

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

S.No	SECTION Detail	Sub SECTION	Clause No.	PART-A No	Description	Bidder Comments	CLARIFICATION BY NTPC
1	SECTION - I (IFB)	Invitation for Bids	4.0	3 of 8	Bid Opening Date & Time for Stage-I (Techno-commercial) Bid 16.08.2019 at 1500 Hrs. (IST)	As we have to prepare huge documentation and need clarifications from your end on some of the technical parameters, we would like request you to extend the bid submission date by atleast 45 days from the present bid submission date (by 30th September 2019, Monday).	
2	SECTION - I (IFB)	RDF HANDLING	2.0	1 of 8	Crusher	After Getting of RDF to WtE plant Premises what is the requirement of Crusher?	Not required. Not envisaged in technical specification.
3	SECTION - I (IFB)	RDF HANDLING	2.0	1 of 8	Recycled oil System	What is the meaning of Recycling oil?	Not required for RDF handling. It is for flushing oils including fresh oil refilling during the pre-commissioning and commissioning activities and subsequent initial operation of TG & Auxiliary
4	SECTION - I (IFB)	ASH SYSTEM	2.0	1 of 8	Fly Ash Treatment System	Whats is the definition of Fly Ash Treatment System?	May be read as Fly ash handling system
5	SECTION - I (IFB)	ASH SYSTEM	2.0	1 of 8	Bottom ash crane	Bottom Ash Crane is not part of our design, so is it compulsory or optional?	Bottom Ash Crane shall be applicable in case Bidder provide Bottom ash PIT for storage.
6	SECTION - I (IFB)	Other systems and facilities	2.0	1 of 8	Wastewater treatment system	Whats is the definition of Fly Ash Treatment System?	May be read as Fly ash handling system
7	SECTION - I (IFB)	Other systems and facilities	2.0	1 of 8	Truck washing facilities	This facilities is optional or compulsory.	Optional
8	SECTION - I (IFB)	Other systems and facilities	2.0	1 of 8	Workshop	Workshop detail should be specified?	It is a covered shed used for common maintenance work for tools & vehicles
9	SECTION-IV (GCC)	General Condition of Contract	7.0	16 of 70	In addition to the supply of Mandatory Spare Parts included in the Contract, the Contractor agrees to supply spare parts required for the operation and maintenance of the Facilities. However, the identity, specifications and quantities of such spare parts and the terms and conditions relating to the supply thereof are to be agreed between the Employer and the Contractor, and the price of such spare parts shall be that given in Price Schedule No. 5, which shall be added to the Contract Price. The price of such spare parts shall include the purchase price thereof and other costs and expenses (including the Contractor's fees) relating to the supply of spare parts. Prices of recommended spares covered under price Schedule No. 5 shall be kept valid for a period of six (6) months after placement of Notification of Award for Main Equipment and Materials.	1. Need More clarification on Mandatory Spare Parts before adding spare part cost in Main bids. 2. Also need More clarity on Mandatory and Recommended spare parts.	Bidder to comply the specification requirement.
10	SECTION-VI-PART-A	SUB SECTION-I INTENT OF SPECIFICATION	5.00.00	8 of 12	GENERAL ENVIRONMENTAL REQUIREMENTS	We propose NTPC should handover a plain land (ready for construction) if not, a minimum of 6 months additional time is required for ground preparation. Please note any underground Soil contamination as existing shall not be the liability of the EPC Contractor.	Bidder to visit plant area for assessment. Bidder to comply the specification requirement.
11	SECTION-VI-PART-A	SUB SECTION-I INTENT OF SPECIFICATION	6.00.00 (2)	9 of 12	Oversize waste shall have a separate bay for transferring the oversized waste into the shredder input so that it can be shredded before dumping it into the waste bunker for further processing	When the waste is already processed then, there is no need of shudder in the pit. If direct MSW is supplied then pre-processing plant is required.	Noted. Refer amendment-01
12	SECTION-VI-PART-A	SUB SECTION-I INTENT OF SPECIFICATION	6.00.00 (16)	10 of 12	Coordinate with all concerned Govt. agencies as and when required to comply norms related to waste to energy plant and maintain all necessary certificate for ready reference.	NTPC being the owner of the project, all approvals, permits shall be in the scope of the owner, we will extend documentation support and presentation support to authorities. Please confirm. (It is presumed that all pre-construction and project development stage clearances and approvals will be obtained by client and made available to the contractor)	Bidder to comply the specification requirement.
13	SECTION - VI (PART-A)	SUB SECTION-I INTENT OF SPECIFICATION	1.01.0	01 of 12	The plant should be able to operate at its peak capacity continuously when the need arises.	Plant capacity for 115% over load will leads to over design of total plant auxiliaries and less efficient. Request you to set the peak value as 110 % and the continuous operation as 100%. Request you to confirm	Bidder to comply the specification requirement.
14	SECTION - VI (PART-A)	SUB SECTION-I INTENT OF SPECIFICATION	1.02.11	05 of 12	Acoustic enclosure along with aesthetic architecture including,	We will not advise for Acoustic enclosure. We will provide closed plant for good aesthetic.	This is a very specific requirement based on feedback from various operators. Bidder to comply the specification requirement.
15	SECTION-VI- PART-A	SUB SECTION-I INTENT OF SPECIFICATION	1.00.0	1 of 12	Generating power output of a minimum of 14.9 MW	LCV of the fuel has to be confirmed, based on that power generation depends.	Waste analysis provided. Refer Part-E
16	SECTION - VI (PART-A)	SUB SECTION-I INTENT OF SPECIFICATION	6.00.00	09 of 12	Oversize waste shall have a separate bay for transferring the oversized waste into the shredder input so that it can be shredded before dumping it into the waste bunker for further processing	NTPC to confirm whether Preprocessed waste is supplied or unsegregated waste is supplied. Bidder anticipates that the requirement of shredder and segregation facility is not required if the waste is preprocessed.	Bidder understanding is correct. Refer amendment-01
17	SECTION - VI (PART-A)	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.27.00	16 of 18	Though supplied fuel is RDF, minimum segregation facility is required at site to prevent undesired material in waste.		Bidder understanding is correct. Refer amendment-01
18	SECTION-VI PART-A	SUB-SECTION-IB PROJECT INFORMATION	1.03.00	2 of 9	The Water Requirement for the project is to be met from existing water allocation (15 MGD) of Kawas Gas Power Project	We will inform water requirement during detail engineering,	Noted. Bidder to comply the specification requirement.
19	SECTION-VI-PART-A	SUB-SECTION-IB PROJECT INFORMATION	1.00.00	1 of 9	As per the Memorandum of Understanding (MOU) signed between Surat Municipal Corporation (SMC) and NTPC on 24.10.2018 at Surat for scientific processing of solid waste by setting up waste to energy (WtE) plant at NTPC Kawas premises with SMC providing Refused Derived Fuel (RDF) / processed Municipal Solid Waste (MSW) to NTPC for incineration in the WtE plant of NTPC. The present proposal is for implementation of Kawas Waste to Energy Power Project (14.9 MW) with RDF/processed MSW capacity of 700 TPD within the premises of Kawas Gas Power Station.	When the waste is already processed then, there is no need of shudder in the pit. If direct MSW is supplied then pre-processing plant is required. Request you to confirm.	Refused Derived Fuel (RDF) / processed Municipal Solid Waste (MSW) is supplied. Hence, pre-processing plant is not required. Refer amendment-01
20	SECTION - VI (PART-A)	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.10.01	07 of 18	PA Fan consisting of (1) 2x100% oil pumps each with motor, coupling and coupling guard. (2) 2x100% oil coolers. (3) 2x100% filters, differential pressure switches, etc. (4) One (1) oil storage tank. (5) Instrumentation, vibration monitoring, inter connected piping, valves and fittings including pressure relief valves and NRVs. If order to minimize the plant footprint and to ensure minimum land requirement for the waste to energy plant, the waste which is unloaded into the waste pit needs to be carried to the segregation area, preferably located adjacent to the waste pit (opposite side of chute/boiler) with minimum transportation / movement. The area below the tipping floor (truck movement floor) may be utilised for conveying raw waste from the waste pit and returning the segregated waste into the pit. The waste pit crane may be used for loading raw waste into the segregation conveyor with necessary hopper type arrangement (if any), which supplies raw waste into segregation facility.	For this capacity of fans we don't recommended forced lubrication system.	Considering the nature of duty and prevalent operational practices, the equipment needs to be designed as per the requirement. Bidder to comply the specification requirement.
21	SECTION-VI-PART-A	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.27.02	17 of 18		As per tender segregate waste will be supplied by SMC. Then separate area for segregation is not required. Request you to clarify, whether unsegregate MSW is supplied or segregated MSW is supplied and any preprocessing system has to consider in bidders scope of supply. Please confirm	RDF/processed MSW will be supplied. Refer amendment-01

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22	SECTION-VI-PART-A	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.27.03	17 of 18	In the segregation area, the equipment's such as removal of metallic / non-metallic materials, size reduction, removal of construction and demolition waste (if any) to be incorporated (such as shredder, conveyors, trommels, density separation, suspended magnet, metal detector as applicable) along with their final disposal and feeding lines (by conveyor or loading into truck). After segregation the waste which is suitable for burning needs to be conveyed back into the waste pit again for storage, mixing and feeding into chute of grate etc., All the drives / equipment shall be provided with adequate frou free approach for ease of operation and maintenance, platforms, hand rails, toe guards, fencing, ladders, enclosures, coupling guard, maintenance space etc., However, bidder may offer / suggest alternate suitable proven solution for segregation facility strictly meeting recent SWM rules subject to approval by the employer.	As per tender segregate waste will be supplied by SMC. Then separate equipment for segregation is not required. Request you to clarify, whether unsegregate MSW is supplied or segregated MSW is supplied. Also request you to confirm what are the characteristics and calorific value of the unsegregated waste so that accordingly the pre-processing system will be selected.	RDF/processed MSW will be supplied. Refer amendment-01
23	SECTION-VI-PART-A	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.23.00	14 of 18	Refractories and Insulation: Refractories in furnace area, first pass and insulation including cladding, lagging, reinforcement, wire mesh, cleats and supports for all the equipment, auxiliaries, ducting, dampers, piping and valves in the scope of this specification so as to ensure skin casing temperature of any surface in Contractor's scope is not more than 60 deg.C. with ambient temperature of 45 deg.C. and air velocity of surface air being 0.25 m/s when the steam generator is operation at Full load.	In furnace area, above incinerator area, the skin temperature shall be ambient +40°C (±5), where inside refractory lining is provided. Request you to confirm.	The specification requirement is clear in this respect. Bidder to comply the specification.
24	SECTION-VI-PART-A	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.27.01	17 of 18	2.27.01 Scope The vendor has to suggest a preferred way for segregation of waste, considering the unsegregated nature of waste and its size/composition/climate/seasons. The exact process layout / sizing may be finalised during detail engineering stage, the same shall be approved by the employer.	As per the document, SMC will be providing processed waste. In that case no separate segregation area is require. You are requested to confirm whether segregated waste is supplied or unsegregated waste. In case unsegregated waste is supplied then calorific value of the fuel may not cross more than 1650kcal/kg. As per our standard we design for calorific value minimum 1100 kcal/kg to maximum 2200 kcal/kg and design for 1650kcal/kg. Please confirm.	RDF/processed MSW will be supplied. Refer amendment-01
25	SECTION VI Part A	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.22.00	14 of 18	Elevators One (1) no. passenger elevator having a capacity of 680 kg. (or suitable for 10 persons) and one (1) number goods elevator having a capacity of 3000 kg for steam generator.	We propose to provide one elevator of 3000 kg capacity for both goods and passengers. As the requirement of lifting goods are rare phenomena in our plant. Please confirm	Due to heterogeneous nature of raw material WtE plant need regular maintenance / replacement due to high content of alkali content. Hence specification condition will prevail. Bidder to comply with the specification requirement.
26	SECTION VI Part A	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.13.00	10 of 18	Burner Air Fans 2 x 100% burner air fans shall be provided. The fans shall be complete with motors, base plate, foundation bolts, coupling and coupling guard, air piping, dampers, supports etc.	We propose as per our standard, one no burner air and cooling fan will be provided. Request you to confirm.	Specification requirement is clear. Bidder to comply with the specification requirement.
27	SECTION VI Part A	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.14.00	10 of 18	Burner Cooling Air Fans 2 x 100% burner cooling air fans shall be provided. The fans shall be complete with motors, base plate, foundation bolts, coupling and coupling guard, air piping, dampers, supports etc.		
28	SECTION VI Part A	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.25.02	15 of 18	One (1) set of power operated gondola or furnace maintenance cradle/cradle for furnace tube repairs and maintenance. Each set of gondola/maintenance cradles shall be suitable for complete and simultaneous coverage of all the four walls of a steam generator and shall be complete with all slings etc. Steam generators shall have suitable provisions for suspending this cradle from the top.	For this plants we don't recommend this system. Request you to confirm.	Specification requirement is clear without any ambiguity. Bidder to comply with the specification requirement.
29	SECTION VI Part A	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.15.01	10 of 18	On line fuel measurement facility for accurate measurement of waste mass flow rate/air fuel ratio shall be provided.	This is not applicable for waste incinerators. Request you to confirm.	Bidder to comply with the specification requirement.
30	SECTION VI Part A	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.17.00	11 of 18	Integration with the furnace safeguard and supervisory system.	There wont be any separate FSSS is applicable for this project.	Specification requirement is clear without any ambiguity. Bidder to comply with the specification requirement.
31	SECTION VI Part A	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	2.26.03	16 of 18	An array (required to scan the entire furnace) of optical type of temperature measurement system shall be provided to monitor the furnace temperature and control of the SNCR operation.	As per our standard, for SNCR system we will use standard K-type thermocouple only, hence we don't need any separate optical type of temperature measurements.	Monitoring of furnace temperature is very crucial for a WtE Plant with respect to emission generation and operation of SNCR. Hence bidder to comply the specification requirement.
32	SECTION - VI (PART-A)	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	5.02.00	08 of 12	Emission measurement The emission measurement system shall be continuous monitoring type capable of measuring the flue gas properties and composition in the stack. The main system components shall include ☐ Instruments for temperature, pressure and flow rate measurement ☐ Measurement instrument for particulate matter (dust) ☐ Gas concentration measurement system for determination of gaseous flue gas components (H2O, O2, CO2, CO, HCl, SOx, NOx, HF, heavy metals, TOC, etc.)	Few components like heavy metals, HF, dioxins, furans cannot be measured continuously. Request you to confirm	Noted, All the components which can be monitored continuously has to be measured online.
33	SECTION - VI (PART-A)	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	6.01.07	09 of 12	Opacity monitors complete with all accessories at the outlet of each filter chamber in parallel (if applicable) of fabric bag filter upstream of the ID Fan.	Considered opacity meter at outlet of filter not for each filter chamber. Request you to confirm	Opacity meter shall be mounted at the outlet of each filter chamber. There shall be multiple filter chamber in the bag filter facility. Specification requirement is clear in this respect. Bidder to comply.
34	SECTION - VI (PART-A)	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	6.01.11	09 of 12	Water washing system for the fabric bag filter and its hoppers along with all piping, valves and nozzles etc.	Please note that Water washing system not considered for fabric filter and it's hopper. Request to confirm.	Specification requirement is clear. Bidder to comply with the specification requirement.
35	SECTION - VI (PART-A)	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	7.00.00	11 of 12	The silo shall be provided with thermal insulation.	Please note that silo need not required any kind of insulation.	Ash silo needs to be thermally insulated. Bidder to comply the specification requirement.
36	SECTION-VI-PART-A	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	2.12.00	6 of 12	Hydraulic Power drives Combined or separate hydraulic station needs to be provided for ram feeder and grate, but each system shall be separate control block with necessary control system and redundancy. Ram feeder system Pumps : 2 x 100 % Filter : 2 x 100 % Cooler : 2 x 100 % Accumulator : 1 x 100 % Grate system Pumps : 2 x 100 % Filter : 2 x 100 % Cooler : 2 x 100 %	As per our standard design, there is only one hydraulic station which is common for both ram feeder and grate. There is no separate hydraulic drives/station for ram feeder and grate and accumulator has per our design. Request you to confirm.	This is a very specific requirement based on feedback from various WtE operators. Specification requirement is very clear. Bidder to comply the specification requirement.

