

PEDESP- 001-2A 	<b>PROJECT ENGINEERING &amp; SYSTEMS DIVISION HYDERABAD</b>		Doc. No: <b>PY51589</b>
			Rev. No.   <b>00</b>
			Sheet 1 of 23

<p style="text-align: center;"><b>COPYRIGHT AND CONFIDENTIAL</b></p> <p>The information on this document is the property of <b>BHARAT HEAVY ELECTRICALS LIMITED</b>, It must not be used directly or indirectly in any way detrimental to the interest of the company.</p>	<p><b>SPECIFICATION FOR PRE-BID TIE UP WITH “Qualified Waste to Energy Plant Equipment Manufacturer (QWEPM)”</b></p> <p><b>TENDER: NTPC KAWAS 2x350 TPD WASTE to ENERGY PLANT</b></p>
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<b>Revisions:</b> Refer to record of revisions	<b>Prepared by :</b>	<b>Checked by :</b>	<b>Approved by :</b>	<b>Date :</b>
	SC	BHK	JKP	27.07.2018



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### **1. Introduction:**

NTPC intends to install a Waste to Energy Plant (WtE Plant) having waste disposal (incineration) capacity of 700 tons per day (TPD). The plant shall be installed at NTPC plant premises at Kawas, Surat and shall be disposing the waste i.e. segregated combustible fraction (SCF)/ Refuse Derived Fuel (RDF) obtained from Surat Municipal Corporation. SCF/RDF consists largely of combustible components of waste such as non- recyclable plastics (not including PVC), wood, pulp or organic waste in the form of fluff.

**BHEL intends to participate as a “Indian EPC/ R&M Company” in above tender.**

BHEL is in the process of identifying suitable “Qualified Waste to Energy Plant Equipment Manufacturer (QWEPM)” to have pre-bid tie up and quote jointly for NTPC Kawas 2 x 350 TPD WtE plant.

As per NTPC Tender requirements, BHEL (EPC Contractor) and its associate/ collaborator will execute a Deed of Joint Undertaking (DJU) in which the executants of DJU shall be jointly and severally liable to the Employer (NTPC) for successful performance of contract as per format enclosed in the bidding documents. The DJU shall be submitted along with techno-commercial bid, failing which the Bidder shall be disqualified and rejected.

In case of award of contract to BHEL, associate/ collaborator of Bidder (QWEPM) will be required to furnish a bank guarantee for an amount of 5% of the awarded total contract price on EPC contractor ordered by NTPC in addition to the contract performance security which will be furnished by BHEL (EPC Contractor).

In the event, BHEL is adjudged as successful EPC Bidder and awarded the “Project” by NTPC, BHEL will in turn place an order on selected “Qualified Waste to Energy Plant Equipment Manufacturer (QWEPM)” for the identified scope.

### **2. Intent of Specification**

The intent of this specification is to elaborate the scope of “QWEPM” for the proposed 2x350 TPD Waste to Energy Plant. The “QWEPM” shall conform to all technical specification requirement set forth in the tender documents attached and further agrees to abide by it within the execution schedule.

“QWEPM” shall be responsible for design & supply of all equipment of the process as per the scope document enclosed, provide performance guarantee, provide technical support on overall WtE plant design and provide technical assistance during execution of the project and till expiry of operation and maintenance period for the said project.

The techno commercial terms agreed during pre-bid tie up shall be valid upto expiry of Operation and Maintenance period of BHEL for the plant as per contractual agreement with M/s NTPC.



**3. Scope of work [Supply & Services] of “QWEPM”:**

The scope of work of “QWEPM” indicating **Supply & Services** is listed below:-

**A. Scope during Pre bid stage:**

**A.1 “QWEPM”** will prepare and submit offer for the identified scope as per scope division (Attached as **Annexure-1**) to BHEL for consolidation of offer.

**A.2 Pre-Bid Engineering services by “QWEPM” (During bid submission by BHEL to NTPC):**

- i. Support BHEL for Pre-bid engineering of the Waste to Energy (WtE) plant by providing technical inputs for:
  - a) Design of Balance of Plant Equipment/system like Steam Turbine, Air cooled Condenser, DM Plant, Leachate Treatment Plant, Compressed Air system, AC Ventilation system etc.
  - b) Electrical Load List (Normal, Emergency, UPS etc)
  - c) DCS (I/O List for Control)
  - d) Civil works
  - e) Erection and commissioning
  - f) O&M for two years.

