
	Technical Enquiry Specification for Coal Handling Plant EPC Package	
	Customer : NTPC Ltd.	NBPPL-004-101-34-P1G-A2 R00


VOLUME – I

Technical Enquiry Specification for Wagon Tippler Package for 1 X 500 MW Unchahar Thermal Power Project

 <small>A Joint Venture Company of NTPC & BHEL</small>	Technical Enquiry Specification for Coal Handling Plant EPC Package	
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1.0 PRE-QUALIFICATION CRITERIA FOR THIS PACKAGE:

As per Annexure –1, enclosed with NIT

2.0 PROJECT INFORMATION:

Feroze Gandhi Unchahar Thermal Power Station (FGUTPP) Stage-I (2X210MW) was implemented by UPRVN. Further, it was taken over by NTPC Ltd. and thereafter NTPC implemented Stage-II (2X210MW) & Stage-III (1X210MW).

The present expansion proposal is for setting up of a coal based FGUTPP STAGE-IV (1x500 MW) to be owned by NTPC Ltd... The NTPC BHEL Power Project Private Limited (NBPPL) is the prime contractor of this project.

The FGUTPP (1X500MW) is located in Raebareli district of Uttar Pradesh. It is bounded by villages Khanpur, Faridpur and Khaliqpur Khurd. Mustafabad town is located at a distance of about 3 Kms from plant.


Unchahar railway station on Allahabad- Raebareli broad gauge (BG) section of Northern railway (NR) is 2 KMs away. The nearest airport is located at Lucknow at a distance of approximately 110 Km from the project site.

The latitude and longitude of Site are 25° 54' 50" to 81° 19' 50" respectively.

3.0 SCOPE OF ENQUIRY:

This enquiry covers complete wagon tippers with side arm chargers and apron feeders with associated equipment & accessories including all drives, necessary electrical items, and instrumentation and control accessories excluding civil works but including civil design work. This wagon tippler package is a part of coal handling system of 1x500 MW FGUTPP stage – IV, to be done as turnkey package including design, engineering, manufacture, supply, assembly, inspection and testing at manufacturer's and/or his sub-contractors works, proper packing, delivery at site, transportation, unloading/handling at site, storage at site, erection, site painting, commissioning, testing, all E&C works for wagon tippers, side arm charger, apron feeders, technological structures, including mandatory spares/recommended spares / special tools & tackles for maintenance, start up, pre-commissioning & commissioning spares, first fill &

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consumables as specified for coal handling system as defined in the technical specification (volume I and volume II) of tender documents.


4.0 GENERAL TECHNICAL INSTRUCTIONS.

1. It is not the intent to specify herein all the details of design and manufacture. However the equipment shall confirm in all respect to high standards of design, engineering and workmanship, and shall be capable of performing the required duties in a manner acceptable to Engineer/owner, who will interpret the meaning of drawing and specifications and shall be entitled to reject any component, work or material, which in his opinion is not in conformity with the duty requirements.
2. The omission of specific reference to any component/accessory necessary for the proper performance of the equipments shall not relieve the bidder of the responsibility of providing such facilities to complete the supply /erection/commissioning etc. of entire coal handling plant at quoted prices.
3. NBPPL's/ owner's representative shall be given access to the shop in which the equipments are being manufactured or tested and all the test records shall be made available to him.
4. The equipments covered under this specification shall not be dispatched unless the same have been finally inspected, accepted and shipping release issued by NBPPL/NTPC.
5. In case any deviation from this technical enquiry, technical specification, General Technical conditions, the same shall be indicated in the schedule of deviations. In the absence of duly filled schedules it will be assumed that the bid strictly confirms to the specifications.
6. Unpriced copy of the price bid shall be furnished along with the technical bid.

Further if any contradiction/ discrepancy in technical enquiry then NTPC specification details shall be prevailing.

Bidder shall include the responsibility of getting drawings approved from Customer & NBPPL. Bidder shall be solely responsible for submission and getting the drawings /Data sheets/QAP/ FQAP/Commissioning procedures /O& M manual/PG test procedure/Testing procedures approved from NBPPL/NTPC in time and shall plan the activities.

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Bidder shall submit a signed copy of NBPPL's tender documents (all volumes) as part of technical offer along with the bid without any deviations.

Complete detail engineering drawings, calculations, (for civil, mechanical, electrics and C& I), selection of components etc. shall be subject to approval by NTPC/NBPPL engineers during detailed engineering.

Successful bidder shall take prior approval from NBPPL/NTPC while placing the E&C contract order for this package to a sub- contractor. NBPPL/NTPC reserves the right to disapprove/reject any such E&C contractor which NBPPL/NTPC deems not fit for executing E&C of this contract.


5.0 BROAD SCOPE OF WAGON TIPLERS & ASSOCIATED EQUIPMENTS

Bidder to consider the following in their scope apart from the items referred in the Bid document elsewhere.

