



**TECHNICAL SPECIFICATION OF LIMESTONE GRINDING SYSTEM
NTPC DADRI 2X490MW**

DADRI:FGD:LGS:R00

	d. Dimensions e. Lifting places f. Handling marks and the following delivery marking
8.	Each package or shipping units shall be clearly marked or stenciled on at least two sides as follows. NTPC NATIONAL CAPITAL THERMAL POWER PROJECTS STAGE – II DADRI, 2 X 490 MW. UTTAR PRADESH INDIA EPC CONTRACTOR: BHARAT HEAVY ELECTRICALS LIMITED, INDIA" In addition, each package or shipping unit shall have the symbol painted in red on at least two sides of the package, covering one fourth of the area of the side.
9.	Each part of the equipment which is to be shipped as a separate piece or smaller parts packed within the same case shall be legibly marked to show the unit of which it is part, and match marked to show its relative position in the unit, to facilitate assembly in the field. Unit marks and match marks shall be made with steel stamps and with paint.
10.	Each case shall contain a packing list showing the detailed contents of the package. When any technical documents are supplied together with the shipment of materials no single package shall contain more than one set of such documents. Shipping papers shall clearly indicate in which packages the technical documents are contained.
11.	The case number shall be written in the form of a fraction, the numerator of which is the serial number of the case and the denominator the total number of case in which a complete unit of equipment is packed.
12.	Wherever necessary besides usual inscriptions the cases shall bear special indication such as "Top", "Do not turn over", "Care" , "Keep Dry" etc. as well as indication of the center of gravity (with red vertical lines) and places for attaching slings (with chain marks)
13.	Marking for Safe handling: To ensure safe handling, packing case shall be marked to show the following: a. Upright position b. Sling position and center of Gravity position c. Storage category d. Fragile components (to be marked properly with a clear warning for safe handling
14.	Each crate or package is to contain a packing list in a waterproof envelope. All items are to be clearly marked for easy identification against the packing List. All cases, packages etc. are to be clearly marked on the outside to indicate the total weight where the weight is bearing and the correct position of the slings are to bear an identification mark relating them to the appropriate shipping



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	documents. All stencil marks on the outside of cases are either to be made in waterproof material or protected by shellac or varnish to prevent obliteration in transit.
15.	The packing slip shall contain the following information: - Customer name, Name of the equipment, Purchase Order number with Date, Address of the delivery site, Name and Address of the Sender, Serial Number of LGS & accessories, BHEL item Code, Gross Weight and Net weight of Supplied items.
16.	Prior to transport from manufacturer's work to destination, components of the unit shall be completely cleaned to remove any foreign particles. Flange faces and other machined surfaces shall be protected by an easily removable rust preventive coating followed by suitable wrapping.
17.	All necessary painting, corrosion protection & preservation measures shall be taken as specified in painting schedule. Supplier shall consider the coastal environment zone which is defined as "very severe" during final finishing/shipping.
18.	Successful bidder shall furnish the detail packing /shipment box details with information like packing box size, type of packing, weight of each consignment, sequence no. of dispatch, no. of consignment for each deliverable item against each billing break up units/ billable blocks. Without these details the BBU shall not be approved during detail engineering. Also, complete billing break-up with above mentioned details shall be submitted within 10days of LOI.
19.	All items/equipment shall be dispatched in properly packed condition (i.e. no item shall be dispatched in loose condition such that it becomes difficult to store/identify its location at site at a later stage).
20.	Cases which cannot be marked as above shall have metal tags with the necessary markings on them. The metal tags shall be securely attached to the packages with strong steel binding wire. Each piece, Skid, Case or package shipped separately shall be labelled or tagged properly.
10.0	SUPERVISION OF ERECTION, TESTING AND COMMISSIONING
1.	The erection of Limestone Grinding System(LGS) will be done by owner as per Erection Manual and check List. However, the bidder shall make one visit per boiler for the supervision of erection, pre-commissioning & post- commissioning check-up, start-up, testing and trial runs of all the items covered under the scope of supply.
2.	There will be one visit per boiler and totally there will be 2 visits for 2 boilers. The bidder will be informed well in advance for the visit. Bidder shall include 15 working days per visit in the offer with minimum 2 visits.
3.	TA/DA, boarding and lodging shall be borne by the bidder and shall be inclusive in



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	supply portion.
11.0	EXCLUSION
	The following work associated with the LGS system will be by BHEL: a. Supply of main drive HT motor b. Civil foundations c. Walkways, platforms and ladders d. Material handling hoists
12.0	INSPECTION AND TESTING
A)	Minimum Testing requirements to be considered are as below:
1.	Vibration levels measured on the non-rotating parts shall not exceed the zone limit "B" as defined in ISO 10816 at steady conditions and shall not exceed the zone limit "C" as defined in ISO 10816 at transient conditions.
2.	List of Non-Destructive test over and above the material test are as follows: a. Mechanical Seal- Manufacturer's recommendation. b. Base Plate- Stress relieving of weld. c. Replaceable Rubber liner- Shore Hardness, Class and Type certificate
3.	Once mounting is finished and operation test will be conducted on each LGS to determine the characteristic curves. to determine the parameters at the design point, mechanical running & performance testing shall be performed & witnessed.
4.	Vibration test and Noise level test shall be witnessed at site.
5.	For surfaces with rubber lining Welding shall be visually inspected to verify the absence of rough area and unacceptable transition between surfaces which prevent the adequate adherence of rubber. The acceptance criteria shall be as per latest standard.
6.	For surfaces with rubber lining, degree of cleaning shall be visually checked before the application of the coating. There must be no area with oxidation, dirt or partially or generalized corrosion defects.
7.	Test certificates shall be issued for each lot of raw material used in the coating, corresponding to specific weight and traction resistance.
8.	For surfaces with rubber lining, adherence test shall be conducted on production samples. Adherence test shall be conducted on the actual surface through hammering. In order to verify the absence of air packets (or) surface without adherence.
9.	For surfaces with rubber lining, Coating thickness shall be checked at 100%.A High