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37	SECTION-VI-PART-A	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	6.01.00	9 of 12	One fabric bag filter for each Steam Generator of 1 x 500 TPD units complete in all respects including all components and accessories stated in this SECTION.	Fabric filter considered for each 1 X 350 TPD capacity with 15% margin. Request you to confirm	One fabric bag filter for each Steam Generator of 1 x 350 TPD units complete in all respects including all components and accessories stated in this SECTION.
38	SECTION-VI-PART-A	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	7.00.00	11 of 12	Separate Silos shall be provided for hazardous and no hazardous ashes.	Please note that separate silo not required for hazardous and non hazardous ash. As there no classification for same.	Bidder to comply the specification requirement.
39	SECTION-VI-PART-A	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	8.00.00	12 of 12	Environmental performance shall be maintained as per MCM 2016 rules	Environmental performance shall be maintained as per MCM 2016 rules	This is very specific requirement, in order to establish a emission free plant with state of the art technology. Specification requirement is very clear without any ambiguity. Bidder to comply the specification requirement.
40	SECTION-VI-PART-A	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	2.11.00	6 of 12	Grinding/crushing system for crushing of ash agglomerate in order to ensure max. particle size for transportation by Pneumatic transport system	Grinding/crushing system for crushing of ash agglomerate in order to ensure max. particle size for transportation by Pneumatic transport system	Please refer the RDF composition and Calorific value, based on this, bidder to select the appropriate proven technology. Specification requirement is very clear without any ambiguity. Bidder to comply the specification requirement
41	SECTION - VI (PART-A)	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	7.00.00	11 of 12	The position of the unloading bay, waste pit, shredder top view, feed hopper top view.	The position of the unloading bay, waste pit, shredder top view, feed hopper top view.	Bidder to refer amendment-01 of the specified clause in this regard
42	SECTION VI Part A	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	2.04.06	5 of 12	Four cameras to be provided for grid frame operation to view the unloading bay, waste pit, shredder top view, feed hopper top view.	Four cameras to be provided for grid frame operation to view the unloading bay, waste pit, shredder top view, feed hopper top view.	Specification requirement is very clear. Bidder to comply the specification requirement.
43	SECTION VI Part A	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	2.07.02	5 of 12	2 Level Monitors to be installed for feed hopper (top & Bottom)	2 Level Monitors to be installed for feed hopper (top & Bottom)	Specification requirement is very clear. Bidder to comply the specification requirement.
44	SECTION VI Part A	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	4.00.00	7 of 12	Special Tools & Tackles and Test / Measuring Equipments	Special Tools & Tackles and Test / Measuring Equipments	It will be part of scope of supply.
45	SECTION VI Part A	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	5.03.04	9 of 12	There shall be a provision to measure the amount of lime and activated carbon spray, by means of flow measurement device for remote indication and control.	There shall be a provision to measure the amount of lime and activated carbon spray, by means of flow measurement device for remote indication and control.	Specification requirement is very clear. Bidder to comply the specification requirement.
46	SECTION-VI-PART-A	SUB-SECTION-IIA- 12 MSW & ASH CRANE	1.01.00	1 of 2	WASTE FEED CRANE Shall operate in full automatic mode and should be also be capable to operate semiautomatic or remote or manual mode.	WASTE FEED CRANE Shall operate in full automatic mode and should be also be capable to operate semiautomatic or remote or manual mode.	Bidder to comply stipulation of Technical Specification
47	SECTION - VI (PART-A)	SUB SECTION-IIA-13 SLAG & ASH HANDLING SYSTEM CLEANING	1.02.00(a)	01 of 06	(a)TWO (2) NOS. BOTTOM ASH / SLAG EXTRACTOR PER UNIT	Hit proposed 1 no. bottom ash / slag extractor for this capacity of plant. Request you to confirm.	Confirmed , bidder to refer amendment in this regard.
48	SECTION - VI (PART-A)	SUB SECTION-IIA-13 SLAG & ASH HANDLING SYSTEM CLEANING	1.02.00(vi)	01 of 06	Suitable air Fans shall be provided so that vapours arising from the bottom ashes/slag leaving the ash extractor shall be ventilated back into the Slag chute by a continuously running air fan. Ducts shall be made of acid resistant plastic material.	HZIND india presume that the fan's which you had mentioned is meantly for sealing arrangement. As per our standard design we are providing sealing air by tapping from PA duct. So fan are not required for vapours back to slag chute. As per our standard bottom ash system does not require any sealing air.	Bidder's understanding is correct . Bidder to refer amendment in this regard.
49	SECTION - VI (PART-A)	SUB SECTION-IIA-13 SLAG & ASH HANDLING SYSTEM CLEANING	1.02.00(b)	02 of 06	TWO(2) NOS.SUBMERGED GRATE LEAK CONVEYOR PER UNIT	We proposed 1 no. submerge grate leak conveyor for this capacity of plant. Request you to confirm	Confirmed , bidder to refer amendment in this regard.
50	SECTION - VI (PART-A)	SUB SECTION-IIA-13 SLAG & ASH HANDLING SYSTEM	1.03.00	3 of 6	Grinding/crushing system for crushing of ash agglomerate in order to ensure max. particle size for transportation by Pneumatic transport system	Grinding/crushing system not applicable as boiler ash from 2nd and 3rd pass , 4th pass, and fabric filter is very fine ash.	Grinding/Crushing system shall be applicable for oversize particles not suitable for subsequent Conveying by Pneumatic system.
51	SECTION - VI (PART-A)	SUB SECTION-IIA-13 SLAG & ASH HANDLING SYSTEM	1.03.00	3 of 6	Otherwise, Boiler ash collected from various passes shall also be transported up to Fly Ash silo by suitable mechanical conveyors only throughout the Boiler ash conveying system.	2nd and 3rd pass boiler ash shall be transported through screw conveyor into bottom ash extractor. 4th pass boiler ash shall be transported to fly ash silo through pneumatic conveying system. Residue ash from fabric filter shall be transported through combination of mechanical conveyor and pneumatic conveying system to fly ash silo.	There is no contradiction with the Technical specification with the bidder's method of handling Boiler ash . All conveying options are available within the indicated clause 1.03.00.
52	SECTION - VI (PART-A)	SUB SECTION-IIA-13 SLAG & ASH HANDLING SYSTEM	1.04.00	4 of 6	DRY FLY ASH TRANSPORTATION AND STORAGE SYSTEM	Residue ash from fabric filter shall be transported through combination of mechanical conveyor and pneumatic conveying system to fly ash silo.	Residue ash from fabric filter may be transported through combination of mechanical conveyor and pneumatic conveying system to fly ash silo. Bidder to refer amendment in this regard.
53	SECTION - VI (PART-A)	SUB SECTION-III TERMINAL POINTS & EXCLUSIONS HANDLING SYSTEM CLEANING	1.02.01(c)	01 of 01	Vapour absorption machines (Approximate capacity of 10,000 TR shall be in the scope of NTPC. However, the contractor shall provide a earmark a suitable space for the machines, cooling towers for vapor absorption machines. However bidder shall provide the extraction steam pipe line up to that space. d) A suitable area to be left for VAM plant which would require approx. 35m x35 m area for housing VAM machines and adjacent 60m X 12m area allocated for cooling towers for VAM machines.	NTPC has to provide the steam parameters (flow, pressure and temp) to size the pipe line .	detail to be provided in detail engineering
54	SECTION-VI-PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	3.01.01	5 of 13	3.00.00 GUARANTEES UNDER CATEGORY -I 1. Unit Heat rate: Vendor should quote the Unit heat rate in their bids. The quoted heat rates shall not be more than 4200 kcal/kwhr at design ambient temperature of 40 Deg C. The bids quoting higher heat rate than 4200 kcal/kwhr shall be rejected.	In general the station heat rate of MSW based power plant is higher when compare to normal conventional boiler . As it will vary with fuel input, but we can guarantee the power output for design case. Request you to confirm.	Specification requirement is very clear. Bidder to comply the specification requirement.
55	SECTION - VI (PART-A)	SUB SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	3.01.01	5 of 13	UNIT Heat rate in kcal /kW hr as close as possible to design ambient temperature, at peak output (not less than 17.1 MW) , with zero extraction steam from internally controlled extraction for heating / cooling. TGHR (peak load)	TGHR (design load) Request you to confirm. SG_EFF(design load)	Bidder to comply the specification requirement.
56	SECTION-VI-PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	3.01.01 (2)	7 of 13	2. Auxiliary Power Consumption The vendor shall need to supply the list of Auxiliary consumers considered for the guaranteed consumption. Vendor shall guarantee Maximum Aux. Power Consumption is 14% i.e. 2086 KW at Load Point D in the Firing Diagram (LP D). The information in this chapter has been identified by the Employer as the essential, which is to be provided by the bidders along with the techno - commercial bid necessarily. Incase bidder does not fill these information, their techno - commercial bid may be considered as non responsive.	The Auxiliary power consumption is bit higher in MSW based boilers. Maximum power consumption shall be 16%-18%. Request you to confirm	Bidder to comply the specification requirement.
57	SECTION - VI (PART-A)	SUB SECTION-V ESSENTIAL DATA	1.00.00	01 of 03	1. MECHANICAL DATA 2. CIVIL DATA 3. ELECTRICAL DATA 4. C&I DATA	Complete details cannot be provided at bidding stage. We will be providing the information as per our standard documents. Request you to confirm.	Bidder to comply the specification requirement.

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58	SECTION-VI PART-A	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES...	3.01.01	7 of 13	The vendor shall guarantee the annual availability of the unit be not less than 85%.	Plant load will be depend upon the input waste quality and quantity according to Firing diagram. Plant shall not be available 100% load continuously.	Bidder to comply the specification requirement.
59	SECTION VI Part A	PART-A SUB-SECTION-II-C (C&I)	5.00.00	7 of 14	Flame Monitoring (Scanner) system	For this type of wte plants, we don't recommend any separate flame scanners , since we are providing furnace camera that itself sufficient to control the combustion. Please confirm.	Bidder to comply technical specifications
60	SECTION VI Part A	PART-A SUB-SECTION-II-C (C&I)	6.00.00	8 of 14	For control system, Bidder can use microprocessor based 24 V DC Modular two sets, each set containing 1x100 % intelligent modular 24 V DC power supply charger system or may use 230 V AC UPS power supply.	As per our standard practice, we are considering 230V AC UPS Supply for Control system instead of Microprocessor Based 24V DC system. Please confirm	specification requirements are clear . Bidder to comply technical specifications
61	SECTION VI Part A	PART-A SUB-SECTION-II-C (C&I)	19.00.00 & 20.00.00	14 of 14	Maintenance and calibration equipment & tools & Tackles	Please provide list of Maintanance calibration equipment & tools & tackles to be supplied along with specification, otherwise we will offer as per our standard practice	specification requirements are clear . Bidder to comply technical specifications
62	SECTION - VI (Part-B1)	A-03 STEAM GENERATOR & AUXILIARIES	1.03.00	02 of 33	The design of Steam Generator shall be such that it does not call for any oil support for flame stabilization.	If the low NCV waste was coming then the furnace temperature normally comes down and we need the oil support to stabilize the furnace temperature.	Bidder to comply technical specifications. However, refer revised firing drawing and waste analysis
63	SECTION - VI (Part-B1)	A-03 STEAM GENERATOR & AUXILIARIES	08.02.06(e)	11 of 33	The fan suction shall be so located that it does not suck-in dirty air / flying waste particles.	As per our design the Suction of PA fan must located in the top portion of waste pit, it will suck the odor and some flying dust particle.	specification requirements are clear . Bidder to comply technical specifications
64	SECTION - VI (Part-B1)	A-03 STEAM GENERATOR & AUXILIARIES	12.01.03(c)	24 of 33	Temperature element on all drain lines, including soot blower drain line.	What is the requirement of temperature element of each drain lines?	Bidder to comply technical specifications
65	SECTION - VI (Part-B1)	A-03 STEAM GENERATOR & AUXILIARIES	18.01.00	32 of 33	The blow down system shall comprise of an atmospheric flash tank and drain receiving vessel, 2 X 50% condensate transfer pumps located in Steam Generator area and shall be complete with all necessary valves, piping, level control system etc.	In our design the condensates are collected to the basin and utilized in the Process. Due to the high Ph value we are not considering in the water-steam cycle.	specification requirements are clear . Bidder to comply technical specifications
66	SECTION - VI (Part-B1)	A-07 POWER CYCLE PIPING	1.02.00(c)	01 of 05	Pressure drop in main steam line shall not be more than 90% of the allowable pressure differential between superheater outlet header and turbine inlet valves at BMCR.	Please clarify .	Bidder to comply the specification requirement.
67	SECTION - VI (Part-B1)	A – 24 LP DOSING AND OXYGENATED TREATMENT SYSTEM	2.00.00	02 of 04	Complete Oxygen Dosing System shall be supplied and installed by the Bidder. It is proposed to dose Oxygen at two (minimum) locations in the Condensate and in Feed water circuit of each unit. I.e one at outlet of condensate polishing Plant and another at the outlet of deaerator (suction line to feed water pumps). Additional dosage points if required as per manufacturer's standard practice shall also be included by the Bidder.	Oxygen dosing system is not required in our water-steam cycle design concept.	Specification requirement is clear. Bidder to comply with the specification requirement.
68	SECTION-VI-PART B1	SUB SECTION-A-01 OPERATING CAPABILITY of PLANT	1.05.00	1 of 2	The plant shall be designed to operate for all the envisaged quality of RDF for the following i.e Design point @ 2100 kcal/kg	The LCV of the fuel is obtain after pre processing of MSW will be maximum around 1650 Kcal/kg. We request to consider and confirm the Design point at 1650 Kcal/kg.	Refer revised firing drawing and waste analysis in PART-E
69	SECTION-VI-PART B1	SUB SECTION-A-01 OPERATING CAPABILITY of PLANT	1.02.00	1 of 7	Normal Start up/ Black Start /low load/stabilizing fuel as natural gas	Request you confirm, which type of fuel to be used, either natural gas or LDO. So that accordingly the burner system will be selected.	Both Natural gas &LDO is considered for start up /black start / low load / stabilizing fuel.
70	SECTION-VI-PART B1	SUB SECTION-A-02 EQUIPMENT SIZING CRITERIA	1.05.03.01,	6 of 7	The Fuel oil preparation and firing system shall be sized based on following criteria.		
71	SECTION-VI-PART B1	SUB SECTION-A-02 EQUIPMENT SIZING CRITERIA	1.04.02	2 of 7	Design Metal Temperature: (ii)Upto & including 400 degree material to be used Carbon steel to ASME SA-106 Gr. B/C or SA 210 Gr. C or approved equivalent Celsius As per vendors proven practice, required numbers of Acromat thermocouples located inside the gas path for measurement of gas side metal temperature covering all stages of Superheaters.	As per our standard for Super heater outlet temperature at 410 degree C, we are using SA 106 Gr B header. Request you to confirm the same.	Specification requirement is clear. Bidder to comply with the specification requirement.
72	SECTION-VI-PART B1	SUB SECTION-A-03 STEAM GENERATOR & AUXILIARIES	5.03.01 (ii)	7 of 33	Rated Steam Temperature The control system for SG shall be able to maintain SH outlet temperatures within $\pm 5^{\circ}\text{C}$ of above values over complete control range of Steam Generators with the range of specified waste fuel.	For this type of plant , flue gas temperature range will be < 1100 degc, hence we don't recommend for metal temperature thermocouples.	Specification requirement is clear. Bidder to comply with the specification requirement.
73	SECTION-VI-PART B1	SUB SECTION-A-02 EQUIPMENT SIZING CRITERIA	1.04.04 (1)	3 of 7	The control system for SG shall be able to maintain SH outlet temperatures within $\pm 5^{\circ}\text{C}$ of above values over complete control range of Steam Generators with the range of specified waste fuel.	As per our standard SH outlet temperature within $\pm 10^{\circ}\text{C}$. Request to confirm the same.	Specification requirement is clear. Bidder to comply with the specification requirement.
74	SECTION-VI-PART B1	SUB SECTION-A-06 TURBINE GENERATOR AND AUXILIARIES	10.00.00 (d)	27 of 28	The temperature difference between the cold face of finished insulation and ambient shall not be more than 200C. The ambient temperature shall be considered as 400C.	In furnace area the surface temperature will be ambient + $40\pm 5^{\circ}\text{C}$,where inside refractory lining is provided and near water wall the surface temperature will be ambient + $20\pm 5^{\circ}\text{C}$. Request to confirm the same.	Bidder to comply with the specification requirement.
75	SECTION-VI-PART B1	SUB SECTION-A-03 STEAM GENERATOR & AUXILIARIES	3.04.00(a)	5 of 33	Provision for future installation of additional Soot Blowers shall be made in the furnace so that after commissioning of each unit, the same can be installed, if the operational experience warrants the same	As per our standand and proven design, soot blower's are nor required in furnace . Soot blowers are provided in third and fourth pass at Super heaters, evaporators, gas air pre heaters and economiser SECTION. Please confirm.	This is a specific requirement. Bidder to comply with the specification requirement.
76	SECTION - VI (Part-B1)	A-06 TURBINE GENERATOR AND AUXILIARIES	10.00.00	27 of 28	INSULATION Bidder shall provide insulation for all equipments, valves, piping etc. with surface temperature more than 60°C. The temperature difference between the cold face of finished insulation and ambient shall not be more than 20°C. The ambient temperature shall be considered as 40°C.	In furnace area the surface temperature will be ambient + $40\pm 5^{\circ}\text{C}$ where inside refractory is provided and near water wall the surface temperature will be ambient + $20\pm 5^{\circ}\text{C}$.	Specification requirement is clear. Bidder to comply with the specification requirement.
77	SECTION - VI (Part-B1)	A-16 Fire Detection & Protection System	6.00.00	02 of 24	FIRE DETECTION, ALARM AND CONTROL SYSTEM The Contractor shall be solely responsible for obtaining the required approval and clearance for the different components and systems of the Fire Detection and Alarm System from the following authorities, as applicable: i. Department of Atomic Energy (Certification of safety from Radioactivity). ii. Central Building Research Institute, Roorkee. iii. Central Mining Research Station, Dhanbad iv. Local Fire Authorities. Safety valves and relier valves shall have minimum discharge capacities as under: Valve Minimum Discharging Capacities (i) Spring loaded safety valves a) Drum & Superheater Combined capacity 105% Full load (BMCR). (ii) Electromatic Relief Valve or spring loaded safety valve (as per vendor's proven practice) at: a) Super heater outlet 1.5 % BMCR	NTPC being the owner of the project, all approvals, permits shall be in the scope of the owner, we will extend documentation support and presentation support to authorities. Please confirm. (It is presumed that all pre-construction and project development stage clearances and approvals will be obtained by client and made available to the contractor). Request you to confirm	Specification is amply clear. Bidder to comply with the specification requirement.
78	SECTION - VI (Part-B1)	A-03 STEAM GENERATOR & AUXILIARIES	12.01.01	24 of 33	Metallic type expansion joints suitable for the service conditions shall be provided	For this capacity of plant , there will be two safety valves on drum and one SV (82.5 %) on MSL (27.5) , with the combine relieving capacity of 110 %	Specification requirement is clear. Bidder to comply with the specification requirement.
79	SECTION - VI (Part-B1)	SUB SECTION-A-03 STEAM GENERATOR & AUXILIARIES	11.01.10	20 of 33	The stroke position and adjustment will be done by 4-20 mA D.C. signal from BOP C&I part of DDCMIS and the pumps stroke actuation should be suitable for accepting 4-20 mA D.C. signal. The pumps are to be provided with 24 V DC, two wire LVDT type position feed back transmitter which will generate 4-20 mA signal indicating stroke position	Non Metallic expansion joint will be provided.	Specification requirement is clear. Bidder to comply with the specification requirement.
80	SECTION-VI (Part B-1)	SUB-SECTION-A-25 SERVICE ELEVATORS CRANE, HOIST & MONORAIL	3.07.06	4 of 4	Steam Generator casing/pent house shall: (b) Be welded wall construction, SECTIONalized to allow easy removal/replacement of casing/penthouse wall SECTIONS.	HP Dosing is not automatic control , it will run continuously . As per standard practice tender clause is not applicable.	Bidder to comply the specification requirement.
81	SECTION - VI (Part-B1)	A-03 STEAM GENERATOR & AUXILIARIES	4.02.01(b)	06 of 33	Steam Generator casing/pent house shall: (b) Be welded wall construction, SECTIONalized to allow easy removal/replacement of casing/penthouse wall SECTIONS.	Pent house shall not be required as entire steam generator assembly is within the enclosure. Request you to confirm.	Specification requirement is ample clear. Bidder to comply with specification requirement.
82	SECTION-VI (Part B-1)	SUB SECTION-A-03 STEAM GENERATOR AND AUXILIARIES	4.02.01	06 of 33	Steam Generator casing/pent house shall: (b) Be welded wall construction, SECTIONalized to allow easy removal/replacement of casing/penthouse wall SECTIONS.	Pent house shall not be required as entire steam generator assembly is within the enclosure. Request you to confirm.	Specification requirement is ample clear. Bidder to comply with specification requirement.