Design, engineering, manufacturing, shop fabrication, assembly, testing and inspection at supplier's works, forwarding, packing, dispatch, shipping, delivery at Indian port/unloading at Indian port/delivery from Indian port to site in case of imported equipment and delivery/unloading at site for indigenous equipment, unloading and storing at site, insurance up to time of handing over, handling at site, complete erection, start-up, commissioning, successful performance testing and handing over of the Wagon Tiplers, Side Arm Chargers Apron Feeders with associated Equipment and accessories on turnkey basis consisting of the following:

- A. Wagon Tiplers,
- B. Side Arm Chargers,
- C. Apron Feeders,
- D. Basic Engineering, Detailed layouts and equipment General Arrangement Drawings, complete civil design, detailing including issue of Civil Construction drawings associated with Wagon Tipler Complex (irrespective of the coverage of supply scope). This is essential in this contract and the scope of design and detailing shall include furnishing

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load details for the connecting equipments also, so that the civil requirements in other's scope will be taken care.

Complete Civil and structural design, supply, fabrication and execution of wagon tippler packages shall include all sub structures and super structures also. Bidder shall submit piling design documents, if required. The below structures shall be considered in bidder's scope for civil design.

1. The complete system design, and equipment design, supply, erection, commissioning, testing of below mentioned items but not limited to for the completion of CHP for Stage IV shall be in the scope of bidder.
 - a) Wagon Tipplers with side arm charger.
 - b) Apron feeders
 - c) Sump Pumps
 - d) Complete Electrical System associated with wagon Tippler package.
 - e) Complete C & I System for Wagon Tippler ,Side Arm Charger, Apron feeder
2. Complete design of civil, structural, mechanical, electrical and C& I equipments design and supply shall comply with the NTPC technical specification. Further, Structural fabrication and erection works along with supply of Structural steel sections required if any for this package (except for wagon tippler control room/MCC Room) shall also be in the scope of bidder. Bidder to procure the structural steel sections only from NTPC/NBPPL approved sources for that bidder has to take prior approval from NTPC/NBPPL before placement of purchase order.
3. Any type of grouting including supply of grouting material is in the scope of bidder.
4. Sheeting works along with supply of all types of sheets shall be in the scope of bidder. Bidder to procure the sheeting materials only from NTPC/NBPPL approved sources for that bidder has to take prior approval from NTPC/NBPPL before placement of purchase order.

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5. Supply and erection/laying of any type of grating is in the scope of bidder.
6. Bidder to procure BOIs only from NTPC/NBPPL approved sources.
7. Scope of services shall include but not limited to erection/testing/commissioning/trial run & performance test of complete Wagon Tippler System. Transportation of equipments, material to site, local clearance, storage at site etc & supply of all labour including supervision personnel, materials, erection tools & tackles etc. as necessary for expeditious execution of works etc are also included in bidder's scope. It shall be the responsibility of the bidder to arrange all T&P required for the execution of complete job including erection and structural works.
8. Supply of mandatory spares as per the list in the NTPC technical specification shall be in the scope of bidder.
9. All operation and maintenance platforms for individual equipments, view holes, etc shall be in bidders scope of supply and E&C.

System integration and PG test of entire Wagon Tippler package, until final handing over and written confirmation from NBPPL/NTPC shall be in bidder's scope.


10. Bidder's scope shall also include system integration & control requirements and control philosophy w.r.t. wagon tippler package. Bidder shall also ensure that the control system provided by bidder shall be compatible with the owner's/Employer's system.
11. Bidder shall submit the weekly engineering progress reports in NBPPL's format and depute full project team for attending all project review meetings called by NBPPL and NTPC without fail.
12. Bidder to adhere to the NTPC sub-vendor list. If any additional vendors considered by bidder in their offer, same is subjected to approval from NBPPL & NTPC. If the same is not approved, then the original list shall be followed by bidder without any price implication to NBPPL in such event. If sub-vendor list

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for any equipments/items are not provided in the technical specification, then the same shall be subject to NTPC/NBPPL approval in the event of order.

13. Consumables like lubricants, oils, grease etc for initial flushing, first fill and initial operation with topping up to handover of entire Wagon Tippler System to NBPPL/NTPC and Special tools and tackles, as required, commissioning spares, supply & application of rust preventive paints at shop floor and at site after erection as applicable for the equipment / system shall be in the scope of bidder.
14. Bidder to note that time is the essence of this contract, thus they shall submit the drg. Submission schedule for design activity, in no. of days starting from the zero date i.e. LOI date. No delay shall be entertained later on. Bidder shall also submit the manufacturing schedule for his self manufactured items and ordering schedule for all the other BOI. This shall be discussed before LOI is placed on the successful bidder and mutually agreed upon.
15. Engineering drg./doc. must essentially contain the following (individual to system, equipment and items) but not limited to these and any drg./doc. as deemed necessary by NBPPL/NTPC for thorough engineering of Wagon tippler complex associated with CHP shall be furnished by the vendor during detail engineering:
 - a. General arrangements drawings, floor plans of all Wagon Tipper buildings,
 - b. Civil & Steel structural design, construction drawings with all details for Wagon Tipper buildings
 - c. Various schedules
 - d. Design calculations of all equipments.
 - e. Data sheets
 - f. Fabrication drawings of chutes & technological structures.
 - g. O&M manuals

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h. PG test procedures

i. QAP

j. FQP

In addition to the no. of copies indicated and desired by NTPC, bidder to ensure submission of additional 4 sets of all engineering drg./doc. to NBPPL and for all such subsequent revisions in hard form along with a soft copy sent thru email addressed to Project manager and concerned project team.