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	voltage porosity test will be conducted on 100 % of the coated surface.
10.	Quality- Tests
	PUMPS:
i.	UT on shaft forgings (greater or equal to 40mm) and MPI/DPT shall be done on shafts and impeller to ensure freedom from defects.
ii.	The pump casing shall be hydraulically tested at 200% of pump rated head or at 150% of shut off head, whichever is higher. The test pressure shall be maintained for at least half an hour.
iii.	The pump rotating parts shall be subjected to static and dynamic balancing.
iv.	Noise and vibration shall be measured during the performance testing at shop.
v.	For Motors-Type test requirement ref Annexure-I-MOTORS SPECIFICATION
	AGITATORS:
i.	Rubber Lining shall be tested for hardness and spark test
ii.	Impellers shall be tested for dimensional and balancing check
iii.	Gear Boxes shall be tested for run test as per standard practice
	HYDROCYCLONES:
i.	Hydro-cyclones shall be checked by visual, dimensional etc.
	TANKS:
i.	All welds joints shall be DP tested and complete tanks shall be water fill tested.
ii.	All atmospheric storage tanks fabricated and erected at site shall be subjected to tests (Hydro, NDT and Vacuum) according to design code as applicable.
iii.	Rubber lining shall be tested for hardness and spark test, as applicable.
B)	General Inspection requirements to be considered are as below:
1.	Bidder shall furnish written copies of shop production, fabrication and quality test procedures and drawings to be used for review by BHEL / NTPC prior to manufacture. Inspection of above mentioned tests by BHEL/ NTPC representative at bidder's works is envisaged.
2.	The Bidder shall furnish performance test procedure along with standard. The test procedure will be reviewed and approved by the BHEL/NTPC.



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3.	LGS will be inspected at the Bidder's works before dispatch or where the test facilities are available.
4.	Vibration levels shall be measured during shop running/performance tests.
5.	Contract shaft seals shall be used during shop tests, unless the seal design is unsuitable for the shop-test condition.
6.	LGS shall not be released for shipment, until shop tests data and performance tests curves have been approved by Owner.
7.	Bidder should furnish performance guarantee as per applicable standard guarantee for the design, manufacture, material and safe operation of the equipments.
8.	BHEL shall witness the test at Bidder's works and a notice of minimum three (3) weeks shall be given for attending the inspection.
9.	Bidder to arrange all calibrated gauges, Instruments during inspection.
10.	Mechanical running and the performance test shall be carried out.
13.0	PAINTING
1.	Surface Preparation: Power Tool Cleaning to St3 (SSPC-SP3)
2.	PRIMER COAT: i. Primer: Red Oxide Zinc Phosphate Primer to IS: 12744 (Two coats) – DFT: 60 microns. ii. Intermediate: One coat of Synthetic Enamel intermediate coat to IS 2932; DFT- 50μ
3.	FINISH COAT: One coats of Synthetic Enamel to IS 2932, DFT- 50μ/ coat Total DFT : 50 micron.
4.	COLOUR CODE (based on DIN 2403:2007-05 & DIN 5381) i. Base: To be informed later ii. Lettering: To be informed later.
5.	Corrosion protection, coating and galvanizing, painting shall be taken care by the bidder. Bidder shall submit the painting scheme during detail Engg in line with the specification and shall be subject to approval of BHEL / NTPC.
14.0	SPARES,TOOLS & TACKLES
14.1	START UP & COMMISSIONING SPARES
	Start-up & Commissioning Spares shall be part of the main supply of the LGS. Start-up &



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	commissioning spares are those spares which may be required during the start- up and commissioning of the equipment/system. All spares required for successful operation till commissioning of LGS shall come under this category. Bidder shall provide an adequate stock of such start up and commissioning spares to be brought by him to the site for the equipment erection and commissioning. The spares must be available at site before the equipments are energized.
14.2	SPECIAL TOOLS & TACKLES:
	Any special tools & tackles required for the entire equipment to disassemble, assemble or maintain the units, they shall be included in the quotation and furnished as part of the initial supply of the machine. List of special tools & tackles shall be decided by bidder as per his proven practice. When special tools are provided, they shall be packaged in separate, boxes with lugs and marked as "Special Tools for (tag / item number)." Each tool shall be stamped or tagged to indicate its intended usage. Levers and eye bolts for the removal of parts to be serviced shall be submitted with special tools.
15.0	PERFORMANCE GUARANTEE
	All performance tests for LGS shall be carried out in accordance with any latest international codes/standards. 1) Bidder shall furnish Performance guarantee for the design, manufacture, material, safe and trouble-free operation of the LGS and its accessories 2) Wet ball Mill capacity at rated fineness Bidder shall guarantee and demonstrate each WBM capacity of 19.4 TPH with limestone output fineness of 90% or higher through 325 mesh for the range of limestone quality mentioned in our technical specification. 3) Wet ball Mill wear parts guarantee Contractor shall demonstrate the life of wet ball Mill wear parts in line with requirements stipulated in our Technical Specification. The establishment of the above guarantee shall be based on the operating records available at the Power station and will be computed for each pulverizer based on actual total hours of operation. 4) Wet ball Mill ball consumption Contractor shall guarantee ball consumption per ton of limestone throughput. Contractor shall furnish the minimum ball diameter below which the balls shall be replaced. 5) The Bidder shall ensure a design of the equipment to achieve an average target availability of 98% for 120 days and average target availability of 95% for 1 year. 6) Noise level ≤ 90 dB (A) at 1m horizontal distance from equipment/enclosures and 1.5m above operating floor is to be guaranteed. 7) Vibration levels measured on the non-rotating parts shall not exceed the zone



