NTPC LIMITED

(A Govt. of India Enterprise)

CORPORATE ENGINEERING

NOTICE FOR EXTENSION OF EXPRESSION OF INTEREST (EOI) SUBMISSION DATE

Ref No.: NTPC/PEM/EOI/13/2022/EXT/1 Date: 30.06.2022

This is in continuation to our notice inviting Expression of Interest (EOI) No.: NTPC/PEM/EOI/13/2022 Dated 06.06.2022 for Identification of Vendors for "Coal based 660 MW & 800 MW Super Critical Thermal Power Projects", uploaded on www.ntpctender.com website, wherein last date of EOI submission was 30.06.2022. The last date of EOI submission is hereby extended to **15/07/2022.**

For detailed EOI and documents, please visit at www.ntpctender.com or may contact:

Sr. Manager (PEM-TG & System), Project Engineering (Mechanical), NTPC Limited, SRHQ, NTPC Bhavan, Kavadiguda, Secunderabad-500080, E-mail: vishalchandgupta@ntpc.co.in

Registered office: NTPC Bhawan, SCOPE Complex, 7, Institutional Area, Lodi Road, New Delhi- 110003. CIN: **L40101DL1975GOI007966** Website: www.ntpc.co.in

(GLOBAL INVITATION FOR EXPRESSION OF INTEREST)

NTPC Limited

(A Government of India Enterprise)

INVITATION FOR

EXPRESSION OF INTEREST (EOI)

FOR

IDENTIFICATION OF VENDORS FOR COAL BASED

660 MW & 800 MW SUPER CRITICAL THERMAL POWER PROJECTS

(GLOBAL INVITATION FOR EXPRESSION OF INTEREST)

(INVITATION FOR EXPRESSION OF INTEREST)

DETAILED NOTICE INVITING EXPRESSION OF INTEREST (EOI)

EOI No.: NTPC/PEM/EOI/13/2022 **Date: 06.06.2022**

NTPC is Inviting an Expression of Interest for "Identification of vendors for Coal based 660 MW & 800 MW Super Critical Thermal Power Projects".

1.0 NTPC Limited (A Government of India Enterprise) intends to set up new units of coal based Supercritical Power projects across India of 660 MW & 800 MW capacities.

Note: ***This EOI is to assess available vendor base for following packages for supercritical Thermal Power Plants:***

i. ***Steam Turbine Generator Island Package***
ii. ***Steam Generator Island Package***
iii. ***Balance of Plant Turnkey Package***
iv. ***Engineering, Procurement and Construction (EPC) Package.***

After identifying the APPLICANTs through EOI, their capacity and capability, vendor base shall be prepared for different packages.

2.0 Brief Scope of Work:

2.1 Steam Turbine Generator Island Package

Design, manufacture, engineering, inspection and testing at Contractor's work(s), packing, forwarding to site, unloading, erection, supervision, pre-commissioning, testing, commissioning and performance testing of the equipment/systems.

The broad Scope of work includes Steam Turbine, Generator & Auxiliaries, Air Conditioning System, Ventilation System, Fire Detection & Protection System, Condensate Polishing Plant (CPP), Civil works, Generator Bus ducts and associated equipment's, Power Transformers & Reactors, HT Switchgears for complete plant facilities, LT indoor Transformer, MV Bus-duct, LT Switchgears and LT Bus Ducts, DC Batteries, Battery chargers, DG sets, Lighting, Earthing, Cabling, HT, LT power cables & LT control cables, Lightning protection, Associated Control & Instrumentation systems, Fire proof cable penetration sealing system, Solar PV plant on roof tops of buildings etc.

2.2 Steam Generator Island Package

Design, manufacture, engineering, inspection and testing at Contractor's work(s), packing, forwarding to site, unloading, erection, supervision, pre-commissioning, testing, commissioning and performance testing of the equipment/systems.

The broad Scope of work includes Steam Generator and Auxiliaries, Electrostatic Precipitator, Flue Gas Desulphurization (FGD) System, De-Nox ready system, Biomass co-firing capability, Ash Handling System including AWRS System, Coal Conveying system in Main Plant Area, Air Conditioning System, Ventilation System, Civil works, LT switchgear & LT Bus Duct, Outdoor Transformers, HT ,LT power cables & LT control cables, Lightning Protection, DG sets for FGD, Lighting, Cabling, Earthing, Associated Control & Instrumentation systems, Fireproof cable penetration sealing system, Solar PV plant on roof tops of buildings etc.

2.3 Balance of Plant Turnkey Package

Design, manufacture, engineering, inspection and testing at Contractor's work(s), packing, forwarding to site, unloading, erection, supervision, pre-commissioning, testing, commissioning and performance testing of the equipment/systems.

