

INVITATION FOR EXPRESSION OF INTEREST

NTPC Limited

(A Government of India Enterprise)



Invites

EXPRESSION OF INTEREST (EOI)

For

**Exploring the OEMs/ Expert Agency/Research Institute for design of Steam Turbine at 55%
TMCR Load as best efficiency point for New Upcoming sub-critical & super-critical Units**

INVITATION FOR EXPRESSION OF INTEREST

DOCUMENTS OF EOI

This EOI document comprises the following sections:

- (i) Section I : EOI Information
- (ii) Section II : Introduction
- (iii) Section III : Instructions to the Applicants
- (iv) Section IV : Consideration of Response
- (v) Section V : Application Form and Annexures

INVITATION FOR EXPRESSION OF INTEREST

Section - I

EOI Information

INVITATION FOR EXPRESSION OF INTEREST

DETAILED NOTICE INVITING EXPRESSION OF INTEREST (EOI)

EOI No.: NTPC/EOC/EOI/STMTUR/2026-27

Date: 12.06.2026

NTPC Limited is Inviting an Expression of INTEREST (EOI) exploring the OEMs/ Expert Agency/Research Institute from India for design of Steam Turbine at 55% TMCR Load as best efficiency point for New Upcoming sub-critical & super-critical Units.

1. NTPC Limited (A Government of India Enterprise) intends to explore the Expert Agency/OEMs for design of Steam Turbine at 55% TMCR Load as best efficiency point for New Upcoming sub-critical & super-critical Units. In this regard, NTPC Limited invites Expression of Interest (EOI). (Hereinafter called APPLICANT).

Note: This EOI is to assess prospects of OEMs/Expert Agency/Research Institute from India for design of Steam Turbine at 55% TMCR Load as best efficiency point for New Upcoming sub-critical & super-critical Units. After identifying the APPLICANTS through EOI who are interested in design of Steam Turbine at 55% TMCR Load as best efficiency point for New Upcoming sub-critical & super-critical Units and fulfilling all technical requirements, "Applicant" base shall be prepared.

2. DOWNLOAD AND TIMELINES FOR SUBMISSION OF EOI

- a. Interested APPLICANTS may download the documents of EOI free of cost from www.ntpctender.com & <https://eprocurementpc.nic.in>

b. **Last date for submission of EOI** : **15.07.2026**

c. **Response Validity** : **2 months from Last Date of EOI Submission**

3. NTPC Limited encourages submission of EOI in soft copy. For consideration of EOI, APPLICANTS are required to e-mail softcopy of EOI, completed in all respect, through e- mail mentioned hereunder. If APPLICANTS also wish to submit hard copies of the EOI, the same can be submitted either in person or by registered/ speed post till the last date of submission of EOI to the following address: -

To: Satyendra Kumar Singh, DGM (PEM-Mech/TG)
Email: satyendraksingh@ntpc.co.in
Project Engineering (Mechanical),
NTPC Limited, SRHQ, NTPC Bhavan, KavadiGuda, Secunderabad-500080

4. NTPC Limited 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. NTPC bears no responsibility or liability of any kind in reference to the EOI.

INVITATION FOR EXPRESSION OF INTEREST

Section - II

Introduction

INVITATION FOR EXPRESSION OF INTEREST

1. INTRODUCTION

- i. NTPC Limited is a Govt. of India Enterprise. NTPC group produces electricity through its cluster of gas, coal, hydro and RE based power stations of more than 90 GW capacity spanning across the country.
- ii. NTPC Limited, in keeping focus on evolving power market, intends to explore for OEMs/ Expert Agency/Research Institute for design of Steam Turbine at 55% TMCR Load as best efficiency point for New Upcoming sub-critical & super-critical Units.
- iii. NTPC Limited intends to engage a technically competent and experienced OEMs/ Expert Agency/Research Institute to undertake a comprehensive study for recommending Steam turbine design with best efficiency/cycle heat rate at 55% of maximum continuous rating (MCR) load. The study will involve identification, evaluation, and recommendation of design modifications and advanced technologies for improving the heat rate and efficiency of new upcoming sub-critical & supercritical steam turbine units at 55% TMCR load, while maintaining operational flexibility, reliability, and grid support requirements. Study aims to cover the upcoming entire fleets of sub-critical units 200 MW, 500 MW, 600 MW and super-critical units of 660 MW & 800 MW capacity.
- iv. Based on response in EOI, NTPC Limited intends to consolidate the interested 'Applicant' base and get the said study done. Tendering process and associated modalities in this regard shall be subsequently finalized. 'Applicant' are requested to submit their budgetary offer also with this EOI for conducting said study.
- v. The essential data to be submitted with the EOI application and experience of the 'Applicant' for this EOI is detailed in subsequent sections of this document.