16. Bidder shall furnish the L-2 project schedule for complete project inline with NBPPL milestones along with the bid. Successful bidder shall furnish the L-3 project schedule in line with the L-2 schedule after award of the contract.

17. Bidder shall make their own arrangements well in advance for heavy erection equipment like bigger cranes, hydras, pay loaders, etc. that are required for lifting, shifting & erection of equipment.


18. Bidder shall strictly adhere to and follow the erection & commissioning terms and conditions as mentioned in the enclosed NTPC documents.

19. Bidder shall confirm & strictly adhere to the time schedule which shall be furnished before the LOI to the bidder and discussed during post bid meeting and also bidder to fill the T&P deployment sheet and give declaration of T&P deployment as per requirement.

20. Bidder to note that the Installation of Wagon Tippler Complex is considered in a staggered manner to suit with CHP commissioning activities. Hence, Bidder has to consider the above aspect and envisage mobilization of all resources (men and materials) required in the shortest possible time during E&C at site. For this, the successful bidder has to consider advance resource planning so that E&C by the successful bidder will not be delayed.

21. Bidder shall visit the Project Site for this Power Plant to get familiarized with the space allotted for the proposed Wagon Tippler Complex of CHP and also note the operation of existing Wagon Tippler Complex. The Bidder may note

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the prevailing operation in detail and observe site constraints, if any before submitting the complete offer to NBPPL. No issues arising out of site condition or layout constraints shall be entertained later on during detail engineering and any modification required due to site conditions

22. All consumables like lubricants, oil, etc. required for initial operation of the equipment, till final handing over to NTPC, shall be in the scope of bidder. Also supply of commissioning spares shall be in the scope of bidder.


23. Cleaning of any debris produced by the bidder during E&C shall be done immediately at each front by the bidder.

24. Bidder to extend all help and documentary support for compliance and addressing any statutory issues raised at site which pertains to the area / work under bidder's scope.

General Notes:

1. Bidder to note that the above list is not exhaustive and any work required for completing the system and ensuring its satisfactory running shall be in the scope of work and supply for this package bidder.
2. In case of any ambiguity, conflict in the standard & /or interpretation of clauses in this enquiry spec. and its enclosures the decision of NTPC/NBPPL shall be final and binding and any change due to this shall have no price implication on NBPPL and shall have to be absorbed by successful bidder.
3. Bidder shall strictly follow and adhere to the guidelines laid down in the enclosed ECC.
4. Bidder shall submit the signed and stamped copy of all the pages which constitute this technical enquiry specification, signed by authorized signatory to avoid any ambiguity in scope understanding & the scope division as a technical offer during bidding.

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Special Note :

1. Bidder to note that “no deviation” from the enclosed NTPC’s technical specification (along with other documents) and the pre-bid MOMs, amendments and clarifications, vendor lists, spares list, etc. shall be acceptable until and unless written approval from customer NTPC/NBPPL has been accorded. Bidder shall submit a signed copy of NBPPL’s tender documents and enclosures as part of technical offer along with the bid without any deviations.

6.0 TECHNICAL DOCUMENTS AND DRAWINGS:

1. Bidder shall furnish the following details in their technical offer.
 - a) System capacities and all equipment ratings as per their scope of supply.
 - b) Motor ratings of all equipments.
2. All drawing and data sheet are to be submitted in standard sheets having approved title blocks. NTPC’s and NBPPL’s name has to be incorporated in all the drawings.
3. As far as possible, first angle projection shall be followed.
4. Drawing shall be generally in A3 size. However, if inevitable, the size shall be A0, A1, and A2.
5. Drawing shall be complete. Incomplete drawing shall not be accepted.
6. All drawings submitted shall indicate the type, size, arrangement, weight of each component, breakdown for packing and shipping, the external connections, fixing arrangements required, the dimensions required for installation with other equipment and material, clearances required

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between various portions of the equipment and any other information that is relevant or requested for.

7. Free hand drawing, lettering, overwriting etc., shall be totally avoided and the same shall be stenciled in ink.
8. The drawings mentioned for approval are to be submitted for approval. If drawings are approved with comments, then the same shall be resubmitted after incorporating the comments.
9. Test certificates shall invariably consist of details such as Nameplate data, projects and NTPC's name.
10. Test certificates shall be strictly in A4 size
11. Records of test results / readings etc., made during internal testing shall be available during testing/ inspection in customer's presence.
12. All drawings and test certificates etc., shall be marked as "CERTIFIED" and signed by the competent authority on the Bidder's side.

