

**NTPC Limited  
CC-OS  
EOC Noida**

**Sub: Qualifying Requirement for Vendor Enlistment for supply of “Rotary Air Preheater Baskets for NTPC Stations”**

A)	<b>MEG DETAILS</b>		
	<b>1.0</b>	<b>MEG NO.</b>	46MEG-05
	<b>2.0</b>	<b>MEG DESCRIPTION</b>	Rotary Air Preheater Baskets for NTPC Stations
	<b>3.0</b>	<b>RESPONSIBILITY CENTRE</b>	CPC
B)	<p><b>Technical Criteria of QR:</b></p> <p><b>Option-1</b></p> <p>i) The applicant should be a manufacturer of Boiler of coal fired Thermal power plants. and</p> <p>ii) The applicant should have supplied such boilers to at least two Units each of 200 MW or higher capacity, located at two different power stations and which have been commissioned at least two years prior to the date of application.</p> <p>In this case, applicant himself can manufacture and supply the Rotary Air Preheater (RAPH) Baskets or the applicant can source the Rotary Air Preheater (RAPH) elements from such manufacturer, who meet the criteria specified at Option no.2 or 3. If opting for outsourcing then applicant has to submit credential of Vendor who meets credential of Option-2 or Option-3</p> <p><b>Option-2</b></p> <p>i) The applicant should be a manufacturer of the Rotary Air Preheater (RAPH) for coal fired Boilers having capacity 200MW or higher. and</p> <p>ii) The applicant should have supplied at least one complete Rotary Air Preheater (RAPH) for coal fired Boilers having capacity 200MW or higher during preceding five (5) years as on date of application. and</p> <p>iii) The applicant should have Cold Forming continuous automatic in line Profile Rolling Machine (continuous from De-coiler to shearing machine for making the Heating Elements of Rotary Air Preheater (RAPH) offered). and</p> <p>iv) The applicant should have in house facilities for manufacturing of baskets casing/frame and facilities for applying rust preventive oil.</p> <p><b>Option-3</b></p> <p>i) The applicant should be a manufacturer of the Rotary Air Preheater (RAPH) complete baskets (heating elements and frame) for coal fired Boilers having capacity 200MW or higher. and</p> <p>ii) The applicant should have supplied Air preheater baskets including HE/HIE(either of two) &amp; CE of Rotary Air Preheater (RAPH) for coal fired Boilers having capacity 200MW or higher during preceding five (5) years as on date of application in one or more POs. and</p> <p>iii) The applicant should have Cold Forming continuous automatic in line Profile Rolling Machine (continuous from De-coiler to shearing machine for making the Heating Elements of Rotary Air Preheater (RAPH), offered. and</p> <p>iv) The applicant should have in house facilities for manufacturing of baskets casing/frame and facilities for applying rust preventive oil.</p> <hr/> <p><b>Documents required in support of QRs.</b></p> <p>Option-1</p> <p>(i) :- ISO Certificate / Copy of Letter of Award/ Catalogue</p> <p>(ii) Letter of awards / Self declaration with details in own letter head and</p>		