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	limit "B" as defined in ISO 10816 at steady conditions and shall not exceed the zone limit "C" as defined in ISO 10816 at transient conditions. 8) Acceptance tests to be carried out as per the procedure defined by the bidder which shall be submitted for BHEL/ NTPC approval. In the event that the performance test is unsuccessful, bidder shall take necessary remedial action at his cost and the performance test shall be repeated.
16.0	BID EVALUATION CRITERIA FOR POWER CONSUMPTION:
1.	POWER GUARANTEE Bidder to specify the total guaranteed power per Limestone Grinding System (LGS) operating at the rated capacity in their offer
2.	BID EVALUATION CRITERIA FOR POWER CONSUMPTION: Total guaranteed power consumption for Limestone Grinding System (LGS) at rated capacity (19.4 TPH) shall be quoted by bidder. Lowest quoted guaranteed power consumption will be taken as base value. Bid prices of other bidders will be loaded @ 197,080 INR for every KW excess over the base value as per the formula given below. Adjustment factor for excess power consumption in INR = $(GPC-BV) \times PL \times 1$ No. of Working LGS stream GPC- Guaranteed Power Consumption quoted by bidder in KW BV- base Value i.e. lowest quoted power consumption in KW PL- Power Loading @ 197,080 INR/KW
17.0	LIQUIDATED DAMAGES FOR POWER CONSUMPTION
	If actual Power Consumption during prove out (or) PG Test operating at the duty point exceeds the value guaranteed by the bidder, liquidated damages for shortfall in performance shall be deducted from contract price as per the formula given below Liquidated damage deductible in INR = $(GPC-APC) \times P \times 1$ No. of Working LGS Where • GPC- Guaranteed Power Consumption quoted by bidder in KW • APC- Actual Power Consumption in KW P- Penalty @ 197,080 INR per KW
18.0	WARRANTY
1.	The warranty period shall begin on the date of taking over by NTPC or date of issuance of the provisional acceptance certificate for the unit (whichever occurs first) and shall



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	end after twenty-four (24) months. Provided that the successful bidder shall extend the provisions of this warranty to cover all repaired and replacement parts furnished under the warranty obligations hereunder, subject to the warranty period for the same being for a period of 24 months from the date on which replacement or renewal work is completed.
2.	In case of failure of the equipment to meet the guarantee, NTPC/BHEL reserves the right to reject the equipment. However, NTPC/BHEL reserves the right to use the equipment until new equipment supplied by bidder meets the guaranteed requirement .
19.0	FIRST FILL OF CONSUMABLES:
1.	Bidder's scope shall also include supply and filling of all chemicals, reagents, resins, lubricants, grease, filters and consumable items for operation up to commissioning including top up requirements. All lubricants proposed for the plant operation shall be suitable for all operating and environmental conditions that will be met on site consistent with good maintenance procedures as instructed in the maintenance manuals.
2.	Detailed specifications for the lubricating oil, grease, gases, servo fluids, control fluids, chemicals including items qualities and quantities required per month of the plant operation for the NTPC/BHEL's approval herein shall be furnished within 2 months of placement of Order. On completion of erection complete list of bearings/equipment giving their location and identification marks shall be furnished to BHEL along with lubrication requirements. All types of chemicals, consumables, lubricants and grease shall be readily obtainable locally and the number of different types shall be kept to a minimum. For each type and grade of lubricant recommended, bidder shall list at least three equivalent lubricants manufactured by alternative companies.
20.0	TRAINING
	Successful bidder shall provide comprehensive training for NTPC/BHEL Engineering, O&M, Erection & Commissioning staffs at site covering all aspects of the LGS system - Operation & Maintenance, Troubleshooting etc.
21.0	CONFLICT
	Bidder's equipment shall be designed for and shall meet the service, performance and minimum level of quality requirements specified. Bidder shall be solely responsible for advising NTPC in writing of any conflicts between the specifications and Bidder's design, including performance and levels of quality. Bidder agrees that its obligations, liabilities and warranties shall not be diminished or extinguished due to its meeting the requirements of the Specification.
22.0	DOCUMENTATION