7.0 **INSPECTION AND TESTING:**

1. Bidder shall give 15 days' advance written notice of equipment being ready for testing. Such tests shall be to bidder's account only. The customer / Inspector, unless the witnessing of the tests is virtually waived, will attend such tests within 15 days of the date on which the equipment is notified as being ready.
2. Type & routine test report / certificates shall include details of standard to which the tests are performed, test parameters, acceptance criteria, test set up etc. used during the testing along with the test piece details / rating and the detailed test record and final test result.
3. All inspection, measuring and test equipment used by the contractor shall be calibrated periodically. Bidder shall maintain all relevant records of

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periodic calibration, instrument identification, and shall provide for inspection by bidder wherever asked specifically; bidder shall calibrate measuring / testing equipment in the presence of employer.


4. The details of the checks to be carried out for various components (MQP) are to be submitted within one month from the date of Purchase order by bidder for customer approval. However, some indicative checks on different items are mentioned elsewhere in the tender specification which should necessarily form part of the Quality Assurance Plan to be agreed with the customer.

8.0 **ERECTION CONDITIONS OF CONTRACT:**

Bidder to note that CHP fronts during erection will be given in a staggered manner. So, Bidder has to consider and envisage mobilization of all resources required, including manpower, in a shortest possible time during execution time. For this bidder has to consider advance resource planning so that erection by the successful bidder is not delayed.

9.0 **SITE ACTIVITIES:**

1. All site activities like unloading, receipt, storage, security & handling material, civil/structural works in the bidder's scope, erection and commissioning, trial run & PG test, handing over to customer the complete System shall be in bidder's scope.
2. Bidder has to construct his site office , open storage yard and closed storage yard


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10.0 OPERATION AND MAINTENANCE TILL HANDING OVER:

10.01.0 Scope of work for operation & Maintenance of the System:

1. The bidder shall be responsible to carry out the “round the clock trouble free operation” of the complete Wagon tippler complex covered under this enquiry. The scope shall be either coal unloading to stacking or reclaiming to bunker or direct bunker feeding modes or combination or the above..
2. Operation and maintenance of the entire Wagon tippler complex system supplied by the bidder shall be in the scope of bidder.
3. All consumables (gasket, rope, diesel, rustoline, waste cloth, lapping paste, jute, emery papers, welding electrodes, grinding wheel, hacksaw-blade, cutting gas, Electric items like Insulation Tape, Lugs, Fuses, Push Buttons, Electrical contact cleaner etc.) required shall be in the scope of the bidder.
4. All tools, tackles, viz. chain pulley block, pulling & lifting equipment, Trolley, Crane, Hydra, Truck, Trailer, winch, wire rope, grinding machine, sling, D-shackle, Coupler etc. including precision measuring instruments, welding machine & single phase portable welding machine that may be essential to execute the job shall be arranged by the bidder at no extra cost to NBPPL. Portable diesel generator machine will have to be arranged by the bidder for carrying out maintenance job outside the plant where power supply could not be arranged by NBPPL.
5. For electrical job, Megger (1 no.), Multimeter (02 nos.), Clamp meter (1 no.), Tester and screw driver set (02 nos.), Spanners/Pliers/Small tools kit (1 set)/Crimping tools for power and control cables/ cutter (2 nos.)/

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wire stripper (2 nos.)/Blower to be arranged by the bidder at no extra cost to NBPPL.


6. Necessary shifting of materials, spares, equipments etc. from store to work site and unserviceable materials from work site to store/yard, is to be done by the bidder at their own cost.
7. The bidder must have adequate resources to undertake routine, preventive maintenance jobs of CHP. They should have adequate resources to mobilize the site for carrying out three to four jobs simultaneously without any delay.
8. Bidder has to compulsorily maintain log book for the O & M staff engaged for O&M jobs and submit to Engineer in charge for certification for realization of the bills. After certification of the bill by Engineer in charge of NBPPL, bidder shall claim the amount after completion of minimum 100 shifts.

Additional responsibility of the bidder:

The bidder shall also be responsible for following operational activities:

1. Top up of oil/grease/lubricant as required during operation of system shall be done by the bidder.
2. During coal unloading at wagon tippler area necessary manpower shall be deploy necessary manpower for breaking of lumps as and when required in shift during coal unloading.
3. The bidder should remove all the technical waste including coal in and around Wagon Tippler complex area after each maintenance and


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operational activities to keep the place clean and according to the satisfaction of NBPPL Engineer in charge within 3(three) days after completion of work, failing which NBPPL will get the cleaning done at the risk and cost of the bidder.


4. In case there is choking due to formation of blockage in chutes in running condition of the system, utmost effort is to be given to remove those blockage. Necessary Safety arrangement as deemed fit is to be undertaken in course of removing choking. Poking at chutes and above to dislodge choking as and when required.
5. The bidder shall do the servicing of field instruments as required for the completion of the system
6. To maintain the daily log book for shift wise system operations this will include all activities. A copy of observation and recording of salient operational readings of the unit to be submitted by the bidder to the Engineer-in-charge of NBPPL for record and further processing.
7. Housekeeping: Cleaning of all equipment and housekeeping to be carried out dedicatedly in total Wagon tippler complex and its office premises.
8. All routine, preventive, predictive and breakdown maintenance of equipments of Wagon tippler complex in bidder scope.
9. In case of dumping of coal from the hoppers/chutes on the floor the same has to be cleaned. The coal has to be transported to the specified place by the bidder as per the instruction of the Engineer-in-charge.
10. Fabrication and erection of platform/extra support for Wagon tippler

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complex area, if felt necessary during operation and maintenance of the System has to be done by the bidder. Materials like channels, beam, angle etc as required shall be arranged by bidder itself.