	<p>Credentials of Partner (as per option-2 or option-3) from whom Outsourcing of Basket is to be done.</p> <p>Option-2</p> <ul style="list-style-type: none"> <li>(i) ISO Certificate/ Catalogues/ SSI Certificate or any other relevant document</li> <li>(ii) Order Copies along with execution proofs</li> <li>(iii) Self-declaration with details of the machine set-up, photographs, makes/ model details/ machine procurement invoice etc.</li> <li>(iv) Self-declaration in form of list of the facilities/ machines for this QR</li> </ul> <p>Option-3</p> <ul style="list-style-type: none"> <li>(i) ISO Certificate/ Catalogues/ SSI Certificate or any other relevant document</li> <li>(ii) Order Copies along with execution proofs</li> <li>(iii) Self-declaration with details of the machine set-up, photograph, make/ model details/ machine procurement invoice etc.</li> <li>(iv) Self-declaration in form of list of the facilities/ machines for this QR</li> </ul>	
C)	<p><b>Other Documents to be submitted</b></p> <p>In addition to the documents required in support of meeting technical requirements as stated above, following documents are required to be submitted by the applicant:-</p> <ol style="list-style-type: none"> <li>1. At least one PO and maximum three PO(s) along with execution proof of highest executed values of similar work during last five years from the date of application. The definition of similar works is as defined at NOTE-1 below. Copy of Invoice / completion certificate from the concerned buyers in support of successful execution of supply against the PO(s). The POs submitted against execution capability are not meant for qualifying requirement (QR) fulfillment. The applicant can submit the PO(s) used for QR fulfillment for execution capability also, subject to meeting the definition of similar works.</li> <li>2. Audited balance sheet including profit and loss statement for the previous three completed financial years reckoned from the date of application. In case the audited results for the preceding financial year is not available, certification of financial statements from a practicing chartered account may be submitted. In case, Applicant is not able to submit the certificate from practicing chartered Account certifying its financial parameters, the audited results of three consecutive financial years preceding the last financial year shall be considered for evaluating the financial parameters. Further a Certificate would be required from the CEO/CFO as per the format enclosed in the application format documents stating that the financial results of the company are under audit as on the date of Application and the Certificate from the practicing Chartered Accountant certifying the financial parameters is not available.</li> <li>3. Latest Annual Report / NSIC/SSI/MSME registration certificate/BIS license/ISO certificate/ Certificate of registration from concerned excise department/ any other statutory document as a proof of being manufacturer of the required material. The submitted document should be valid as on the date of application.</li> <li>4. Any other documents in addition to the above which the applicant wants to submit.</li> </ol>	
D)	NOTE-1	Similar works means: Supply of Rotary Air Preheater Baskets
	NOTE-2	The executed value means basic value of quantity of similar works executed/ supplied against the reference PO (also applicable to partly executed POs as on date of application). Where PO value is composite (i.e. including taxes etc.), the applicant to give item-wise break-up of composite PO value mentioning basic values, Taxes etc.

**NTPC Limited**  
**CC-OS**  
**EOC, Noida**

**Sub: Technical Specifications for Vendor Enlistment for supply of “Rotary Air Preheater Baskets for NTPC Stations”**

<b>A)</b>	<b>MEG DETAILS</b>		
	<b>1.0</b>	<b>MEG NO.</b>	46MEG-05
	<b>2.0</b>	<b>MEG DESCRIPTION</b>	Rotary Air Preheater Baskets for NTPC Stations
	<b>3.0</b>	<b>RESPONSIBILITY CENTRE</b>	CPC
<b>B)</b>	<b>Technical Specifications:</b>  The intended technical details of materials (Rotary Air Preheater Baskets) are attached below in Annexure. The applicant may note that this annexure will be a part of specific tender after enlistment is completed.		



**NTPC LIMITED**  
**CC-OS**  
**EOC Noida**

**TECHNICAL SPECIFICATION**

1. **Intent of the specification:** NTPC Ltd. Intends to procure Air pre heater baskets for their ----- /-----/ 200 MW / 500 MW / 660 / -----MW Unit boilers from reputed Vendors through competitive bidding. The specifications given below provide information regarding characteristics of the baskets considered important by NTPC Ltd.. It also gives information regarding other important aspects of the procurement like QAP, guarantee, process etc. NTPC Ltd expects that prospective bidder shall go through these specifications, understand them well and acquaint themselves with further information / knowledge as may be necessary, before furnishing their bids. The workmanship and material of the offered baskets shall be of high quality so as to ensure fitment, durability and performance.
2. **SCOPE:** "Supply of Hot, Hot Intermediate and Cold End Baskets for Air Pre Heater of ----- / -- ----- / 200 MW / 500 MW / 660 MW / ----- units of NTPC – Details as per site specification.
3. **APH Type:** Tri sector / Bi Sector Air Pre Heaters of -----/-----/ 200 MW / 500 MW / 660 MW / ----- Units. Details as per site specification  
Type – LJUNGSTORM  
For reference mostly following Type of APH are in NTPC stations:  
Tri-sector: 24.5 VIT 57.5", 25.5VIT, 26VIT-1350, 27VIT80", 27VIT72", 27.5VIMT2000 (12sector), 27.5VIMT2000 (24 sector)  
Bi-sector PAPH: 25 VAZ1300, 26.5VIM2000, 27VI90", 27VIM72", 27VIM80", 27VIM2000, 27VIM1550, 27.5VIM2000, 27.5VIM2150, 28.5 VI58(70)"  
Bi-sector SAPH: 29.5 VAZ2100, 30VIM2000, 30.5VIM2000, 30.5VIM62", 30.5VIM1750, 30.5VIM2000, 30.5VIM2150, 31.5VIM2000, 31.5VIM70 (82)"
4. **BIDDING PROCESS:**
  - a. Bidder must meet "Qualifying requirements" specified in NIT.
  - b. Bidders shall submit their offer in 02 parts:  
Part – (i) Documents to prove their meeting of the QR + Technical bid, and  
Part – (ii) Price bid
  - c. Evaluation of the above parts of the bid shall be done in the order Part-(i) → Part – (II).
  - d. Bidders may visit NTPC sites prior to bidding to acquaint themselves with the type and profile of the elements and baskets provided in NTPC units.
  - e. Technical bid shall consist of –
    - i. Technical Details Data sheet (Enclosed) duly signed & accepted by vendor.
    - ii. Element profile drawings for basket elements covered in the scope of supply, in 1:1 scale.
  - f. Original Equipment Manufacturer / Original Equipment Supplier of Air Pre Heater installed at 200 MW / 500 MW units of NTPC are exempted from site visits / submission of basket drawings & basket element profile drawings for approval.