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

83	SECTION - VI (Part-B2)	Electrical specification IIIB-01	1.11.00	03 of 126	The motor feeders for 110kW & above shall be Air Circuit Breaker controlled.(LV Switch gears)	ACB for 630Amps and above. MCCB for below 630Amps.	ACB is required for Motor feeders for 110KW and above. MCCB is not acceptable. Bidder to comply with specification requirement.
84	SECTION VI Part B-3	SUB-SECTION-C-01 BASIC DESIGN CRITERIA	6.02.00	3 of 4	Backup Instrumentation	As we already considering Redundancy for critical loops, we don't feel this back up instrumentation separately. Please confirm	Bidder to comply technical specifications
85	SECTION VI Part B-3	SUB-SECTION-IIIC-04 SPECIAL INSTRUMENTS	1.05.0	2 of 5	ACOUSTIC PYROMETERS	In this type of plants, furnace temperature is around 1100 degc, as per our design, we propose K-Type thermocouples to measure furnace temperature, hence Acoustic pyrometers are not applicable.	This is a specific requirement for measurement of furnace temperature. Its measurement is critical. Bidder to comply with the specification requirement.
86	SECTION VI Part B-3	SUB-SECTION IIIC-14 ELECTRIC ACTUATORS	2.11.00	2 of 3	All actuators shall be certified for SIL 2 or better	We Recommend normal actuators only instead of SIL 2, as these actuators are going to be installed safe area only. Please confirm.	
87	SECTION VI Part B-3	SUB-SECTION-IIIC-04 SPECIAL INSTRUMENTS	1.03.00	1 of 5	Flame Monitoring System	In Incinerator plants waste is always fired on the grate, not like as in PC fired boiler the coal is fired at different levels of furnace by coal burners, and therefore flame scanners are not provided. We are providing one camera to view waste location on grate and to know flame intensity to stabilise combustion by primary area at different zones of grate.	Bidder to comply technical specifications
88	SECTION VI Part B-3	SUB-SECTION-IIIC-04 SPECIAL INSTRUMENTS	1.06.00	2 & 3 of 5	Flame viewing system (Furnace Camera With DVR) (TO be interfaced with LVS) (Recording duration is not available).	We are providing one Furnace camera to view and analyse the combustion. As per our Standard design we will provide one furnace camera that will hook to a LED Screen which is going to be installed at Main Plant control room. We feel separate recording and interfacing with LVS is not required as 40" LED TV is installed at Control room only. Also Separate Zooming facility is not required as 40" itself very big size, in that we can clearly visualise the combustion process. Pl. confirm	specification requirements are clear. However, minimum 2 number of cameras shall be considered. Bidder to comply technical specifications
89	SECTION VI Part B-3	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS	2.05.03	5 of 31	Metal Temperature Thermocouples	Heat flux in furnace and gas temperature for SH and drum are comparatively less with PC fired boilers. For this type of plants metal thermocouples for water walls, Drum, superheaters are not applicable.	Bidder to comply technical specifications
90	SECTION VI Part B-3	SUB-SECTION-IIIC-04 MEASURING INSTRUMENTS	2.06.00	5 of 31	Thermowell: For furnace zone, impervious ceramic protecting tube of suitable material along with Incoloy supporting tubes and adjustable flanges.	We will select thermowell material based on flue gas characteristics only not limited to ceramic. Please confirm	Bidder to comply technical specifications
91	SECTION - VI, PART-C	GENERAL TECHNICAL REQUIREMENTS	22.02.00	28 of 83	Manufacturing quality plan will be developed for the components and equipment, various tests/inspection, to be carried out as per the requirements of this specification and standards mentioned therein and quality practices and procedures followed by Contractor's/ Sub-contractor's/ sub-supplier's Quality Control Organisation, the relevant reference documents and standards, acceptance norms, inspection documents raised etc., during all stages of materials procurement, manufacture, assembly and final testing/performance testing. The Quality Plan shall be submitted on electronic media through C-folders, a web based system of NTPC ERP in addition to hard copy, for review and approval. After approval the same shall be submitted in compiled form on CD-ROM (As per format Annexure D)	confirm whether this clause will be applicable for critical equipment's or all equipment's. only Critical equipments as per the Agreed Quality Programme will be submitted for approval & remaining QAP will be submitted for review.	List of items requiring MQP approval shall be finalised during pre-bid discussion. It will be applicable for all Cat-I and Cat-II items
92	SECTION VI Part C	PART - E (TENDER DRAWINGS) SECTION - VI		1 of 1	General plant layout 2600-001-POC-A-001	NTPC to confirm whether closed shed is required for the entire plant area or each boiler lane separately. Please be noted that MSW pit and tipping floor will be in closed shed and minimum 30 mtr width road is required for tipping bays for easy movement of the trucks. confirm whether this clause will be applicable for critical equipment's or all equipment's.	closed shed is required for the entire plant area
93	SECTION - VI, PART-C BID DOC. NO.: CS-2600-001-9	GENERAL TECHNICAL REQUIREMENTS	22.07.00	29 of 83	No material shall be despatched from the manufacturer's works before the same is accepted, subsequent to pre-despatch final inspection including verification of records of all previous tests/inspections by Employer's Project Manager/Authorised representative and duly authorised for despatch by issuance of Material Despatch Clearance Certificate (MDCC).	We will follow only Critical equipments as per the Agreed Quality Programme	This clause is applicable for all items identified as CAT-I, Cat-II and Cat -III
94	SECTION - VI, PART-C	GENERAL TECHNICAL REQUIREMENTS	22.09.00	29 of 83	All welding/brazing procedures shall be submitted to the Employer or its authorised representative for approval prior to carrying out the welding/brazing.	This clause will be applicable for critical equipment's or all equipment's. Please confirm. We will follow only Critical equipments as per the Agreed Quality Programme	Applicable for all items
95	SECTION - VI, PART-C	GENERAL TECHNICAL REQUIREMENTS	22.11.00	29 of 83	Welding procedure qualification & Welder qualification test results shall be furnished to the Employer for approval. However, where required by the Employer, tests shall be conducted in presence of Employer/authorized representative.	This clause will be applicable for critical equipment's or all equipment's. Please confirm	Applicable for all items
96	SECTION - VI, PART-C	GENERAL TECHNICAL REQUIREMENTS	22.17.00 & 22.18.00	30 of 83	For components/equipment procured by the contractors for the purpose of the contract, after obtaining the written approval of the Employer, the contractor's purchase specifications and inquiries shall call for quality plans to be submitted by the suppliers.	This clause was applicable for critical equipment's or all equipment's. Please confirm. We will follow only Critical equipments as per the Agreed Quality Programme	This clause is applicable for all items identified as CAT-I & CAT-II items
97	SECTION - VI, PART-C	GENERAL TECHNICAL REQUIREMENTS	23.01.01	32 of 83	The final quality document will be compiled and issued at the final assembly place of equipment before despatch.	Final Quality dossier will be issued one week after despatch	Technical Specification to be complied
98	General				Drive Control philosophy for DDCMIS to be furnished to estimate IO requirement	NTPC to be provide the standard	Bidder to comply technical specifications
99	General				Training details to be clearly mentioned indicating number of persons and duration	NTPC to be provide the standard	Bidder to propose training schedule for our approval as per technical specification.
100	CS-2600-001-9	Section I (IFB)	6 1.2.3 - Route 2	4 of 8	Route 2, Clause 1.2.3	The clause 1.2.3 under Route 2 is not required as the requirement is already specified under Route-1 (1.1.2). Please confirm bidder's understanding	Bidder to comply with the specification requirement.
101	CS-2600-001-9	Section III (BDS)	10.1 - Time for Completion of Facility	13 of 16	Time for Completion of facility	We request to provide 35 Months as Time for Completion to Facility	Bidder to comply with the specification requirement.
102	CS-2600-001-9	Section-IV_GCC	9.2	20 of 70	The Contractor confirms that it has entered into this Contract on the basis of a proper examination of the data relating to the Facilities (including any data as to boring tests) provided by the Owner, and on the basis of information that the Contractor could have obtained from a visual inspection of the Site and of other data readily available to it relating to the Facilities sufficient time advance from the deadline set for price bid submission. The Contractor acknowledges that any failure to acquaint itself with all such data and information shall not relieve its responsibility for properly estimating the difficulty or cost of successfully performing the Facilities.	Bidder's offer will be based on Soil report provided by the Owner along with the Tender and Bidder has not done any additional investigation to access the correctness and completeness of the data provided. Please confirm that any cost and time implication due to variation of actual data w.r.t Soil report provided in the tender, will be allowed as pass through.	Bidder to comply with the specification requirement.
103	CS-2600-001-9	Section VI (TS) Part A Sub Section I - Intert of Specification	6.00.00	9 of 12	Operation & Maintenance Spares	It is assumed that the bidder shall be required to provide routine spares during the O&M period and any unit assemblies or equipment requiring replacement shall be provided by the employer or shall be allowed as a pass through. Since Mandatory spares are not included in bidder's scope, any outage due to lead time required to arrange such spares shall be not be counted for the purpose of the Availability of the facility.	Bidder understanding is not correct. Bidder to provide O&M spares
104	CS-2600-001-9	Technical specifications / Section VI/Sub Section IID / Part A	1.00.0	1 of 3	The scope of civil, structural and architectural works shall include detailed geotechnical investigation, site clearance, preparation of design documents and drawings	Fresh Geotechnical investigation shall be carried out by bidder after award of work. Bidder requested to provide the existing soil investigation & Topographical survey data during bid stage. Also, please provide the Rain fall data & other metrological data for bid purpose.	Bidder is requested to refer amendment-01 to Technical Specification for available preliminary Soil Data (refer Part-E) and Rainfall Data (already available in Part-A, sub section-I-B). Detailed Geo-Technical Investigation, Topographical Survey is in Bidder's scope as stipulated in Scope of Work

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

105	CS-2600-001-9	Technical specifications / Section VI/Sub Section IID / Part A	2.00.0	2 of 3	Construction Facilities	We request Client to provide Construction Power and Water on free of cost at one location at the plant boundary.	Bidder is requested to adhere to the provisions of Bid Documents
106	CS-2600-001-9	Technical specifications / Section VI/Sub Section 01 / Part B-4	4.01.02	8 of 16	Finished Ground Level (FGL) generally corresponds to RL (+) 5.5 m for proposed area. Filling of thickness 2.5 to 3.0 m has been done over Natural Ground Level (NGL) to achieve the FGL as indicated in General Layout Plan.	Bidder presume that Natural ground level (NGL) is RL 0.00M. Bidder presume that no any area filling and grading required in proposed plant area. Please confirm.	Finished Ground Level (FGL) generally corresponds to RL (+) 5.5 m for proposed area. Filling of thickness 2.5 to 3.0 m has been done over Natural Ground Level (NGL) to achieve the FGL as indicated in General Layout Plan. However, grading/minor levelling of the area is in Bidder's scope.
107	CS-2600-001-9	Technical specifications / Section VI/Sub Section 01 / Part B-4	4.02.01	8 of 16	For equipment's of static weight between 1.5 T and 20 T, the equipment may be supported on compacted sand filling with the load intensity below the equipment limited to 4T/m ² . The minimum depth of foundation is 1.0m below FFL.	Bidder understanding is that, Minimum depth of foundation shall be 1.0m below Natural Ground Level(NGL) instead of Ground Level (FGL, RL5.50M).	Bidder's understanding is correct
108	CS-2600-001-9	Technical specifications / Section VI/PART-A/ SUB SECTION-I	1.02.14	6 OF 12	Civil works for the complete plant covered under bidder's scope shall be as mentioned in Sub- Section II-D, Section VI, Part-A of the specification. (which includes chimney)	Please confirm the total height, Diameter, flue gas temperature & other specific design parameter of chimney. Is this RCC or Steel chimney? Also, confirm the number of flue & material & lining of chimney Flue. Please provide the full specification for the chimney works.	As specified in Annexure- VI of PART-E to Amendment-01 in Technical Specification chimney shell shall be of RCC construction. Number & material of Flue and height of chimney shall be as per system requirement.
109	CS-2600-001-9	Technical specifications / Section VII PART-B SUB-SECTION-A-12	1.00.00	34 of 35	TECHNICAL SPECIFICATION SECTION – VI, PART-B SUB-SECTION-01	Appendix-A is not available. Please provide the capacity of system in terms of LPD. Is this RCC or steel construction? Please confirm. Also, provide the detail specification.	Deleted. Refer amendment-01 in this regard.
110	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION – VI, PART-B SUB-SECTION-01		2 of 16	The following minimum grades of concrete will be adopted for the type of structure noted against each. Design mix shall be used for RCC work as per standards. All RCC members in foundation & Substructure - M25.	Please specify the grade of concrete to be adopt for concreting work in superstructure, substructure and water retaining structures.	Provision of Technical specifications is clear in this regard
111	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION – VI, PART-B SUB-SECTION-01		15 of 16	The chemicals in ground water are more than permissible limits. Sulphates and chlorides in ground water are 2000 to 7000 ppm & 7000 to 88000 ppm respectively. In view of the presence of chemicals following shall be adopted for all foundations and sub-structures - Minimum grade of concrete shall be M30.		
112	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION – VI, PART-B SUB-SECTION-01	2.01.3	2 of 16	Wind loads (WL) Wind load on structures shall be as specified in Annexure-II.	Annexure II not found.	Bidder is requested to refer amendment to Technical Specification in this regard
113	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION – VI, PART-B SUB-SECTION-01	2.01.4	2 of 16	Seismic load (SL) Seismic design shall be done as specified in Annexure-I.	Annexure I not found.	Bidder is requested to refer amendment to Technical Specification in this regard
114	CS-2600-001-9	Technical Specification Section – VI, PART-B SUB-SECTION-01	4.07.00 @	14 of 16	Moorum/CNS shall also be provided on the sides of the foundation. The thickness of moorum/CNS filling shall be 1.0m (refer annexure III for detail).	Annexure III not found.	Bidder is requested to refer amendment to Technical Specification in this regard
115	CS-2600-001-9	Technical Specification Section – VI, PART-B SUB-SECTION-01	4.00.0	7 of 16	The bore logs of vicinity are enclosed at annexure-IV.	Annexure IV not found.	Bidder is requested to refer amendment to Technical Specification in this regard
116	CS-2600-001-9	Technical Specification Section – VI, PART-A SUB-SECTION-IB	1.03.00	2 of 9	The Water Requirement for the project is to be met from existing water allocation (15 MGD) of Kawas Gas Power Project	As per tender drawing, location of 15MGD water body not found except Raw water reservoir. Bidder presume that water requirement shall be met from existing Raw water reservoir.	Bidder's understanding is correct
117	CS-2600-001-9	Technical Specification Section-VI, Part-A Sub Section-I	5.06.00	9 of 12	Solid wastes generated during construction such as construction debris, excess cement / concrete, wrapping materials (e.g. plastic packets and wrappers), timber, tins, cans and drums, wire, nails, glass etc., chemical wastes and hazardous wastes.	We request to mention the lead for disposal of the same.	Entire Solid wastes generated during construction such as construction/demolition debris, excess cement / concrete etc. shall be disposed off in compliance to the MOEF&CC Notification dated 29.03.2016 on Construction and Waste Management Rules 2016.
118	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-A SUB-SECTION-V	1.00.00	1 of 3	The information in this chapter has been identified by the Employer as the essential, which is to be provided by the bidders along with the techno – commercial bid necessarily. In case bidder does not fill these information, their techno – commercial bid may be considered as non-responsive. CIVIL DATA 1. General Layout Plan 2. Detailed Geotechnical Report 3. Rain fall data 4. Topographical survey Data	Fresh Geotechnical investigation shall be carried out by bidder after award of work. Bidder requested to provide the existing soil investigation & Topographical survey data during bid stage.	Bidder is requested to refer amendment to Technical Specification in this regard
119	CS-2600-001-9	Section VI/Part-B (Electrical)	1.11	2 of 126	VCB of generator switching	Bidder understanding is that Generator VCB is a part of MV switchgear which will have interrupting capability as per IEEE std.	Bidder's understanding is correct
120	CS-2600-001-9	Section VI/Part-B (Electrical)	1.17	7 of 126	Type test reports-General	Bidder will submit all valid type test reports, test conducted within last ten years for customer review & approval. Bidder is not envisaging any repetition of type test	Yes. Repetition of type test is necessary in case bidder is not able to submit type test reports conducted within last 10 years for the same type of equipment offered from date of bid opening.
121	CS-2600-001-9	Section VI/Part-B (Electrical)	6.02	14 of 126	Main Plant DDC system	Please arrange to furnish details for existing DDC system i.e inputs/signals required for the same from WIE/ TG&System system for interfacing requirement	Vendor has to provide 24V Coupling relays which will be energised by Main plant DDC system
122	CS-2600-001-9	Section VII/Part-A	1.02.14	6 of 12	Scope of proposal "Power electricity evacuation (switchyard)/Switchyard for power evacuation"	As per tender SLD, there is no switchyard. Please clarify	No switchyard is envisaged
123	CS-2600-001-9	Section VII/Part-A	1.7.1/1.7.2/1.7.3/1.7.4/1.7.5/1.7.6 & 1.7.9	3 of 5	Provenness Criteria for electrical equipment	Please clarify the starting date to consider provenness criteria	Equipment should be in operation for atleast 2 years from the date of bid opening
124	CS-2600-001-9	Section VI/Part-A	1.05.00	2 of 9	Capacity & power evacuation" cable feeder"	Bidder understanding is that connection between new 6.6kV switchgear at WIE/ TG&System end & 6.6kV switchgear near switchyard shall be done by suitably rated 6.6kV cable.	confirmed
125	CS-2600-001-9	Section VI/Part-A		2 of 9	From this switchgear two nos of cable feeder.....at switchyard end	This clause is not clear. Please clarify	Employer intends to use existing colony feeders in 1CLGA and 2CLGA for integration of WTE generation in electrical system of existing Kawas Gas project. Existing colony feeders shall be shifted to new 6.6kV tie switchgear located near switchyard as indicated in tender SLD
126	CS-2600-001-9	Section VI/Part-A	1.11.00	3 of 5	Generator busduct	Bidder understanding is that there is segregated phase busduct from generator to generator circuit breaker & from switchgear to generator transformer is cable connection Can we directly generate power at 6.6kV voltage level? thus GT can also be avoided, please confirm. Is there any specific reason that states Generator transformer is a must requirement, then please specify.	Confirmed
127	CS-2600-001-9	Technical Specification/Section-VI/Part-B-(Electrical)	1.11.00	Page 2 of 126	Sizing & Design Generator Transformer: The minimum rating of the GT shall be 25 MVA.		Not acceptable GT Shall be supplied as per NTPC Specifications even if generation voltage is 6.6kV
128	CS-2600-001-9	Technical Specification/Section-VI/Part-B-(Electrical)	1.11.00	Page 2 of 126	Sizing & Design Generator Bus duct: The continuous rating of the Generator bus ducts shall be such that the maximum continuous peak output of the steam turbine unit under most onerous condition of operation at any ambient temperature between 0 deg C and 50 deg C	If we can use 6.6kV Generator. We can use cables in place of Busduct to evacuate the power. Please confirm.	As Surge protection cubicles, VT and LA Cubicles are envisaged and it is not possible to accommodate the same with cables
129	CS-2600-001-9	Technical Specification/Section-VI/Part-B-(Electrical)	1.11.00	Page 3 of 126	Sizing & Design LV Switchgears: All ACDBs, DCDBs, Solenoid Valve DBs and MCCs located on Stackler Reclaimer, Paddle feeders and Travelling trippers shall be of Fixed Module type.	Unlike Coal Handling Plants, WIE/ TG&System plant do not require stacker reclaimers, travelling trippers for WIE/ TG&System projects. Is there any other reason to specify stacker reclaimers and travelling trippers, please confirm.	Stacker reclaimers and travelling trippers are not envisaged for this project
130	CS-2600-001-9	Technical Specification/Section-VI/Part-B-(Electrical)	1.11.00	Page 3 of 126	Sizing & Design LV Switchgears: For 415V system, busduct assemblies shall be used for incoming connection from transformers to the switchboard and interconnecting sections between switchboards wherever transformer rating is 1000KVA or above	For LV system upto 2.5MVA and >10 meter distance between transformer and LV panel, we suggest to use Cables in place of Busducts. Thus we can avoid busduct to switchgear center line matching issues and delay in construction schedule. Please confirm.	Bidder to comply with specification requirements
131	CS-2600-001-9	Technical Specification/Section-VI/Part-B-(Electrical)	1.11.00	Page 5 of 126	Sizing & Design D.C. Systems Minimum Battery Bank Rating: 90AH Ni Cd or 150AH Lead Acid Plant	Since the DC Capacity required for WIE/ TG&System is very less as compared to Base load power plants, we recommend to use Sealed Maintenance Free (SMF) batteries for optimizing the maintenance cost and minimizing commissioning schedule and cost.	Not acceptable. Pls comply to specification requirements