11. Leakages/Spillages/Debris etc. generated on account of repairs during operation and maintenance of the System at various locations in the Wagon tippler complex has to be collected, cleaned and disposed at designated area as marked by NBPPL.
12. Transportation of new pipes, spares, equipments from stores to site including loading, unloading and return the damaged pipes, spares, equipments to the designated place in the store in scope of bidder.
13. To maintain the daily Maintenance log book in which details of overhauling / breakdown / maintenance of any equipment including replacement of spares / components to be recorded. Recording of any abnormality of equipments, malfunctioning of system of the CHP also to be noted in the Log book and informed to the Engineer-in-charge of NBPPL for initiating immediate corrective action by the contractor.
14. The bidder shall take approval from Engineer-in charge of NBPPL by submitting organization Chart of O&M staff for this site clearly indicating man power deployment with their educational background& experience with supporting documents.
15. The bidder shall be solely and wholly responsible for safety and security of workers engaged in the job and the NBPPL property. In case of any accident the contractor shall pay proper compensation to the workers as per workmen's compensation act and repair/replace NBPPL property at their own cost & arrangement. The bidder shall also make adequate

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provision of insurance for their workers at their own cost to cover them against the risk of accident.

16. The bidder and their workers engaged in the job shall follow all safety rules at the time of execution of work. It shall be responsibility of the bidder to supply all safety equipment as necessary to its O&M staff.
17. The bidder shall comply with all laws, rules & regulations of the land including but not limited to, i) Labour rules & Acts, ii) Factories Act, iii) Minimum wages Act, IV) Payment of Wages Act, v) Bonus Act, vi) EPF rules, vii) Contract Labour (Regulation & Abolition) Act as in vogue or comes in to vogue from time to time. NBPPL will be kept indemnified against any claim arising out of non-compliance of such Acts/rules.
18. NBPPL shall not be responsible in matters of employment of workers engaged in the job at any point of time. The bidder shall be fully responsible for his workers with regard to terms of employment of services. NBPPL shall not be held responsible in any manner, whatsoever, in respect of workers engaged by the contractor for carrying out the works at site. Regarding engagement of workers preference should be given towards experienced and competent workers with bonafide testimonials.
19. Beyond general shift if any trouble/breakdown occurs in the System, Maintenance team must reach the plant without any delay along with Engineer/Site In charge.
20. If any additional manpower is required during O&M whatsoever under the scope of contract the same shall be made available by bidder in time within the cost. To cater the need of time bound maintenance jobs, the bidder shall depute additional manpower without any cost implication to

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NBPPL.

21. During execution of work if any personnel is found not suitable for the job or his presence inside powerhouse premises is felt undesirable, the personnel has to be replaced within 15 days.

22. NBPPL will not be responsible for payment towards idle labour charges.

11.0 TOOLS & TACKLES, COMMISSIONING SPARES:


- Bidder to include Special tools and tackles, Commissioning spares along with Wagon tippler complex package.
- Commissioning Spares as per the system requirement till commissioning of the equipment shall have to be supplied by bidder without any cost implication to NBPPL.

12.0 OPERATION & MAINTENANCE MANUAL:

O & M manual shall contain the following.

1. Principle of operation of the equipment.
2. Details of preventive / repair maintenance for equipment and accessories used.
3. Details about the general specifications, design capacities of equipment, their function.
4. Equipment Bidder's address, telephone nos., contacts person details to be furnished.
5. Required Dismantling devices, tools etc.
6. List of DO's and DO NOT's.
7. Test certificates.
8. All drawings.
9. Calculations.
10. Storage and erection instructions.
11. Proper procedures & sequence of operation.

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12. Details of consumable.


Note:

- a) All manual shall be supplied in proper bound books or in folders, preferably in A4 size.
- b) Prospective Bidder will submit the regular progress reports for self manufactured & their bought out items equipment ordering /manufacturing status, drawings status once in fifteen days.

13.0 LIST OF FORMATS/ ENCLOSURES:

Following Formats/ enclosures attached is an integral part of this technical enquiry and must be dully filled, signed and stamped and submitted along with the offer:

1. Qualification format Attachment- 3A-6 (As Applicable)
2. Past performance format Attachment - 3F
3. Format for Manufacturing capability and Plant loading of Bidder and sub Vendor Attachment - 3D.
4. Format for Equipment guaranteed capacity/head Attachment 10B
5. Present Order Book Position for Coal Handling System Attachment – 3E

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14.0 SCOPE OF ELECTRICAL & C&I FOR CHP PACKAGE :

Necessary Electricals & controls (Design, supply, erection and commissioning) for feeding power and successful operation of Wagon Tippler package mechanism detailed under SI No5 is under Electrical scope.