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A	DOCUMENTS TO BE SUBMITTED ALONG WITH THE OFFER
	The Bidder shall submit all documents, drawings, diagrams and all such information, which are necessary to fully understand the offer for techno – commercial evaluation as per Annexure V. Annexure V documents are required for proper evaluation purpose and vendors are requested to comply with above in all respect.
B	DOCUMENTS TO BE SUBMITTED AFTER AWARD OF CONTRACT
	The Successful bidder shall submit necessary data, documents and drawings for review, approval as specified under Annexure V. Drawings that are reviewed by the NTPC/ BHEL will be returned to bidder with a transmittal letter with any comments and / or questions marked on the drawings or noted in the letter. All comments and questions must be resolved before a resubmission of drawings / documents. If the design has not developed enough to resolve some of the comments or questions, bidder shall place a “hold” on those items or areas of design. NTPC/ BHEL reserves the right to return drawings unprocessed to bidder if there exists any evidence that bidder has not acknowledged all comments and questions. All necessary GA drawings, sections, sub-assembly drawings, specifications of main and sub components and necessary set of operation & maintenance manual as asked by NTPC must be furnished by bidder in soft and hard copy forms. For all documents softcopy format shall be searchable pdf, however in addition all drawings, diagrams like P&IDS shall be supplied in ACAD or other editable format and all lists in Excel format. Further break up of technical documents will be discussed during finalization of the purchase contract. Unless agreed otherwise, Ten (10) hard copies and five (05) sets of electronic copies of all documents are to be submitted in the English language. Electronic Copies shall be submitted in primary original data format (e.g. DOC, XLS, DWG) as well as in a printable non-proprietary document format (e.g. PDF). Especially P&IDs shall be submitted as DWG files and PDF files. Bidder to ensure submission of hard copies as per NTPC requirement for all engineering drg/doc and for all subsequent revisions along with a soft copy through email to concerned project team. However all the engineering related information shall be furnished in soft form to BHEL.

23.0 REFERENCE DOCUMENTS

1. Typical Layout & elevation drawing of ball mill building



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24.0

ANNEXURES

Annexure –I		एनटीपीसी NTPC													
CLAUSE NO.	INTENT OF SPECIFICATION														
4.00.00	QUALIFYING REQUIREMENTS FOR EQUIPMENTS/SYSTEMS														
4.01.00	Provenness criteria for critical equipment, auxiliaries, systems and bought out items: The Bidder / Bidder's sub-vendor(s) is required to meet the Provenness criteria and/or qualification requirement for critical equipment, auxiliaries, system and bought out items as per criteria stipulated below:														
4.01.01	Wet Limestone Grinding Mills for the Wet Limestone based Flue Gas Desulphurisation (FGD) System offered by the Bidder shall be only from such manufacturer(s) who has previously designed (either by itself or under collaboration / licensing agreement), manufactured / got manufactured the respective equipment(s) of the type, application and minimum equipment rating as stipulated below such that the respective equipment(s) should have been in successful operation in at least one (1) plant for a period not less than one(1) year reckoned as on the date of consideration for approval but not later than six months to award date of contract to the Main bidder: <u>Type and Rating for Qualification</u> <table><tr><th>Sl. No.</th><th>Name of Equipment</th><th>Type of Equipment</th><th>Application</th><th>Equipment Rating</th></tr><tr><td>(d)</td><td>Wet limestone Grinding mills</td><td>Horizontal Wet Ball mill</td><td>Wet Limestone based FGD application in Coal fired power plant</td><td>80% of the offered Ball mill capacity with pulverizing fineness not less than 90% thru 325 mesh</td></tr></table>					Sl. No.	Name of Equipment	Type of Equipment	Application	Equipment Rating	(d)	Wet limestone Grinding mills	Horizontal Wet Ball mill	Wet Limestone based FGD application in Coal fired power plant	80% of the offered Ball mill capacity with pulverizing fineness not less than 90% thru 325 mesh
Sl. No.	Name of Equipment	Type of Equipment	Application	Equipment Rating											
(d)	Wet limestone Grinding mills	Horizontal Wet Ball mill	Wet Limestone based FGD application in Coal fired power plant	80% of the offered Ball mill capacity with pulverizing fineness not less than 90% thru 325 mesh											
4.01.03	Bidder shall offer and supply only the type of the above equipment(s) for which he himself or the manufacturer proposed by the bidder for the above equipment(s) is qualified. A JV / Subsidiary Company formed for manufacturing and supply of equipment(s) as listed at clause no. 4.01.01 above in India, can also manufacture such equipment(s), provided that it has a valid collaboration or licensing agreement for design, engineering, manufacturing of such equipment(s) in India with a qualified equipment manufacturer who meets the requirements stipulated at clause 4.01.01 above (or the technology provider of the qualified equipment manufacturer) for the respective equipment(s). Before taking up the manufacturing of such equipment(s), the bidder/ his sub-vendor(s) must create /have created manufacturing facilities at his works as per collaborator's/licenser's design, manufacturing and quality control system for such equipment(s). Further, in such a case, such qualified equipment manufacturers should have, directly or indirectly through its holding company/ subsidiary company, at least 26% equity participation in the Indian Joint Venture Company/ Subsidiary company , which shall be maintained for a lock-in period of seven (7) years from the date of														