INVITATION FOR EXPRESSION OF INTEREST

2. INTENT OF THE EXPRESSION OF INTEREST (EOI)

The purpose of this Expression of Interest (EOI) is to identify and engage reputed Steam turbine OEMs, Research institutions and Expert Agencies from India possessing proven expertise in steam turbine design and thermal performance optimization for utility-scale power plants.

For design of Steam Turbine at 55% Load as best efficiency point, the study is intended but not limited to:

- i. Identify innovative steam turbine design features and technologies capable of improving heat rate and efficiency at 55% Load.
- ii. Evaluate global best practices adopted in sub-critical steam turbine units and supercritical steam turbine units for flexible and efficient low-load operation.
- iii. Assess opportunities for optimization of HP, IP, and LP turbine steam paths to minimize efficiency degradation at 55% Load.
- iv. Examine advanced blade profiles, sealing technologies, exhaust hood designs, moisture management systems, and other turbine improvements for enhanced performance at 55% Load.
- v. Study thermodynamic cycle modifications and regenerative cycle optimization measures that can improve overall plant heat rate at 55% Load.
- vi. Identify design provisions that may be incorporated to achieve superior operating efficiency at part load of 55% and without much attention at full load performance i.e., at 100% Load. However, unit capability for 105% shall be also ensured with respect to grid requirements.
- vii. Evaluate advanced control philosophies, sliding pressure operation strategies, Overload valve use strategy, Control stages design (If applicable), Governing system design and flexible operation features suitable for upcoming thermal power stations. Further, operational strategies to reduce the start-up time of Steam Turbine in view of two-shift operation.
- viii. Benchmark domestic and international technologies, research findings, and operating experiences relevant to part load steam turbine efficiency enhancement.
- ix. Quantify the potential heat rate improvement achievable through recommended design interventions.
- x. Develop technical guidelines and design recommendations for incorporation in future 200/500/600 MW sub-critical, 660 MW and 800 MW supercritical steam turbine procurement specifications.
- xi. Support NTPC in developing next-generation thermal power units capable of meeting future grid flexibility requirements while maintaining best in class efficiency at 55% Load with reliability.

INVITATION FOR EXPRESSION OF INTEREST

Section - III

Instructions to the Applicants

INVITATION FOR EXPRESSION OF INTEREST

1. The Applicants should note that:

- i. Applicants shall submit their Expression of Interest (EOI) along with all relevant supporting documents demonstrating their technical expertise and experience.
- ii. Applicants shall clearly indicate their understanding of the design study objectives and proposed approach for achieving heat rate improvement in upcoming 200/500/600 MW sub-critical, 660 MW and 800 MW super-critical steam turbine units at 55% Load.
- iii. Applicants shall provide details of relevant assignments, studies, research work, or projects executed in the field of steam turbine design, thermal performance improvement and cycle optimization.
- iv. Applicants shall furnish details of key technical personnel proposed for the study, including their qualifications, experience, and areas of specialization.
- v. Applicants shall provide details of analytical tools, software, modelling capabilities, laboratories, testing facilities, and proprietary technologies available with them.
- vi. Applicants shall submit details of publications, patents, technical papers, research activities, or technology developments relevant to steam turbine performance enhancement, as applicable.
- vii. Applicants shall highlight their experience in subcritical and supercritical steam turbine technologies, particularly for utility-scale units of 200/500 MW and above.
- viii. Applicants shall indicate their experience in low-load operation, flexible operation, part-load efficiency improvement, and advanced turbine cycle optimization.
- ix. Applicants shall furnish documentary evidence in support of all claims regarding technical expertise, project experience, and their capabilities.
- x. All information submitted shall be complete, accurate, and duly authenticated by an authorized representative of the applicant.
- xi. NTPC reserves the right to seek additional information, clarifications or technical discussions from any applicant during the evaluation process.
- xii. Submission of an EOI shall not constitute any commitment by NTPC for issuance of a tender, award of work, or reimbursement of any costs incurred by the applicant.
- xiii. NTPC reserves the right to accept or reject any or all EOIs without assigning any reason thereof.
- xiv. Applicant shall make themselves duly aware with CEA & CERC regulations which shall be taken care while performing the above Steam Turbine design at 55% Load and propose their recommendation. Design study shall also include the key recommendation which needs to be taken up with regulatory bodies in respect of heat rate improvement.

