

NTPC Limited
(A Govt. of India enterprise)



Invites

**Expression of Interest
(EOI)**

for

**Metal 3D Printing of Pump Impeller (225 mm dia.) and
successful trial run for at least 4000 hours at NTPC,
Khargone**



DOCUMENTS OF EOI

This EOI document comprises of the following sections:

- (i) Section-I: Invitation for Expression of Interest
- (ii) Section-II: Information to APPLICANTs
- (iii) Section-III: Application Form and Annexures



SECTION-I:

INVITATION FOR EXPRESSION OF INTEREST

DETAILED NOTICE INVITING EXPRESSION OF INTEREST (EOI)

EOI No.: STN-ENGG/2022-23/001

Date: 28.10.2022

Expression of Interest for Metal 3D Printing of Pump Impeller (225 mm dia.) and successful trial run for at least 4000 hours at NTPC, Khargone

- 1.0 NTPC is India's largest power utility with installed capacity of more than 70,000 MW (including its JVs). The company is engaged in the business of generation and sale of bulk power. NTPC aims to become a 130 GW company by 2032. NTPC is having pan-India presence with own stations including 23 coal based, 7 gas based, 1 Hydro, 1 Wind, 18 Solar and 1 Small hydro plant. Under JV, NTPC has 9 coal based, 4 gas based, 8 hydro based and 5 renewable energy projects.
- 2.0 With its such large-scale operating assets, NTPC Limited maintains huge inventory of different O&M spares of more than Rs 7000 Cr. In its endeavor to optimize the spare inventory and to introduce smart spare management system, NTPC is actively considering various new innovative technological solutions.
- 3.0 In furtherance to the above, NTPC has decided to take up a **Pilot Project** wherein a pump impeller will be manufactured through **metallic 3D Printing**, and it shall be put into service to prove its reliable operation, conforming to the standards of the original impeller. NTPC invites Expression of Interest (EOI) from willing APPLICANTs from India for the following:
 - 3D Scanning of a pump impeller of 225 mm diameter and of material ASTM A744 Gr.CF8M (SS 316)
 - Manufacturing the impeller through 3D Printing as a Pilot Project. The 3D printed impeller shall meet the required minimum physical and chemical properties, so that the same can successfully replace /do all the functionalities of the original impeller, in similar working condition, to the satisfaction of NTPC.
 - Demonstration of successful operation / continuous running of the 3D printed impeller for at least 4000 hrs.
The original impeller is in use at NTPC, Khargone (Madhya Pradesh) and the 3D printed impeller shall be tested at the same Power Station.
- 4.0 After identifying the APPLICANTs through EOI, NTPC may come out with a detailed tender for the same. NTPC reserves the right to implement the Pilot Project either on nomination basis or through Request for Proposal (RFP) process amongst the shortlisted parties identified through this EOI Process.

5.0 Eligibility for Participation in EOI

- The APPLICANT shall be a Company / Sole Proprietorship / Partnership / Limited Liability Partnership / Consortium / Cooperative Society registered in India.
- The APPLICANT should have in a single contract Reverse engineered a metallic rotating functional component (gear, impeller, blower, fan blades, coupling etc.) and manufactured the same through 3D printing. **PO copies of such executed contract/contracts and End user certificate of successful operation shall be submitted as supporting documents.**
- The APPLICANT should have its own facilities of metallic 3D printing and may own/sublet the work of 3D scanning and post 3D printing treatment processing. However, for the successful operation of 3D printed pump impeller for minimum period of 4000 run hrs., the end-to-end responsibility shall lie with the APPLICANT.