The broad Scope of work includes Coal, Biomass, Limestone and Gypsum Handling System, CW equipment and associated civil works, Raw Water and associated Electrical & civil works, Cooling Towers, Water treatment plant and associated civil works including Effluent quality Monitoring System(EQMS), Station Piping, Fire Detection & Protection System, LT Switchgears and LT Bus Ducts, Cabling, Earthing, EHV, HT, LT power cables & LT control cables, Lightning protection, Battery chargers, DC Batteries, Lighting, Switchyard including interconnection with existing stage for start-up power, Air conditioning and Ventilation of GIS building, Station Control & Instrumentation (C&I) , Sewerage Treatment Plant, All civil, structural & architectural works including underground facilities like drainage, sewerage, trenches, earthing mat/ grounding for the Offsite area, Miscellaneous Buildings, Rain Water Harvesting, Solar PV plant on roof tops of buildings, Make-up Water System Package etc.

2.4 Engineering, Procurement and Construction (EPC) Package

Design, manufacture, engineering, inspection and testing at Contractor's work(s), packing, forwarding to site, unloading, erection, supervision, pre-commissioning, testing, commissioning and performance testing of the equipment/systems.

The broad Scope of work includes Steam Generator and Auxiliaries, Electrostatic Precipitator, Flue Gas Desulphurization (FGD) System, DeNOx Ready System, Auxiliary Boiler, Biomass co-firing capability, Ash Handling System including AWRS System, Compressed Air System, Enabling Works, Civil, Structural & Architectural works including Site Levelling, Boundary Wall, Roads, Drains & Sewerage, Pipe / Cable Racks and Raw Water Reservoir, Chimney & Chimney Elevator, Steam Turbine, Generator & Auxiliaries, , Fire Detection & Protection System, Civil, Structural & Architectural works of Main Power House, Common Control Room, Service Building, Transformer Yard and Pipe / Cable Racks, CST, Generator Bus ducts and associated equipment’s, Power Transformers & Reactors, HT Switchgears for complete plant facilities, LT indoor Transformer, MV Bus-duct, DC Batteries, Battery chargers, DG sets, CW system including

equipment, Duct, CT & CW channel and associated civil works, Raw Water and associated Electrical & civil works, Water treatment plant and associated civil works including Effluent quality Monitoring System(EQMS), Make-up Water System including associated Electrical, Civil, Structural & Architectural Works, Transmission line upto Makeup water Pump House, ECW system for TG & SG including station auxiliaries, Condensate Polishing Plant (CPP) and associated controls & Instrumentation, Station Piping, Coal, Biomass, Limestone & Gypsum Handling Plant System, Fuel Oil unloading, Mill Reject System, Air Conditioning System, Ventilation System, Packaged Sewerage Treatment Plant, LT switchgear & LT Bus Duct, Outdoor Transformers, Switchyard, HT ,LT power cables & LT control cables, Lightning Protection, DG sets for FGD, Lighting, Cabling, Earthing, Control & Instrumentation(C&I), Fireproof cable penetration sealing system, Solar PV plant on roof tops of buildings, underground facilities like drainage, sewerage, trenches, earthing mat/ grounding for the Offsite area, Miscellaneous Buildings, Rain Water Harvesting, etc.

3.0 DOWNLOAD AND TIMELINES FOR SUBMISSION OF EOI

a. Interested APPLICANTs may download the documents of EOI free of cost from www.ntpctender.com & https://eprocurentpc.nic.in

b. **Last date for EOI submission:** 15.07.2022 (Extension-1, Ref No.: NTPC/PEM/EOI/13/2022/EXT/1

c. **Response Validity:** 24 months from Last Date of EOI Submission

4.0 NTPC encourages submission of EOI in soft copy. For consideration of EOI, APPLICANTs are required to e-mail softcopy, completed in all respect, from its official e- mail ID to below mentioned e-mail IDs. 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: Vishal Chandra Gupta, Sr. Manager (PEM-TG & System)
Email: vishalchandgupta@ntpc.co.in
CC to: pawandwivedi@ntpc.co.in
Project Engineering (Mechanical),
NTPC Limited, SRHQ, NTPC Bhavan, Kavadiguda, Secunderabad-500080

5.0 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.