CLAUSE NO.	एनटीपीसी NTPC INTENT OF SPECIFICATION
4.01.05	incorporation of such Joint Venture/ Subsidiary or upto the end of defect liability period of the contract, whichever is later. (i) In case the Bidder or the proposed sub-vendor is not manufacturer of proven Wet limestone Grinding mills as per clause 4.01.01 (d) above but is a manufacturer of dry Grinding mills for power or cement industry of minimum 20 T/h capacity, the Bidder or the proposed sub-vendor can also manufacture Wet limestone Grinding mills, provided it has collaboration or valid licensing agreement for design, engineering, manufacturing, supply of such Wet limestone Grinding mills in India with such manufacturer who meet the requirements stipulated at clause 4.01.01 (d) above for the Wet limestone Grinding mills. Before taking up the manufacturing of such equipment, the bidder/ his sub-vendor must create /have created manufacturing facilities at his works as per collaborator's /licenser's design, manufacturing and quality control system for such equipments. In addition, the Bidder along with the qualified equipment manufacturer shall furnish DJU in which executant of the DJU shall be jointly and severally liable for the successful performance of the equipment as per the format enclosed in the bidding document. The DJU shall be submitted prior to the placement of order on the approved sub-vendor for Wet limestone Grinding mills. In case of award, each executant of the DJU except the Bidder shall be required to furnish an on demand bank guarantee for INR 10 Million (Indian Rupees Ten Million only) for each project. OR (ii) In case, the bidder or proposed sub vendor is not a manufacturer of proven Wet Limestone Grinding Mills as per clause 4.01.01 (d) above, but have designed, manufactured & supplied dry Grinding Ball Tube mills for at least 500 MW pulverized coal fired power plant, the Bidder or the proposed sub-vendor can also manufacture Wet limestone Grinding Mills provided it has a licensing agreement with a Wet limestone Grinding mills manufacturer who meet the requirements stipulated at clause 4.01.01 (d) above for the Wet limestone Grinding mills and provides extended warranty of three (3) years for the Wet Limestone Grinding Mills. In such a case Bidder shall provide an additional on demand bank guarantee for INR 10 Million (Indian Rupees Ten Million only) for each project.
4.01.08	Before taking up the manufacturing of such equipment(s) as per clause 4.01.02, 4.01.03, 4.01.04, 4.01.05(i), 4.01.06 & 4.01.07 above, the Bidder / its sub vendor(s) must create (or should have created) manufacturing and testing facilities at its works as per Collaborator / licensor's design, manufacturing and quality control system for such equipments duly certified by the Collaborator / licensor. Further, the Collaborator / Licensor shall provide (or should have provided) all design, design calculation, manufacturing drawings and must provide (or should have provided) technical and quality surveillance assistance and supervision during manufacturing, erection, testing, commissioning of equipments.
4.01.09	Bidder shall offer and supply only the type of the above equipment(s) for which it, itself or the manufacturer / Collaborator(s) / Licensor(s) proposed by the Bidder for the above equipment(s) is qualified.

4.01.10

The Employer reserves the right to fully satisfy himself regarding capability and capacity of Bidder / its sub-vendor(s) and the proposed arrangement and may prescribe additional requirement before allowing manufacture of the equipment listed above for this contract.

Note to clause 4.01.01

(1) Whenever the term 'coal fired' is appearing above, "Coal" shall be deemed to also include bituminous coal/brown coal/Anthracite Coal/lignite.

FOR
NCTPP DADRI ST-II (2X490 MW)
BIDDING DOCUMENT NO. CS-6130/0330-109-9

Bidder's Name and Address:

To
Contract Services-II
NTPC Limited
Noida-201301

Summary of Critical Equipment indicated under clause 4.01.00, sub-Section-I, Part-A of Section-VI.

Equipment Name	Sub-Vendor Name	Collaborator's Name, if applicable	Seeking Qualification as per clause... Sub-Section-I, Part-A of Section-VI
Booster Fans			*4.01.01 / *4.01.02 / *4.01.03
*Slurry Recirculation Pumps			*4.01.01 / *4.01.03 / *4.01.07
Oxidation Blowers			*4.01.01 / *4.01.03 / *4.01.04
Wet limestone Grinding mills			*4.01.01 / *4.01.03 / *4.01.05 (i) / 4.01.05 (ii)
Slurry Pumps			*4.01.01 / *4.01.03
Agitators			*4.01.01 / *4.01.03 / *4.01.06
Vacuum Belt filters			*4.01.01 / *4.01.03

Note : *Strike-off whichever is not applicable.

1. If qualification sought as per clause 4.01.01, sub-Section-I-A, Part-A of Section-VI then the details of the sub vendor (manufacturer) shall be filled by the bidder in the format A to G.

2. If the qualification sought as per the clause 4.01.02, sub-section-I-A, Part-A of Section-VI, then the details of proposed sub vendor (i.e manufacturer of such equipments for at least 490 MW unit rating) shall be filled individually by the bidder in the format A and the details of collaborator who meets the requirement stipulated at 4.01.01, sub-section-I-A, Part-A of Section-VI shall also be filled by the bidder in the format A separately. Further, in case of qualification vide clause 4.01.02, sub-section-I-A, Part-A of Section-VI a copy of valid ongoing collaboration and technology transfer agreement for design, engineering, manufacturing, supply of such equipment in India with the collaborator who meets the requirement stipulated at 4.01.01, sub-section-I-A, Part-A of Section-VI shall also be furnished.
3. If the qualification sought as per the clause 4.01.03, sub-section-I-A, Part-A of Section-VI then the details of JV/Subsidiary Company formed for manufacturing of such equipments in India shall be furnished individually for each equipment by the bidder such as,
 - i) Copy of document of incorporation of JV/Subsidiary company in India
 - ii) Copy of valid ongoing collaboration and technology transfer agreement for design, engineering, manufacturing, supply of such equipment in India with the collaborator who meets the requirement stipulated at 4.01.01, sub-section-I-A, Part-A of Section-VI.
 - iii) Copy of document of at least 26% equity participation of qualified equipment manufacturer in the Indian JV company/subsidiary company directly or indirectly through its holding company /Subsidiary company, which shall be maintained for a lock -in period of seven (7) years from the date of incorporation of such JV/subsidiary or up to the end of defect liability period of the contract which ever is later.