6.0 DOWNLOAD AND SUBMISSION OF EOI

- A. Interested APPLICANTS may download the documents of EOI **free of cost** from <https://ntpctender.ntpc.co.in>
- B. For consideration of EOI, APPLICANTS are required to e-mail signed and scanned copy of EOI, duly filled and complete in all respect, through e-mail mentioned hereunder.
Email: soumyajitmukharjee@ntpc.co.in / akhileshpoddar@ntpc.co.in
- C. APPLICANTS may send their queries related with EOI through e-mail at soumyajitmukharjee@ntpc.co.in / akhileshpoddar@ntpc.co.in
- D. **Date of publication of EOI : 28.10.2022**
- E. **Last date for submission of Application: 12.11.2022 (till 17:00 hrs. IST)**
- F. **Last date for queries/ seeking clarifications: 10.11.2022**
- G. **Response Validity: 6 months from the last date for EOI Submission**
- H. NTPC shall not be liable for any postal/ Mail delivery issue and delays whatsoever in receipt of EOI documents and EOI received after the stipulated date and time shall not be entertained. EOIs submitted without supporting documents (as mentioned in Sec-I clause 5.0 and Annexures mentioned in Sec-III) will be summarily rejected.
- I. NTPC reserves the right to reject or accept any or all applications, cancel/withdraw the EOI process without assigning any reason whatsoever, and in such case, APPLICANT shall not have any claim arising out of such action.
- J. Language of the responses to EOI or any query/clarifications/correspondences shall be in English only.
- K. APPLICANTS shall mention the name and contact details of two persons, with complete address, phone number and email id.

- L.** The responsibility of Compliance of all applicable statutory provisions are within the entire scope of the Agency and shall indemnify NTPC in case of any claim, procedure, dispute what soever towards the execution of the work in its entirety.
- M.** NTPC Ltd. may, at its sole discretion, ask for additional information/ documents and/ or seek clarifications from the APPLICANT(s) after the Deadline for submission of response, inter alia, for the purpose of removal of inconsistencies or infirmities in their responses.

7.0 Validity of Responses

The APPLICANT shall submit the responses which shall remain valid up to six (6) months after the response Deadline (“Response Validity”). NTPC reserves the right to reject any response, which does not meet the above-mentioned validity requirement.

NTPC may solicit the APPLICANT’s consent for an extension of the period of validity of the response. The request and the response in this regard shall be in writing. In the event any APPLICANT refuses to extend its response validity as requested by NTPC, NTPC shall terminate processing of such APPLICANT’s responses. An APPLICANT accepting NTPC request for validity extension shall not be permitted to modify its response.



SECTION-II: INFORMATION TO APPLICANTS

- 1.0** The impeller of a centrifugal pump handling clarified water at ambient temperature has been identified for the **pilot project** of 3D printing. The following details are tabulated below:

Location	Khargone Super Thermal Power Station, Khargone, Madhya Pradesh
Impeller dia	225 mm
Design flow of pump	60 m ³ /hr
Design Head of the pump	17 MWC
Shut-off head of the pump	19.5 MWC
Nominal speed	1450 rpm
Material of construction - Impeller	ASTM A744 Gr.CF8M (SS 316)

2.0 Objective of EOI

Objective of the EOI is to identify qualified players who are interested to take up the 3D printing of the above impeller. Refer to clause 3.0 of Section-I for the scope of the **pilot project**.



SECTION-III: APPLICATION FORM AND ANNEXURES

Instructions to APPLICANTS

- This Expression of Interest (EOI) is to identify interested parties for the Scope of Work mentioned particularly at clause no-3 of the Detailed Notice Inviting Expression of Interest (EOI)
- For expression of interest, Application Form and Annexures given in Section-III shall be duly filled and sent to NTPC by the APPLICANT in soft copy. Following are the list of Annexures:
 - **Annexure -1:** Application Form
 - **Annexure- 2:** APPLICANT's Profile
 - **Annexure- 3:** Acceptance of Fraud Prevention Policy of NTPC
 - **Annexure- 4:** Any other information
- **APPLICANTS should go through Section-I and Section-II thoroughly before filling and submitting the application.**
- Along with submission of application & form, APPLICANT must ensure that they have provided following information without which EOI shall be rejected:
 - GSTN and PAN of firm (or individual if applying as individual).
 - Address/ Contact number/ e-mail address/ Name of Contact person.

(EXPRESSION OF INTEREST: APPLICATION FORM)

(To be submitted on APPLICANT's Letter Head)

Ref No.