(GLOBAL INVITATION FOR EXPRESSION OF INTEREST)

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SECTION-I

INFORMATION TO APPLICANT

1. INTRODUCTION

a) NTPC Limited, a Govt. of India Enterprises, NTPC group produces around 300 billion units of electricity annually through its cluster of gas, coal, hydro and RE based power stations of more than 68 GW capacity spanning across the country.

b) NTPC intends to add it's Coal based Thermal Power generation capacity by setting up new Super Critical power generating units of 660 MW and 800 MW capacities at different location across India to meet the growing energy demands and to take care of Base load due to retirement of old thermal power plants on completion of their life.

c) Based on response in EOI, vendors capacity and capability, vendor base shall be prepared.

2. INTENT OF THE EXPRESSION OF INTEREST (EOI)

This EOI is to identify vendors available in the market who are interested in participation to set up Coal based 660 MW & 800 MW Super Critical Thermal Power Projects.

3. THE APPLICANTS SHOULD NOTE THAT:

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-II shall be duly filled and sent to NTPC by the APPLICANT in soft copy.

c. Applicants should go through Section-I thoroughly before filling and submitting the application form and annexures in Section-II.

d. Applicants shall mention the name and contact details of two persons, with complete address, phone number and official 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 response, inter alia, for the purpose of removal of inconsistencies or infirmities in their responses.

4. The applicants from prior reference countries sharing land border with India need to be registered as per GoI order regarding public procurement dated 23.07.2020 for participation in tenders.

5. ENQUIRIES AND CLARIFICATIONS

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

To: Vishal Chandra Gupta, Sr. Manager (PEM-TG & System)
Email: vishalchandgupta@ntpc.co.in
CC to: pawandwivedi@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. VALIDITY OF THE RESPONSES

The Applicant shall submit the responses which shall remain valid up to Twenty Four (24) months after the response Deadline (“Response Validity”). NTPC reserve the right to reject any response, which does not meet the afore mentioned validity requirement.

NTPC may solicit the Applicant’s consent for an extension of the period of validity of the application. The request and the response in this regard shall be in writing.

8. SUBMISSION OF THE RESPONSE TO EOI

The responses to the EOI are to be submitted in soft copy via below e-mail format
To: vishalchandgupta@ntpc.co.in
CC to: pawandwivedi@ntpc.co.in

Ref. EOI No. NTPC/PEM/EOI/13/2022 Dated: ---------

Submitted to:
Vishal Chandra Gupta,
Sr. Manager (PEM-TG & System)
Project Engineering (Mechanical),
NTPC Limited, SRHQ, NTPC Bhavan,
Kavadiguda, 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.

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

9. Opening of responses to the EOI

The responses to the EOI shall be opened as per the time schedule mentioned in Section-I and will be communicated to the Applicants via e- mail. 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 venue 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.

11. 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.

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SECTION-II

APPLICATION FORM & ANNEXURES

(GLOBAL 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,

Vishal Chandra Gupta, Sr Manager (PEM-TG & System)
Project Engineering (Mechanical),
NTPC Limited, SRHQ, NTPC Bhavan,
Kavadiguda, Secunderabad-500080

Subject: ***INVITATION FOR EXPRESSION OF INTEREST FOR IDENTIFICATION OF VENDORS FOR "COAL BASED 660 MW & 800 MW SUPER CRITICAL THERMAL POWER PROJECTS".***

Ref.: EOI No. NTPC/PEM/EOI/13/2022, Dated 06.06.2022

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 we have not 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. 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 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.

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 vishalchandgupta@ntpc.co.in 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 Ltd., 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 Twenty Four (24) months from the response Deadline.

We remain,

Yours sincerely

(Name, Designation and Signature of Authorized Person)

(GLOBAL INVITATION FOR EXPRESSION OF INTEREST)

Annexure-2

GENERAL INFORMATION TO BE SUBMITTED BY APPLICANT

1. Name of Applicant Company:
2. Legal status of the Applicant Company:
3. Brief description of the Company including details of its business groups/subsidiaries/ affiliates:
4. Date of Incorporation:
5. Date of Commencement of Business:
6. Shareholding details:
7. Indian Subsidiary company /Indian JV company / Indian Holding company details:
    a. Formed for Manufacturing Super Critical Steam Generator sets in India:
    b. Formed for Manufacturing Super Critical Steam Turbine Generator sets in India:
8. 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:
9. Existing commercial facilities – locations, capacity
10. Existing manufacturing & Infrastructure facilities – Locations, capacity, items manufactured related to above specified scope for Steam Turbine Generator & Auxiliaries, Steam Generator & Auxiliaries.
11. Manufacturing facility in India for 660/800 MW units for (If Yes, Furnish location details):
    a. Steam Generator:
    b. Steam Turbine:
    c. Generator:
12. Documents to be enclosed:

Technical Credentials –

a) Supporting document for technology ownership of 500/660/800 MW or higher capacity Super Critical Steam Turbines/Steam Generators.