INVITATION FOR EXPRESSION OF INTEREST

2. Enquiries and clarifications

Any clarifications on the EOI may be sought to the following via email:

To: Satyendra Kumar Singh, DGM (PEM-Mech/TG & System)
Email: satyendraksingh@ntpc.co.in
Project Engineering (Mechanical),
NTPC Limited, SRHQ, NTPC Bhavan, Kavadi guda, Secunderabad-500080

3. Corrigendum

At any time before the last date of submission of EOIs, NTPC may, for any reason, whether at its own initiative or in response to a clarification requested by an Applicant, modify the EOI document. The amendment will be posted on the website and will be binding on the Applicants and the Applicant will give due consideration to the same, while they submit their EOIs, and would invariably enclose documents/ information, as required, on account of the amendment, as a part of the EOI. NTPC may, at its discretion, extend the deadline for the submission of EOIs.

4. Preparation of the response to EOI

The application of EOI consists of the following:

- (a) Annexure 1,2, & 3 of Section-V

5. Validity of the responses

The Applicant shall submit the responses which shall remain valid up to two (2) months after the response Deadline ("Response Validity"). NTPC reserve the right to reject any response, which does not meet the aforementioned 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.

INVITATION FOR EXPRESSION OF INTEREST

6. Submission of the response to EOI

The responses to the EOI are to be submitted in soft copy via below e-mail format

To: satyendraksingh@ntpc.co.in

Ref. Eoi No. **Dated**

Submitted to:

To: Satyendra Kumar Singh, DGM (PEM-TG & System)

Email: satyendraksingh@ntpc.co.in

Project Engineering (Mechanical),

NTPC Limited, SRHQ, NTPC Bhavan, Kavadi guda, Secunderabad-500080

Submitted by:

Name, address & contact no. of the Applicant

All the pages of the response should be duly stamped and signed by the authorized signatory in whose favour the Power of Attorney is issued.

The responses to the EOI should be submitted within the Deadline as mentioned in this document.

7. Costs and expenses towards response to EOI

The Applicants shall be responsible for all the costs associated with the preparation of the response and participation in discussions and finalization & execution of the documents related with this EOI, NTPC shall not be responsible in any way for such costs, regardless of the conduct or outcome of this short-listing/ selection process.

8. Confidentiality

The Applicants undertake to hold in confidence this EOI and any document related or pursuant to this EOI and not to disclose the terms and conditions of the transaction contemplated hereby to third parties, except:

(a) To their professional advisors.

(b) To their officers, contractors, employees, agents or representatives, financiers, who need to have access to such information for the proper performance of their

INVITATION FOR EXPRESSION OF INTEREST

activities.

- (c) Disclosures required under applicable Law, without the prior written consent of the other parties of the concerned agreements.

Provided that the Applicant(s) agrees and acknowledges that NTPC may at any time, disclose the terms and conditions of this EOI and any document related or pursuant to this EOI to any person, to the extent stipulated under the applicable Law.

9. Disclaimer

- (a) This Expression of Interest (EOI) has been prepared by NTPC Ltd. to consolidate the interested "Applicant" base for the OEMs/ Expert Agency/Research Institute for design of Steam Turbine at 55% TMCR Load as best efficiency point for New Upcoming sub-critical & super-critical Units.
- (b) In submitting an expressed EOI in response to the EOI, the Applicants certify that it understands, accepts and agrees to the disclaimers on this page. Nothing contained in any other provision of the EOI nor any statements made orally or in writing by any person or party shall have the effect of negating or superseding any of the disclaimers set forth herewith.

INVITATION FOR EXPRESSION OF INTEREST

Section-IV

Consideration of Response

INVITATION FOR EXPRESSION OF INTEREST

RESPONSIVENESS/EVALUATION METHODOLOGY

1. Responsiveness check

The responses submitted by Applicants shall be scrutinized to establish expertise in Steam Turbine design and thermal performance optimization for utility-scale power plants.

