

(INVITATION FOR EXPRESSION OF INTEREST)

NTPC Limited

(A Government of India Enterprises)



Invites

Expression of Interest (EOI)

from

Indian START-UPs

for

'Torrefied Pellet Manufacturing Plant for Agri-Waste'

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Expression of Interest from Indian START-Ups for 'Torrefied Pellet Manufacturing Plant for Agri-Waste'

Section-I: EOI Information

1.0 ABOUT NTPC:

NTPC is India's largest energy conglomerate with a +68 GW power generating capacity, with roots planted way back in 1975 to accelerate power development in India. Since then, it has established itself as the dominant power major with a presence in the entire value chain of the power generation business. From fossil fuels it has forayed into generating electricity via hydro, nuclear and renewable energy sources. This foray will play a major role in lowering its carbon footprint by reducing greenhouse gas emissions.

2.0 ABOUT NETRA:

NETRA is the R&D wing of NTPC. Through its innovative solutions, NETRA contributes to positioning NTPC at the front of a learning curve and sustaining its eminence in the Indian Power Sector. NETRA endeavors to become a key player and driver for R&D in the domain of energy, nurturing NTPC goals. For now, besides providing state of art scientific services to Indian power plants, NETRA is focused on the development and demonstration of technologies in the domain of carbon capture and its utilization, green hydrogen, green synthetic fuel and chemicals, water, ash etc.

3.0 ABOUT EXPRESSION OF INTEREST (EOI) & SELECTION METHODOLOGY:

MOP, GOI has set up a 'National Mission on use of Biomass in coal-based thermal power plants (NBM)' in May'2021. NTPC Ltd is already engaged in the mass utilization of non-torrefied biomass for the co-firing in PC-fired boilers. However, for bulk utilization of biomass, it needs to be torrefied & pelletized– as torrefied biomass pellet has more energy density and its characteristics are closer to coal.

Several entities, including 'Start Ups', have taken various initiatives to develop the 'torrefied biomass pellet' technology – however, it has not reached the stage of maturity.

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NTPC, thru its R&D arm NETRA, intends to provide a platform to 'Start Ups' and enable them to develop the technology for producing torrefied biomass pellets - well-suited for decentralized small-scale users viz farmers, small entrepreneurs, small communities etc.

Any 'Start Ups' registered with 'Start-Up India, GOI' can participate in this Expression of Interest (EOI)'.

Technology Developer shall be selected thru this EOI based on the information provided by him in Section-III, Annexure-2. The system design will be evaluated by the expert team of NTPC, National Biomass Mission and others as per the different criteria such as less technical complexity, easy installation and operation, less maintenance, high production, good quality product and any other as per the evaluation parameter set by the expert panel.

After evaluation, the start-up will be given a Work Order/Purchase Order by NTPC for complete 02 TPD (Qnt: 01 Nos.) and 10 TPD (Qnt: 01 Nos.) torrefied biomass pellet manufacturing machines.

It is intended to develop and set up 'torrefied biomass pellet' plants of two different capacities i.e., 02 TPD and 10 TPD as part of this EOI.

4.0 RESPONSIBILITY MATRIX FOR TECHNOLOGY DEVELOPMENT:

- a) Responsibility of Technology Developer:
 - i. Development of 'torrefied biomass pellet' technology,
 - ii. Setup of 'torrefied biomass pellet' plants at a location mutually decided by Technology Developer & NTPC,
 - iii. Performance assessment of 'torrefied biomass pellet' plant & incorporation of improvements,
 - iv. O&M of 'torrefied biomass pellet' plant for 12 months including the arrangement of feedstock,
 - v. Sale of torrefied biomass pellets to NTPC at the rate indicated by them in the EOI but not exceeding 10 Rs/Kg for 2 TPD plant and 8 Rs/Kg for 10 TPD plant respectively, during the period of O&M, and
 - vi. Commercialization of 'torrefied biomass pellet' technology/ plant and part sharing of commercialization proceeds with NTPC for 3 years.