A Maharatna Company

- g. However, this shall be subject to their submission of
  - a. Proof of their status as OEM OES.
  - b. An undertaking that their supplies shall be in full accordance in all respects with their original supplies, except in such features, where, the technical specification given here, are different from the original features.
  - c. In such features, where, the technical specification given here, are different from the original features OEM / OES will be not exempted from site visits / submission of basket drawings & basket element profile drawings for approval.

5. **BASIC ARRANGEMENT:**

The drawings with the specification give general arrangement of the baskets and dimensions inside the Air Pre Heaters various sectors will **as per site specification.**

6. **BASKET & ELEMENT PROFILE DRAWINGS:**

The successful bidder shall have to submit baskets drawings & basket element profile drawings for NTPC approval before manufacturing of the baskets in accordance with site reference drawings.

**The reference drawings are as per list mentioned below.**

Details as per site specification

Material Code	Type of Baskets	Drawing Number

HE/HIE basket element profile shall be as per reference drawing no: ----- & CE basket element profile shall be as per reference drawing no: ----- (reference drawing will be provided by site)

**For reference mostly following Type of profiles of baskets are in NTPC stations: DU, NF6, DU 2.78, NP 5.5 DUN**

7. **GUARANTEE: Fitment guarantee of baskets to be furnished by successful bidder.**
8. **QUALITY ASSURANCE PLAN:**

The successful bidder shall submit Quality Plan as per reference Quality Plan No – as attached (as per CQA) for NTPC approval, & have to get the material inspected as per NTPC approved Quality Plan.
9. **BILL OF QUANTITY:**

Details shall be provided by site



A Maharatna Company

## 10. TECHNICAL DETAILS DATA SHEET

### 10.1 ELEMETNS:

#### a. PROFILE: **Details as per site specification**

i. Hot / Intermediate End: -----

ii. Cold End: -----

Note: Generally, NTPC having following type of Profiles: DU, NF6, DU 2.78, NP 5.5, DUN

### 10.2 MATERIAL OF HEATING ELEMENT:

#### A. **Hot / Intermediate End Basket Elements: CRCA as per IS: 513 CR3:2008**

Chemical composition of the material of heating element when tested as specified in relevant part of IS: 228

##### Surface finish of material – Matt

	<b>CRCA IS: 513 CR3</b>
CARBON	0.10%
MANGANESE	0.45%
SULPHUR	0.030%
PHOSPHOROUS	0.025%

Max variation permitted in the above-mentioned chemical composition shall be as per IS 513:2008.

**The mechanical & physical properties shall be as per IS513:2008.**

##### Max variation permitted in the above:

CARBON	+/-0.02%
MANGANESE	+/-0.03%
SULPHUR	+/-0.005%
PHOSPHOROUS	+/-0.005%

#### B. **Cold End Basket Elements: CORTEN-A**

##### Chemical composition

	<b>CORTEN-A</b>
CARBON	0.12% max.
MANGANESE	0.20% to 0.50%
SULPHUR	0.050% max
PHOSPHOROUS	0.070% to 0.15%
SILICON	0.25% to 0.75%
COPPER	0.25% to 0.55%
CHROMIUM	0.50% to 1.25%
NICKEL	0.65% max

##### Mechanical properties:

1. Tensile strength: 485 MPa (Min)



A Maharatna Company

- 2. Yield Strength: 345 MPa (Min)
- 3. Elongation in 2 inch -22% (Min)

**10.3 THICKNESS OF SHEETS FOR HEATING ELEMENT:**

Details as per site specification

Thickness of

- a. Hot / Intermediate End heating elements shall be  $\pm 0.05$  mm.
- b. Cold End heating elements shall be  $\pm 0.05$  mm.