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

132	CS-2600-001-9	Technical Specification/Section-VI/Part-E (TENDER DRAWINGS)		Page 155 of 310	ELECTRICAL SINGLE LINE DIAGRAM GENERAL NOTES. 5. 3X50% Feeding arrangement may be used for 415V load centers where the total load LT load is more than 2.15 MVA	As per Technical Specification/Section-VI/Part-B (Electrical)/ 1.11.00 Sizing & Design each 3.3KV / 415 V switchgear / MCC / DB shall be fed by 2x100% or 3 X 50 %, transformers / feeders. Among these two options, we prefer to choose 2x100% feeding arrangements for all LT loads, please confirm.	bidder may choose as per its own design criteria
133	CS-2600-001-9	Electrical single line diagram for WIE/ TG&System project			Vector group of existing system	Please arrange to furnish vector group of existing system connected with this WIE/ TG&System switchgear	shall be provided during detailed engineering is required
134	CS-2600-001-9	Electrical single line diagram for WIE/ TG&System project				Please arrange to furnish relay setting of existing 6.6KV switchgear for relay setting coordination with WIE/ TG&System system	Will be provided during the detailed engineering
135	CS-2600-001-9	General				Please arrange to furnish Key Single line diagram& control building/switchgear room layout of existing system	Will be provided during the detailed engineering
136	CS-2600-001-9	General				Bidder understanding is existing cable tray in the control building can be used by the bidder. Please confirm our understanding	Bidder understanding is not correct. Bidder to comply technical specifications
137	CS-2600-001-9	General				Please arrange to furnish existing earthing layout	Will be provided during the detailed engineering
138	CS-2600-001-9	General				Bidder understanding is all protections related to existing 6.6KV switchgear near switchyard is already there. Bidder doesn't envisage supply of protection relay for the same. Bidder will lay & terminate the HT cable for their scope.	Necessary modification in existing feeders if 1CLGA and 2CLGA are in bidders scope.
139	CS-2600-001-9	SECTION – VI, PART-A/ SUB-SECTION-C-01/	4.02.00	7 of 138	Bidder to ensure that the depth of all the cabinets (both DDCMIS and Non-DDCMIS) shall be 800mm except in few cases like Gram Feeder Cabinets, Power Supply Cabinets	Whether it is necessarily essential to provide all C&I panels having 800 mm width (except in few cases like Gram Feeder Cabinets, Power Supply Cabinets). OR Bidder's standard and proven panel sizes are also acceptable? Please clarify	Technical requirements are clearly indicated in the specification. Bidder to comply technical specifications
140	CS-2600-001-9	SECTION-VI, PART-A SUB-SECTION-IIB ELECTRICAL SYSTEM / EQUIPMENTS	1.13.00	4 of 5	Construction Power	Bidder Request Employer to provide Construction power free cost at single point.	Only required input feeder(415V) at single point shall be provided on chargeable basis. Further safely distribution of construction power is in bidder scope(cabling, installation of PDB, LDB, metering etc). However, if load requirement of bidder is not supported by our feeder then bidder has to arrange their construction power by their own.
141	CS-2600-001-9	SECTION-VI, PART-A SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS	1.02.01	1 of 1	Arrangement for supply of sufficient quantity of RDF and ensuring regular supply of the RDF to site, based on prior information in writing.	Arrangement for supply of sufficient quantity of RDF shall in scope of Customer. Contractor scope start from receiving of RDF. During O&M Stage, Contractor will provide MIS report for Fuel stock and future requirement.	Bidder to comply technical specifications
142	CS-2600-001-9	SECTION-VI, PART-A SUB-SECTION-I INTENT OF SPECIFICATION	1.02.07	3 of 12	Waste receipt, waste pit including Truck waiting area.	Please provide the detail of Truck Waiting Area Like a. Minimum number of Truck b. Waiting area shall be covered or not? PI Clarify. c. RDF Loaded truck will be transported through covered or in open condition?	a&b) Around 80 trucks to be unloaded during 8hr. C) RDF Loaded truck will be transported in covered condition
143	CS-2600-001-9	SECTION-VI, PART-A SUB-SECTION-I INTENT OF SPECIFICATION	1.02.08	5 of 12	Water Treatment Plant Raw water Storage Process water Basin Construction of complete pumping system to pump raw water from intake location to waste to energy plant along with all its accessories, is in bidder's scope. Raw water intake location is marked in GLP. Capacity of intake water pump shall be 2 X 100 %	Bidder request to provide the raw water analysis report. Please provide the capacity of Raw Water Storage in Days. What means of Process water Basin. PI Clarify. We understand that Intake Water Pump which will be installed at Intake Location shall be in Scope of Bidder. Please Provide the route for Laying of Discharge Pipe for Intake Water to Pre-Treatment Plant. Do we need to construct new Raw Water Storage area as specified in tender? Please clarified. Do Contractor require to construct Clarified water Storage Tank? If yes, then please inform the day of storage. In The GLP the Intake Water Location is not clear. Please clarify the location and also inform us the location for setting of Balance of Plant.	WTP has been deleted from scope. Please refer amendment-01
144	CS-2600-001-9	SECTION-VI, PART-A SUB-SECTION-I INTENT OF SPECIFICATION	2.00.00	5 of 12	Plant Utilities including, Vacuum cleaning System	For What Purpose Vacuum has been envisaged in tender. Please clarify.	It is for any surrounding dust cleaning
145	CS-2600-001-9	SECTION-VI, PART-A SUB-SECTION-I INTENT OF SPECIFICATION	2.00.00	7 of 12	(c) In line with Gazette Notification on Ash Utilization issued by MOEF and its amendment thereafter, contractor shall use ash and ash based products in works as specified in these specifications, drawings and as per instructions of the Engineer. He shall also use ash and ash based products in construction of his offices, stores, staff quarters and labour huts etc. He shall furnish a compliance report along with all details of use of ash and ash based products along with each bill	Bidder understands that the existing Power Plant is operating with GAS. Hence this clause may not be applicable here.	Bidder to comply technical specifications
146	CS-2600-001-9	SECTION-VI, PART-A SUB-SECTION-I INTENT OF SPECIFICATION	5.00.00	PAGE 8 OF 12	GENERAL ENVIRONMENTAL REQUIREMENTS The contractor shall execute all work at site as per the general environmental requirement and following the applicable local provisions and local regulations in this respect	All the regulatory compliance and statutory clearance for Environmental related work shall be in scope of Customer. Contractor shall facilitate manpower to Customer for same.	Contractor has to adhere with environmental regulation while executing all construction related work at site w.r.t to emission standards from DG, Proper maintenance of Vehicles & construction equipment, arrangements of sanitation/water/safe camps for migrant labourers, controlling dust emission at site within standards etc. However, clearances regarding the establishment of projects (i.e. CTE/NOC) shall be obtained by NTPC.
147	CS-2600-001-9	SECTION-VI, PART-A SUB-SECTION-I INTENT OF SPECIFICATION	5.00.00	PAGE 9 OF 12	OPERATION & MAINTENANCE OF PLANT Operation & Maintenance of the plant as per the Indian Solid Waste Management Rule 2016, in all respects including waste receipt, processing, segregation, power generation, disposal of waste to landfill site, all consumables, all spares etc., Oversize waste shall have a separate bay for transferring the oversized waste into the shredder input so that it can be shredded before dumping it into	As per Tender, RDF as a fuel are being used. Hence Segregation processing unit shall not be part of this tender. Please clarify. Shredder is not a part of bidder scope.	As per Feasibility Report, Refused Derived Fuel (RDF) / processed Municipal Solid Waste (MSW) shall be used as Primary Fuel, which shall be supplied/sourced from Surat Municipal Corporation (SMC) to the proposed NTPC Kawas site for incineration in the WIE plant. The ash generated due to combustion of RDF will be also given back to Surat Municipal Corporation (SMC) for disposal in their landfill sites. Hence, waste receipt, processing, segregation, disposal is not envisaged. Shredder is not required
148	CS-2600-001-9	SECTION-VI, PART-A SUB-SECTION-I INTENT OF SPECIFICATION	6.00.00	10 of 12	Make arrangements for loading of municipality vehicle for disposal off the waste viz. Bottom & Fly ash to the landfill facility. The vendor to propose suitable means of transport of ash from waste to energy plant to landfill facility who's O&M shall be in the scope of municipality	O&M Contractor scope shall be limited to operation and maintenance of Plant. Unloading, Transportation and landfilling of Ash is in the scope of Employer. Bidder shall only make arrangements to facilitate the loading/unloading of ash through chute.	Bidder to comply technical specifications
149	CS-2600-001-9	SECTION-VI, PART-A SUB-SECTION-I INTENT OF SPECIFICATION	6.00.00	12 of 12	16. Coordinate with all concerned Govt. agencies as and when required to comply norms related to waste to energy plant and maintain all necessary certificate for ready reference	Any coordination with government statutory agency shall be a part of Customer Scope. Contract will facilitate to customer for Manpower and Documentation.	Bidder to comply technical specifications
150	CS-2600-001-9	SECTION-VI, PART-A SUB-SECTION-I INTENT OF SPECIFICATION	6.00.00	12 of 12	22. During defect liability period, the vendor shall need to replace the equipment / parts which is required to achieve the satisfactory performance of the plant on free of cost.	Replacement of Wear Tear Spare Part of any equipment Shall be part of Customer Scope.	Bidder to comply technical specifications
151	CS-2600-001-9	SECTION-VI, PART-A SUB-SECTION-I INTENT OF SPECIFICATION	6.00.00	12 of 12	17. Operate, maintain & ensure availability of the Diesel generator to supply power to the plant facility, in case of power failure.	Bidder understand this is an Emergency Power Back Up Requirement. Please provide the technical requirement chapter of DG.	Bidder to comply technical specifications
152	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION – VI, PART-A SUB-SECTION-IB PROJECT INFORMATION	1.04.03	PAGE 2 OF 9	Fuel Quality Parameters and Fuel oil Characteristics The primary fuel for the plant shall be RDF/ processed MSW provided by SMC.	We understand Plant shall be designed for RDF Fuel Not MSW.	Bidder to comply technical specifications
153	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION – VI, PART-A SUB-SECTION-IB PROJECT INFORMATION	1.07.00	PAGE 2 OF 9	PLANT WATER SCHEME The Plant water scheme is described below.	PI provide the details. Scheme is not available.	Refer amendment-01(Part-E) in this regard.

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

154	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-A SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	2.02.00	PAGE 3 OF 12	Waste Pit The waste pit needs to be designed to handle RDF/PROCESSED MSW for at least five days of plant capacity. The RDF is supposed to be in dry form, still in case of high water content in the waste, a drain system is to be provided with a pump to extract the water from the waste pit and the same is treated in the waste treatment plant, further the treated water is sent to the process water tank.	Can bidder consider common Waste Pit for 2 X 350 TPD? Also Clarify the quantity requirement of waste Crane.	Bidder to comply technical specifications
155	CS-2600-001-9		2.02.05	PAGE 3 OF 12	2.02.05 Shredder Required size and capacity of one number of shredder shall be designed & supplied by the vendor. The shredder shall be located in the waste bunker area, with adequate feeding hopper facility of loading only oversized RDF/PROCESSED MSW into the shredder by the grab crane as well as unloading bay. 2.02.06 Segregation Though supplied fuel is RDF/processed MSW, though Bidder shall provide minimum required equipment and system for Mechanical separation of burnable and non burnable, size reduction through shredding, separation and screening to prevent any undesirable material from going grate.	Please clarify the requirement of Shredder and Screening System. Since Employer is providing Sized RDF hence the above two system may not be required.	Refer amendment in this regard.
156	CS-2600-001-9	SECTION-VI, PART-A SUB SECTION-IIA-01	2.02.06	11 of 18	Fuel oil System Fuel oil system shall cater to LDO firing requirements of two (02) Steam Generators. Oil storage system such as oil tanks (considering start up / shut down / stabilization & secondary firing requirements), pumping systems like pump (2 x 100 %), oil strainer (2 x 100 %), oil recirculation, fire hydrant system etc..	Bidder understand that the supply of LDO is in the scope of Employer. Please provide the storage capacity of LDO Tank.	Supply of LDO is in NTPC scope. LDO tank capacity must design for at least five days of plant capacity
157	CS-2600-001-9	PART – A SECTION - VI	1.00.0	1 of 12.	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.	For designing the systems, the following information shall be made available to us. ☐ SCF Proximate and Ultimate analysis. ☐ RDF Ultimate analysis. ☐ RDF & SCF Ash Chemical Analysis ☐ SCF / RDF Sieve analysis.	Refer revised firing diagram and waste analysis in PART-E
158	CS-2600-001-9	PART – A SECTION - VI	1.00.0	1 of 12.	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.	For designing the systems, the following information shall be made available to us. ☐ SCF Proximate and Ultimate analysis. ☐ RDF Ultimate analysis. ☐ RDF & SCF Ash Chemical Analysis ☐ SCF / RDF Sieve analysis.	Refer revised firing diagram and waste analysis in PART-E
159	CS-2600-001-9	PART – A SECTION - VI	1.01.0	1 of 12.	The plant name plate rating shall not be less than 14.9 MW and plant overload capacity shall be at least 15% higher than the name plate rating to take care of grid frequency response and sudden surge in waste quantity and calorific value. The plant should be able to operate at its peak capacity continuously when the need arises.	We understand that Plant design capacity shall be 17.135 MW considering 15% overloading on 14.9 MW continuously. Please clarify.	WIE/ TG&System
160	CS-2600-001-9	PART – A SECTION - VI	1.02.0	2 of 12	d) Compliance with statutory requirements and obtaining clearances from statutory authorities, wherever required;	Necessary compliance with statutory requirements and clearances shall be obtained by NTPC, however necessary documentation shall be provided by us whenever required.	WIE/ TG&System
161	CS-2600-001-9	PART – A SECTION - VI	37653	4 of 12	- Air heaters & SCAPH.	We propose to install SCAPH only. Please confirm.	SG
162	CS-2600-001-9	PART – A SECTION - VI	40575	5 of 12	Acoustic enclosure for entire plant / machine along with appropriate aesthetic architecture to ensure pleasant appearance on par with international standards to promote people accordance level towards waste to energy plant.	We propose to install acoustic enclosure for continuously operating rotating equipment having noise level more than 85 dBA at 1.0 meter distance.	WIE/ TG&System/SG
163	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-B	2.01.01	PAGE 13 OF 29	Provision of air evacuation pumps: Condenser to be designed for minimum air leakage and under normal operating conditions, the air leakage in condenser not to exceed more than 50% of design value taken for sizing of vacuum pumps. The same shall be demonstrated at site under actual operating condition falling which Bidder shall carryout necessary modifications.	For this type of small ACC unit, Steam Jet Air Ejector is the economical solution. Hence, we have considered the same in place of vacuum pumps. Kindly confirm.	Bidder to comply with the specification.
164	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-B	2.04.00	PAGE 16 OF 29	Ambient temperature corresponding to worst vacuum 45 Deg C	Most of the ACC Supplier in India has not designed ACC at worst ambient temperature i.e 45 deg C. Request to NTPC please review and accept the design on design ambient temperature i.e 40 Deg C.	Bidder to comply with the specification.
165	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-B SUB SECTION-A-06 TURBINE GENERATOR AND AUXILIARIES	3.00.00	PAGE 16 OF 29	CONDENSATE EXTRACTION PUMP (b) Drive Variable frequency drive motor with speed variation meeting all operating conditions.	Bidder can also consider fixed speed motor pump as per proven practice in small size of power plant. Please confirm.	Specification requirements are clear. Bidder to comply.
166	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-B SUB SECTION-A-06 TURBINE GENERATOR AND AUXILIARIES	4.00.00	20 OF 29	DEAERATOR (e) All pressure parts like shell, heads and nozzles shall be of carbon steel as per ASTM A-516 Gr. 70. Shell plate min. thickness 15.8mm of welded construction.	Bidder clarified that the shell thickness of deaerator shall be as per OEM standard. For small size of power plant specified thickness will not be required. Please review.	Refer amendment-01 in this regard.
167	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-B SUB SECTION-A-06 TURBINE GENERATOR AND AUXILIARIES	5.02.00	PAGE 22 OF 29	5.02.00 (a) Configuration 2 x 100 % Motor driven feed pump per unit.	Bidder understanding is that the configuration given in tender for 2 stream of Boiler. This means 1 x 100 % Working BFP pump will cater the water requirement for both the Steam Generator. Please clarify.	Refer amendment-01 in this regard.
168	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-B SUB SECTION-A-06 TURBINE GENERATOR AND AUXILIARIES	5.02.00	PAGE 23 OF 29	(j) BFP lube oil system Common lubricating oil system for BFP, motor and hydraulic coupling complete with shaft driven lube oil pump, AC motor driven auxiliary oil pump, working oil cooler / lube oil cooler / oil filters / strainers, valves, fittings, instruments etc.	Bidder understanding, this clause may applicable as per Vendors design and OEM Standards.	Bidder to comply with the specification.
169	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-B SUB SECTION-A-06 TURBINE GENERATOR AND AUXILIARIES	5.02.00	24 OF 29	(b) Emergency Lubrication of BFP Pressure lubrication (if necessary) of BFP at the time of coasting down of the boiler feed pump set in the event of AC power failure shall be arranged by Bidder.	Bidder understanding, this clause may applicable as per Vendors design and OEM Standards.	Bidder to comply with the specification.
170	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-B SUB SECTION-A-06 TURBINE GENERATOR AND AUXILIARIES	5.05.00	PAGE 25 OF 29	5.05.00 HYDRAULIC COUPLING- Type Combined fluid Coupling/Gear box type, Electric actuator and linkages alongwith necessary amplifier units.	For the small size of BFP, we used to control the water flow Through Auto recirculation / minimum recirculation Valve. Request to NTPC please review this clause and allow bidder to consider Constant speed motor driven pump with fixed coupling as per bidder proven practice.	Bidder to comply with the specification.
171	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-A SUB SECTION- IIA-04 POWER CYCLE PIPING	1.03.01	PAGE 2 OF 3	It is the responsibility of the contractor to identify and obtain all necessary approvals from various Government agencies/board/statutory authorities/ IIR (CBB, Delhi / CIB of the state in which the power plant is being installed) etc., as applicable for the material, design, manufacture, erection and testing of pipes, valves, fittings, specialties etc. and furnishing the same to employer. This includes furnishing all required documentation, certificates of manufacturing & testing in IIR formats, IIR fees, etc.	All necessary approval from Various Government agency / Statutory Authorities /IIR shall be in scope of Customer. However, Contractor/Bidder will arrange all necessary document/ drawing in order to obtain the certificate for the same.	The specification requirement is clear. Bidder to comply the specification requirement.
172	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-A SUB SECTION- IIA-04 POWER CYCLE PIPING	1.03.03	PAGE 2 OF 3	Basic engineering as well as detailed engineering including static & dynamic analysis, hanger engineering and engineering of thermal insulation etc.	Dynamic Analysis of Critical Pipe may not require for Small Size of Power Station. Please accept.	Bidder understanding is not correct. Bidder to comply the specification requirement.
173	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-A SUB SECTION- IIA-04 POWER CYCLE PIPING	1.03.07	PAGE 3 OF 3	(d.) Piping in cold position during the first complete shutdown after at least six (6) months of operation.	As per bidder understanding this will be applicable for MS Supply Line and Feed Water Line only. Please clarify.	Bidder understanding is not correct. Bidder to comply the specification requirement.
174	CS-2600-001-9	TECHNICAL SPECIFICATIONS SECTION-VI, PART-A	1.03.00	PAGE 2 OF 2	j) Excavation, preparation of bed, backfilling with compaction of soil and removal of extra-earth to designated places in case of pipes to be buried.	Please clarify the depth of excavation and Bed Thickness for the buried pipe. Bidder is considering Sand material for Bed Preparation for buried pipe.	For details bidder to refer technical specification clause no. 2.05.00, 2.05.01 & 2.05.02 of Subsection-A08/Part-B/Section-VI.
175	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION – VI, PART-A SUB-SECTION-IIA-09 PLANT UTILITY	2.00.00	1 OF 7	One (1) number Monorail Electric Hoist of minimum five (5) ton capacity for main fire water pump house	As per our understanding the monorail Hoist capacity should have 10 % margin on the heaviest load in the pump house. Please exclude the minimum word from tender. It may in lower size and capacity.	Bidder to comply the specification requirement.