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b) Responsibility of NTPC:

- i. All steps leading to the selection of technology developer and award of work to start-up including project funding,
- ii. Project monitoring during the period of technology development & setup of 'torrefied biomass pellet' plants,
- iii. Performance evaluation of 'torrefied biomass pellet' plants, and
- iv. Procurement of 'torrefied biomass pellets' at the rate indicated in the EOI but not exceeding 10 Rs/Kg for 2 TPD plant and 8 Rs/Kg for 10 TPD plant respectively, during the period of O&M.

5.0 EOI TIMELINES:

Interested APPLICANTS may download the documents of EOI free of cost from www.ntpctender.com & <https://eprocurementpc.nic.in>. Important dates for the EOI are following:

- | | |
|---|--------------------------------------|
| a) Last date for queries/ seeking clarification | Date of publication of EOI + 15 Days |
| b) Last date for submission of EOI | Date of publication of EOI + 30 Days |

6.0 VALIDITY OF THE RESPONSES

The Applicant shall submit the responses which shall remain valid up to twelve (12) 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.

Section-II: Instructions to the Applicants

1.0 GENERAL INSTRUCTIONS:

- a) Language of the responses to EOI or any query/ clarifications/ correspondences shall be in English only.
- b) For expression of interest, Application Form and Annexures given in Section-III shall be duly filled and sent to NTPC by the applicant in hard as well as soft copy.
- c) Applicant should go through Section-I and Section-II thoroughly before filling and submitting the application form and annexures in Section-III.
- d) Applicant shall mention the name and contact details of two persons, with complete address, phone number and email id.
- e) 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 a response, inter alia, for the purpose of removal of inconsistencies or infirmities in their responses.

2.0 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 applicant (s) 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.

3.0 CONTENT OF EOI:

The application of EOI consists of the following in Section-III:

- Covering Letter in Annexure 1, and
- Information to be filled in Annexure 2

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4.0 SUBMISSION OF EOI:

For consideration of EOI, applicants are required to e-mail softcopy of EOI, completed in all respect, through e-mail as well as send the hard copy of the same, which can be submitted either in person or by registered/ speed post till the last date of submission of EOI to the following address:

- a) Soft Copy: (i) To: ajaykumarsutrakar@ntpc.co.in,
(ii) CC: headnetra@ntpc.co.in

- b) Hard Copy:

Ref EOI No.: NTPC/NETRA/EOI/02-2022

Dated: 03.03.2022

Submitted to:

Sh. Ajay Kumar Sutrakar

NETRA, NTPC LTD

E-3, ECOTECH-II, UDYOG VIHAR, GREATER NOIDA-201306

DISTT. GAUTAM BUDH NAGAR, UP (INDIA), Phone: 0120-2356581

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.

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, the 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.

5.0 OPENING OF RESPONSES TO THE EOI:

The responses to the EOI shall be opened as per the time schedule of 1500 Hrs. at the date as mentioned in Section-I and will be communicated to the applicant (s) via e-mail.

In the event of any of the above dates falling on a day that is not a working day or which is a public holiday, the responses shall be opened on the next working day at the same venue and time.

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6.0 RESPONSIVENESS CHECK OF EOI:

Responses shall be deemed non-responsive for the following reasons:

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

All bids 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.

7.0 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.

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8.0 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 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.

Section-III: Application Form & Annexures

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 the 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 a 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 has 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 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 the EOI process. We confirm

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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.

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 NTPC 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.

8. We confirm that all the terms and conditions of our response are valid for acceptance for a period of twelve (12) months from the response Deadline.

9. We confirm that we have not taken any deviation so as to be deemed "Non-Responsive" as stipulated in Section-II of this EOI.