Further, the details of collaborator or technology provider of the qualified equipment manufacturer who meets the requirement stipulated at 4.01.01, sub-section-I-A, Part-A of Section-VI shall be filled by the Bidder in the format A to G (format given at 1.00.00). In addition to that, the sub vendor along with the Indian JV company/subsidiary company, qualified equipment manufacturer and its holding company/subsidiary company as applicable shall furnish the DJU.

*** strike out whichever is not applicable.**

1.00.00

(Applicable for Bidder/his sub vendors seeking qualification as per clause no. 4.01.01, Sub section-I, Part-A of Section-VI. Bidder shall furnish the required data only for those equipments / auxiliaries which are proposed to be sourced under this route.)

We, hereby furnish the data on proveness criteria for critical equipment, auxiliaries, systems and Bought Out Items such as Wet Limestone Grinding Mills which have been designed (either by self manufacturer or under valid ongoing collaboration and technology transfer agreement), *manufactured/ *got manufactured and supplied by us /Manufacturer (or manufactured/ got manufactured & supplied by our proposed sub-vendors) and these are in successful operation in at least one (1) plant for a period not less than one year reckoned as on the date of consideration for approval but not later than six months to award date of contract to the Main bidder. The details of type and minimum equipment rating of such equipment are given below :

D. Wet limestone Grinding mills: We declare that, we/our Sub-Vendor, have designed (either by itself or under collaboration / licensing agreement), *manufactured/*got manufactured and supplied at least one (1) number of Wet limestone Grinding mill of minimum 80% of the offered Ball mill capacity with pulverizing fineness not less than 90% thru 325 mesh, working in Wet limestone based FGD application in Coal fired power plant and which has been in successful operation for minimum one(1) year reckoned as on the date of consideration for approval but not later than six months to award date of contract to the Main bidder, as per the details furnished below:

Sl. No.	Description	Reference Work
1.	Name of the reference plant & location:	
2.	Client name and his address:	
3.	Whether power plant is coal fired	-*Yes/*No
4.	Whether operating in a Wet Limestone based FGD application in Coal fired power plant	-*Yes/*No
5.	Name of equipment manufacturer & address:	
6.	Date of commission of the equipments:	
7.	Model no. of the equipment:	
8.	Brief Technical particulars of the equipments:	
9.	Capacity-	TPH with pulverizing fineness not less than 90% thru 325mesh

Sl. No.	Description	Reference Work
10.	Whether the equipment(s) are in successful operation in atleast one (01) plant for a period not less than one (01) year reckoned as on the date of consideration for approval but not later than six months to award date of contract to the Main bidder	- *Yes/*No
11.	Flue gas Desulphurization system details:	*Technical extract/ *paper letter/ *email/ *Drawing from user or *contract document or *scheme or *any document in public domain enclosed at annexure....to Attachment-3K
12.	Scope of Work:	*Letter of Award or *Contract or *P.O. enclosed at Annexure.....to Attachment-3K
13.	Performance details:	*Certificate/*Letter/*E-mail from End user enclosed at Annexure.....to Attachment-3K

* Strike off whichever is not applicable.

(Data to be furnished in line with format given at 1.00.00 of this Attachment)

2.02.00

We further confirm that details in respect of collaboration / valid licencing agreement for the aforesaid equipment as per 2.01.00 above who meets the requirement stipulated at clause 4.01.01, sub-section-I, Part-A, Section-VI are enclosed at **Annexure-.....** to this Attachment. The data in respect of proveneness criteria for these equipment which are in successful operation in at least one (1) plant for a period not less than one reckoned as on the date of consideration for approval but not later than six months to award date of contract to the Main bidder are furnished below. We further confirm that we/ our sub vendor(s) have created manufacturing and testing facilities at our/ their works as per collaborator's/ Licensor's design, manufacturing & quality control system for these equipment(s)/ Auxiliary(ies).

(Data to be furnished in line with format given at 1.00.00 of this Attachment)

*3.00.00

Applicable for JV Company/Subsidiary Company meeting provenness criteria as per clause no. 4.01.01, Sub section-IA, Part-A of Section-VI.

3.01.00

We, hereby confirm that JV company/ Subsidiary company (Strike off whichever is not applicable) formed for manufacturing and supply of equipment(s) (Wet Limestone Grinding Mills) has a valid ongoing collaboration and technology transfer agreement for design, engineering, manufacturing of such equipment(s) in India with a qualified equipment manufacturer who meets the requirements stipulated at clause 4.01.01 of sub-section-I, Part-A, Section VI of bidding documents (or the technology provider of the qualified equipment manufacturer).
Further, in such a case, such qualified equipment manufacturers is having, directly or indirectly through its holding company/subsidiary company, at least 26% equity participation in the Indian Joint Venture Company/subsidiary company, which shall be maintained for a lock-in period of seven (7) years from the date of incorporation of such Joint Venture / Subsidiary or up to the end of defect liability period of the contract, whichever is later. Before taking up the manufacturing of such equipment(s) (Wet Limestone Grinding Mills), we/ our sub vendor(s) *will create /*have created manufacturing facilities at his works as per collaborator's/licenser's design, manufacturing and quality control system.

