NOTES AND SHALL QUOTE THEIR BEST COMPETITIVE PRICE.

PLEASE REFER TO,

1. **QUALIFICATION REQUIREMENTS (QR)**
2. **ANNEXURE-A FOR STANDARD TERMS & CONDITIONS (FOR GUIDANCE TO THE SUPPLIERS),**
3. **ANNEXURE-B FOR GENERAL TERMS AND CONDITIONS OF REVERSE AUCTION,**
4. **ANNEXURE-C FOR COMMERCIAL TERMS AND CONDITIONS**
5. **ANNEXURE-D FOR PRICE BID FORMAT**
6. **TECHNICAL ENCLOSURES:**

Technical Specification : ROS 6095 /0,
Erection Specification : Sec 9 of ROS 6095/0
E, C & I Specification : ROS 4053 / 0
P & ID : 1-wt-220-00248/0
MB Layout Drawing : 2-wt-220-00064/0
E, C&I BOQ Drawing : 3-wt-310-00220/0
Hook up & Installation Drgs : 25 Drgs..
Customer approved Vendor List,

Important Instruction to Bidders:

1. All the items will be procured from a single vendor only on complete set basis. Hence please quote for all items. Incomplete offers will be rejected.
2. Vendors shall go through the “Qualification Requirement” & furnish Qualification Data sheet duly filled in along with Techno-Commercial offer. Offers received without this requirement will be summarily rejected & such offers will not be processed further.

- TENDER SHALL BE SUBMITTED IN TWO PARTS AS REFERRED IN ANNEXURE-A.
- ANY REVISED OFFER(S) SENT BY VENDORS ON THEIR OWN, AFTER THE TENDER OPENING, WILL BE TREATED AS "UNSOLICITED OFFER". SUCH OFFERS WILL NOT BE CONSIDERED AND NECESSARY ACTION AS DEEMED FIT WILL BE TAKEN BY BHEL ON THOSE VENDORS. HENCE COMPETITIVE OFFER TO BE GIVEN IN THE ORIGINAL QUOTE ITSELF.

IMPORTANT NOTE:

TENDER SHOULD BE SENT IN DUPLICATE IN A SEALED COVER. INNER COVER SEALED WITH TENDERER'S DISTINCTIVE SEAL AND SUPERSCRIBED WITH CORRECT TENDER NO., ITEM OF SUPPLY, DUE DATE OF OPENING AND VALIDITY OF THE OFFER ADDRESSED BY DESIGNATION TO **MANAGER / NEW PRODUCTS - PURCHASE, BHARAT HEAVY ELECTRICALS LIMITED, BOILER AUXILIARIES PLANT, INDIRA GANDHI INDUSTRIAL COMPLEX, RANIPET, VELLORE DISTRICT-632406.**

- 01) OFFERERS ARE REQUESTED TO CAREFULLY READ THE FOLLOWING CONDITIONS AND GIVE THEIR SPECIFIC CONFIRMATION OF ACCEPTANCE IN TOTO.
- 2A) TIME IS THE ESSENCE OF CONTRACT.
- 2B) IN THE EVENT OF DELAY ON THE CONTRACT DELIVERY, LIQUIDATED DAMAGES (LD) WILL BE LEVIED.
- 2C) LD WILL BE LEVIED AT THE RATE OF 0.5 % PER WEEK OR PART THEREOF ON THE CONTRACT VALUE.
- 2D) THE LD CEILING WILL BE 15 %.



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- 2E) LD WILL BE A MANDATORY CONDITION IN THE PURCHASE ORDER.
- 3) IF NO CONFIRMATION OR COMMENTS ARE INCLUDED IN THE INITIAL OFFER BY THE TENDERER, IN THE EVENT OF PLACEMENT OF ORDER, THE ORDER WILL BE RELEASED WITH THE STANDARD LD CONDITION GIVEN ABOVE.
- 4) THE CONDITION WILL BE INCLUDED IN THE ORDER WITHOUT ANY FURTHER REFERENCE TO THE OFFERER AND NO CHANGES WILL BE PERMISSIBLE, POST ORDER RELEASE.