SCOPE MATRIX BETWEEN NBPPL AND BIDDER FOR ELECTRICAL

SL. NO.	DETAILS	SUPPLY	E & C	REMARKS
1	415V Switchgear (PCC/PMCC, MCC)	Bidder	Bidder	Switchgear required for Wagon tippler equipments are in scope of bidder.
2	LT Outdoor/Indoor Transformers (3.3KV/415V)	Bidder	Bidder	NBPPL shall provide 2 nos. 3.3 KV feeders located at CHP main Control room alongwith electrical supply upto Transformer Incomer.
2	Local Push button station, JBs and control panels	Bidder	Bidder	
3	Power cables, control cables and screened control cables as required.	Bidder	Bidder	<p>1. All power cables required for this package is in the scope of bidder. However, NBPPL shall provide 2 nos. 3.3 KV feeders located at CHP main Control room alongwith electrical supply upto wagon tippler switchgear/control room building.</p> <p>2. Control Cables from field instruments to JBs to RIO panels and from JBs to Switchgear are in the scope of bidder.</p>
4	Any special type of cable like compensating, co-axial, prefab, , optical fibre etc.	Bidder	Bidder	

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5	Cable trays, accessories & cable tray supporting system	Bidder	Bidder	<p>1. Civil design of (RCC)cable trench along with insert plates drawings provided by bidder during detailed engg . Civil construction work is in the scope of NBPPL's civil contractor throughout CHP.</p> <p>Cable trays, cable tray supporting structures and accessories shall be in bidders scope of supply and E&C.</p>
6	Cable glands and lugs for equipments	Bidder	Bidder	
7	Equipment grounding & lightning protection	Bidder	Bidder	<p>Material and sizes shall be as per specification and subject to NBPPL/NTPC approval during detailed engineering stage.</p>
8	Below grade grounding	NBPPL	NBPPL	<p>Connection with risers are in the scope of bidder.</p>
9	LT/HT motors with base plate and foundation hardware	Bidder	Bidder	<p>Make shall be subject to NBPPL/NTPC approval at contract stage.</p>
10	Indoor/outdoor Lighting system	Bidder	Bidder	<p>In addition to other lighting system items, vendor shall consider lighting transformer, distribution board (LDB), lighting panels (LP) with outgoing feeders & timer control as per requirement. lighting along road side is in the scope of NBPPL.</p>
11	Any other equipment/material/ service required for completeness of CHP but not specified above.	Bidder	Bidder	
12	<p>Engineering activities during detailed engineering stage, including those listed below.</p> <p>a. Electrical load data</p>	Bidder	-	<p>1. Documentation shall be submitted as per project schedule for NBPPL/NTPC approval.</p>

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	<p>submission in NBPPL/NTPC format</p> <p>b. Electrical equipment GA drawings</p> <p>c. Electrical equipment layout drawings</p> <p>d. Cable trench/tray layout drawings</p> <p>e. Power & Control cable schedules showing routing details.</p> <p>f. Grounding and lightning protection system layouts</p> <p>g. Cable termination/interconnec tion details (diagram)/cable block diagram</p> <p>h. Lighting layout, wiring drawings including lux calculation</p> <p>i. Sizing calculation for cables and 415V, MCC</p>			<p>2. Vendor shall be responsible for necessary coordination with NBPPL/NTPC for required engineering interfacing during contract stage.</p> <p>3. Any approval required from electrical inspection authority for electrical equipment shall be arranged by vendor.</p>
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NOTES:

1. Sub-Vendor List provided for Electrical Equipments/items is indicative only and it requires prior approval from NBPPL/NTPC before finalizing the sub-vendor.
2. All QAPs shall be subject to approval of NBPPL/NTPC after award of contract without any price implication to NBPPL. If bidders have any reference QAP of NTPC projects then same shall be applicable. QAP attached with specification is for reference only.

Design, supply, transportation, loading/unloading at site, receipt, storage, security, transportation to erection location, Erection, Testing & Commissioning of the following electrical items for the completion of CHP package but not limited to shall be in the scope of successful bidder.

1. LT switch gears
2. LT cables

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3. LT Motors
4. Cabling works,
5. Earthing & Lightning Protection
6. indoor/outdoor Lighting of wagon tippler house
7. Fire Proof cable Penetration Sealing system
8. Electrical Actuators with integral starters
9. LT control cables
10. Screened control Cables
11. Control Panels for equipments.
12. Earthing system including design, material, installation.
13. LPBS, JB's (CJB & PJB) & Power distribution boards (PDB).
14. Lighting system complete with light fittings, LDBs, sw. Boards, wiring, earthing of lighting equipments.

ELECTRICAL GENERAL:

The following electrical items for the completion of entire Wagon tippler package shall also be in the bidders scope of Supply, Erection, Testing & Commissioning with respect to the NTPC technical specifications.