We further confirm that details in respect of collaboration / valid licencing agreement for the aforesaid equipment(s) (Wet Limestone Grinding Mills) who meets the requirement stipulated at clause 4.01.01, sub-section-I, Part-A, Section-VI for are enclosed at **Annexure-.....** to this Attachment.

*5.00.00

Applicable for Bidder/his sub vendors seeking provenness criteria as per clause no. 4.01.05 (i), Sub section-I, Part-A of Section-VI.

5.01.00

We, hereby confirm that *we/*our sub-vendors is a manufacturer of Dry Grinding Mills for minimum 20 T/h capacity. (Details of references enclosed at Annexure)

(Data to be furnished in line with format given at 1.00.00 of this Attachment))

5.02.00

We further confirm that details in respect of collaboration / valid licencing agreement for the Wet Grinding Mills between *us/*our sub-vendors, as per 5.01.00 above, and with qualified Wet Grinding Mill manufacturer, who meets the requirement stipulated at clause 4.01.01, sub-section-I, Part-A, Section-VI are enclosed at **Annexure-.....** to this Attachment. The data in respect of provenness criteria for the qualified Wet Grinding Mill manufacturer, which is in successful operation in at least one (1) plant for a period not less than one reckoned as on the date of consideration for approval but not later than six months to award date of contract to the Main bidder are furnished below.

(Data to be furnished in line with format given at 1.00.00 of this Attachment)

We further confirm that before taking up the manufacturing of such Wet Grinding Mill *we/ *our sub vendor(s) *will create /*have created manufacturing facilities at his works as per collaborator's/licenser's design, manufacturing and quality control system.

In addition, the Bidder along with our sub-vendors, as per 5.01.00 above (if applicable) and the qualified Wet Grinding Mill manufacturer and its holding/ subsidiary Company, as applicable, shall furnish DJU in which executant of the DJU shall be jointly and severally liable for the successful performance of the equipment as per the format enclosed at **Annexure-III of Attachment-3K.**

(Data to be furnished in line with format given at 1.00.00 of this Attachment)

*6.00.00

Applicable for Bidder/his sub vendors seeking provenness criteria as per clause no. 4.01.05 (ii), Sub section-I, Part-A of Section-VI.

6.01.00

We, hereby confirm that *we/*our sub-vendors have designed, manufactured & supplied dry Grinding Ball Tube mills for at least 500 MW pulverized coal fired power plant. (Details of references enclosed at Annexure

(Data to be furnished in line with format given at 1.00.00 of this Attachment))

6.02.00

We further confirm that details in respect of valid licencing agreement for the Wet Grinding Mills between *us/*our sub-vendors, as per 6.01.00 above, and with qualified Wet Grinding Mill manufacturer, who meets the requirement stipulated at clause 4.01.01,

sub-section-I, Part-A, Section-VI are enclosed at **Annexure-.....** to this Attachment. The data in respect of proveneness criteria for the qualified Wet Grinding Mill manufacturer, which is in successful operation in at least one (1) plant for a period not less than one reckoned as on the date of consideration for approval but not later than six months to award date of contract to the Main bidder are furnished below.

(Data to be furnished in line with format given at 1.00.00 of this Attachment)

We further confirm that *we/*our sub-vendors shall provide an extended warranty of three (3) years for the Wet Limestone Grinding Mills provide an additional on demand bank guarantee for INR 10 Million (Indian Rupees Ten Million only) for each project.

(Data to be furnished in line with format given at 1.00.00 of this Attachment)

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ANNEXURE-I

FORM OF DEED OF JOINT UNDERTAKING TO BE PROVIDED
FOR WET LIMESTONE GRINDING MILLS
AS PER CLAUSE 4.01.05 (i) OF SUB-SECTION-I, PART A, SECTION VI
(ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

DEED OF JOINT UNDERTAKING TO BE EXECUTED BY THE BIDDER/CONTRACTOR, QUALIFIED INDIAN MANUFACTURING COMPANY MEETING THE REQUIREMENTS SPECIFIED AT CLAUSE NO. 4.01.05 (i) OF SUB-SECTION-I, PART A, SECTION VI ALONGWITH QUALIFIED EQUIPMENT MANUFACTURER OF WET LIMESTONE GRINDING MILLS MEETING THE REQUIREMENTS AS PER CLAUSE 4.01.01 (d) OF SUB-SECTION-I, PART A, SECTION VI FOR SUCCESSFUL PERFORMANCE OF WET LIMESTONE GRINDING MILLS IN WHICH EXECUTANT OF THE DJU ARE JOINTLY AND SEVERALLY LIABLE FOR THE SUCCESSFUL PERFORMANCE OF THE WET LIMESTONE GRINDING MILLS

The DEED OF UNDERTAKING executed this day of by M/s a Company incorporated under having its Registered Office at (hereinafter called the "Bidder/Contractor", which expression shall include its successors, administrators, executors and permitted assigns) AND

**M/s a dry Grinding mills manufacturer as per the requirement of clause 4.01.05 (i) of sub-section-I, Part-A, Section-VI, incorporated under having its Registered Office at (hereinafter called the "Qualified Indian Manufacturing Company"), which expression shall include its successors, administrators, executors and permitted assigns) AND

M/s a Wet limestone Grinding mill manufacturer meeting the requirements of clause 4.01.01 (d) of sub-section-I, Part-A, Section-VI incorporated under having its Registered Office at (hereinafter called the "Qualified Equipment Manufacturer", which expression shall include its successors, administrators, executors and permitted assigns) AND

in favour of NTPC Limited, A Government of India Enterprise, incorporated under the Companies Act, 1956, having its Registered Office at NTPC Bhawan, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi-110003 INDIA (hereinafter called "NTPC" or "Employer" which expression shall include its successors, administrators, executors and assigns).