Based on the above, preparation of detailed BOQ and cost estimation for BOP portion will be done by BHEL.
- ii. Support BHEL for Technical closure of bid with customer.

**A.3** Execute a Deed of Joint Undertaking [DJU] along with BHEL in the prescribed format attached as **Annexure – 2** which is to be submitted to end customer along with technical offer. Scope & responsibilities mentioned in DJU shall be adhered to by QWEPM without any deviation.

**B. Scope of “QWEPM” during Project Execution:**

- i. Design, Engineering, Manufacturing, Supply, Testing, Packing and Forwarding, Transportation of Grate fired boiler covering major equipment such as,
  - a) Complete grate fired boiler with combustion control and monitoring system
  - b) All boiler auxiliaries including Grab Crane, FD Fans, ID Fans, Air Pre-heater, air & flue gas duct up to inlet of stack, soot blowers, etc. (Supply of Stack is in BHEL’s scope)
  - c) All systems / equipment required for flue gas treatment with fabric filter / ESP for meeting the emission norms as per requirement specified else where in the specification.
  - d) Complete bottom and fly ash handling system
  - e) Boiler blow down system
  - f) HP Chemical dosing system for boiler drum



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- g) All consumables like lube oil, Chemical for flue gas treatment, Activated Carbon etc. in entire Boiler Island.
  - h) Dedicated control system for boiler along with necessary field instrumentation, cables up to & including Junction Box (JB)
  - i) Surface Preparation and Painting of supplied items.
- ii. Engineering support (by QWEPM) for design / procurement of the following equipment / systems by BHEL :
- a) Steam Turbine, Air cooled Condenser, DM Plant, Leachate Treatment Plant, Compressed Air system, AC Ventilation system
  - b) Municipal / Industrial solid waste handling / maintenance facility in the waste pit
  - c) Odor control system
  - d) Leachate collection and disposal system
  - e) Steam & Water Analyzers System (SWAS)
  - f) Feed control station for boiler
- iii. Site Supervision of Civil works of Boiler & Auxiliaries (Civil Engineering & Civil execution is in the scope of BHEL. Necessary civil inputs and loading data to be provided by the “QWEPM”)
- iv. Site Supervision of Erection & Commissioning [E&C] of Boiler & Auxiliaries (E&C is in the scope of BHEL. Necessary erection inputs to be provided by the boiler “QWEPM”)
- v. Trial run, site performance guarantee test of boiler & auxiliaries supplied by “QWEPM”
- vi. Training on boiler operation to BHEL staff & end user
- vii. O&M for boiler & auxiliaries for period of 2 years from the date of successful completion.
- viii. Supply of commissioning spares, O&M spares for boiler & its auxiliaries.
- ix. Providing documentation for obtaining necessary statutory approvals by BHEL, such as Indian Boiler Regulations (IBR).
- x. Resolving punch list /contract closing issues pertaining to systems / equipment supplied by boiler OEM.
- xi. Any equipment / system related to Boiler & auxiliaries and feed to the plant which is required for completion of project as per NTPC specification but is not covered in Scope Matrix between BHEL and “QWEPM” shall be in scope of “QWEPM”.

**4. Services provided by BHEL to Boiler OEM (QWEPM) :**

- A. BHEL will provide the following data, systems / equipment / facilities,
- i. Project information
  - ii. Technical requirements of Boiler (scope of supply, guarantee parameters along with LD and other condition, plant layout etc. required for boiler design)



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- iii. BHEL will provide following services / utilities at one point near Boiler (further distribution within boiler area shall be by boiler OEM):
- a) RDF at Waste Reception Pit
  - b) Start-up fuel (LDO) / NG
  - c) DM water
  - d) Feed water
  - e) Cooling water [supply & return]
  - f) Instrument Air
  - g) Service Air
  - h) Nitrogen if required
  - i) Service Water
  - j) Potable water
- iv. Fire Protection system for boiler area
- v. Ventilation & Air-conditioning system for boiler area, if necessary
- vi. Complete electrical systems for boiler, such as MCC, DC power, cables,
- vii. Cable trays, earthing, illumination.
- viii. Instrumentation cables from boiler field JBs to boiler control system in control room
- ix. Interfacing of boiler control system with plant control system
- x. Civil Engineering & execution of civil works for the boiler and flue gas treatment system
- xi. E&C of the boiler and flue gas treatment system

**5. Scope matrix between BHEL and “QWPEM”:**

**Refer Annexure-1.**

**6. FUNCTIONAL GUARANTEES:-**

- A. “QWPEM” to prove the Functional Guarantee like Boiler efficiency, Auxiliary Power, Availability as per Annexure-3.