MSME STATUS - This is applicable for Indian Vendors only

AS PER THE PUBLIC PROCUREMENT POLICY NOTIFIED BY THE CENTRAL GOVERNMENT, MICRO AND SMALL ENTERPRISES QUOTING WITHIN THE PRICE BAND OF L1+15% SHALL BE ALLOWED TO SUPPLY A PORTION OF THE REQUIREMENT UP TO 20% OF THE TENDER VALUE SUBJECT TO CONDITION THAT SUCH ENTERPRISES BRING DOWN THEIR PRICE TO L1 PRICE WHERE L1 PRICE IS FROM OTHER THAN A MICRO AND SMALL ENTERPRISE. IF L1 OFFER IS FROM A MICRO / SMALL ENTERPRISE, THIS PROVISION WILL NOT BE APPLICABLE. IN CASE MORE THAN ONE MICRO AND SMALL ENTERPRISE IS THERE WITHIN THIS SPAN, THE SUPPLY SHALL BE SHARED PROPORTIONATE TO THE TENDER QUANTITY. (70:30 OR 50:30:20 OF THE ELIGIBLE QUANTITY)

NOTE: SPECIAL PROVISION FOR MICRO AND SMALL ENTERPRISES OWNED BY SC OR ST: -
SUB TARGET OF 20% (I.E. 4% OUT OF 20%) WOULD BE EARMARKED FOR PROCUREMENT FROM MICRO AND SMALL ENTERPRISES OWNED BY THE SCHEDULED CASTE OR SCHEDULED TRIBE ENTREPRENEURS PROVIDED THAT IN EVENT OF FAILURE OF SUCH MICRO AND SMALL ENTERPRISES TO PARTICIPATE IN THE TENDER PROCESS OR MEET THE TENDER REQUIREMENTS AND THE L1 PRICE, THE 4% SUB-TARGET FOR PROCUREMENT EAR-MARKED MSE OWNED BY SCHEDULED CASTE OR SCHEDULED TRIBE ENTREPRENEURS SHALL BE MET FROM OTHER MSE ENTERPRISES/S. THE MSE CONCESSION IS SUBJECT TO CONDITION THAT LATEST VALID CERTIFICATE FOR MSE AND OWNERSHIP IS SUBMITTED ALONG WITH THE OFFER. OFFER/S RECEIVED WITHOUT THESE DOCUMENTS WILL BE TREATED AS NON-MSE AND ORDER FINALIZATION WILL BE DONE BASED ON THIS PREMISE. DOCUMENTS SUBMITTED AFTER BID-OPENING WILL NOT BE CONSIDERED IN THE TENDER.

THIS PROVISION FOR MSE WILL APPLY SUBJECT TO THE CONDITION THAT THE PARTICIPATING MSE MEETS THE TENDER REQUIREMENTS.

VALUE ADDED TAX

PLEASE INDICATE YOUR TIN (TAXPAYER IDENTIFICATION) NUMBER, COMMODITY CODE FOR EACH ITEM, DESPATCHING PLACE AND STATE, WHILE SUBMITTING YOUR OFFER.

E - PAYMENT

BHEL IS MAKING PAYMENTS THROUGH E-MODE. SUPPLIERS, WHO HAVE NOT AVAILED THEMSELVES OF THIS FACILITY, CAN E-MAIL TO PURCHASE EXECUTIVES TO OBTAIN NECESSARY FORMATS.