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

176	CS-2600-001-9	TECHNICAL SPECIFICATIONS SECTION VI, PART-A SUB-SECTION-IIA-07 WATER SYSTEM	1.00.00	1 OF 1	1.00.00 SCOPE OF WORK (WATER SYSTEM) 2. Pre-treatment Plant of raw water is in bidder's scope.	Please provide the raw water analysis report and Route of Pipe from Intake to Waste to energy plant. Please clarify that Do we need to consider the construction of Intake Water Pump House in bidder Scope.	Refer amendment-01 in this regard.
177	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION – VI, PART-A SUB-SECTION-IIA-09 PLANT UTILITY	2.00.00	1 OF 7	a) Fire Water Pumping System	As per Part B, Sub Section A-16 Page no 2 of 24, Water Source for Fire Fighting System is Raw water and Circulating System Blow down . Please clarify the meaning of Circulating System Blow down and its input source . For the second source, Bidder understand that the Raw water as a water source for fire fighting which requires separate Pump at Intake. Please clarify. Also provide the storage capacity of Fire Water storage Tank.	Bidder to comply the specification requirement.
178	CS-2600-001-9	TECHNICAL SPECIFICATIONS SECTION-VI, PART-A SUB-SECTION-III TERMINAL POINTS & EXCLUSIONS	1.02.01	1 OF 1	A suitable area to be left for VAM plant which would require approx. 35m x35 m area for housing VAM machines and adjacent 60m X 12m area allocated for cooling towers for VAM machine.	Bidder Understanding that this is not continuous requirement. However Bidder will consider, design controlled Turbine Extraction Pipe till VAM System . We understand that VAM System and its auxiliaries , Colling Tower and Flash Tank for storage of return condensate steam shall be in scope of Customer. we also understand that during the steam discharge through extraction to VAM Unit , Generator Output will be less than 14.9 MW. Please clarify.	Bidder under standing is not correct
179	CS-2600-001-9	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	1.00.01	2 OF 13	1.00.01 General Requirements k) However if the specified performance guarantee(s) are still not met but are achieved within the Acceptables shortfall Limit specified at clause 1.01.02 of this subsection,	Shortfall Limit Clause is 3.01.02 . specified at clause 1.01.02 of this subsection is Typo error. Please confirm.	its typo error. Confirmed
180	CS-2600-001-9	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	3.01.02	2 OF 13	1. For each kcal/kwhr of deficiency in Unit heat rate with extraction steam from internally regulated extraction points for meeting external demand closed, and rated ambient temperature with RDF of design GCV, hydrogen content and moisture. Plant operating at its peak load capacity (-) up to 2.0% of the guaranteed value but not more than 4200 kcal/ kg	(-) up to 2.0% of the guaranteed value but not more than 4200 kcal/ kg Bidder understand that As per the clause of LD there is Acceptable Shortfall limited of +2% provided instead of - 2%. Please clarify.	Bidder to comply the specification requirement.
181	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-I INTENT OF SPECIFICATION /1.01.0	Page 1 of 12	Waste Disposal quantity, quality and Plant Output Ratings The peak capacity of the plant shall be designed to incinerate up to 265,000 metric tons annually of RDF/ combustible fraction having GCV of 2,500 kcal/kg to convert it efficiently into Power, assuming 330 days of plant operation	The point of peak capacity of plant i.e. 265,000 ton/year and GCV of 2,500kcal/kg (NCV 2,300kcal/kg) is arriving out of Firing diagram as shown in attached sketch. Please clarify whether EMCR NCV is 2,100 kcal/kg OR 2,300 kcal/kg	Refer Part-E for revised firing diagram and waste analysis
182	CS-2600-001-9	Technical specifications / Part A/Section IIA-02	Cl No. 6.00.00	Page 9 of 12	Operation & Maintenance of Plant Oversize waste shall have a separate bay for transferring the oversized waste into the shredder input so that it can be shredded before dumping it into the waste bunker for further processing.	Please specify size, type, composition & other details of oversized waste.	Clause not correct. Refer amendment-01
183	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-I/6.00.00 / 32 / 4	Page 12 of 12	Disposal of ash and operation and maintenance of the land fill if applicable.	We understand the battery limit for ash disposal is at loading point (bottom ash pit and fly ash silo). Please confirm that any further activity related to disposal of ash, operation and maintenance of land fill is not part of Bidder's scope.	Bidder understanding is correct
184	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-I/ 6.00.00 / 32 / 6	Page 12 of 12	Disposal of recyclable materials if any (loading to vendors vehicle – as the case may be) in accordance with prevailing practice.	We understand that the plant is supposed to be designed for RDF / SCF (not for unsegregated waste) hence it is not envisaged to segregate the waste at site. Please confirm.	Bidder understanding is correct
185	CS-2600-001-9	Technical specifications / Section VI / Part A Technical specifications / Section VI / Part B	1.02.00 FUEL	Page 2 of 9 Page 1 of 7	Secondary fuel oil (LDO) shall be used for start-up, flame stabilization and low load operation and maintaining adequate temperature of 950 Degree for 2 sec as per statutory requirement. ii) Normal Start up/ Black Start/low load/stabilizing fuel - Natural gas iii) Backup fuel - LDO	In Technical specification, Part A Startup/ stabilizing fuel / low load mentioned as LDO only. In technical specification, Part B, Startup/ stabilizing / low load fuel mentioned as Natural gas. Bidder will consider LDO as startup / stabilizing / low load fuel. Please confirm	Both Natural gas and LDO are envisaged as a secondary fuel.
186	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION- I-B / Annexure 2	Page 6 of 9	REFUSE DERIVED FUEL/ PROCESSED MSW CHARACTERISTICS	We understand that the report includes the analysis of one waste sample tested at one time (and not the result of multiple sampling done for prolonged period). Please provide the analysis of RDF/ SCF done for multiple samples at different time period across the year. This will help us to design the furnace / grate system appropriately covering all the operating points under firing diagram. Also we need elementary analysis in addition to parameters provided in report.	Refer waste analysis in PART-E
187	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-I / Intent of specifications / 1.02.11	Page 6 of 12	Acoustic enclosure for entire plant / machine along with appropriate aesthetic architecture to ensure pleasant appearance on par with international standards to promote people acceptance level towards waste to energy plant.	Please confirm 1) Whether only waste pit and waste hopper are expected to be enclosed while the steam generator, flue gas treatment & stack could be outdoor? or is it expected that the steam generator and flue gas treatment system to be installed indoor? 2) We believe that acoustic enclosure is meant for noise abatement and should be provided only for those equipment where it is necessary. It is not required for equipment not generating noise beyond acceptable level. Hence, the term "acoustic enclosure for entire plant" needs clarification.	The specification requires is very clear in this respect. Acoustic enclosure for entire plant needs to be provided with appropriate aesthetic architecture to ensure pleasant appearance Bidder to comply the specification requirement
188	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-II-A-01/ SG & Auxiliaries / 2.00.00	Page 2 of 18	The Contractor's scope of supply & services for Steam Generator (SG) shall include all equipment required for one (01) number of multi pass boiler, balanced draft, outdoor type, municipal solid waste fired steam generating units having steam parameters with all necessary auxiliaries, integral piping, ducts, elevators, etc. Items though not specifically mentioned but needed to complete the equipment and systems to meet the intent of specification, shall be deemed to be included in scope of work of Contractor.	To design the segregation facility the following data is required with Bid document. 1.The data and information of existing waste processing plant at Surat where proposed RDF is prepared. 2.Proposed RDF facility, flow sheet, layout and equipment specification, sieve analysis and maximum size of RDF at WTE/ TG&System plant RDF receipt area etc.	Refer amendment-01 in this regard.
189	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-IIA-01/ Steam Generator & Segregation / 2.27.00	Page 17 of 18	Though supplied fuel is RDF, minimum segregation facility is required at site to prevent undesired material in waste.	Noted. List of test to be conducted during Commissioning stage will be as per technical specification and bidder offer.	Noted. The list of tests will be finalised during detailed engineering stage. The list needs approval from the client.
190	CS-2600-001-9	Technical specifications / Section VI / Part A	Sub-section- IIA-02 / Grate and Flue Gas Cleaning System / 1.03.01	Page 1 of 12	Complete pre-commissioning work including tests of facilities such as line flushing, hydraulic testing of pressure parts, air and gas tightness tests of steam generator enclosure, chemical cleaning of pressure parts, steam blow off etc. and all other tests as mutually agreed in the Contractor's quality assurance program as well as those identified in the specification.	Kindly provide dimensions ,specifications and frequency of arrival of all types of waste carrying trucks which are supposed to be used.	Bidder to consult with SMC for dimension of trucks. Around 80 trucks to be unloaded during 8hr.
191	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-II-A-02/ Grate & flue gas cleaning / 2.00.00	Page 2 of 12	Waste (RDF/PROCESSED MSW) is delivered to the WTE/ TG&System plant by closed type trucks. Waste deliveries are typically scheduled Monday through Sunday during regular working hours.	Bidder has proven practice of thermocouple type temperature probe. Hence Bidder should be allowed to use it. Please confirm.	Optical temperature measurement is necessary. For a WIE plant temperature measurement is very critical. Hence bidder to comply the specification requirement without deviation.
192	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-A	SUB SECTION-IIA-01 STEAM GENERATOR & SEGREGATION	Page 3 of 12	(b) Two (2) numbers of optical type temperature probes at the furnace outlet, complete with all accessories like guiding supports, cooling arrangement, control circuit, indicator etc.	Bidder has proven experience of installing and operating the Bridge Breaker device (without Fisher Grab) to remove the accumulation of waste inside hopper. Hence Bidder should be allowed to implement the Bridge Breaker only without Fisher Grab. Please confirm.	Fisher Grab is mandatory considering the nature of Indian kind of waste. Based on feedback from various running units it is found necessary. Hence, bidder to comply the specification.
193	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-IIA-02 /GRATE & FLUE GAS CLEANING / 2.04.07	Page 5 of 12	Fisher grab (in addition to waste crane) of suitable capacity and size to be provided above feed hopper (to cover the entire area of hopper with rail) for removal of RDF/PROCESSED MSW from feed hopper in case of feed hopper choking / jam / fire in the hopper etc., Necessary control system / drive to be provided for safe operation from both local and remote of the same. Provision of maintenance bay for fisher grab needs to be provided.		