Date:

**Additional General Manager, Station Engineering
NTPC Limited, WR-II HQ,
Plot No. 87, Sector 24, Atal Nagar, Nava Raipur
Raipur, Chhattisgarh-492018**

Dear Sir,

Sub: Expression of Interest for Metal 3D Printing of Pump Impeller (225 mm dia.) and successful trial run for at least 4000 hours at NTPC, Khargone, as per Detailed Notice Inviting Expression of Interest (EOI), (Ref No. EOI No.: STN-ENGG/2022-23/001) dated 28.10.2022

We, the undersigned, express our interest for the subject EOI and declare the following:

- (a) We are duly authorized to represent and act on behalf of _____ (name of the firm/company/individual).
- (b) We have examined and have no reservations to the EOI document including Amendment No(s) & Clarification No(s) _____ (if any).
- (c) With reference to your invitation for EOI dated _____, we are furnishing herewith all the required details as per the prescribed Annexures.
- (d) We hereby express our willingness to participate in RFP/ forth coming tender as and when NTPC Ltd invite the same.
- (e) NTPC and /or its authorized representatives are hereby authorized to conduct any inquiries or investigations to verify the statements, documents and information submitted in connection with this application and to seek clarifications from our bankers/suppliers and clients.
- (f) This application will also serve as authorization to seek/ request information as deemed necessary from any individual or authorized representative of any institution referred in the supporting document provided by APPLICANT.

(Annexure-1)

(g) NTPC and /or its authorized representatives may contact the following nodal persons for further information on any aspects of the application:

Name and designation of contact Person	Address for Communication	Telephone No	Email ID

(h) This application is made in the full understanding that:

Through this EOI, NTPC intends to identify interested and capable parties in India for the following work:-

- 3D Scanning of a pump impeller of 225 mm diameter and of material ASTM A744 Gr.CF8M (SS 316)
- Manufacturing the impeller through 3D Printing as a Pilot Project. The 3D printed impeller shall meet the required minimum physical and chemical properties, so that the same can successfully replace /do all the functionalities of the original impeller, in similar working condition, to the satisfaction of NTPC.
- Demonstration of successful operation / continuous running of the 3D printed impeller for at least 4000 hrs.

The original impeller is in use at NTPC, Khargone (Madhya Pradesh) and the 3D printed impeller shall be tested at the same Power Station.

This EOI is not intended for empanelment of APPLICANT or pre-qualification of APPLICANT.

1. EOI process will be subject to verification of all information submitted at the discretion of NTPC.
2. NTPC Ltd reserves the right to reject or accept any or all applications, cancel/withdraw the EOI process without assigning any reason whatsoever and in such case, APPLICANT shall not have any claim arising out of such action.

(i) We declare that we have read and abide by the provisions of Fraud Prevention Policy of NTPC and submit the form of Acceptance of Fraud Prevention Policy duly filled as per NTPC's format.

(Annexure-1)

- (j) The undersigned declare that the statements made and the information provided in the duly completed application are complete, true and correct in every detail.

SIGNATURE

(AUTHORISED SIGNATORY)

(OFFICE STAMP)

DATE _____ NAME _____ DESIGNATION _____

PLACE _____

Applicant's Profile

1. **Name of the interested party:**

2. **Address** :

3. **Classification of Company**

Public Limited

Partnership

LimitedPrivate

Limited

Others Please Specify:

4. **Contact Details** NAME:

DESIGNATION:

MOBILE NO.:

EMAIL-ID:

5. Years of experience in the business:

6. Annual Turnover

7. Details of recently executed projects along with project cost, no. of running hrs. of reversed engineered product, similar to categories mentioned in eligibility section (Section -I, clause 5.0):

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.....

8. PO Copy of the above contracts enclosed ----- (Yes / No)

9. End user certificate for successful operation for the above contracts enclosed ----- (Yes / No)

(FORM FOR ACCEPTANCE OF FRAUD PREVENTION POLICY)

We have read the contents of Fraud Prevention Policy of NTPC displayed on the tender website <https://ntpctender.ntpc.co.in/> and undertake that we shall strictly abide by the provisions of Fraud Prevention Policy of NTPC.

SIGNATURE

(AUTHORISED SIGNATORY)

(OFFICE STAMP)

DATE _____ NAME _____ DESIGNATION _____

PLACE _____

(ANY OTHER INFORMATION)

If Applicant desires to share any other additional Information relevant to the work / assignment like brochure, future plan or any suggestion, it may be given in this Annexure.