

(INVITATION FOR EXPRESSION OF INTEREST)

NTPC Limited

(A Government of India Enterprise)



INVITATION FOR

EXPRESSION OF INTEREST (EOI)

For

**Supply, Engineering, design, installation, and commissioning of
Mechanical Energy storage system (MESS) demonstration project at
Talcher Thermal Power station, NTPC Limited, Orissa-India**

(INVITATION FOR EXPRESSION OF INTEREST)

DETAILED NOTICE INVITING EXPRESSION OF INTEREST (EOI)

EOI No.: NTPC/PE/EOI/001/2023-24

Date: 07-08-2022

NTPC is inviting an Expression of Interest for Supply, Engineering, design, installation, and commissioning of Mechanical Energy storage system demonstration project at Talcher Thermal Power station, Orissa-India

1. NTPC Limited (A Government of India Enterprise) intends to commission mechanical energy storage project at it TTPS station in Orissa, India. In this regard, NTPC Limited invites Expression of Interest (EOI) from any Indian entity. (Hereinafter called **APPLICANT**).

Note: This EOI is to identify prospective entities for the successful commissioning of mechanical energy storage demonstration project at TTPS.

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** : **05.09.2023**

3. NTPC 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 copy 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: bibekkumar@ntpc.co.in, surajprakash@ntpc.co.in
CC to: akhilagarwal@ntpc.co.in

Project Engineering (Mechanical),
NTPC Limited,
Kavadiguda, Hyderabad

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

(INVITATION FOR EXPRESSION OF INTEREST)

Detailed EOI

(INVITATION FOR EXPRESSION OF INTEREST)

1. INTRODUCTION

- i. NTPC Limited produces around 300 billion units of electricity annually through its cluster of gas, coal, hydro and RE based power stations of more than 73 GW capacity spanning across the country. Further NTPC plans targets RE capacity of 60 GW by 2032.
- ii. NTPC Ltd., in keeping focus on power generation in environmentally responsible manner, has already installed RE capacity over 3000 MW including JVs& subsidiaries. Renewable energy solutions struggle to replace fossil fuel power due to intermittency of the generation source and the lack of economic and sustainable energy storage solutions. Cost-effective energy storage is required to increase the amount of electricity that can be delivered to the grid from renewable energy sources in a balanced way that supports grid integration.
- iii. The concept design of the proposed mechanical energy storage system is to convert electrical energy into potential energy for storage and then back to electrical energy on demand.
- iv. Accordingly, NTPC intends to set up a MESS demonstration project at TTPS station of NTPC. The ultimate objective is to support renewable energy by exploring energy storage solutions .

2. PROJECT INFORMATION

NTPC TTPS has an existing boiler steel structure of approximately 50-meter height which shall be repurposed for installation of MESS.

In this design of mechanical storage system planned to be implemented at NTPC TTPS, it is envisaged to have few concrete/ash blocks hanging from a beam at 50-meter height which will fall one after the other in a controlled manner (Constant velocity) without any time lag between the falls ensuring continuous power generation.

The modular system shall consist of multiple electric rope winches raising and lowering weights parallel to the Boiler columns. The winches shall be ground mounted with top pulleys. Standard industry components shall be used for raising loads to column heights with the help of electric motors of rated capacity. Drums, ropes, clamps and pulleys, brakes, clutches and other components shall be selected as per applicable codes.

The winches shall be arranged along a common shaft with individual winches getting engaged/disengaged to enable consecutive fall of weights. The power to the winch motor shall be supplied from the Switchgear/MCC connected to the grid/NTPC supply.

(INVITATION FOR EXPRESSION OF INTEREST)

3. INTENT OF THE EXPRESSION OF INTEREST (EOI)

This purpose of this EOI is to identify prospective entities for the successful commissioning of mechanical energy storage demonstration project at TTPS.

4. CRITERIA FOR PARTICIPATION:

- i. The Applicant of the EOI should be any entity capable of Supplying, Engineering, designing, installation, and commissioning of Mechanical Energy storage system.
- ii. The broad scope of supply and tentative sketch for the intended mechanical storage system is attached as Annexure A and Annexure B.

(INVITATION FOR EXPRESSION OF INTEREST)

4. The Applicants should note that:

- a. For expression of interest, Application Form and Annexures given shall be duly filled and sent to NTPC by the APPLICANT in soft copy.
- b. Applicants should go through EOI document thoroughly before filling and submitting the application form and annexures.
- c. Applicants shall mention the name and contact details of two persons, with complete address, phone number and email id.
- d. 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.
- e. This EOI is non-committal.