Financial Credentials –

a) Copies of Audited Financial statements (Annual Reports) for preceding 3 financial years as on the date of EOI submission.
    i. Average Annual Turnover for preceding 3 financial years.

ii. Net worth for the preceding financial year.
iii. Paid up Share capital for the preceding financial year.

b) Consolidated project values for projects executed in past 10 years.

c) Maximum project values for single project executed in past 10 years.

13. Any other documents considered relevant.

(Sign & Company Seal)
Authorized signatory

(GLOBAL INVITATION FOR EXPRESSION OF INTEREST)

Annexure-3

TECHNO-COMMERCIAL INFORMATION TO BE SUBMITTED BY APPLICANT

Essential Information:

1. Capacity and location of projects/contracts installed/ to be installed/ under execution.

2. Customer details and numbers of units installed/ to be installed/ under execution.

3. Brief description on "How the APPLICANT wants to participate in probable tender for "Coal based 660 MW & 800 MW Super Critical Thermal Power Projects" from following options:
   a. ***Steam Turbine Generator Island Package***
   b. ***Steam Generator Island Package***
   c. ***Balance of Plant Turnkey Package***
   d. ***Engineering, Procurement and Construction (EPC) Package.***
4. Key details of the Thermal Power Projects installed/ to be installed/ under execution.

   Applicant to furnish following details:

   A) Steam Turbine Generator Island Package
   i. Experience details for Super Critical Thermal Power Project(s) (having capacity of 500 MW or more) for "Steam Turbine Generator Island Package":

Sl. No.	Item Description	Installation(s) Details
1.1	Description & Name of project	
1.2	Name of Client with full address, FAX No. and Tel No.	
1.3	Purchase Order/ Contract No./ LOA No. and Date	
1.4	Name of Thermal Power Station & Location	
1.5	Whether aforesaid Thermal Power station is fossil fuel fired	

1.6	No. of unit(s) of Turbine set supplied to the station	
1.7	Make of Turbine	
1.8	Number of cylinders (HP/IP/ Combined HP-IP /LP)	
1.9	Module number/description (HP/IP/ Combined HP-IP /LP)	
1.10	Steam Parameters at turbine inlet a. Main steam pressure (kg /cm^2 (abs)) b. Main steam Temperature (° C) c. Reheat Steam Temperature (° C)	
1.11	Whether the Turbine Set a) is of Reheat type b) consists of separate HP, IP / Combined HP-IP and LP cylinders	
1.12	Capacity in MW of each unit	
1.13	Condenser Type and Supplier: a) Water Cooled b) Air Cooled	
1.14	Whether the scope of work executed for the aforesaid Steam Turbine Set included a) Design b) Engineering c) Manufacturing d) Erection e) Supervising Erection f) Commissioning g) Supervising Commissioning	
1.15	Steam Turbine Set a) Designed by b) Engineered by c) Manufacture by d) Erection by e) Supervision of Erection by f) Commissioning by	

	g) Supervision of Commissioning by	
1.16	Schedule date & Actual Date of commissioning	
1.17	Date of commencement of successful operation	
1.18	Whether Steam Turbine is Tandem Compound or Cross Compound.	
1.19	Whether turbine is directly coupled with Generator	
1.20	Whether work executed under technology collaboration, (yes/no) **If Yes**, a. Name of Technology collaborator b. Validity of Technology Transfer Agreement (mention Date) c. Whether Deed of Joint Undertaking (DJU) with Technology collaborator submitted (***Yes/No***)	
	Financial Status of Technology Collaborator: i. Average Annual Turnover for preceding 3 financial years. ii. Net worth for the preceding financial year. iii. Paid up Share capital for the preceding financial year.	
1.21	Execution Time (in months):	
1.22	In case applicant is Indian Supercritical Steam Turbine Generator manufacturer: i. Whether Eight (8) Nos. supercritical Steam Turbine Generators manufactured/supplied in India by the Indian Subsidiary/JV Company / Indian manufacturing company have completed COD before EOI submission date: (**Yes/No**) ii. Whether Out of above Eight supercritical Steam Turbine Generators Four (04) are in commercial operation for at least one year prior to date of EOI submission: (**Yes/No**)	

	iii. Whether Out of above Eight supercritical Steam Turbine Generators Successful Performance Guarantee (PG) tests conducted for Two (02) nos. units: (**Yes/No**) EOI applicant to fill applicable table/detail in **Annexure 4**	

B) Steam Generator (SG) Island Package

i. Experience details for Super Critical Thermal Power Project(s) (having capacity of 500 MW or more) for "Steam Generator Island Package":