WHEREAS, the Employer invited Bids for design, engineering, manufacture, supply, transportation to site, construction, installation, testing, commissioning and conductance of guarantee tests for the for **NCTPP DADRI** (hereinafter referred to as "Plant") vide its Bidding Document No. **CS-6130/0330-109-9**.

AND WHEREAS vide clause 4.01.05 (i) of Sub-Section-I, Part A, Section VI of bidding documents, it has been specified that a Qualified Indian Manufacturing Company can also manufacture equipment listed at clause no. 4.01.01 (d) of Sub-Section-I, Part A, Section VI for which it is qualified, provided that it has a valid ongoing collaboration and technology transfer agreement for design, engineering, manufacturing of Wet limestone Grinding mill in India with a qualified equipment manufacturer who meets the requirements stipulated at clause 4.01.01(d) of Sub-Section-I, Part-A, Section-VI of bidding documents. Before taking up the manufacturing of Wet limestone Grinding mill, the bidder/ his sub-vendor(s) must create /have created manufacturing facilities at his works as per collaborator's/ licensor's design, manufacturing and quality control system for Wet limestone Grinding mill. In addition, the Bidder/Contractor along with the Qualified Indian Manufacturing Company, qualified equipment manufacturers shall furnish DJU for each equipment in which executant of the DJU shall be jointly and severally liable for the successful performance of the equipment.

WHEREAS M/s(Bidder/Contractor) has submitted its proposal in response to the aforesaid Invitation for Bid by the Employer bearing No. dated for for **NCTPP DADRI** (hereinafter referred to as "Plant") vide its Bidding Document No. **CS-6130/0330-109-9**.

AND WHEREAS M/s (Qualified Indian Manufacturing Company) meets the requirement of clause 4.01.05(i) of sub-section-I, Part-A, Section-VI and has a valid ongoing collaboration and technology transfer agreement for design, engineering, manufacturing, supply of(Name Of Equipment) in India with M/swho meets the requirements stipulated at clause 4.01.01 of Sub-Section-I, Part A, Section-VI of bidding documents.

AND WHEREAS M/s (Qualified Equipment Manufacturer) meets the requirements of clause 4.01.01 of sub-section-I, PartA, Section-VI for(Name Of Equipment).

The Bidder/Contractor along with the *Qualified Indian Manufacturing Company , Qualified Equipment Manufacturers, are required to jointly execute and furnish prior to the placement of order for (Name of equipment), an irrevocable Deed of Joint Undertaking and be jointly and severally responsible and bound unto the Employer for successful performance of the ...
(Name of Equipment)

for **NCTPP DADRI (Name of Project)**.....) fully meeting the stipulated technical requirements, guaranteed parameters and characteristics as per the Bidding Documents, in the event the bid is accepted by the Employer resulting into a Contract.

NOW THEREFORE, THIS DEED WITNESSETH AS UNDER:

1. We the Qualified Equipment Manufacturer and the Qualified Indian Manufacturing Company and the Bidder/Contractor, do hereby declare and undertake that we shall be jointly and severally responsible to the Employer for the successful performance of the (Name of Equipment).
2. In case of any breach of the Contract committed by the Qualified Indian Manufacturing Company, we the Bidder/Contractor and Qualified Equipment Manufacturer do hereby undertake, declare and confirm that we shall be fully responsible for the successful performance of the (Name of Equipment) and undertake to carryout all the obligations and responsibilities under this Deed of Joint Undertaking in order to discharge the Qualified Indian Manufacturing Company obligations stipulated under the Contract. Further, if the Employer sustains any loss or damage on account of any breach of the Contract for the (Name of Equipment), we the Bidder/Contractor and Qualified Equipment Manufacturer jointly and severally undertake to promptly indemnify and pay such loss/damages caused to the Employer on its written demand without any demur, reservation, Contest or protest in any manner whatsoever. This is without prejudice to any rights of the Employer against the Contractor/ his Sub-Vendor under the Contract and/or guarantees. It shall not be necessary or obligatory for the Employer to first proceed against the Indian Qualified Indian Manufacturing Company / Bidder/Contractor before proceeding against the Qualified Equipment Manufacturer nor any extension of time or any relaxation given by the Employer to the Qualified Indian Manufacturing Company / **Bidder/Contractor shall prejudice any rights of the Employer under this Deed of Joint Undertaking to proceed against the Qualified Equipment Manufacturer.
3. The liability of the Contractor, his sub-vendor and Associate/Collaborator shall be limited to an amount equal to 100% of the value of the contract** between the contractor and the sub supplier for the equipment.
4. Without prejudice to the generality of the Undertaking in paragraph 1 above, the manner of achieving the objective set forth in paragraph 1 above shall be as follows:
 - (a) We the Qualified Equipment Manufacturer shall ensure that complete design, manufacturing, quality assurance and installation of the (Name of Equipment) is carried out inline with our manufacturing & quality drawings and procedures and shall be fully responsible for its compliance so as to ensure satisfactory, reliable, safe and trouble free performance of (Name of Equipment).