**7. TECHNICAL SPECIFICATION :**

**A. Mechanical**

Respective area of NTPC Specification Doc. No. CS-2600-001-9

**B. Electrical:**

Respective area of NTPC Specification Doc. No. CS-2600-001-9

**C. Control & Instrumentation:**

Respective area of NTPC Specification Doc. No. CS-2600-001-9



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**8. Qualification requirement for “QWEPM”:**

No.	Subject	Requirement	Document Submission requirement
A.	“QWEPM” requirement	<p>The Bidder should have designed, engineered, supplied, erected / supervised erection, commissioned / supervised commissioning of at least two (02) numbers of waste to energy plants employing Grate Combustion System and Flue Gas Treatment System, having rated waste incineration capacity of at least 300 metric tonnes per day per stream or higher, at different locations anywhere in the world. All two (2) reference waste to energy plants should have been in successful operation for a period of not less than two (2) years prior to the date of techno commercial bid opening.</p> <p align="center">and</p> <p>The Bidder should have designed, engineered, manufactured/ got manufactured at least Grate Combustion System or Waste Heat Recovery Steam Generator (WHRSG) or both in all two (2) reference waste to energy plants stipulated above. The bidder shall offer only the type of Grate Combustion System or Waste Heat Recovery Steam Generator (WHRSG) or both for which it is qualified.</p>	<p>-PO copy with issue date indicating the capacity of the plant, scope of supply</p> <p>- Date of handing over /commissioning certificate signed by customer.</p> <p>-Certificate indicating successful Operation &amp; Maintenance of WtE plant for a period of minimum 02 years from the date of handing over</p> <p>- Performance guarantees targeted and achieved duly signed by customer</p> <p>The “QWEPM” shall submit above documents as evidence signed by end client, not below the rank of Executive Engineer/Plant-in-charge.</p>

**Offers of the bidders meeting the above qualification criteria will be considered by BHEL.**

**9. Quality & Inspection**

To ensure that the equipment and services under the Scope of Contract whether manufactured or assembled within the “QWEPM” works or at his Sub-Vendor’s premises or at the Owner’s site or at any other place or work are in accordance with the specifications, relevant quality Standards (International & Indian) “QWEPM” shall adopt suitable quality assurance program to control such activities at all points, as necessary. Such program shall be outlined by the “QWEPM” and shall be finally accepted by the Owner / Authorized representative after discussions before the award of Contract. The QA program shall be generally in line with ISO-9002/IS-14001. A quality assurance program of the “QWEPM” shall generally cover the following:



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System for shop manufacturing and site erection control including process controls, fabrication and assembly controls.

Quality Assurance Documentation:

The “QWPEPM” shall submit required no. of copies of the following Quality Assurance documents

- A. Material test reports on components as specified by the specification and approved Quality Plans.
- B. The inspection plan with verification, inspection plan check points, verification sketches, if used and method used to verify that the inspection and testing points in the inspection plan were performed satisfactorily.
- C. Sketches and drawings used for indicating the method of traceability of the radiographs to the location on the equipment.
- D. Non-destructive examination results, reports including radiography interpretation reports.
- E. Factory tests results for testing required as per applicable codes and standards referred in the specification and approved Quality Plans.
- F. Inspection reports duly signed by QA personnel of the customer and Technology Provider for the agreed customer hold points.

The equipment shall be guaranteed to meet performance requirements required by this specification and rectification shall be carried out until satisfactory results are obtained. The Owner reserves the right to reject the equipment should the performance values fall short of those indicated in the schedule of Technical data sheets.

Quality Plan:

“QWPEPM” to furnish Quality Plan [Supply Quality plan] to BHEL along with offer in their standard format for general review by BHEL. During Detailed engineering, in addition to various tests indicated in this specification, Quality plan will be reviewed with respect to standard Inspection, standard Engineering practices, applicable standards, code etc. Accordingly, various tests required, stages of inspection and appropriate agencies for Inspection will be intimated. Technology Provider to abide by the same.