10. We understand that you are not bound to accept any response you receive.

We remain,

Yours sincerely

(Name, Designation and Signature of Authorized Person)

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ANNEXURE-2**INFORMATION TO BE SUBMITTED BY APPLICANT**

| Sl. No | DETAILS | REMARKS (Kindly enclose separate papers wherever required) |
|----------|---|---|
| A | GENERAL DETAILS | |
| A.1 | Name of Organization | |
| A.2 | Address of Organization | |
| A.3 | Contact Details of the representative (Email, Phone, Fax, Mobile) | |
| A.4 | Information of the design schematics | |
| A.5 | Information of the manufacturing and supply of the torrefied biomass manufacturing machine | |
| B | TECHNOLOGY - GENERAL | |
| B.1 | Status of Technology <i>(Kindly indicate if you have (i) Developed & Setup pilot/ prototype plant, (ii) Complete design & engineering of the pilot plant, (iii) Pre-engineering stage etc.)</i> | |
| B.2 | Ownership of Technology <i>(Kindly indicate if the technology is owned by you or it is licensed by someone else. In case, the technology is licensed, kindly indicate the technology owner, type (exclusive/ non-exclusive), duration etc. of the license. In case, the technology is owned by you, kindly indicate if it is patented / under patent.)</i> | |
| B.3 | Status of Plant Capacity (TPD) <i>(Kindly indicate the pilot/ prototype plant capacity you have set up or designed thus far)</i> | |
| C | TECHNOLOGY - SPECIFIC | |
| C.1 | Type of torrefaction & palletization process <i>(Kindly indicate if it is batch process OR continuous process)</i> | |
| C.2 | Rate of production of torrefied pellets <i>(Kindly indicate on the basis of Tons/Day)</i> | |
| C.3 | Torrefaction Parameters: Temperature (Deg C) & Holding / Cycle time (in minutes) | |
| C.4 | Mass and Energy balance of complete process and Plant | |
| C.5 | Gross Calorific Value (Kcal/Kg) of torrefied pellets <i>(Kindly provide Test Lab Reports, wherever possible)</i> | |
| C.6 | Proximate / Ultimate Analysis of torrefied pellets <i>(Kindly provide Test Lab Reports, wherever possible)</i> | |
| C.7 | Volatile matter loss after torrefaction | |

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| C.8 | Type & Quantity of fuel used for torrefaction process <i>(Kindly indicate if external fuel viz LNG, PNG, Diesel, LDO etc. OR internal fuel viz. torrefied / non-torrefied Agri-waste is batch process OR continuous process)</i> | |
| C.9 | Product conversion efficiency <i>(Without considering torrefied / non-torrefied Agri-waste consumed in the process for torrefaction, in case of internal fuel consumption)</i> | |
| C.10 | Details of Flue gas cleaning system used (If any) | |
| C.11 | Details / Type of binding/adhesion/compression system used for palletization | |
| C.12 | Mandatory spares for 2 years of continuous operation | |
| D | BUSINESS INFORMATION | |
| D.1 | Which capacity of Plant are you interested in? <i>(Kindly indicate (i) 2 TPD Plant, (ii) 10 TPD Plant, (III) Both)</i> | |
| D.2 | Cost of development & setup of selected Plant <i>(Kindly provide detailed breakup including (i) bought out item cost, (ii) fabrication cost etc.)</i> | |
| D.3 | Cost of O&M of selected Plant <i>(Kindly provide detailed breakup including (i) manpower cost, (ii) power cost, (iii) consumables & spares etc.)</i> | |
| D.4 | Cost of O&M of selected Plant <i>(Kindly provide detailed breakup including (i) manpower cost, (ii) power cost, (iii) consumables & spares etc.)</i> | |
| E | FINANCIAL DETAILS | |
| E.1 | Copy of audited annual report for the last three years. | |

I/We declare that the information stated hereinabove is accurate.

Signature (with designation & seal):

Printed Name:

Company Address:

Tel:

Fax:

Email:

Date:

=====End of the document=====