- a. Responses that are incomplete, i.e. not accompanied by any of the applicable formats inter alia covering letter, applicable undertakings, provided in more details at annexure in Section-V.
- b. Responses not accompanied by Essential Information as prescribed in Annexure 3 in Section-V.
- c. Responses not signed by authorized signatory and / or stamped in the manner indicated in this EOI.
- d. Material inconsistencies in the information/ documents submitted by the Applicant.
- e. An Applicant submitting more than one response to this EOI either itself or through an affiliate or subsidiary company.
- f. Response validity being less than that required as per Clause 5 of section-III of this EOI.
- g. Response being conditional in nature.
- h. Response not received by the response Deadline.
- i. Response having Conflict of Interest.
- j. Applicant delaying in submission of additional information or clarifications sought by NTPC, as applicable.

All response to the EOI that shall meet the responsive check requirements set out above in this section of the EOI document shall be considered as responsive. In case of non- submission of relevant details as above, the responses may be considered as “**non-responsive**”, at the sole discretion of NTPC and will not be considered further.

INVITATION FOR EXPRESSION OF INTEREST

Section-V

Application Form & Annexures

INVITATION FOR EXPRESSION OF INTEREST

Annexure-1

FORMAT FOR COVERING LETTER CUM UNDERTAKING

(The covering letter should be on the Letter Head of the Applicant)

Date : _____

Place : _____

To,

.....

Sub.: (INVITATION FOR EXPRESSION OF INTEREST)

Ref.: Eoi No. _____, dated _____ (the “EOI”)

Dear Sir,

We, the undersigned [insert name of the “Applicant”] having read, examined and understood in detail the **(INVITATION FOR EXPRESSION OF INTEREST)**.

We confirm that neither we nor any of our Parent Company/ Affiliate/ Ultimate Parent Company has submitted response other than this response directly or indirectly in response to the aforesaid EOI.

1. We give our unconditional acceptance to the EOI, issued by NTPC Limited, as amended. In token of our acceptance to the EOI, the same have been signed & stamped by us and enclosed to the response. We hereby confirm that the provisions of the EOI shall be binding on us.
2. We are not from a country sharing land border with India.
3. We have submitted our response strictly as per provisions and formats of the EOI, without any deviations, conditions and without mentioning any assumptions or notes.
4. We hereby unconditionally and irrevocably agree and accept that the decision made by NTPC Limited in respect of any matter regarding or arising out of the EOI shall be binding on us. We hereby expressly waive any and all claims in respect of EOI process. We confirm that there are no litigations or disputes against us, which materially affect our ability to participate or function under the obligations with regard to EOI.

INVITATION FOR EXPRESSION OF INTEREST

5. Details of the contact person are furnished as below:
Name:
Designation:
Address:
Contact numbers:
email id:
6. We are enclosing herewith the entire response containing duly signed formats in electronic format sent via email to: ----- as per the EOI for consideration.
7. It is confirmed that our response is consistent with all the requirements of submission as stated in the EOI and subsequent communications from NTPC Limited, if any.
8. The information submitted in our response is complete, strictly as per the requirements stipulated in the EOI and is correct to the best of our knowledge and understanding. We would be solely responsible for any errors or omissions in our response.
9. We confirm that all the terms and conditions of our response are valid for acceptance for a period of two (2) months from the response Deadline.
10. We confirm that we have not taken any deviation so as to be deemed “**Non-Responsive**” as stipulated in Section-IV of this EOI.
11. We understand that you are not bound to accept any response you receive.

We remain,

Yours sincerely

(Name, Designation and Signature of Authorized Person in whose name Power of Attorney is issued)

INVITATION FOR EXPRESSION OF INTEREST

Annexure-2

INFORMATION TO BE SUBMITTED BY APPLICANT

(Note: Documents in support of meeting the respective requirement shall be submitted by the Applicant.)