Sl. No.	**Item Description**	**Installation(s) Details**
1.1	Description & Name of project	
1.2	Name of Client with full address, FAX No. and Tel No.	
1.3	Purchase Order/ Contract No./ LOA No. and Date	
1.4	Name of Thermal Power Station & Location	
1.5	Capacity in MW of each unit	
1.6	Whether aforesaid Thermal Power station is Pulverized Coal fired supercritical Steam Generator (Yes/No)	
1.7	No. of unit(s) of Steam Generators supplied to the station	
1.8	Make of Steam Generator	
1.9	Type of Steam Generator a. Single Pass (Tower Type)/Two Pass b. Draft Type/ Pressurized Type (Constant or Variable, mention) c. Evaporator design - Whether Variable Pressure operation	
1.10	Single Reheat/Double Reheat	

1.11	Waterwall Type (either spiral wound (inclined) or vertical plain or vertical rifled type water wall tubing)	
1.12	Cyclic Loading Capability (as considered for design life of 25 years)	
1.13	Designed Ramp Rate	
1.14	Dry Bottom/Wet Bottom	
1.15	Oil Firing Capability (capacity percentage) a. LDO b. HFO	
1.16	Biomass Firing capability a. Biomass Type (Torrefied/Other), mention details b. Percentage Firing of total SG capacity	
1.17	Steam Parameters a. Main steam pressure (kg /cm^2 (abs)) b. Main steam Temperature (° C) c. Reheat Steam Temperature (° C) d. 2nd Re-heat Parameters (if applicable)	
1.18	Outlet Emission design limits (mg/Nm^3, 6% O_2) a. NOx b. SOx c. SPM	
1.19	Electrostatic Precipitator a. Make b. Efficiency c. Capacity (Nm^3/h)	
1.20	FGD system a. Make b. Type (Wet/Dry/Other) c. Capacity d. Efficiency	

1.21	DeNOx system a. Make b. Type (SCR/SNCR/Other) c. Capacity d. Efficiency	
1.22	Mill Reject Handling System a. Make b. Type (Pneumatic/Conveyor) b. Capacity	
1.23	Ash Handling System a. Supplier b. Type of Bottom Ash Handling (Jet Pump/ Scrapper Chain / Dry) c. Capacity of Bottom Ash Handling system (MTPH) d. Type of Fly Ash Conveying system (Vacuum/Pressure) e. Capacity of Fly Ash Conveying system (Vacuum/Pressure) (MTPH) f. Capacity of Fly Ash Transport system (Pressure system) (MTPH) g. High Concentration Slurry Disposal System (HCSD) (capacity) (MTPH) h. Type of Ash Conveyor (Trough/Pipe) i. Ash Conveyor capacity (MTPH) j. HCSD Pump Type (Whether positive displacement, Yes/No) i. Capacity of HCSD Pump (m^3/hr) ii. Concentration of slurry (wt./wt.) k. Bottom Ash Slurry Pump i. Capacity (m3/hr) ii. Concentration (wt./wt.)	
1.24	Whether the scope of work executed for the aforesaid Steam Generator/ FGD System/DeNOx System a) Design b) Engineering c) Manufacturing d) Erection e) Supervising Erection f) Commissioning g) Supervising Commissioning	

1.25	Steam Generator/FGD System/DeNOx System a) Designed by b) Engineered by c) Manufacture by d) Erection by e) Supervision of Erection by f) Commissioning by g) Supervision of Commissioning by	
1.26	Actual Date of commissioning	
1.27	Date of commencement of successful operation	
1.28	Whether work executed under technology collaboration/licensing agreement for the above mentioned Steam Generator type, (Yes/No) **If Yes**, a. Name of Technology collaborator(s) b. Scope of Technology Tie-up c. Validity of Technology Transfer Agreement (mention Date) d. Whether Deed of Joint Undertaking (DJU) with Technology collaborator submitted (***Yes/No***) e. Duration of technology tie-up (Mention time period with years) f. Whether license to manufacture and supply in India exist?	
1.29	Financial Status of Technology Collaborator: iv. Average Annual Turnover for preceding 3 financial years. v. Net worth for the preceding financial year. vi. Paid up Share capital for the preceding financial year.	
1.30	Execution Time (in months):	
1.31	In case applicant is Indian Supercritical Steam Generator manufacturer: i. Whether Eight (8) Nos. supercritical Steam Generators manufactured/ supplied in India by the Indian Subsidiary/JV Company / Indian manufacturing company	

	have completed COD before EOI submission date: (**Yes/No**) ii. Whether Out of above Eight supercritical Steam Generators Four (04) are in commercial operation for at least one year prior to date of EOI submission: (**Yes/No**) iii. Whether Out of above Eight supercritical Steam Generators Successful Performance Guarantee (PG) tests conducted for Two (02) nos. units: (**Yes/No**) EOI applicant to fill applicable table/detail in **Annexure 4**	