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## BHEL : BAP : RANIPET New Products

### QUALIFICATION REQUIREMENT FOR WORKING MIXED BED (MB) SYSTEM / DEMINERALIZATION (DM) PLANT

The Qualification requirements for working Mixed Bed (MB) System / Demineralization Plant are listed below and Vendors shall meet the same:

1. Shall have experience in design, manufacture, supply, erection, commissioning & successful operation of either one of the following system (working MB or DM System consisting of SAC, SBA & MB) with consistent output parameters meeting the quality requirement of DM water :

| Sl. No. | Description                     | In case of Working MB  | In case of DM (SAC, SBA & MB) |
|---------|---------------------------------|------------------------|-------------------------------|
| i       | Minimum Net capacity per stream | 50 m <sup>3</sup> /hr. | 75 m <sup>3</sup> /hr.        |
| ii      | Minimum TDS of input water      | 10 mg/lit              | 30 mg/lit                     |

2. MB / DM unit (referred by the vendor under Sl. No. 1) shall be capable of producing DM water to be used as make-up feed water to Boiler / Steam Generator with the net output between regeneration (OBR) on continuous operation basis as 72 hours (minimum).
3. Mixed Bed / DM plant outlet water quality should fulfill the following requirements:

| Sl. No. | Description                | Unit  | Values     |
|---------|----------------------------|-------|------------|
| i       | Conductivity at 25 deg. c  | μS/cm | 0.1 max    |
| ii      | Silica as SiO <sub>2</sub> | ppm   | 0.015 max  |
| iii     | pH                         |       | 6.8 to 7.2 |

4. Plant (referred by the vendor under Sl. No. 1) should have been in trouble free operation for a period of minimum one year after successful commissioning as on 1<sup>st</sup> July 2013.
5. Plant should have been in auto mode operation & regeneration through PLC or DCS system.
6. Vendor shall furnish necessary documentary evidence in original / attested copy obtained from the customer as a proof of meeting the qualifying criteria for review by BHEL. The certificate shall contain all required information for the satisfactory performance, such as plant capacity, location of the plant with postal address, date of supply & commissioning, design and actual performance parameters, etc.,
7. Vendor shall fill up all relevant information of the plant already executed by them (refer to Sl. No. 1) in the annexed formats (Annexure I & II) and submit the signed format.

|                                                                                   |                                                                                                    |                     |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------|
|  | <b>BHEL : BAP : RANIPET</b><br><b>New Products</b><br><b>QUALIFICATION DATA SHEET - WORKING MB</b> | <b>Annexure - I</b> |
|                                                                                   |                                                                                                    | Dated               |

A. Customer details:-

- a. Name :**  
**b. Designation :**  
**c. Mobile :**  
**d. Land line :**  
**e. Fax :**  
**f. Email id :**  
**g. Postal address :**

B. Plant Details:-

**Date of Supply :** \_\_\_\_\_ **Date of commissioning:** \_\_\_\_\_

| Sl. No. | Parameters                                                                                                                                      | Unit                         | Design | Actual |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|--------|--------|
| 01      | Mixed Bed capacity                                                                                                                              | m <sup>3</sup> /hr.          |        |        |
| 02      | Output between regeneration (OBR)                                                                                                               | m <sup>3</sup>               |        |        |
| 03      | Type of operation                                                                                                                               | Automatic through PLC or DCS |        |        |
| 04      | Feed water quality<br>a. pH<br>b. Conductivity<br>c. SiO <sub>2</sub>                                                                           | μS/cm<br>ppm                 |        |        |
| 05      | Output water quality<br>a. pH<br>b. Conductivity<br>c. TDS<br>d. SiO <sub>2</sub>                                                               | μS/cm<br>ppm<br>ppm          |        |        |
| 06      | MB Vessel size Diameter x Height per stream                                                                                                     | m                            |        |        |
| 07      | Cation Resin used<br>a. Make<br>b. Type<br>c. Quantity                                                                                          | Litres                       |        |        |
| 08      | Anion Resin used<br>a. Make<br>b. Type<br>c. Quantity                                                                                           | Litres                       |        |        |
| 09      | Chemical consumption per regeneration as 100% basis<br>a. Hydrochloric acid for Cation regeneration<br>b. Sodium Hydroxide for Anion generation | Kg<br>kg                     |        |        |
| 10      | Duration of regeneration<br>a. Cation<br>b. Anion                                                                                               | Hrs.<br>Hrs.                 |        |        |