1. Name of the Company/ Research institute/ Expert agency/OEM:
2. Legal status of the Company / Research institute/ Expert agency / OEM:
3. Brief description of the Company / Research institute/ Expert agency / OEM including details of its business groups/subsidiaries/ affiliates:
4. Existing design office / R&D office / R&D Lab facility / Manufacturing facilities (If any) – Locations (Country name):

NOTE: Strikethrough wherever not applicable

5. Date of Incorporation:
6. Date of Commencement of Business:
7. Full address including Telephone nos. / Fax nos.:
 - a. Registered Office:
 - b. Head Office:
 - c. Address for communication:
 - d. Contact Details:
 - e. Office Address in India, if any:
8. Documents to be enclosed:

Credentials – Relevant Product/System catalogues, Research papers published, Experience /Reference List, Copies of Customer Certificates, collaborations/tie-ups with designers and manufacturers (as applicable), Supporting document for technology ownership (as applicable), details of manufacturing facility including location and country name, quality accreditations, etc.

9. Any other documents considered relevant.

(Sign & Seal)
Authorized signatory

INVITATION FOR EXPRESSION OF INTEREST

Annexure-3

INFORMATION TO BE SUBMITTED BY APPLICANT SEPARATELY FOR THEIR DESIGN AND EFFICIENCY OPTIMISATION EXPERIENCE AT PART LOAD FOR 200/500 MW AND ABOVE UNIT SIZES (Sub-critical/Super-critical)

Essential Information:

1. Details of past Steam Turbine Performance Improvement design studies performed at part load. The details of design study to be submitted as per table below:

Sl. No.	Particulars	Details to be Furnished by Applicant
a)	Project Name	Name of Power Plant / Utility
b)	Client Name	Owner/Utility Name
c)	Country	Country where study was performed
d)	Year of Completion	Year of study completion
e)	Unit Rating	MW Capacity of Unit
f)	Steam Turbine Type	Subcritical / Supercritical / Ultra-supercritical
g)	Turbine Configuration	Tandem Compound / Cross Compound / Single Reheat / Double Reheat
h)	Condenser Cooling System	Water cooled condenser / Air cooled condenser
i)	Scope of Study	Heat Rate Improvement / Flexible Operation / Steam Path Optimization / Cycle Optimization
j)	Minimum Unit Load Considered for Heat rate optimization point	Minimum load (% TMCR) covered under study
k)	Baseline Gross Heat Rate	kcal/kWh before implementation
l)	Improved Gross Heat Rate	kcal/kWh after implementation/recommendation
m)	Net Heat Rate Improvement Achieved	kcal/kWh
n)	Percentage Heat Rate Improvement	%
o)	Turbine Areas Studied	HP / IP / LP Turbine / Governing System / Seals / Exhaust Hood / Cycle components modified etc.

INVITATION FOR EXPRESSION OF INTEREST

p)	Major Recommendations Proposed	Brief description
q)	Steam Path Modifications Recommended	Yes / No (Provide details)
r)	Blade Path Redesign Involved	Yes / No (Provide details)
s)	Advanced Sealing Technology Proposed	Yes / No (Provide details)
t)	Exhaust Hood Optimization Proposed	Yes / No (Provide details)
u)	Variable Pressure Operation Evaluated	Yes / No (Provide details)
v)	Flexible Operation Assessment Conducted	Yes / No (Provide details)
w)	CFD Analysis Performed	Yes / No (Provide details)
x)	Thermodynamic Cycle Modelling Performed	Yes / No (Provide details)
y)	Capital Investment incurred in efficiency improvement at part load	INR/Applicable currency
z)	Estimated Payback Period	Years
aa)	Recommendations Implemented by Client	Fully / Partially / Not Implemented
bb)	Verified Performance Improvement After Implementation	Yes / No
cc)	Client Reference Contact Details	Name, Designation, Email, Phone No.
dd)	Supporting Documents Enclosed	Completion Certificate / Client Letter / Performance Report
ee)	Any adverse experience after implementation of recommendation	Yes / No (Provide details)
ff)	Any specific Steam Turbine based plant included in design study for efficiency improvement at part load	Yes / No (Provide details)
gg)	Implementation time of proposed recommendation including shutdown period required of plant (If any)	Months

Note: Applicants shall submit documentary evidence substantiating the claimed efficiency improvement at part load, including performance test reports (If available), client certificates, published papers, completion certificates, or equivalent technical documents.

INVITATION FOR EXPRESSION OF INTEREST

2. Budgetary offer:

Applicants shall submit a budgetary offer for carrying out the said study, including details of the study methodology, deliverables, estimated man-month deployment, travel requirements (if any), and validity of the budgetary offer.