C) Balance of Plant Turnkey Package

i. Experience details for Super Critical Thermal Power Project(s) for Balance of Plant Turnkey Package:

Sl. No.	**Item Description**	**Installation(s) Details**
1.1	Description & Name of project	
1.2	Name of Client with full address, FAX No. and Tel. No.	
1.3	Purchase Order/ Contract No./ LOA No. and Date	
1.4	Name of Thermal Power Station & Location	
1.5	Whether aforesaid Thermal Power station is fossil fuel fired	
1.6	Capacity in MW of each unit	
1.7	Cooling Tower a. Make b. Type: Natural Draught/Induced Draught c. Type of Fills d. Capacity (m^3/hr)	

	e. Design Ambient Wet Bulb Temp. (°C) f. Design Inlet Wet Bulb Temp. (°C) g. Dimension	
1.8	CW Pump a. Type of CW Pump (Vertical Wet pit / Concrete Volute / metallic Volute) b. Make c. Rated Capacity (m3/hr) d. Head (mWC) e. Speed	
1.9	Make-up Water (MuW) System a. Type of Pump & intake structure b. Make c. Rated Capacity (m3/hr) d. Head (mWC) e. Speed f. Type of MuW pipe (MS / DI / GRP) g. Nos. of MuW pipes, Size & route length h. Cathodic Protection by	
1.10	Fire Detection and Protection System: a. Supplier b. Scope (Hydrant System/High Velocity Water spray/Medium Velocity Water spray/Fire water pumping and pressurizing arrangement) b. Package Cost	
1.11	Water Pre-Treatment & Liquid Effluent Treatment Plant: a. Supplier b. Capacity (m^3/hr) c. Outlet Turbidity (NTU)	
1.12	Demineralization System: a. Type (Ion Exchange/Reverse Osmosis) b. Supplier c. Capacity (m^3/hr) d. Outlet water Silica content e. Outlet water conductivity	

1.13	Coal Handling Plant a. Supplier b. Conveying Capacity (MTPH) c. Type and Capacity of Stacker cum Reclaimer d. Type of Wagon Tippler (WT) e. WT Hopper Capacity f. Capacity of Crushers (MTPH) g. Capacity of Coal Sampler h. Railway Siding Works Scope (Yes/No) e. Track Hopper (Yes/No) f. Civil Scope for WT/Track Hopper (Yes/No)	
1.14	Fuel Oil Unloading and Storage System a. Supplier b. Type of Fuel Oil (LDO/HFO) c. Capacity of Fuel Oil Decantation d. Type of Decantation (Rail wagons/Road Tankers) e. Storage Tank Capacity (m^3)	
1.15	Whether the scope of work executed for the aforesaid BOP package included a) Design b) Engineering c) Manufacturing d) Erection e) Supervising Erection f) Commissioning g) Supervising Commissioning	
1.16	BOP package facilities (mention for each system) a) Designed by b) Engineered by c) Manufacture by d) Erection by e) Supervision of Erection by f) Commissioning by g) Supervision of Commissioning by	
1.17	Actual Date of commissioning	

1.18	Date of commencement of successful operation	
1.19	Whether work executed under technology collaboration, (yes/no) (mention for each system) **If Yes**, a. Name of Technology collaborator b. Validity of Technology Transfer Agreement (mention Date) c. Whether Deed of Joint Undertaking (DJU) with Technology collaborator submitted (***Yes/No***)	
1.20	Financial Status of Technology Collaborator: i. Average Annual Turnover for preceding 3 financial years. ii. Net worth for the preceding financial year. iii. Paid up Share capital for the preceding financial year.	
1.21	Execution Time (in months):	

D) Engineering, Procurement and Construction (EPC) Package.

i. Experience details for Super Critical Thermal Power Project(s) (having capacity of 500 MW or more) for Engineering, Procurement and Construction (EPC) Package:

Fill all the table formats provided at A), B) & C) above.

ii. Furnish details of Project Management and Engineering experience.

a. Project Management Experience:

Sl. No.	**Item Description**	**Installation(s) Details**
1.1	Area of Industrial Project	
1.2	Name of the Project	
1.3	Project(s) Value Executed in INR (Total in past 10 years)	

1.4	Maximum single Project Value Executed in INR (In past 10 years)	
1.5	Association with Project Management Organisation: (**Yes/No**) ***If Yes***: Name of the Organisation	

b. Engineering Experience:

Sl. No.	**Item Description**	**Installation(s) Details**
1.1	Name of the Project	
1.2	Thermal Power Project MW rating	
1.3	Fuel Type: (Coal/Lignite)	
1.4	Engineering scope (Equipment/System covered)	
1.5	Date of Commissioning: (Scheduled/Actual)	
1.6	Association with Architect Engineering Firm: (**Yes/No**) ***If Yes***: Name of the Firm	

Desirable Information:

1. Details of Engineering/design capabilities.
2. Manufacturing capabilities for various systems/facilities.
3. Are you eager to take the complete responsibility of package for which your interest has been expressed through this EOI submission?