A. Tests & Inspection:

The manufacturer shall conduct all tests required to ensure that the equipment furnished shall conform to the requirements of this specification and in compliance with requirements of applicable codes and standards.

The particulars of the proposed tests and the procedures for the tests shall be submitted to the Purchaser/Consultant for approval before conducting the tests.

B. Test at Manufacturer’s work (as applicable):

Material Tests

Other Tests



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Site Performance Test:

C. Inspection agency:

BHEL/Third Party appointed by BHEL/Customer

The various inspection stages will be witnessed by individual agencies (or) Group of Agencies as per above, in line with approved quality plan.

**10. PROTECTION FOR SHOP FABRICATED ITEMS:**

- A. All coated surfaces shall be protected against abrasion, impact, discoloration and any other damages. All exposed threaded portions shall be suitably protected with either a metallic or non-metallic protecting device. The parts which are likely to get rusted due to exposure to weather, should also be properly treated and protected in a suitable manner. All exposed metallic surfaces subject to corrosion shall be protected by shop application of suitable coatings. All surfaces which will not be easily accessible after the shop assembly, shall beforehand be treated and protected for the life of the equipment. All surfaces shall be thoroughly cleaned of all mill scale, oxide and other coatings and prepared in the shop.
- B. The surfaces that are to be finish-painted after installation or require corrosion protection until installation, shall be shop painted with at least two coats of primer. The finished colors shall be as per referred NTPC Specification Doc. No. CS-2600-001-9.
- C. All material shall be delivered in a clean and usable condition. Openings shall be securely covered against entry of foreign material where appropriate.

**11. PACKING AND TRANSPORTATION:**

All equipment shall be suitably protected, coated, covered or boxed and crated to prevent damage or deterioration during transit, handling and storage at site till the time of erection. "QWEPM" shall follow necessary road safety rules and shall obtain permission from highway authorities for goods movement. However, these aspects shall be taken into consideration in the design of the packing for the system.

**12. NAME PLATES & TAG PLATES:**

- A. Components whose identity is important for operation and maintenance of the plant shall be provided with permanently attached tag bearing the Purchaser's coding together with relevant text clearly inscribed.
- B. A corrosion-resistant nameplate shall be attached to each unit in a clearly visible, easily accessible location. The nameplate shall be stamped with the following information:





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- i. Manufacturer's name
  - ii. Manufacturer's model number
  - iii. Manufacturer's serial number
  - iv. Purchaser's equipment tag number (item No.)
  - v. Service name
  - vi. Weight (kg)
  - vii. Hydrostatic test pressure, Bar. (g)
  - viii. Other design information of the flow media like flow rate, temperature, pressure etc.
- C. Nameplates shall be 3 mm (0.12") thick engraved plate of sufficient rigidity with lettering of a minimum height of 4 mm (0.16"). The method of implementation and labelling will be informed for all components after award of contract.
- D. Identification tags shall be provided and placed on all Technology Provider furnished items. Tags shall be corrosion resistance, having a larger than diameter of 3 cm, and shall have black identification figures stamped thereon. Figure height shall be larger than 0.5 cm. Tags shall bear the component system designation symbol shown on the "QWPEPM" drawings.

**13. VENDOR DOCUMENTATION:**

**A. Pre-Bid Stage:**

Following documents are to be furnished by "QWPEPM" to BHEL:

- i. Civil inputs (Load Details of various component and structure of Boiler)
- ii. Electrical Load List (Normal, Emergency, UPS etc.)
- iii. Overall Process Flow Diagram /P&IDs
- iv. Process write up
- v. Control/ Operation/ Design Philosophy
- vi. Functional guarantees
- vii. Data sheet for Process
- viii. PLC system configuration with Technical Literature & PLC Requirements
- ix. Special Tool and tackle
- x. Sub contractor proposed by Bidder
- xi. Commissioning /start up spares
- xii. Mile stone schedule



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**B. During Project Execution:**

Documents to be submitted by Technology Provider after receipt of order:

Sl. No	DRG/DOC. NAME	Date of Submission
<b>MECHANICAL</b>		
M.01	P&ID	1 week from PO
M.02	System write-up (Including Control Philosophy)	1 week from PO
M.03	Boiler Performance data	4 weeks from PO
M.04	Design Basis and Sizing Criteria of Boiler Plant including Process Calculations	1 week from PO
M.05	List of Utilities alongwith quantity	2 weeks from PO
M.06	Auxiliary power consumption of Boiler and its auxiliaries	4 weeks from PO
M.07	Equipment Layout	2 weeks from PO
M.08	Equipment list and load details	2 weeks from PO
M.09	Pipe Schedule	2 weeks from PO
M.10	Valve Schedule and valve specification	2 weeks from PO
M.11	List of Terminal Points	2 weeks from PO
M.12	Data sheets of Boiler and its auxiliaries	2 weeks from PO
M.13	GA of ID Fan, FD Fan	3 weeks from PO
M.14	GA of Flue Gas Cleaning Equipment	3 weeks from PO
M.15	Data sheet of Boiler and its auxiliaries	3 weeks from PO
M.16	Piping layouts	4 weeks from PO
M.17	Forces and moments of piping at terminal point for steam & feed water lines	4 weeks from PO
<b>ELECTRICAL</b>		
E.01	Electrical Load List with normal and emergency power requirement	2 weeks from PO
<b>INSTRUMENTATION</b>		
I.01	Instrument Index with BOQ, range, set points etc.,	2 weeks from PO
I.02	Instrument Hook up drawings	4 weeks from PO
I.03	Technical data sheet of Instruments	3 weeks from PO
I.04	PLC Configuration Diagram, GA & Wiring diagram	4 weeks from PO
I.05	PLC I/O List	5 weeks from PO
I.06	PLC Logic Diagram	5 weeks from PO



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I.07	PLC Control Room Layout	5 weeks from PO
I.08	PLC Power Supply AC Inputs requirement	5 weeks from PO
I.09	PLC interconnection diagrams	5 weeks from PO
<b>CIVIL</b>		
C.01	Civil input drawings for all buildings	4 weeks from PO
C.02	Civil input drawings for all including Tanks, pits and chambers etc.	4 weeks from PO
C.03	Foundation details of all equipment (Boiler and auxiliaries)	4 weeks from PO
C.04	Foundation details of structures & pipe racks within boiler area	4 weeks from PO
<b>MISCELLANEOUS</b>		
MIS.01	Commissioning spares	5 weeks from PO
MIS.02	Recommended spares	5 weeks from PO
MIS.03	Consumable list (Chemicals, oil, grease etc.)	5 weeks from PO
MIS.04	O&M manual	5 weeks from PO
MIS.05	Performance Test Procedure	5 weeks from PO

**Note:** The date of first submission is indicated above. Technology Provider shall submit all subsequent revision within 5 working days of comments by BHEL.

**C. The O&M manuals shall contain the following details as minimum in addition to those indicated in the above table:-**

- i. Identification details of the equipment like BHEL PO NO., Sub Vendor's Sl. No., Sub - Vendors contact address with tel., fax details.
- ii. Description of the equipment.
- iii. Final Data sheets and Drawings of the equipment as per the list mentioned in this specification.
- iv. Recommended 2 years operational spares.
- v. Test reports.

**D. The erection documentation shall consist of**

- i. All drawings/documents,
- ii. All such drawings/documents, not submitted for review, but essential for erection/ commissioning, e.g. assembly drawings, etc.
- iii. Master document list
- iv. Site dispatchable B.O.M.



**14. Performance Guarantees**

The guarantees shall form contract guarantees to be demonstrated through an approved performance test after the completion of the Plant. The schedule shall be finalized during the detail engineering stage.

**15. Terminal/ Interface Points between technology Provider and BHEL:**

Sl. No.	Equipment	Terminal Point
<b>Mechanical</b>		
1	RDF	At Waste Reception Pit
2	Start up fuel	At Boiler front column
3	Cooling water, Instrument Air, Service Air, Potable Water, Service Water	At Boiler front column
4	Ash	At Bunker/ Pit Outlet
5	Feed Water	At inlet of Economizer
6	Steam	At outlet of Main Steam stop Valve
<b>Electrical</b>		
1	Power Supply 415 V	At Consumption points (Motors/VFDs etc ) of “QWEPM” loads.
<b>Control &amp; Instrumentation</b>		
1	Power supply to PLC	At one (1) point in PLC panel incomer . Further distribution to all associated equipment including HMI, Printer etc. shall be taken care by Technology Provider.
2	I & C cables	At the PLC. (Supply Cables upto PLC panel by BHEL)