5. Enquiries and clarifications

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

To: bibekumar@ntpc.co.in, surajprakash@ntpc.co.in
CC to: akhilagarwal@ntpc.co.in

6. 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.

7. Preparation of the response to EOI

The application of EOI consists of the following:

- (a) Filled up all annexures.

(INVITATION FOR EXPRESSION OF INTEREST)

8. Submission of the response to Eoi

All the pages of the response should be duly signed by the authorized signatory.

The responses to the EOI should be submitted within the Deadline at the address provided in this EOI to the following emails:

- I. bibekkumar@ntpc.co.in, surajprakash@ntpc.co.in
- II. akhilagarwal@ntpc.co.in

9. Opening of responses to the EOI

The responses to the EOI shall be opened as per the time schedule 15:00 HRS on 06.09.2023. In the event of any of above dates falling on a day which is not a working day or which is a public holiday, the responses shall be opened on the next working day at the same and time.

10. Costs and expenses towards response to EOI

The Applicants shall bear all the costs associated with the preparation of the response and participation in discussions and finalization & execution of the documents related with this EOI, regardless of the conduct or outcome of this short-listing/ selection process.

(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.: Eol No. _____, dated _____(the “Eol”)

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, as amended. In token of our acceptance to the EOI, the same have been signed & stamped by us and enclosed to the response.
2. 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.
3. We hereby unconditionally and irrevocably agree and accept that the decision made by NTPC 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)

4. Details of the contact person are furnished as below:
Name:
Designation:
Address:
Contact numbers:
email id:
5. We are enclosing herewith the entire response containing duly signed formats in electronic format sent via email to: ----- as per the EOI for consideration.
6. It is confirmed that our response is consistent with all the requirements of submission as stated in the EOI and subsequent communications from NTPC, if any.
7. 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.

We remain,

Yours sincerely

(Name, Designation and Signature of Authorized Person)

(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 Entity:
2. Legal status of the Entity:
3. Brief description of the Entity including details of its business groups/subsidiaries/ affiliates:
4. Existing commercial/ demonstration facilities (if any)– Details of similar works/other works executed, locations, Capacity
5. Date of Incorporation (if any):
6. Date of Commencement of Business (if any):
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. Maximum capacity of winch installed till date
9. Number of years of successful operation of winch mentioned at Sl. No. 8.
10. Documents to be enclosed:

Technical Credentials – Relevant Product/System catalogues, Experience /Reference List (if any), Copies of Customer Certificates, Engineering strengths, collaborations/tie-ups with manufacturer (if applicable), quality accreditations, logistics infrastructure etc.

Financial Credentials – Copies of Audited Financial statements (Annual Reports) for last 3 years (if any).

11. Any other documents considered relevant.

(Sign & Entity Seal)
Authorized signatory

(INVITATION FOR EXPRESSION OF INTEREST)

(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.

(INVITATION FOR EXPRESSION OF INTEREST)

Annexure-A

Indicative broad scope of supply

(Exact BOQ will be known during specification/engineering stage)

Sl. No	Item Description
Mechanical	
1	Rope Elevators with pulley and rope
2	Gear system
2	Clutch/ Brake
3	Power shaft
4	Open passenger lift
Civil	
6	Sheeting on existing boiler structure from top to 15 meters below and roof of boiler
7	Concrete of Grade M25 (including shuttering, reinforcement at 100 kg/m3, excavation PCC etc.)
8	Mobile masses
9	Air-conditioned Control Room
10	Switchgear room
Electrical	
11	LT cable for connection to main switchgear
12	LT cable for connection to VFD and converter
13	Control Cable
14	Motor Induction DOL
15	VFD with external process input facility
16	PM generator for small WTG
17	AC grid tie converter
18	DC battery
19	DC chargers Float/Boost
20	DG set
21	ACDB
22	LT switchgear MCCB modules
23	Metering arrangement including CT and PT
24	Type Test of MG Set
C&I	
25	PLC-based control system with HMI for control of Mechanical energy storage system
26	UPS, 24V DC power supply with distribution board for control system and HMI
27	Measuring instruments with installation arrangements: 1) Load cells 2) Speed sensors 3) Proximity sensors
28	Instrumentation/control cables with cable trays and branch trays
29	Junction boxes

(INVITATION FOR EXPRESSION OF INTEREST)

Annexure B