1. All electrical panels (LV Panels control panels, JB etc.)
2. All interface between Motors, Panels/JB and the , field devices. This includes cables and cabling accessories like cable trays / conduits, JBs, glands, wiring lugs, ferrules, etc.
3. All safety switches/solenoid valves / actuators / limit/temperature/ pressure / flow switches etc. for the coupling.
4. VFD panel as per requirement shall be in the scope of BidderDesign, manufacturing, supply and erection and commissioning of lighting in and around Wagon tippler house.
5. Specification of various electrical equipment shall be as per Customer spec. & the attached. However, please note that these are submitted for the approval of customer and if any changes done in the same shall be binding on the bidder without any commercial implication
6. Potential free NO-NC contacts are required from all equipments for interlocking purpose to DDCMIS.

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7. Type test reports shall be submitted as per NTPC specification wherever applicable. In case of non-availability of type test reports for the similar rating/type, M/s BIDDER shall conduct the type test at no extra cost to NBPPL.
8. Vendor should obtain prior customer approval for make, GA, OGA, schematics, data sheet, QAP for all sub vendor items.
9. NTPC specification shall be followed without any Deviation.
10. Minimum rear space for local panels and distribution boards shall be sufficient from the nearest obstruction. Cabling shall be done clearing any interference between collars, greasing points and dust collection. There shall be minimum headroom below runoff cable trays.
11. Local control panels requiring operator's attention shall not be located in dust prone areas. Local panels in each area shall be housed in a dust proof cabin to minimize dust nuisance.
12. Cable schedule shall be prepared by the bidder and shall furnish during detailed engineering stage.
13. If speed control is required for any of the drives, drive panel for the same shall be in the scope (supply and E&C) of bidder.

SCOPE MATRIX BETWEEN NBPPL AND BIDDER FOR C&I

SL. NO.	DETAILS	SUPPLY	E & C	REMARKS
1	DDCMIS PANEL	NBPPL	NBPPL	Instrument cables, signal cables from DDCMIS panel (CHP control room) to main control room shall be in the scope of NBPPL. However, cables from field instruments to JB's to RIO panels and from JB's to Switchgear are in the scope of bidder.

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2	UPS	NBPPL	NBPPL	Power supply cables from UPS to the DDCMIS panels shall be in NBPPL scope
3	Instrument cables (Signal, Communication cables etc.)	Bidder	Bidder	
4	Measuring instruments	Bidder	Bidder	
5	PLC for Wagon tippler	Bidder	Bidder	
5	Control desk, LVS and panels	NBPPL	NBPPL	
6	Furniture of control room	NBPPL	NBPPL	
7	RIO Panels	NBPPL	NBPPL	Instrument cables, signal cables from RIO panels to DDCMIS panel (CHP control room and main control room) shall be in the scope of NBPPL.
8	Any other equipment/material/ service including interconnection between Stage-II & Stage-IV required for completeness of CHP but not specified above.	Bidder	Bidder	Supplying the materials for Modification, if required any, in Stage – II are also in Bidder's scope. Bidder shall also make arrangement along with BHEL/EDN/ Bangalore to make modifications in the Control logic of Stage – II (including supply of materials by BHEL, if any) at NO EXTRA COST to NBPPL

NOTES:

1. Make of all C&I / Electrical equipments/items supplied shall be reputed make & shall be subject to approval of NBPPL/NTPC before finalising on them.
2. All Operational Philosophies and QAPs shall be subject to approval of NBPPL/NTPC after award of contract without any price implication to NBPPL. If bidders have any reference QAP of NTPC projects then same shall be applicable. QAP attached with specification is for reference only.

Design, supply, transportation, loading/unloading at site, receipt, storage, security, transportation to erection location, Erection, Testing & Commissioning of the following C&I/

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Electrical items for the completion of CHP package but not limited to shall be in the scope of successful bidder.

1. Measuring instruments (Primary and Secondary)
2. Electrical power supply system
3. Instrumentation and Power supply cables
4. Type test requirements
5. PLC Based Control System.
6. Instruments/field devices/other equipments.
7. Instrument Cables
8. Vibration Monitoring System with sensors
9. Vibration Isolation System

C&I GENERAL:

1. Control system shall be as per NTPC Requirements.
2. Input / output for controls is included in bidder scope. Cabling includes supply of cable, cable trays, support, glands, lugs, tags ferrules, laying and termination up to JB to RIO panels and from JB's to Switchgear are in the scope of bidder.
3. For successful implementation of control system bidder shall furnish control philosophy, I/O list, drive list along with KKS code and all other details/drawings/data/information like write-ups and detailed logic diagrams for controls, interlock and protection of bidder's equipment, recommended control loops, recommended mimics/graphics. Any other data as might be required by Employer during detailed engineering stage shall also be forwarded without any cost repercussions. M/s BIDDER shall depute his engineer to NTPC, Noida for approval of above documents.
4. Bidder shall furnish termination details for all I/Os to be connected to Employer's RIO/control system cabinets as per philosophy approved by Employer during detail engineering stage. The format and exact details by M/s

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BIDDER shall be approved by employer during detail engineering. While preparing I/O list and drive list during detail engineering M/s BIDDER shall obtain details of exact configuration from employer and include details of the same in these lists to be furnished by M/s BIDDER. M/s BIDDER shall depute his engineer to NTPC, Noida for approval of above documents.