(GLOBAL INVITATION FOR EXPRESSION OF INTEREST)

Annexure-4

[Experience details of Applicant]

1.0.0 Applicant's Name and Address:

1.1.0 We confirm that we / our Indian *Subsidiary Company/*JV Company/*Indian Manufacturing Company have manufactured / supplied in India Eight (8) Nos. supercritical Steam Generators and/or supercritical Steam Turbine Generators (as the case may be), which are in commercial operation (achieved COD) out of which four (4) such Steam Generators and/or Steam Turbine Generators (as the case may be), are in commercial operation for at least one year and Performance Guarantee Test have been successfully completed in any two (2) such Steam Generators and/or Steam Turbine Generators(as the case may be) prior to the date of submission of EOI.

***1.2.0* The details are furnished as below: -**

****Supercritical Steam Generators details:***

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.00.00	Name and location of the reference Station in which the unit is located								
1.1.0	Name, address, email, Tel. no. and Fax of owner of the station								
1.1.1	Name and Designation of the responsible person in owner's organisation								
1.1.2	Capacity of Steam Generator Unit in MW								
1.1.3	Contract No. & Date								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.1.4	Starting date of project								
1.1.5	Scheduled date of Commissioning								
1.1.6	Actual date of Commissioning								
1.1.7	Date of commencement of successful operation								
1.1.8	Date of commencement of Commercial operation (COD)								
1.1.9	Whether the Steam Generator is supercritical	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.01.10	Scope of work executed by *us / or *associate:								
	a) Manufactured	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
	b) Supplied	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.01.11	Whether Performance Guarantee Test Successfully completed	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*

S.N.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.02.00	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation (achieved COD) prior to the date of submission of EOI. (enclosed at Annexure-…..)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.02.01	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set is in commercial operation for at least one (1) year prior to the date of submission of EOI. (enclosed at Annexure-…..)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.2.2	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Generator Set has successfully completed Performance Guarantee Tests prior to the date of submission of EOI. (enclosed at Annexure-…..)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
	Details of Steam Generator								
2.00.00	Name and Address of Steam Generator Set manufacturer								
2.01.00	Steam Generator steam flow capacity at SH outlet (T/Hr.)								
2.02.00	Main Steam Temperature at SH outlet (^oC)								
2.03.00	Main Steam Pressure at SH outlet [$kg/cm^2/(a)$]								
2.04.00	Reheat steam flow (T/Hr.)								
2.05.00	a) Reheater outlet pressure [kg/cm^2 (a)]								
	b) Reheater outlet temperature (°C)								
2.06.00	Whether balanced draft type or not								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
2.07.00	Type of Steam Generator								
	i) Single pass (tower type) or two pass type (must match with offered type)								
	ii) Once through type	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
	iii) Evaporator designed for variable pressure operation (sub-critical and super critical pressure range)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
2.08.00	Type of circulation system (Natural or Forced Circulation)								
2.09.00	Type of Water wall tubes (spiral wound (inclined) or vertical plain or vertical rifled) (must match with offered type)								
2.10.00	Minimum mass flow through the water wall tubes (Kg/sec./m^2)								
2.11.00	Type of coal used								
	i) Max. HHV (Kcal/Kg)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
	ii) Min. HHV (Kcal/Kg)								
	iii) Max. Ash content (%)								
	iv) Max. total moisture content (%)								
	v) Volatile matter content (%)								
2.11.1	Type of oil used								
	i) HHV (Kcal/Kg)								
	ii) Sulphur content (%)								
	iii) Viscosity in centistoke at 50^{O}C (Max.^{O}C)								
	iv) Pour point (^{O}C)								
	v) Flash point (^{O}C)								
2.12.0	Fuel (other than pulverised coal fired)								
2.12.1	Type of fuel used								
2.12.2	Firing rate								
2.12.3	Calorific value of fuel (Kcal/kg)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
2.13.00	Designed Boiler efficiency and corresponding GCV								
2.14.00	Tested boiler efficiency and corresponding GCV								
2.15.00	Tested boiler efficiency corrected to design conditions and corresponding GCV								
2.16.00	a) Whether used for two shifting								
	b) If yes, number of such operations it has been designed for								
	c) No. of actual two shifting cycles it has actually operated on till date								
2.17.0	Minimum start-up time achieved								
	i) Cold (after 72 hrs. of unit shut down)								
	ii) Warm (after 36 hrs. of unit shut down)								
	iii) Hot (after 8 hrs. of unit shut down)								
2.18.00	Availabilities of steam generator for last two years								
2.19.00	Maximum total NOx emission (thermal as well as fuel) from the steam generators								