**16. Information to be submitted along with offer**

- A. Filled in Annexures (Key Information, Recommended spares, special tools & tackles and Deviations)
- B. Checklist
- C. Unpriced price-bid format



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**ANNEXURE – IV**

**KEY INFORMATION**

1.	Name of the Bidding Company	
2.	Registered in (mention the name of the Country)	
3.	Name, designation, telex & telephone number and postal address of responsible officer of Technology Provider to whom all reference shall be made for expeditious co-ordination.	
4.	Name, designation, telex & telephone number and postal address of responsible officer of Indian Agent.	
5.	“QWEPM” proposal number	
6.	“QWEPM” proposal date	
7.	Validity of offer, counted from the date of opening of bid	
8.	Guaranteed completion period, counted from date of issuance of LOI/TOI	
9.	Confirm that Scope of supply and services are exactly as per specification requirement	Yes/No
10.	Confirm Technical Compliance with Specification	Yes/No
11.	Confirm that Guarantees are as per Job Specification	Yes/No
12.	Confirm that List of Recommended Spares has been furnished as per Annexure-V	Yes/No
13.	Confirm that List of Special Tools & Tackles has been furnished as per Annexure-VI	Yes/No

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14.	Confirm that deviations ,if applicable, have been furnished as per Annexure-VII	Yes/No
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Signature of QWEPM's

Authorized representative .....

Date.....

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**ANNEXURE – V**

**LIST OF RECOMMENDED SPARE PARTS**

“QWEPM” shall tabulate in the proforma below list of all spare parts as recommended by the respective manufacturer for regular, reliable operation. In case the Technology Provider has to add any other relevant information, the same shall be indicated herein. Continuation sheets of like size and format may be used as per Technology Provider’s requirements.

Sl. No	Description	Quantity	Unit Price	Total Price	Delivery Period	Remarks
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Signature of QWEPM’s

Authorized representative .....

Date.....



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**ANNEXURE – VI**

**LIST OF SPECIAL TOOLS AND TACKLES**

“QWEPM” shall tabulate in the proforma below list of all tools and tackles as recommended by the respective manufacturer for regular, reliable operation. In case the “QWEPM” has to add any other relevant information, the same shall be indicated herein. Continuation sheets of like size and format may be used as per Technology Provider’s requirements.

Sl.No.	Description	Quantity	Remarks
<b>a</b>			
<b>b</b>			
<b>c</b>			
<b>d</b>			

Signature of Technology Provider’s

Authorized representative .....

Date.....





**ANNEXURE – VII**

**DEVIATION FROM SPECIFICATION**

If the proposal submitted has got any deviation from the technical stipulations in the bidding document, the Technology Provider shall tabulate below the full particulars of such deviations and shall sign below. Additional sheets may be enclosed, if necessary. Deviation is to be furnished with mention of specific clause numbers. Technical and commercial deviations to scope of supply and services, shall be indicated separately. Technology Providers shall bring put only those deviations which are impractical to meet (or) not advisable

Sl.No	CLAUSE NO.	DESCRIPTION AS PER SPECIFICATION	DEVIATION BY QWEPM

We confirm that all the deviations/exceptions to the Technical Specification PY51084, Job Specification and enclosures including reference documents attached are listed in this Annexure only. No other deviations or exceptions even if mentioned elsewhere shall be considered for any technical/ commercial evaluation or for ordering.

Signature of QWEPM's

Authorized representative.....

Date .....



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### 1.0 CHECK LIST

QWEPM to note that Check List shall be completely filled and the data required in-line with Check List shall be submitted along with their Offer to enable Purchaser to evaluate the offer submitted.