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

194	CS-2600-001-9	Technical Specifications, Section-VI / Part A, Subsection-II-A-02, Grate & Flue Gas Cleaning	2.06.00	Page 5 of 12	Leachate Treatment System Leachate system shall be of evaporative type using steam extraction either from boiler / turbine.	Bidder propose to treat the net outgoing leachate only (out of total leachate generated some quantity can be internally used). Quality of treated water at outlet of leachate treatment plant shall be as per SWM 2016. Since there are other type of treatment system in addition to evaporative type please do not limit to only one type. Bidder should be allowed to use appropriate type of treatment system.	To be deleted. Refer amendment-01.
195	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB-SECTION-II-A-02/ GRATE & FLUE GAS CLEANING / 5.03.00	Page 8 of 11	The flue gas cleaning system shall be of semi dry type / dry type consists of evaporation cooler / lime / hydrated lime and activated carbon injection in order to meet the required emission norms as prescribed in SWM rule 2016.	There are several other appropriate and effective chemicals for flue gas cleaning using dry type cleaning system to maintain the emission as per SWM 2016. Therefore Bidder should be free to propose the type of chemicals and cleaning system to meet the emission norms. Please confirm.	Specification requirement is very clear regarding the type of equipment required and kind of chemicals to be used for effective removal of acid gases to ensure flue gas has been cleaned to the required level. Hence the bidder to comply the specification.
196	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-II-A-02/ Grate & flue gas cleaning / 5.02.00	Page 8 of 12	Gas concentration measurement system for determination of gaseous flue gas components (H ₂ O, O ₂ , CO ₂ , CO, HCl, Sox, NO _x , HF, heavy metals, TOC, Hg etc.,)	We understand that gas concentration measurement for only following flue gas components is specified. H ₂ O, O ₂ , CO ₂ , CO, HCl, Sox, NO _x , HF, heavy metals, TOC and Hg. Please confirm.	All the measurement needs to be done as per the specification. This is as per SWM rule 2016 notification. Bidder to refer the notification.
197	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-II-A-02 / Grate & flue gas cleaning / 5.02.00 / 5.02.01	Page 8 of 12	The emission measurement system shall be continuous monitoring type capable of measuring the flue gas properties and composition in the stack. All these instruments need to be installed directly on the flue gas duct.	It is not very clear at what location measurement of flue gas components is expected. We presume bidder is free to decide the location of flue gas component measurement either on the stack or on the flue gas duct. Please confirm.	Measure of flue gas properties and composition in the stack.
198	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-II A-02 / 5.01.01	Page 8 of 12	During start-up and shutdown processes, necessary arrangement is to be provided to avoid temperature drop below dew point. The condensate produced in such instances is drained at the low points or upstream of the expansion joints. Flue gas bypass system for flue gas quenching reactor and Bag filter shall be provided as per vendor's proven practice.	WTE/ TG&System Plant are designed for continuous operation with limited start / stop of plant hence Flue gas Bypass system is not required. Also electric heaters can be provided to avoid the cold end corrosion during start / stop of plant.	Specification is very clear in this respect of providing bypass to avoid problem in start up and shut down. Bidder to comply the specification.
199	CS-2600-001-9	Section-VI / Part A / SUB-SECTION-II-A-02 GRATE AND FLUE GAS CLEANING SYSTEM	Cl. No. 5.03.03	Page 8 of 12	Additive handling Complete system for storage of lime and activated carbon including silo, pneumatic / mechanical handling, exhaust fans, metering system, level measurement system for silo, fire protection system, emptying system for silo (in event of fire / chocking clearing) needs to be provided. Appropriate system shall be provided for handling of activated carbon and lime stone from silo (mechanical / Pneumatic conveyer).	The emptying system will be provided for chocking. Necessary fire protection system can be provided in event of fire. Please confirm.	Emptying system for silo even during fire and also for chocking needs to be provided.
200	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-II A-02 / 6.01.00	Page 9 of 12	One fabric bag filter for each Steam Generator of 1 x 500 TPD units complete in all respects including all components and accessories stated in this section.	We understand 500 TPD is a typing error and bag filter should be designed for each furnace steam generation of 1X350TPD. Please confirm.	Bidders understanding is correct.
201	CS-2600-001-9	Section-VI / Part A / SUB-SECTION-II-A-02 GRATE AND FLUE GAS CLEANING SYSTEM	Cl. No. 6.01.01	Page 9 of 12	Each fabric bag filter shall consist of number of filter chambers independent casings including outside shell, structural steel supports and frame work, access ladders, platforms, safety rails, stairways, walk ways, access doors and weather proof pent house etc.	We do not understand concept of number of filter chamber with independent casing. Please elaborate.	Filter chambers means more than one chamber. So that one chamber can be isolated without affecting others those are in service.
202	CS-2600-001-9	Section-VI / Part A / SUB-SECTION-II-A-02 GRATE AND FLUE GAS CLEANING SYSTEM	Cl. No. 6.01.05	Page 9 of 12	Ash hoppers complete with panel type heater, level monitors and indicators, outlet flanges, jointing material, poke holes, access doors and walkways beneath the hoppers.	We have proven practice to use tubular type heater. Bidder should be free to use either tubular or panel type heater. Please confirm.	Bidder to comply the specification requirement.
203	CS-2600-001-9	Section-VI / Part A / SUB-SECTION-II-A-02 GRATE AND FLUE GAS CLEANING SYSTEM	Cl. No. 6.01.07	Page 9 of 12	Opacity monitors complete with all accessories at the outlet of each filter chamber in parallel (if applicable) of fabric bag filter upstream of the ID Fan.	SPM is monitored in stack hence Bidder do not envisage opacity monitors at the upstream of Bag filter.	Opacity monitor in each filter chamber upstream of ID Fan
204	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-II-A-02/ Grate & flue gas cleaning / 6.01.11	Page 10 of 12	Water washing system for the fabric bag filter and its hoppers along with all piping, valves and nozzles etc.	We do not envisage any water washing system for Bag filter type dust arrestor. (Normally it is applicable to ESP type dust arrestor)	Water washing required to clean filter chamber and hopper. Bidder to comply the specification
205	CS-2600-001-9	Section-VI / Part A / SUB-SECTION-II-A-02 GRATE AND FLUE GAS CLEANING SYSTEM	Cl. No. 6.01.19	Page 10 of 12	Compressed air cleaning shall be provided from reservoir (one per filter chamber). From there air needs to be distributed by nozzle lances to each row of filter bags installed.	Bidder will use adequate size of air header cum reservoir for each chamber as per his proven practice. Please confirm.	Compressed air reservoir for each filter chamber is required. Air header is not accepted. Specification requirement is clear in this respect.
206	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-II-A-02/ Grate & flue gas cleaning / 6.01.26	Page 11 of 12	Adequate instruments needs to be provided in the bag filter for remote monitoring of > Inlet and Outlet pressure / temperature > Inlet and outlet moisture concentration > Inlet and outlet dust concentration > Inlet and outlet CO/CO ₂ / O ₂ concentration > Differential pressure across bag filter	Since all necessary parameters would be monitored on stack, we do not envisage monitoring following parameters across bag filter Dust, Moisture, CO, CO ₂ & O ₂ . However pressure and temperature will be monitored across Bag filter. Please confirm.	Specification requirement is very clear. Bidder to comply with the specification.
207	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-II-A-02/ Grate & flue gas cleaning / 5.03.00	Page 8 of 12	The flue gas cleaning system shall be of semi dry type / dry type consists of evaporation cooler, lime / hydrated lime and activated carbon injection in order to meet the required emission norms as prescribed in SWM rule 2016.	Values mentioned for emission performance here are different compared with those specified in Solids Waste Management (SWM) 2016.	Bidders to comply the specification limit value requirement as mentioned in the specification. SWM rule 2016 is referred for different kinds of emissions and its type.
208	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-II-A-02/ Grate & flue gas cleaning / 8.00.00	Page 11 of 12	The vendor shall guarantee that maximum emission from the unit shall not be more than the tabulated as follows within the load range defined by the Firing Diagram (LP D – 1 – 2 – 3 – 4 – 5 – D) and also in the region provided as overload area.	Kindly confirm which values should be referred (SWM 2016 or Bid specifications)?	
209	CS-2600-001-9	Technical specifications / Section VI / Part A (Mechanical)	Sub-section- II-A-02 / Grate and Flue Gas Cleaning System / Annexure-1		Sub-section- II-A-02 / Grate and Flue Gas Cleaning System / Annexure-1 Note: Energy content - Lower calorific value as NCV (dry basis)	We understand that the term NCV (dry basis) is typing error. It should be NCV (wet basis). Please confirm.	Refer revised firing diagram and waste analysis in PART-E
210	CS-2600-001-9	Technical specifications / Section VI / PART-A	Sub-section- II-A-04 POWER CYCLE PIPING / 1.03.03	Page 2 of 3	Basic engineering as well as detailed engineering including static & dynamic analysis, hanger engineering and engineering of thermal insulation etc. for the power cycle piping system. This also includes design and engineering of all temporary piping that are required for the pre-commissioning/commissioning activities of the power cycle piping system.	Dynamic analysis is not required for any type of piping in WTE/ TG&System plant. Since there are no any two Phase slug flow lines in WTE/ TG&System plant.	Bidder understanding is not correct. Bidder to comply the specification equipment.
211	CS-2600-001-9	Technical specifications / Section VI / PART-A	Sub-section- II-A-05 LOW PRESSURE PIPING / 1.02.00	Page 1 of 2	b) Complete assemblies of hangers, supports anchor, guides, restraints, etc. including welded attachments, clamps, devices tie-rods, turn-buckles, springs and spring cages, shoes, rollers, trapezes etc.	As per Bidder standard practice, for Low Pressure Piping, Water Piping, Air Piping 'U-Bolt' / shoe support type primary piping support will be used.	The specification requirement is clear. Bidder to comply the specification requirement.
212	CS-2600-001-9	Technical specifications / Section VI / Part A	SUB SECTION-II-A-09/ Plant Utilities / 2.00.00	Page 1 of 7	The complete fire detection and protection systems shall be as per the guidelines/codes/standards/rules of the TAC/NFPA/IS:3034/OISD.	We understand that the bidder has freedom to choose any standard from those specified in bid (TAC/NFPA/IS:3034/OISD). Depending on the need bidder may choose to use TAC for applicable part while NFPA or other standard(s) for remaining parts. Please confirm.	The specification requirement is clear. Bidder to comply the specification requirement.
213	CS-2600-001-9	Technical specifications / Section VI / Part A	1.02.00 / a	Page 1 of 6	SUB SECTION-II-A-12 / SUB-SECTION-II-A-13 MSW & ASH CRANE / 1.02.00 / a TWO (2) NOS. BOTTOM ASH / SLAG EXTRACTOR PER UNIT	Bidder should be free to decide the quantity as per their proven design. Please confirm.	Confirmed and bidder to refer amendment in this regard.
214	CS-2600-001-9	Technical specifications / Section VI / Part A	1.02.00 / b	Page 2 of 6	SUB SECTION-II-A-12 / SUB-SECTION-II-A-13 MSW & ASH CRANE / 1.02.00 / b TWO (2) NOS. SUBMERGED GRATE LEAK CONVEYOR PER UNIT		
215	CS-2600-001-9	Section-VI / Part A / SUB-SECTION-II-A-13 ASH HANDLING SYSTEM	1.02.00	Page 2 of 6	BOTTOM ASH / SLAG HANDLING SYSTEM (a) iii) A compensator shall be provided between the grate ash/slag extractor and ash fall shaft.	To accommodate thermal expansion necessary arrangement will be provided as per bidders proven practice.	Bidder's understanding is correct. Bidder to refer amendment in this regard.
216	CS-2600-001-9	Section-VI / Part A / SUB-SECTION-II-A-13 ASH HANDLING SYSTEM	Cl. No. 1.02.00	Page 2 of 6	BOTTOM ASH / SLAG HANDLING SYSTEM (a) viii) Automatic Lubrication unit shall be provided for all bearing zones/ lubrication points.	The Lubrication system for conveyor bearing (grease or oil) shall be as per OEM proven practice. Please confirm.	Bidder to follow proven practice of bearing Lubrication regarding grease or oil, the Lubrication system shall be Automatic operated.

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217	CS-2600-001-9	Section-VI / Part A / SUB-SECTION-IIA-13 ASH HANDLING SYSTEM	Cl. No.1.02.00	Page 2 of 16	BOTTOM ASH / SLAG HANDLING SYSTEM (a) Suitable air Fans shall be provided so that vapours arising from the bottom ashes/slag leaving the ash extractor shall be ventilated back into the Slag chute by a continuously running air fan. Ducts shall be made of acid resistant plastic material. Passenger Elevator for integral TG Building/control Room & Goods elevator. (i) One (1) nos. panoramic type passenger elevator with five glass panels on rear side having capacity of 08 persons (600 kg.), for TG cum Service building (for TG building & Main control room integral with crane operator). (iii) One (1) nos. Boiler elevator having a capacity of 3000 kg Elevators One (1) no. passenger elevator having a capacity of 680 kg. (or suitable for 10 persons) and one (1) number goods elevator having a capacity of 3000 kg for steam generator. T	As per bidder proven practice the vapour generated in ash extractor fed to slag chute of furnace using the draft available in furnace. Hence air fan is not necessary for bidder's system.	Bidder's understanding is correct . Bidder to refer amendment in this regard.
218	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-A SUB-SECTION-IIA-16	1.01.00	Page 1 of 2		Employer is requested to confirm , The Capacity of passenger elevator 08 person (500 kg) OR 10 person (680 kg)	Noted. 10 person (680 kg)
219	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-A SUB-SECTION-IIA-01	2.22.00	Page 14 of 18			
220	CS-2600-001-9	Section-VI / PART-A / SUB-SECTION-IIA-03 STEAM TURBINE AND AUXILIARIES		Page 1 of 29	Steam Turbine Internally controlled extraction to provide up to 60% of the steam at the upstream of the extraction point to provide steam at 8 ata at the terminal point.	Please clarify whether the demand for steam for vapour absorption chiller is constant and continuous. We understand that the provision of supplying 60% of rated (EMCR) steam has to be kept irrespective of throughput of the WTE/ TG&System plant.	Specification are clear. Bidder to comply.
221	CS-2600-001-9	Section-VI / PART-B / SUB SECTION-A-01 OPERATING CAPABILITY OF PLANT STEAM TURBINE AND AUXILIARIES	1.01.00	Page 1 of 29	The plant should be able to supply up to 60% of the rated steam flow at 8 ata at the input of the vapour absorption chiller (Absorption chiller not in bidder's scope) for use in district heating/ cooling or other uses. In such case the electric output of the plant may reduce accordingly.	Please specify the location of vapour absorption chiller and presume it is closer (within 100m running length) from the Turbine extraction point. Can Bidder get the Also, confirm whether condensate equivalent to 60% extraction steam will be returned back by Employer to the WTE/ TG&System plant.	Bidder to provide/propose area for VAM to be installed.
222	CS-2600-001-9	Technical specifications / Section VI / Part A	1.00.0	Page 1 of 3	SUB SECTION-II-D/ Civil Work / (i) Dismantling of existing facilities including foundation as required and disposal of scrap/debris.	Please provide details/drawings of all existing structures (aboveground & underground).	Details shall be provided after award if available
223	CS-2600-001-9	Technical specifications / Section VI / Part A	1.00.0 / 12.	Page 2 of 3	SUB SECTION-II-D/ Civil Work / Any other building/facility required for completion of all systems.	We will consider the building/facility requirement as per our design. We presume there is no additional requirement from Employer. Please confirm.	Any other building/facilities as per system requirement of the project
224	CS-2600-001-9	Technical specifications / Section VI / Part A	2.01.00/	Page 1 of 1	SUB SECTION-III / Terminal Points & Exclusions / 2.01.00/Civil Approach roads from highway outside the plant boundary.	We understand that the plant boundary mentioned here means the boundary for WTE/ TG&System plant, as mentioned as "FENCING" in drawing no: 2600-001-POC-A-001 Rev A. The Employer shall provide road connection from highway up to this "FENCING". Such road shall be made available by Employer at all times including the construction activity. Please confirm.	The plant boundary mentioned here means the existing boundary of existing plant. Approach road from highway to WTE plant is in bidder's scope
225	CS-2600-001-9	Technical specifications / Section VI / Part A	1.00.01 / c)	Page 1 of 10	SUB SECTION-IV / Functional Guarantees / 1.00.01 / c) The guarantee tests shall be conducted by the Contractor at site in presence of Employer on each unit individually.	As per definition of heat rate (clause no. 1.00.01) the efficiency of steam generator has to be calculated. Please confirm whether the average of calculated efficiencies of two steam generators will be considered in the calculations of heat rate .	Specification are clear. Bidder to comply.
226	CS-2600-001-9	Technical specifications / Section VI / Part B / Book 1 of 5	1.04.02.e	Page 2 of 7	SUB SECTION-A-02 / Equipment Sizing criteria / 1.04.02.e Material used for..... SG components (pressure parts) for..... duty up to and including 400deg.c : SA 210 Gr c or approved equivalent	We envisage to use SA 210 Gr A1 tubes for SG components suit to project requirement as per Bidder's proven practice.	The specification requirement is ample clear. Bidder to comply the specification requirement.
227	CS-2600-001-9	Technical specifications / Section VI / Part B / Book 1 of 5	1.05.01.03	Page 6 of 7	SUB SECTION-A-02 / Equipment Sizing criteria / 1.05.01.03 (i) Margin over 100% Full load flow is 20% for FDF & IDF (ii) Margin over 100% Full load pressure requirement is 44% for FDF & IDF	Please note that very high margins above 100% load will hamper the Fan efficiency at duty point. The selection of fan pressure and flow should be as per design norms of the bidder. Please confirm.	The specification requirements for fans are clear. Bidder to comply the specification requirement.
228	CS-2600-001-9	Technical specifications section-VI Part-B-1	1.04.00	Page 2 of 33	Sub-Section-A-03 Steam Generator and auxiliaries clause:1.04.00 Loading/Unloading Pattern and adaptability for sudden load Changes/ Load Throw off To match the desired plant operating capabilities, the steam generator shall also be designed for expected numbers of steam generator start-ups during 25 years of design life.	Please specify the expected number of Startup in 25 Years.	Bidder to propose
229	CS-2600-001-9	Technical specifications section-VI Part-B-1	2.04.00	Page 4 of 33	Sub-Section-A-03 Steam Generator and auxiliaries clause:2.04.00 In the steam generator enclosure, minimum 1.5m (or as per the vendors proven practice) cavity height shall be provided in between the horizontal banks/sections of economizer, superheater for maintenance purpose.	Bidder has proven practice to provide maximum height of 1000 mm between the horizontal banks/sections of economizer. Please confirm.	Bidder to comply the specification.
230	CS-2600-001-9	Technical specifications / Section VI / Part B		Page 10 of 33	PRIMARY AIR FANS Fan control System : (a) Fan flow control (i) By VFD On the dampers (if any) shall be compatible with selected automatic control system.	Bidder has proven experience of installing actuated dampers .Hence Bidder should be allowed to implement it. Please confirm.	The specification requirement is clear and require VFD for flow control. Bidder to comply the specification.
231	CS-2600-001-9	Technical specifications / Section VI / Part B	10.06.00	Page 16 of 33	SUB SECTION-A-03 / Steam generator & Auxiliaries / 10.06.00 FD and ID fans shall meet following operational requirements. (c) Bearing metal temperature monitoring FD Fans: shall be possible from remote as well as locally, using at least two(02) nos. of duplex platinum RTD's per bearing (100 ohms at 0 deg.C). ID Fans: Shall be possible from remote as well as locally, using three (03) nos. of duplex platinum RTD's (100 ohms at 0 deg. C) per bearing.	Bidder should be free to decide the type of temperature monitoring as per their proven design. Please confirm.	The specification requirement is very clear without any ambiguity. Bidder to comply with the specification requirement.
232	CS-2600-001-9	TECHNICAL SPECIFICATIONS SECTION – VI, PART-B SUB SECTION-A-03 STEAM GENERATOR & AUXILIARIES	08.02.07	Page 12 of 33	Fan bearing lubrication system (c) In case of oil lubricated bearing the design shall be such that bearing are lubricated by external oil lubricating system in which oil is cooled by external cooler. In addition sump lubrication with ring shall also be provided.	The lubrication system for fan bearing (grease or oil) shall be as per OEM proven practice. Please confirm.	The specification requirement is very clear without any ambiguity. Bidder to comply with the specification requirement.
233	CS-2600-001-9	Technical Requirements / SUB-SECTION-A-05 LAYOUT REQUIREMENTS	1.02.00	Page 2 of 4	Equipment Layout 10) No. of Fire Escape staircases in the main plant with fire doors at each landing. Min-2 Nos. per unit. However the number shall meet the requirement of insurance companies.	The requirement or criteria of insurance company should be specified at Bid stage only. However we are considering maximum 2 Nos per unit.	Bidder shall provide min. 2 nos. of fire escape staircases per unit. Further bidder to refer section: VI/B , sub section-01:Civil Works, clause no: 3.12.0
234	CS-2600-001-9	Technical specifications / Section VI / Part B-1 (Mechanical)	1.02.01.7	Page 2 of 4	Sub Section - A - 05 - Layout Requirements / Equipment layout - Minimum clear working space around the equipment - 1200 mm	Equipment Maintenance platform will be minimum 1200mm and access platform will be minimum 800mm.	1. For TG, auxiliaries and other area, bidder to comply with specification section VI/B, subsection A-05: layout requirements. 2. For SG and auxiliaries area, refer section VI/B, sub section A-03
235	CS-2600-001-9	Section-VI, Part-B-1 Technical Requirements / Sub-Section-A-06 Turbine Generator and Auxiliaries	4.02.00	Page 19 of 28	4.02.00 Deaerator (e) Shell plate min. thickness 15.8mm of welded construction.	Shell plate thickness of deaerator shall be decided on design parameter as per IBR / ASME Section VIII Div. I. Kindly confirm.	Refer amendment-01 in this regard.
236	CS-2600-001-9	Technical Specifications, Section-VI, Part B, Subsection-A-12, Water System	1.12.00	Page 13 of 35	1.12.00 Dosing System The dosing pump should have 150 strokes/min for precise control of chemicals.	Number of strokes for dosing pump will be as per pump manufacturers standards	Bidder to comply the specification requirement.
237	CS-2600-001-9	Technical Specifications, Section-VI, Part B,		Page 34 of 35	Subsection-A-12, Water System Part-V Leachate Treatment System The Leachate treatment system shall be based on Evaporation & drying technology only. The process flow diagram of suggested Evaporation & drying technology has been attached herewith as Appendix-A.	The Appendix-A (process flow diagram) is not found in Bid document. Please provide.	Leachate Treatment system deleted from scope. Please refer amendment-01