Signature of the Vendor



# BHEL : BAP : RANIPET

## New Products

QUALIFICATION DATA SHEET - DM (SAC, DG, SBA & MB) SYSTEM

Annexure - II

Dated

A. Customer details:-

- a. Name :  
b. Designation :  
c. Mobile :  
d. Land line :  
e. Fax :  
f. Email id :  
g. Postal address :

B. Plant Details:-

Date of Supply :

Date of commissioning:

| Sl. No. | Parameters                                                                        | Unit                         | Design | Actual |
|---------|-----------------------------------------------------------------------------------|------------------------------|--------|--------|
| 01      | DM Plant Capacity                                                                 | m <sup>3</sup> /hr.          |        |        |
| 02      | Output between regeneration (OBR)                                                 | m <sup>3</sup>               |        |        |
| 03      | Type of operation                                                                 | Automatic through PLC or DCS |        |        |
| 04      | Feed water quality<br>d. pH<br>e. Conductivity<br>f. SiO <sub>2</sub>             | $\mu$ S/cm<br>ppm            |        |        |
| 05      | Output water quality<br>e. pH<br>f. Conductivity<br>g. TDS<br>h. SiO <sub>2</sub> | $\mu$ S/cm<br>ppm<br>ppm     |        |        |
| 06      | SAC Vessel Size Diameter x Height per stream                                      | m                            |        |        |
|         | DGT Vessel size Diameter x Height per stream                                      | m                            |        |        |
|         | SBA Vessel size Diameter x Height per stream                                      | m                            |        |        |
|         | MB Vessel Size Diameter x Height per stream                                       | m                            |        |        |
| 07      | Cation Resin used in SAC<br>d. Make<br>e. Type<br>f. Quantity                     | Litres                       |        |        |
| 08      | Anion Resin used in SBA<br>d. Make<br>e. Type<br>f. Quantity                      | Litres                       |        |        |

| <i>Sl. No.</i> | <i>Parameters</i>                                                                                                                                                                                | <i>Unit</i>                              | <i>Design</i> | <i>Actual</i> |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|---------------|---------------|
| <b>09</b>      | <b><i>Cation Resin used in MBC</i></b><br><b><i>g. Make</i></b><br><b><i>h. Type</i></b><br><b><i>i. Quantity</i></b>                                                                            | <b><i>Litres</i></b>                     |               |               |
| <b>10</b>      | <b><i>Anion Resin used in MB</i></b><br><b><i>g. Make</i></b><br><b><i>h. Type</i></b><br><b><i>i. Quantity</i></b>                                                                              | <b><i>Litres</i></b>                     |               |               |
| <b>11</b>      | <b><i>Chemical consumption for SAC per regeneration as 100% basis</i></b><br><b><i>c. Hydrochloric acid</i></b>                                                                                  | <b><i>Kg</i></b>                         |               |               |
| <b>12</b>      | <b><i>Duration of regeneration</i></b>                                                                                                                                                           | <b><i>Hrs.</i></b>                       |               |               |
| <b>13</b>      | <b><i>Chemical consumption for SBA per regeneration as 100% basis</i></b><br><b><i>d. Sodium Hydroxide</i></b>                                                                                   |                                          |               |               |
| <b>14</b>      | <b><i>Duration of regeneration</i></b>                                                                                                                                                           | <b><i>Hrs.</i></b>                       |               |               |
| <b>15</b>      | <b><i>Chemical consumption for MB per regeneration as 100% basis</i></b><br><b><i>e. Hydrochloric acid for Cation regeneration</i></b><br><b><i>f. Sodium Hydroxide for Anion generation</i></b> | <b><i>Kg</i></b><br><b><i>kg</i></b>     |               |               |
| <b>16</b>      | <b><i>Duration of regeneration</i></b><br><b><i>c. Cation</i></b><br><b><i>d. Anion</i></b>                                                                                                      | <b><i>Hrs.</i></b><br><b><i>Hrs.</i></b> |               |               |

*Signature of the Vendor*