Supercritical Steam Turbine Generators details

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.00.00	Name and location of the reference Station in which the unit is located								
1.01.00	Name, address, email, Tel. no. and Fax of owner of the station								
1.01.01	Name and Designation of the responsible person in owner's organisation								
1.01.02	Capacity of Steam Turbine Generator Unit in MW								
1.01.03	Contract No. & Date								
1.01.04	Starting date of project								
1.01.05	Scheduled date of Commissioning								
1.01.06	Actual date of Commissioning								
1.01.07	Date of commencement of successful operation								
1.01.08	Date of commencement of Commercial operation (COD)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
1.01.09	Whether the Steam Turbine Generator is supercritical	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.01.10	Scope of work executed by *us / **our Indian *Subsidiary Company/*JV Company/*Indian Manufacturing Company*:								
	a) Manufactured	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
	b) Supplied	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.01.11	Whether Performance Guarantee Test Successfully completed	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.02.00	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set is in commercial operation (achieved COD) prior to the date of submission of EOI. (enclosed at Annexure-…..)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.02.01	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
	Generator Set is in commercial operation for at least one (1) year prior to the date of submission of EOI. (enclosed at Annexure-…..)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
1.02.02	Certificate from the Owner of the reference plant that the aforesaid supercritical Steam Turbine Generator Set has successfully completed Performance Guarantee Tests prior to the date of submission of EOI. (enclosed at Annexure-…..)	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
2.00.00	**Details of Turbine**								
2.01.00	Steam Turbine make								
2.02.00	Tandem compound	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
2.03.00	No. of Reheat								
2.04.00	(i) No. of Cylinders:								
	(a) HP								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
	(b) IP								
	(c) Combined HP-IP								
	(d) LP								
	(ii) Whether HP and IP cylinders are combined or separate								
2.05.00	Module Number								
	(a) HP Turbine								
	(b) IP Turbine								
	(c) Combined HP-IP turbine (if applicable)								
	(d) LP Turbine								
2.06.00	Main steam pressure (gauge)								
2.07.00	Main steam temperature (° C)								
2.08.00	Reheat Steam temperature (° C)								
2.09.00	Condensing type	Yes*/No	*Yes*/No	*Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
2.10.00	Rated speed (RPM) and operating frequency range (Hz)								
2.11.00	No. of Steam Extractions								
2.12.00	Steam Turbine and Generator Directly coupled	Yes*/No*	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
2.13.00	Steam Turbine Generator Set Installation (Indoor / Outdoor)								
3.00.00	**Generator Details**								
3.01.00	Generator make and model No.								
3.02.00	Rated MVA								
3.03.00	Rated Power Factor								
3.04.00	MW rating								
3.05.00	Rated voltage (kV)								
3.06.00	No. of phases								
3.07.00	No. of poles								
3.08.00	Mounting (Horizontal / Vertical)								
3.09.00	Installation (Indoor / Outdoor)								

SN.	Item Description	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5	Unit-6	Unit-7	Unit-8
3.10.00	Cylindrical rotor type	Yes*/No*	*Yes*/No*	Yes*/No*	Yes*/No*	Yes*/No	*Yes*/No*	*Yes*/No*	*Yes*/No*
3.11.00	Cooling medium								
	(a) Stator								
	(b) Rotor								
3.12.00	Thermal Class of insulation								
	(a) Stator								
	(b) Rotor								
3.13.00	Schedule date of Commissioning								
3.14.00	Actual date of commissioning								
3.15.00	Date of commencement of successful operation								

Annexure-5

RESPONSIVENESS/EVALUATION METHODOLOGY

1. **Responsiveness check**

The responses submitted by Applicants shall be scrutinized to establish the technical and financial requirements for different package options for setting Coal based 660 MW & 800 MW Super Critical Thermal Power Projects. Responses shall be deemed non-responsive for 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 this EOI document.

b. Responses not accompanied by Essential Information as prescribed in this EOI document.

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.

f. Response validity being less than that required in this EOI document.

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.