<b>S.No.</b>	<b>Description</b>	<b>Enclosed or [Yes/No]</b>	<b>Remarks/ Comments by Technology Provider</b>
1	<b>QWEPM to confirm compliance with spec. PY-51589 and its annexure without any deviations.</b>		
2	QWEPM has already raised pre-bid queries (if any) on Purchase specification.		
3	QWEPM Shall submit completely filled following Annexures enclosed with Technical Purchase Specification PY 51589 along with their offer <b>Annexure-IV: Key Information</b> <b>Annexure-V: List of Recommended Spare Parts</b> <b>Annexure-VI: Special Tools and Tackles</b> <b>Annexure-VII: Deviation from specification</b>		
4	Tentative Electrical Load List is enclosed with offer.		
5	QWEPM shall furnish the list of Erection and commissioning spares along with their offer.		
6	QWEPM to fill Deviation list (Refer Annexure-VII of PY 51589). Only those deviation indicated in this list will be considered during technical evaluation of offer. Technology Provider to indicate the deviations which are impractical.		
7	All other requirements except the deviations brought out under deviation list, have been taken into consideration in the offer.		
8	QWEPM has submitted unpriced "Price bid format" with "Quoted" mentioned against price for each line item of Price Bid Format		



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**PRICE SCHEDULE**

SL. NO.	DESCRIPTION	QTY.	UNIT PRICE (Rs)	TOTAL PRICE (Rs)
<b>1.0</b>	<b>DESIGN, ENGINEERING, MANUFACTURE, SUPPLY, SUPERVISION OF ERECTION &amp; COMMISSIONING</b>			
<b>1.1</b>	<b>Design, Engineering, Manufacture, Supply of the Grate type Boilers and Auxiliaries (2x350TPD)</b>	<b>1 set</b>		
1.1.1	350 TPD Boilers (2 nos) and associated auxiliaries	1 set		
1.1.2	PLC system for Boiler Controls	1 set		
1.1.3	Special Tools & Tackles for supplied items as per the specification	1 set		
1.1.4	<b>Commissioning and erection spares</b> [Item wise list of commissioning and erection spares with unit rate and quantity for supply items listed under Sl. No. 1.1 above to be furnished by Technology Provider)	1 set		
<b>1.2</b>	<b>Engineering services</b> for the design of the WtE plant equipment /system as per the specification.	<b>1 Set</b>		
<b>1.3</b>	<b>Supervision of Erection and commissioning including performance guarantee test</b> of the plant as per the specification.	<b>1 Set</b>		
1.3.1	Unit Rate per visit of Service Engineer including Travel Expenses, Boarding, Lodging & Local Travel for the erection supervision and commissioning of the WtE Plant. 8 man-days per visit	4 visits		
<b>2.0</b>	<b>O&amp;M Spares</b>			
2.1	2 years O&M spares for the Spare during the O&M period.	<b>As required</b>		
	<b>TOTAL (1.0 + 2.0) for L1 Evaluation</b>			



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**NOTES:-**

1. QWEPM to quote strictly as per BHEL's NIT requirements.
2. QWEPM to note that this is a LUMP SUM Turn-Key Order. Any additional claim after placement of order will not be entertained under any circumstances.
3. QWEPM to quote the base rates only. All Applicable taxes and duties shall be indicated separately for the Supply Portion and Erection supervision & Commissioning Portion.
4. QWEPM shall also submit unpriced copy of the Price-Bid Format with "Quoted" against each line item of the format along with the technical offer.
5. QWEPM to quote strictly in the price bid format with line wise itemized price and quantity, failing which the Technology Provider's offer shall be liable for rejection.
6. For the purpose of tender evaluation, a total of 8 man-days each for 4 visits have been considered. However, either or both of the number of man days or no of visits may change on either side based on the actual site requirement.
7. Bidders need to quote the basic rates only against each item. They may indicate applicable taxes (GST) separately.
8. Rate for supply items may be quoted inclusive of packing & forwarding charges, freight & transit insurance but exclusive of taxes (GST)
9. Payment of GST will be made as per GCC & SCC document.

Signature of QWEPM's

Authorized representative .....

Date.....

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**LIST OF ATTACHMENTS**

<b>Sl No.</b>	<b>Description</b>	<b>Drg. / Doc. No.</b>	<b>Rev. No.</b>
1	SCOPE MATRIX BETWEEN BHEL & "QWEPM"	Annexure - 1	00
2	Format for Deed of Joint Understanding (DJU)	Annexure - 2	00
3	Technical Specification of NTPC for the WtE plant	Appendix - 3	00
4	QAP Guidelines	-	

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**RECORD OF REVISIONS**

Rev. No.	Date	Revision Details	Revised By	Approved By
00	16.08.19	First Issue	SC	JKP