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

238	CS-2600-001-9	Technical specifications / Section VI / Part B / Book 1 of 5	1.00.0	Page 1 of 1	SUB-SECTION-A-21/1.00.0 Waste Feed Crane- Volumetric capacity of grab (m ³): Minimum 8 (m ³) Lifting capacity of crane (T): 12 (T) Minimum Bottom Ash Crane- Volumetric capacity of grab (m ³): Minimum 1.5 (m ³) Lifting capacity of crane (T): Minimum 5 (T) SUB-SECTION-A-24	Bidder shall be allowed to decide capacity based on actual requirement and Bidder's proven practice. Please confirm.	Bidder to refer amendment to Technical Specification in this regard.
239	CS-2600-001-9	Technical specifications / Section VI / Part B / Book 1 of 5	1.02.00	Page 1 of 4	LP DOSING AND OXYGENATED TREATMENT SYSTEM 1.02.00 If the proposed method is All Volatile type of Treatment (AVT) using ammonia and hydrazine dosing shall be used. Cl. No. 5.01.00	LP dosing system, Deoxidizer (non hydrazine type of chemical shall be used to remove the excess of oxygen from condensate water. Ammonia chemical are not for LP dosing system as per Bidder treatment plan.	Bidder to comply the specification requirement.
240	CS-2600-001-9	Technical specifications / Section VI / Part C	5.01.00	Page 2 of 83	Rules, Regulations, Codes, & Standards 1. (n.) Petroleum Act. 1984, (o.) Petroleum Rules, 1976, (p.) Gas Cylinders Rules, 1981 2. (vi) Any other statutory codes / standards / regulations, as may be applicable Cl. No. 5.07.00	1. These standards are not applicable for Waste to Energy Plants. 2. Please specify other codes or standards in detail.	Bidder to comply the specification requirement.
241	CS-2600-001-9	Technical specifications / Section VI / Part C	5.07.00	Page 4 of 83	In case of any change in codes, standards & regulations between the date of bid opening and the date when vendors proceed with fabrication, the Employer shall have the option to incorporate the changed requirements or to retain the original standard. It shall be the responsibility of the Contractor to bring to the notice of the Employer such changes and advise Employer of the resulting effect. Cl. No. 5.03.03	Codes, standards & regulations published on or before date of bid only will be considered. Employer has to bear the resulting cost impact due to change in code standard and regulation occurred after award of contract.	Bidder to comply the specification requirement.
242	CS-2600-001-9	Technical specifications / Section VI / Part C	8.03.01	Page 6 of 83	A) BASIC ENGINEERING DOCUMENTATION Prior to commencement of the detailed engineering work, the Contractor shall furnish a Plant Definition Manual within 12 weeks from the date of the Notification of Award. Cl. No. 5.03.03	We understand Plant Definition manual is basic design data. Please confirm.	Specification requirements are clear in this regard
243	CS-2600-001-9	Technical specifications / Section VI / Part D	25.00.00	Page 10 of 53	25.00.00 The contractor shall have total responsibility for protecting his works till it is finally taken over by the employer	Employer shall allow bidder's security manpower 24/7 inside Employer's premises for all times including construction activities. Please confirm	Specification requirements are clear in this regard, specific needs of the contractor may be discussed at the time of execution
244	CS-2600-001-9	Technical specifications / Section VI / Part D	26.03.00	Page 11 of 53	26.03.00 The hours of work on the Site shall be decided by the Employer and the Contractor shall adhere to it. Working hours will normally be eight (8) hours per day - Monday through Saturday.	As per need, the bidder may have to work more than 8 hours and also need to work on Sundays. There should not be any restriction on working hours.	Specification requirements are clear in this regard, however any deviation may require permission of the employer
245	CS-2600-001-9	Technical specifications / Section VI / Part D	28.04.00	Page 12 of 53	28.04.00 Site laboratory for civil works: Contractor shall provide and maintain a site laboratory for the testing of construction material under the direction and general supervision of employer.	Outsourcing of such test should be allowed (if applicable). Please confirm.	Specification requirements are clear in this regard
246	CS-2600-001-9	Technical specifications / Section VI / Part D	36.05.00 j)	Page 20 of 53	36.05.00 j) Compliance to all environment and other conditions stipulated by the concerned statutory authorities while according clearance /NOC to the project.	All the necessary compliances /permissions /clearances shall be obtained by Employer. However all documentation shall be provided by Bidder whenever required. Please confirm.	Specification requirements are clear in this regard
247	CS-2600-001-9	Technical specifications / Section VI / Part D	36.05.00 k)	Page 20 of 53	36.05.00 k) The landscape and rainwater harvesting plan shall be finalized immediately after award of work and suitable work plan with priority and schedule shall also be finalized thereafter.	Please clarify meaning of "landscape and rainwater harvesting plan shall be finalized immediately after award of work".	Specification requirements are clear in this regard
248	CS-2600-001-9	Technical specifications / Section VI / Part D	42.00.00	Page 23 of 53	42.00.00 The Contractor shall confine all his field operations to those works which can be performed without subjecting the equipment and materials to adverse effects during inclement weather conditions, like monsoon, storms, etc. and during other Unfavorable construction conditions. No field activities shall be performed by the Contractor under conditions which might adversely affect the quality and efficiency thereof, unless special precautions or measures are taken by the Contractor in a proper and satisfactory manner in the performance of such Works and with the concurrence of the Employer. Such Unfavorable construction conditions will in no way relieve the Contractor of his responsibility to perform the Works as per the schedule.	Unfavorable working conditions specified here should not include such conditions where it is practically not possible to work for a human being. As site administration and control is under employer review, so any unfavourable situation such as Local nuisance/Political/Statutory bodies interventions/Union etc which restricts contractor's ongoing work shall not be attributable to bidder.	Specification requirements are clear in this regard
249	CS-2600-001-9	Section-VI / Part A / SUB-SECTION-I-A PROVENNESS	Cl. No. 1.1.0	Page 1 of 5	Cl. No. 1.1.0 The critical equipment, auxiliaries, systems and bought out items offered shall be proven and should have been in successful operation for a minimum period of two (2) year in a waste fired unit of at least 300 TPD incineration capacity. Documents in support of the above shall be submitted along with the bid. ATTACHMENT - 3K	The two clause are contradictory. Also, Bidder should be given flexibility that critical equipment supplied should have been in continuous operation for other than waste fired plant shall also be acceptable. Documents in support of the above shall be submitted along with the bid.	Bidder to comply with the specification.
250	CS-2600-001-9	Section-VII	ATTACHMENT - 3K	Page 1 of 56	The critical equipment, auxiliaries, systems and bought out items offered shall be proven and should have been in successful operation for a minimum period of one (1) year in a waste fired unit of at least 300 TPD capacity. Documents in support of the above shall be submitted along with the bid.		
251	CS-2600-001-9	Sec-VI PART-G CHAPTER-III SUB-SECTION-DM1	1.02.00	Page 4 of 15	1.02.00 Other Data Description and details of the recommended mill rejects disposal system.	We do not envisage mill and mill reject system for the WtE/ TG&System Plant.	Bidder to comply with the specification.
252	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-B SUB SECTION-A-06 TURBINE GENERATOR AND AUXILIARIES	1.05.00	3 OF 29	STEAM TURBINE ROTORS Turbine assembly radial seal clearances at rotor blade tip and inter stage area shall not be less than 0.8 mm.	This shall be as per OEM Design. Please confirm.	Bidder to comply with the specification.
253	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-B SUB SECTION-A-06 TURBINE GENERATOR AND AUXILIARIES	1.13.00	6 OF 29	(a) Emergency Governor (1) Bidder shall provide over speed trip of the Unit at 110% of rated speed in case speed governor fails to limit the turbine over speed.	As per Proven Practice , Bidder Proposed Mechanical Over speed Trip. Please confirm	Specification requirement is clear in this regard
254	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-B SUB SECTION-A-06 TURBINE GENERATOR AND AUXILIARIES	1.15.00	7 OF 29	In addition of above 2x100% AC Aux. oil pumps for startup, shut down of TG unit and as standby to M.O.P. for automatic operation shall be provided.	As per OEM proven Practice, we proposed 1 X 100 % AC Aux. Oil Pump. Please confirm.	Bidder to comply with the specification.
255	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION-VI, PART-B SUB SECTION-A-06 TURBINE GENERATOR AND AUXILIARIES	1.15.00	10 OF 29	c. Service Factor Between turbine and generator 2.0	This should be 1.5 as per AGMA.	Bidder to comply with the specification.
256	CS-2600-001-9	PART – A SECTION - VI SUB SECTION-I	6.00.00	9 of 12	Operation & Maintenance of the plant as per the Indian Solid Waste Management Rule 2016, in all respects including waste receipt, processing, segregation, power generation, disposal of waste to landfill site, all consumables, all spares etc	Please correct the wording as "peration & Maintenance of the plant as per the Indian Solid Waste Management Rule 2016, in all respects including waste receipt from RDF Plant , processing, segregation, power generation, disposal of waste to landfill site, all consumables, all spares (except Mandatory Spares) etc. Please also specify the requirement of Laboratory during O&M period. Please exclude followin from O&M scope of Bidder - 1) Receipt of waste from municipality, as WtE/ TG&System plant will receive waste from RDF plant. 2) Disposal of waste to land fills 3) Labour Camps 4) Control the movement of all vehicles beyond the battery limits i.e. Plant Gate . 5) Any equipment and services that are not clearly specified in the offer 6) Supply of vehicles (various types) required for movement of waste within the plant and outside (if required)	Bidder to comply the specification requirement.Please refer amnednment-01

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

257	CS-2600-001-9	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	2.12.00	Page 6 of 12	Combined or separate hydraulic station needs to be provided for ram feeder and grate, but each system shall be separate control block with necessary control system and redundancy. Ram feeder system Pumps : 2 x 100 % Filter : 2 x 100 % Cooler : 2 x 100 % Accumulator : 1 x100 % Grate system Pumps : 2 x 100 % Filter : 2 x 100 % Cooler : 2 x 100 % Accumulator : 1 x100 %	Can bidder provide Common Hydraulic System for Ram Feeder & Grate System and Waste hopper Gate per unit?	The specification requirement is clear. Bidder to comply the specification requirement.
258	CS-2600-001-9	SUB SECTION-II A-02 GRATE & FLUE GAS CLEANING	6.01.03	Page 9 of 12	Flue gas inlet distribution system complete with perforated plates, turning vanes, deflector plates, flow splitters, guide vanes and all necessary gas flow control devices in the inlet and outlet cones and duct, warranted by the results of flow model test, complete duct stiffening devices, interior bracings, slide plates, access doors, brackets, supporting structures, hangers, sampling connections, etc.	We understand flow model test is CFD analysis. Please confirm.	Flow model means physical flow model.
259	CS-2600-001-9	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	3.01.01	Page 7 of 13	The vendor shall need to supply the list of Auxiliary consumers considered for the guaranteed consumption. Vendor shall guarantee Maximum Aux. Power Consumption is 14% i.e. 2086 KW at Load Point D in the Firing Diagram (LP D)	We understand that the unit heat rate guarantee is required at Gross Power output i.e 115%. So we are considering Guaranteed Aux. power consumptions at 115% load. Please confirm.	spec requirements are clear in this regard
260	CS-2600-001-9	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	3.01.01	Page 7 of 13	The vendor shall guarantee the annual availability of the unit be not less than 85%. The availability shall be calculated at the end of second year of operation for the whole year of plant operation. Availability shall be calculated as follows: Annual operational availability = (hours for which plant is available for full load operation in a year) / (8760)	To be discussed in Pre Bid Meeting	The specification requirement is clear. Bidder to comply the specification requirement.
261	CS-2600-001-9	Section-VI / PART-A / SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	3.03.01	Page 11 of 13	The average of A-weighted sound pressure level measurements expressed in decibels to a reference of 0.0002 micro bar shall not exceed the guaranteed value.	Please elaborate the condition.	
262	CS-2600-001-9	SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	3.03.05	Page 12 of 13	Vendor shall guarantee the Continuous operation (throughput and load points) of the unit within the load range defined by the Firing Diagram (LP D – 1 – 2 – 3 – 4 – 5 – D) with the provision of margin of at least 15 % for both waste throughput and thermal load beyond 100 % as overload area.	We understand the overload capacity Le 115% is continuous operation. Considering this, the waste throughput capacity of furnace 60% will be (50% of 115% overload capacity). This capacity seems to be too low of waste throughput. Please confirm the minimum acceptable waste throughput capacity.	Bidder to comply specification requirements.
263	CS-2600-001-9	Section-VI / PART-A / SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	1.00.00	Page 1 of 13	PERFORMANCE GUARANTEES e) The performance tests will be performed using only the normal number of Employer supplied operating staff.	PG test will be conducted as per PG test procedure submitted by bidder and approved by Employer.	Specification requirement is clear in this regard
264	CS-2600-001-9	Section-VI / PART-A / SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	1.00.00	Page 3 of 13	iii) For Category-III Guarantees the contract price an amount equivalent to the damages as determined by the EMPLOYER	We request Employer to add "Bidder" under this clause and reframe the clause as mentioned below. the contract price an amount equivalent to the damages as determined by discussion between the EMPLOYER and Bidder.	Bidder to comply specification requirements.
265	CS-2600-001-9	Section-VI / PART-A / SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	1.00.00	Page 6 of 13	Correction curves for heat rate/ output. Correction for the quoted values shall be allowed only for the following: 1. Ambient temperature; 2. Fuel GCV variation; 3. Moisture and hydrogen in Fuel/RDF	It is impossible to measure directly each content of actual GCV. Moisture and hydrogen of RDF which is used for Performance Test, considering characteristics of RDF is fluctuated and deviation is large. (Analysis of RDF samples taken from pit can not be representative values.) Therefore, please allow Bidder to propose to use NCV to get Employer's approval.	Refer revised firing diagram and waste analysis in PART-E
266	CS-2600-001-9	Section-VI / PART-A / SUB-SECTION-IV FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	1.00.00	Page 8 of 13	RDF of design GCV, hydrogen content and moisture.	Please specify the design figure of GCV, hydrogen content and moisture of RDF. This figure should be the same as firing diagram definition (171 of 185)	Refer revised firing diagram and waste analysis in PART-E
267	CS-2600-001-9	Technical specifications / Section VI / Part A	1.00.01	Page 2 of 13	SUB-SECTION-IV / FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES / 1.00.01 i) The Performance / Acceptance test shall be carried out as per the agreed procedure. The PG test procedure including demonstration tests shall be submitted within 90 days of the date of Notification of Award and finalization of the PG test procedure shall be done within 180 days from the date of Notification of Award.	Considering the project schedule and progress of detail design, it is difficult for Bidder to submit appropriate documents within 90 days and finalize within 180 days after the date of Notification of Award. To prepare appropriate documents after discussing related sub-vendors and conduct PG, we propose that it should be 180 days for submission before PG and further 90 days for finalization before PG respectively.	Bidder to comply specification requirements.
268	CS-2600-001-9	Technical specifications / Section VI / Part A	1.00.01	Page 2 of 13	SUB SECTION-IV/ Functional Guarantees / i) The PG test procedure including demonstration test. SUB SECTION-IV/ Functional Guarantees / 3.01.01/3. The Annual Operational Availability./II	Please elaborate the meaning of "demonstration test".	Demonstration tests are envisaged for CAT-III guarantees.
269	CS-2600-001-9	Technical specifications / Section VI / Part A	3.01.01/3.	Page 7 of 13	Notes: II. Operation and load interruptions for which the vendor is not responsible for is counted as operating time with full availability. Such events like a). Non availability of inputs such as raw water in the canal. Municipal solid waste	We request Employer to include 'Non availability of supplementary fuel (LDO)' under interruptions for which vendor is not responsible.	Bidder to comply specification requirements.
270	CS-2600-001-9	Technical specifications / Section VI / Part A	3.03.05	Page 12 of 13	SUB SECTION-IV/ Functional Guarantees / 3.03.05 Waste Throughput as per Firing Diagram	We understand that "the provision of margin of at least 15% is just for short term fluctuation of both waste throughput and thermal load. Please confirm the maximum time for overload operation In case a furnace designed to operate at 115% overload continuously, 60% partial load against 3500t/d will have no meaning. 350 t/d x 0.6 x 2 fce = 420 t/d → Almost possible to be covered by one fce. operation So, should "lowest partial load" be increased (~70%)?	Refer revised firing diagram and waste analysis in PART-E
271	CS-2600-001-9	SECTION – VI, PART-B SUB SECTION-A-03 STEAM GENERATOR & AUXILIARIES		Page 33 of 33	Physical model testing for the following 1. SNCR 2. Bag filter 3. Flue gas cleaning & Treating (Activated carbon / lime spray system)	Bidder would like to inform that SNCR, Bag Filter & FGT System is not required. Necessary CFD analysis will be used to design the flow.	Physical model testing is required as per the sepecification. Bidder to comply with the requirement.
272	CS-2600-001-9	IV/ A/ Sub Sec C-01	2.02.00	1 of 4	All equipment, systems and accessories furnished under this specification shall be from the latest proven product range of a reputed experienced manufacturer whose successful performance has been established by a considerable record of satisfactory operation in Waste utility power station as specified in Section IFB and/or Section-VI.	The provenness governing clause for control system to be offered shall be in line with Cl. 1.4.0 of Sub Sec I. NTPC may please confirm.	provenness requirement for control system is clear. Bidder to comply technical specification.