**10.4 HEIGHT OF HEATING ELEMENT:**

Details as per site specification

Height of heating elements for

- a. Hot / Intermediate End Baskets =  $\pm 3$  mm each
- b. Cold End Baskets =  $\pm 2$  mm each

**10.5 BASKET HEIGHT:**

Details as per site specification

- a. Hot / Intermediate End:  $\pm 3$  mm.
- b. Cold End:  $\pm 2$  mm

**10.6 NO. OF HEATING ELEMENTS:** each

Details as per site specification

No. of elements (pair) per basket shall be given below: -

Hot End		Intermediate End		Cold End	
Basket Type	No. of Elements (pairs)	Basket Type	No. of Elements (pairs)	Basket Type	No. of Elements (pairs)

**10.7 WEIGHT OF BASKETS / ELEMENTS:**

Details as per site specification

a. Tentative weight of each type of baskets (kg) is indicated below: -

Hot End			Intermediate End			Cold End		
Basket Type	Weight per basket	Weight of element per basket	Basket Type	Weight per basket	Weight of element per basket	Basket Type	Weight per basket	Weight of element per basket

Tolerance in Weight of any basket is  $\pm 5\%$  of standard weight as mentioned in table above.

**10.8 STRUCTURE / FRAME:**

- a. Each basket shall have a sturdy frame / structure with stiffeners of adequate strength so as to enable repeated (yearly) lifting/handling of the baskets without any damage to the elements.



A Maharatna Company

- b. Each Basket (HE/IE) shall be provided with formed angles at four corners for rigidity.
- c. The frame materials for the baskets shall be as per IS: 2062 Gr. – A, minimum thickness of casing plate for cold end baskets should be 3.15 mm.
- d. All the baskets should be reversible upside down.
- e. Weld temporary bracings (to be painted yellow) after assembly of basket for safe transportation.

#### **10.9 INSPECTION AT SUPPLIER'S WORKS**

NTPC representative shall have free access at all times to all parts of the manufacturer's works, while the material of the P.O. is being manufactured. The supplier shall offer him all reasonable facilities without charge to satisfy the latter that the material is being furnished in accordance with this specification. The supplier shall prepare and provide necessary test specimen for testing to be carried out.

#### **10.10 PACKING**

- a. Baskets should be treated with anti-corrosive solution of non-inflammable type to prevent rusting of elements & fire (Rustop 173 – Hindustan Petroleum Corporation Ltd, RP-102 of IOC)
- b. Prior to dispatch the baskets shall be packed suitably in steel crates so as to ensure no damage in transit.
- c. Type of basket shall be punched at suitable location as given in the approved drawing.
- d. Fresh metal surface shall be protected with suitable anti corrosive compound.

Note: Details Bill of Quantities and scope will be provided with tender documents.



## SUPPLIER WORKS FACILITY DATA SHEET

(To be submitted by all bidders as part of their technical bid)

PART-I

1. **NAME OF THE COMPANY:**
2. **ADDRESS:**
3. **LOCATIONS OF WORKS (MANUFACTURING FACILITY):**
4. **FACILITIES WORKING CONDITION AVAILABLE FOR MANUFACTURE OF APH BASKETS  
(Please attach separate sheets if required)**

S N	Description	Make	Capacity	Year of manufacture
1				
2				
3				

5. **TESTING FACILITIES AVAILABLE (Please attach separate sheets if required)**

S N	Description	Make	Capacity / Range	Calibration / Testing authority	Calibration valid up to (date)
1					
2					
3					

6. **DETAILS OF BASKETS SUPPLIED AS ON DATE BIDDING:  
(Please attach separate sheets if required)**

1	2	3	4	5	6	7	8	9
APH MODEL NO.	TYPE OF BASKET	TYPE OF PROFILE OF ELEMENT	MATERIAL DETAILS OF ELEMENT	NO. OF PAIR OF ELEMENTS IN 01 BASKET	THICKNESS OF ELEMENT	HEIGHT OF ELEMENT	QTY OF BASKET	NAME OF CUSTOMER

Complete details are to furnished for assessments of capability of bidders.

Signature & seal of the bidder