5. All the instruments / equipments / Hard ware including which are required to implement the control philosophy as specified in technical specification for Wagon tippler complex package shall be in the scope of bidders scope of supply and E&C.
6. JBs shall be strategically located in each area to enable usage of multicore Cables.
7. Type test reports shall be submitted as per NTPC specification wherever applicable. In case of non availability of type test reports for the similar rating/type, bidder shall conduct the type test at no extra cost to NBPPL.
8. NTPC's Technical specification shall be followed without any deviation for all equipments design, supply testing and E&C.
9. Cable schedule shall be prepared by the bidder and shall be furnished during detailed engineering stage.

15.0 Criteria for Evaluation and comparison of bids:

Bidder to note that grand total price indicated at Sl. No. A will be the criteria for evaluation and hence your prices should be complete in all respects for the full scope defined considering all terms and conditions agreed.

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16.0 **CONSTRUCTION FACILITIES:**

A. Land

1. Depending upon the availability, Land for contractors office, storage and other facilities will be allocated with certain time frame and to the extent available/ considered necessary. The contractor has to plan and use the existing land inside the project premise considering the use of land by other civil /mechanical/ electrical contractors and the storage of plant machineries and materials. the existing land shall be shared by all erections agencies.
2. The contractor will be responsible for handing back all lands, as handed over to him by EMPLOYER/Customer.
3. Area within plant premises for fabrication, batching plant, office, storage area etc. for construction purpose shall be provided as per availability free of cost.


B. Construction of temporary office, stores etc.

The contractor shall arrange at his own cost cleaning of area allotted, construction of his temporary office, stores, cement godown etc. and also the watch and ward of all the above. Materials required for the same shall be provided by contractor at his own cost.

C. Electricity

1. Contractor shall have to deploy the DG sets for carrying out the tender works. However electricity (for construction purpose only) may be provided free of cost at customers single point source subject to availability. Bidders have to make his own distribution arrangement to draw electricity.
2. Contractor will have to procure & install general illumination system during construction right from start of his work. This system will include temporary pole lighting, portable lighting towers with dg back-up for different floors/working areas for execution of the work & safety of workmen till the permanent illumination system is established, within the quoted rate. The

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illumination should be such that minimum illumination requirement as specified by Indian standards for general illumination is maintained.

3. Supply of electricity shall be governed by Indian Electricity Act and Installation Rules and other Rules and Regulation as applicable. The contractor shall ensure usage of electricity in an efficient manner and the same may be audited by EMPLOYER time to time. In case of any major deviation from normally accepted norms is observed, EMPLOYER will reserve the right to impose penalty as deemed fit for such cases.
4. Demobilization of the facilities after completion of works shall be in Contractors scope.
5. The bidder shall have to provide earth leakage circuit breaker at each point wherever human operated electrical drives/ T&Ps are deployed.
6. The power supply will be from the available grid. EMPLOYER shall not be responsible for any inconvenience or delay caused due to any interruption of power supply/ variation in voltage level and no compensation for delay in work can be claimed by the contractor due to such non-supply on the grounds of idle labour, machinery or any other grounds.
7. The contractor should ensure that the work in critical areas is not held up in the event of power breakdown. In the event of breakdown in the electric supply, if the progress of work is hampered, it will be the responsibility of the contractor to step up the progress of work after restoration of electric supply so that overall progress of work is not affected.

D. Water

1. Contractor has to make his own arrangement for construction and drinking water by resorting to the methods like bore well, water tankers etc. Necessary network for construction & drinking water system shall be done by the bidder at his own cost. Contractor is to get the construction water tested and approved by the customer at his own cost.

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2. Contractor should arrange on their own, drinking water in their labour colony.
3. Contractor will have to arrange for storage of water to meet the day-to-day requirement. Bidder will ensure adequate supply of construction water to meet the requirement of water during major concreting.

17.0 TERMINAL POINTS:

S.No:	ITEM DESCRIPTION	TERMINAL POINT
1	COAL	Feeding Point at Belt Conveyors, Bc-29A/B.
2	Electrical	3.3 KV supply feeders, 2 nos. terminated at wagon tippler switchgear and control room is the terminal point. From this point onwards, rest all electrical and C&I for the wagon tippler package is in Bidder scope.

18.0 EXCLUSIONS:

1. All Civil Works are excluded. However, design of all civil works including design of foundation bolts for wagon tippler complex are in the scope of bidder.
2. Dust Suppression System, dust extraction, service water, cooling water, drinking water systems etc.
3. AC and Ventilation System
4. Fire Protection System
5. Monorail and hoists
6. Any RCC, Floor, Slab including metal deck sheet as required.
7. Electrical supply from CHP Main Control Room to Transformer Incomer for wagon tippler.

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ANNEXURE- 1

Refer NIT for PRE-QUALIFICATION CRITERIA FOR THIS PACKAGE