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

273	CS-2600-001-9	IV/ A/ Sub Sec IIA-01	2.27.06	18 of 18	The segregation system shall have minimum 2 numbers of additional PTZ cameras & 2 numbers of IP based 8-type PA stations in addition to as defined in C&I section of the specification. Closed Circuit Television System (CCTV):	NTPC may please if the segregation cameras are to be considered additional to CCTV cameras as per Cl. 12.00.00 of Sub sec IIC.	Segregation is not envisaged. Refer amendment-01
		IV/ A/ Sub Sec IIC	12.00.00	11 of 14			
274	CS-2600-001-9	IV/ A/ Sub Sec IIC	2.00.04	3 of 14	Waste crane handling system: the operating system for both cranes handling waste shall be fully automatic along with weigh measurement of waste & integration of measurement along with provision of MANUAL operation. To enable this, Contractor to provide fully automatic intelligent system as defined in Mechanical sections. If contractor's standard & proven practice is to use PLC for this system, the same can be provided. In such case, Contractor to furnish documents establishing standard practice. This system shall be integrated with Unit DDCMIS.	NTPC may please provide more details regarding integration of crane handling system with DDCMIS.	Specification requirements are clear ,bidder to comply technical specifications
275	CS-2600-001-9	IV/ A/ Sub Sec IIC	2.02.00	3 of 14	Three numbers of workstation with 22" TFT monitors, KVM switch, 2 numbers of Programming stations, Redundant servers, three no's of LaserJet (A4)printer , shall be provided along with three(3) numbers of large video screens (LVS) complying specification part-B shall be provided.	We understand the HMIPIS quantities mentioned vide the referred clause is common for complete plant. NTPC may please clarify. Further, we understand separate LVS workstations are not required to be provided. NTPC may please clarify.	These are common quantities for complete plant .Further , Bidder to consider separate LVS workstations other than indicated .
276	CS-2600-001-9	IV/ A/ Sub Sec IIC	19.00.00	14 of 14	MAINTENANCE AND CALIBRATION EQUIPMENT	NTPC may please provide the list of MAINTENANCE AND CALIBRATION EQUIPMENT to be considered by the bidder.	Bidder to comply technical specifications
277	CS-2600-001-9	IV/ B/ IIIC-04	2.04.02	4 of 31	Multi Input Temperature transmitter (Temperature Multiplexer) For only information related temperature inputs fieldbus based Multi input temperature transmitters can be provided.	We understand that Profibus/ FF bus philosophy is not applicable as per the tender. Employer may please clarify.	bidder understanding is correct
278	CS-2600-001-9	IV/ B/ IIC	15.00.00	13 of 14	For non-intrusive actuators 5 Nos. configuration/ diagnostic tool (if applicable) shall be provided in this package.	NTPC may please clarify if hand held HART calibrators are also to be considered by bidder.	2 numbers of hand held tools for configuration /diagnostic tool shall be provided .
279	CS-2600-001-9	IV/ A/ IIC	4.01.00	5 of 14	MEASURING INSTRUMENTS Primary instruments like thermocouples & RTDs along with temperature transmitters,pressure/diff. pressure/temperature/flow & gauges, flow sensing elements (orifice plates, flow nozzles etc), Flue Gas flow transmitter, vibration measurement. For vibration measurements and protection minimum 2 number (X and Y direction) sensors per bearing shall be provided.	NTPC may please provide the list of drives for which vibration monitoring system is to be considered by the bidder. Further, We understand vibration analysis and diagnostics is not part of the tender. NTPC may please clarify.	bidder understanding is not correct .However refer Part-B " special instruments" of specification for better clarity
280	CS-2600-001-9	IV/ A/ IIIC-05	-	-	Electrical Power Supply System	NTPC may please provide the contract quantities of UPS and 24V Dc Power supply system to be considered for the project.	technical specifications are clear .Bidder to comply technical specifications
281	CS-2600-001-9	IV/ A/ IIC	10.00.00	9 of 14	CONTROL DESK & FURNITURE:--	NTPC may please provide the contract quantities to be considered for control desks and furniture.	specification requirements are clear ,bidder to comply technical specifications
282	CS-2600-001-9	Sec: VI/ Part-A/ Sub Sec. IB	1.03.00	2 of 9 (27/85)	The Water Requirement for the project is to be met from existing water allocation (15 MGD) of Kawas Gas Power Project. Make-up Water for Kawas GPP is drawn from Singapore Weir constructed across Tapi River near surat	Kindly provide Raw water analysis for design of DM plant	WTP has been deleted from scope. Please refer amendment-01
283	CS-2600-001-9	Sec: VI/ Part-A/ Sub Sec. IID	1.00.00, 10.	2 of 3 (161/185)	Sewerage system and Sewerage treatment plant	Kindly provide the capacity of STP required and the specification for the same.	Bidder to furnish
284	CS-2600-001-9	Sec: VI/ Part-B/ Sub Sec. A-12	1.12.00 g)	13 of 35 (131/292)	Supply of all types of operating and cleaning and lab chemicals shall be in the scope of the bidder for the initial and trial operations and up to six (6) months from the commissioning of UF+RO+EDI OR UF+RO+MB units.	As per tender, 2 years O&M is specified. However, the specified clause refers to 6 months' chemicals. Kindly clarify: 1) Is Scope of supply of 2year O&M chemical applicable? 2) Is only 6 months chemical is under Bidder's scope and for remaining period is under NTPC.	Please refer amendment-01
285	CS-2600-001-9	Sec: VI/ Part-B/ Sub Sec. A-12	Part-II Pre-treatment 1.01.00 1.02.00	13 of 35 (131/292) 14 of 35 (132/292)	Tender specifics 2 types of Pre-treatment 1) MBBR system 2) MBR system	Kindly confirm type of Pre-treatment required (MBBR or MBR) with detailed specification requirement. As per 1.03.00 Sec.VI,Part-A, Sub Sec.IB, Water requirement for the project is to be met from existing water allocation of Gas Power plant. Hence, we do not understand the need for a MBBR/ MBR plant in Pre-treatment plant. Please clarify with scheme/ flow diagram.	Please refer amendment-01
286	CS-2600-001-9	Sec: VI/ Part-B/ Sub Sec. A-12	Part-V	34 of 35 (152/292)	Leachate Treatment system The Leachate treatment system shall be based on Evaporation & drying technology only. The process flow diagram of suggested Evaporation & drying technology has been attached herewith as Appendix-A.	Kindly provide Appendix-A. The same is not available in the Tender docs.	Leachate Treatment system deleted from scope. Please refer amendment-01
287	CS-2600-001-9	Sec: VI/ Part-A/ Sub Sec.IV	1.00.00	1 of 13	Functional guarantees for Water treatment systems	Kindly provide the functional guarantees for Water treatment systems as the same is not available in the tender.	WTP has been deleted from the scope therefore functional guarantees are not applicable
288	CS-2600-001-9	General				Kindly provide Tender scheme, Datasheet, PID, Guarantee requirements for designing the water treatment systems and offer preparation.	Please refer amendment-01(Plant water scheme in Part-E)
289	CS-2600-001-9	Sec:VI/Part-A, Sub Sec. III		1 of 1 (166/185)	Terminal points & exclusions	Kindly provide terminal points and exclusion for Water treatment system, chemicals, etc.	Please refer amendment-01(Plant water scheme in Part-E)
290	CS-2600-001-9	General Approved Vendor List	-	-	Vendor List	Bidder will supply the equipment as per bidder Approved Vendor List only except the Qualified Waste to Energy Plant Equipment manufacturer.	Vendor list shall be finalised during pre-bid discussion.
291	CS-2600-001-9	Section -VI, Part-A, Sub section- IIA-01 -SG and Auxiliaries	-	Annexure-1	Firing Diagram	As per Firing Diagram there is margin of 15% between peak and design load condition which lead the inefficient operation of the Plant with higher capital investment. NTPC is requested to reduce this margin in the range of 3 to 5%. Please check and confirm.	Refer revised firing diagram in PART-E
292	CS-2600-001-9	Section -VI, Part-A, Sub section- IIA-01 -SG and Auxiliaries	-	Annexure-1	GCV Value	The GCV value specified in the Annexure-1 is on high side only for the proposed WTE Plant. NTPC is requested to reconfirm the maximum and minimum GCV value of municipal waste of Surat for cost optimization of entire WTE plant.	Refer revised firing diagram in PART-E
293	CS-2600-001-9	Section -VI, Part-A, Sub section- IIA-01 -SG and Auxiliaries	16 of 18	2.27.00	Segregation Facility	As per Annexure-1 (Firing Diagram) the Design and Guarantee is based on the RDF, NTPC is responsible to supply RDF at Terminal Point. If any segregation facility is required the same to be in scope of NTPC only. Please confirm.	Refer amendment-01 in this regard.

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294	CS-2600-001-9	Section -VI, Part-A-Sub section -IVFunctional Guarantee	7 of 13	3.01.01	Auxiliary power consumption	Please furnish the List of Drives for which Auxiliary Power to be guaranteed.	technical specifications are clear .Bidder to comply technical specifications
295	CS-2600-001-9	Section -VI, Part-A-Sub section -IVFunctional Guarantee	5 of 13	3.01.02	Bid Evaluation Factor	As Steam Turbine is common for the proposed WTE plant, the evaluation facotor for heat rate adjustment should be at Station level not as Unit Level. Hence bid evaluation factor and LD factor for Heat Rate should be same. Please clarify.	technical specifications are clear .Bidder to comply technical specifications
296	CS-2600-001-9	Section -VI, Part-A-Sub section -IVFunctional Guarantee	9 of 13	3.02.00	Emission Performance	NTPC is requested to furnish the detailed composition of RDF to guarantee the emission.	waste analysis is being provided. Refer Part-E
297	CS-2600-001-9	Section -VI, Part-A, Sub section- IIA-03 Turbine Generator and Auxiliaries	1 of 29, 12 of 29 and 15 of 29	1.01.00 -(vi), 2.00.00 and 2.04.00	Condenser Pressure	As per Cl no. 2.00.00 the design criteria of Condenser is at VWO condition with 0% make up at 32 deg C ambient condition. However, as per cl no. 1.01.00 and 2.04.00 Design pressure of condenser is mentioned between 120mm Hg to 135 mm Hg at 40 deg C. ambient condition. NTPC is requested to specify the design ambient of Condenser.	refer amendment-01
298	CS-2600-001-9	Section -VI, Part-A, Sub section- IIA-03 Turbine Generator and Auxiliaries	2 of 29	1.01.00	EMCR, TMCR and VWO condition	Please note that the margin between the best efficiency point and VWO condition is generally 3 to 5% instead of 15% as specified in the reference clause. If Turbine will be designed based on maximum out put of 17.1 MW then there is loss of efficiency for generation at 14.9MW. Hence NTPC is requested to reduce the margin from 15% to 3 to 5% for VWO condition and the same should be reflected in Annexure-1 Firing diagram also as clarified in point no. 1. Please confirm.	refer amendment-01
299	CS-2600-001-9	Section -VI, Part-A, Sub section- IIA-03 Turbine Generator and Auxiliaries	10 of 29	1.16.00	Steam Turbine Bypass system	As per the reference clause,minimum aggregate capacity of Bypass System is equal to 65% of "BMCR flow". Does "BMCR flow" indicate the maximum continuous generation of single Boiler? Please clarify.	refer amendment-01
300	CS-2600-001-9	Section -VI, Part-A, Sub section- IIA-03 Turbine Generator and Auxiliaries	11 of 29	1.18.00	Heat balance Diagram for BMCR condition	It is understood that BMCR condition corresponds to 15% margin over Load Point Design as per Annexure-1. Please confirm.	refer amendment-01
301	CS-2600-001-9	Section -VI, Part-A, Sub section- IIA-07 Water System	1 of 1	1.00.00	Water Terminal point detail and Water Quality	NTPC is requested to furnish the detail of tap off for Raw Water from existing system like Pipe size, Pressure, Temperature and location of the same. Please indicate the Input Raw Water Quality for dwon stream engineering of Water Tretament Plant.	refer amendment-01
302	CS-2600-001-9	Section -VI, Part-A, Sub section- IIA-07 Water System	1 of 1	1.00.00	Lechate Treatment System	NTPC is requested to furnish the Input Parameter of lechate tretment system like flow rate, composition of lechate and outlet quality.	refer amendment-01
303	CS-2600-001-9	Section -VI, Part-A, Sub section- IIA-09 Compressed Air system	1 of 7	1.00.00	Compressed Air system	The capacity of Compressed air system is small and not suitable for Screw air compressor. Reciprocating compressor is economical and suitable for this application. Please confirm.	Bidder's query is not clear. Bidder to comply with specification requirement.
304	CS-2600-001-9	Section -VI, Part-A, Sub section- IIA-09 Compressed Air system	5 of 7	3.00.00	Air Conditioning System	Package Type Air cooled Air conditioing system can be used inplace of Central Chiller with AHU for Central Control Room, UPS room etc. Please confirm and furnish the revised specification in Section VI Part-8.	Looking in to the criticality of Control room equipments centralised A/c plant is envisaged. Bidder to comply with specification requirement.
305	CS-2600-001-9	Section -VI, Part-A, Sub section- IIA-10 Chemical lab equipment	1 of 1	1.00.00	List of equipment	NTPC is requested to furnish the list of Chemical lab equipments.	Bidder to comply technical specifications
306	CS-2600-001-9	Section -VI, Part-A IB	-	-	Project Information	Please specify the design Dry Bulb temperature and Relative humidity required for designing FRP cooling Tower.	Bidder to comply technical specifications
307	CS-2600-001-9	Section -VI, Part-A IB	-	-	Project Information	Is any Return Condensate available in the proposed WTE Plant? If so, Please furnish the detail of Return condensate (Flow, temperature , Pressure and Quality) at Terminal point.	Bidder to comply technical specifications
308	CS-2600-001-9	Section -VI, Part-B A-12	2 of 35	1.00.00	Water system	Please specify the design capacity of DM plant and Pre treatment Plant required for the proposed WTE Plant considering steam extraction at 8 ata level.	Please refer amendment-01
309	CS-2600-001-9	Section -VI, Part-B, A-02	1 of 7	1.02.00	Start Up fule and back up fuel	Please confirm that avallability of both Natural Gas and LDO for WTE Plant. Secondly it is understood that both NG and LDO will be used as only start up fuel or low load condition. Please confirm the correctness of understanding. Please furnish the Ng composition and battery limit condition for proposed WTE plant.	NG/LDO is considered as start up and back up fuel.
310	CS-2600-001-9	Section -VI, Part-A, Subsection III	1 of 1	1.02.01	Terminal Point of WTE Plant	1)NTPC is requested to mark in GLP the Terminal point for Raw water, Process steam at 8 ata, Condensate Return and Effluent output. It is understood that the Terminal point for Bottom and Fly Ash is out let of Bunker/ Pit. Please confirm. 2) Please indicate the temperature of process steam also at Terminal Point.	Please refer revised GLP. Further input to be provided during detail engineering
311	CS-2600-001-9	Technical Specification Section-VI Part -A sub section- I Bid DOC.No: CS-2600-001-9	6 of 12	1.02.14	Power electricty evacuation(switchyard)	As per the referred clause, Power electricity evacuation(switchyard) is in Bidder scope. However, Bidder envisaged 6.6kv switchgear at WTE End for power evacuation and no separate switchyard is included in bidders scope. Customer/consultant may please note the same.	No separate switchyard is envisaged
312	CS-2600-001-9	Technical Specification Section-VI Part -A sub section- IB Bid DOC.No: CS-2600-001-9 sub section-IB Project Information	2 of 9	1.05.00	Terminal point for power evacuation	As per the referred clause, Bidders understanding is that Bidder scope includes 6.6kV switchgear (WTE End), 6.6kV switchgear (Near switchyard),Interconnection of 6.6kV switchgear (WTE End) and 6.6kV switchgear (Near switchyard). Since the detailed requirement like number of feeders and location of 6.6kV switchgear (Near switchyard), the routing between 6.6kV switchgear (WTE End) and 6.6kV switchgear (Near switchyard) is not available and hence , Bidder envisaged two number of outgoing feeders of Bidder scope of 6.6kV switchgear (WTE End) is the bidder terminal point for power evacuation. Customer/consultant may please review and accept bidders proposal.	Terminal point is upto existing 6.6kV feeder in 1CLGA and 2CLGA. Necessary modification in these feeders is also in bidders scope

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CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

329	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION – VI, PART-A/ SUB-SECTION-III CIVIL WORKS TECHNICAL SPECIFICATION SECTION – VI, PART-D/ECC	2.00.0 (1) 27.02.00	2 of 3 11/53	Construction water shall be arranged during all stages of construction. Contractor shall make all arrangements himself for the supply of construction water as well as potable water for labour and other personnel at the worksite/colony. Raw water intake location is marked in GLP. Raw water shall be drawn from intake location for waste to energy plant.	1) Water for construction purposes may please be provided by customer on free of all charges. 2) Customer shall provide a supply point of water at construction sites i.e. SG/ TG area for both units	Bidder to comply technical specifications
330	CS-2600-001-9	TECHNICAL SPECIFICATIONS SECTION – VI, PART-A/ FUNCTIONAL GUARANTEES & LIQUIDATED DAMAGES	Note (iv)	9 of 13	Contractor's aggregate liability to pay liquidated damages for failure to attain the functional guarantee shall not exceed twenty five percent (25%) of the Contract Price.	Aggregate liability for liquidated damages for failure to attain the functional guarantee may please be limited to a maximum of 05% of the Contract Price.	Bidder to comply technical specifications
331	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION – VI, PART-D/ECC	27.04.00	11 of 53	The contractor shall advise the employer with in thirty(30) days from the date of acceptance of the Notification of Award about his exact requirement of space for his office, storage area, pre-assembly and fabrication areas etc., The above requirement shall be reviewed by the Employer and the space as decided by Employer will be allotted to the contractor for construction of his temporary structures/facilities like office, storage sheds, pre assembly and fabrication areas etc. for contractor's as well as his sub-contractor's use. Land for staff and labour colony shall not be provided by the owner and the contractor has to make his own arrangement for the same at his own cost.	Owner may please provide land free of charge for temporary offices, fabrication yard, and storage facilities with in plant boundary. Temporary accommodation, including all fencing, water supply at two points (both for drinking and construction purposes), electricity, fuel, supply, sanitation, fire prevention and fire-fighting equipment for contractor's staff and labour free of charge.	Bidder to comply technical specifications
332	CS-2600-001-9	Section-I (IFB)			The complete scope of the proposal for the Design, Engineering, Manufacture, Supply, Construction, Erection, Testing, Commissioning works including Operation & maintenance of the plant for an initial period of 2 years for the EPC Package for Waste to Energy Project (2 x 350 TPD).	The bidder may be exempted from O & M scope of work.	The specification requirement is very clear with respect to scope, bidder to comply with the specification.
333	CS-2600-001-9	TECHNICAL SPECIFICATION SECTION – VI, PART-D/ECC	44.19.00	31/53	Penalties	Contractor may be exempted from the penalty clause. No penalty shall be imposed on contractor as mentioned in the clause.	Bidder to comply technical specifications
334	CS-2600-001-9	Sec-IV /GCC	27.8.1	46 /70	At the end of the Defect Liability Period, the contractor liability ceases except for latent defects. The contractor's liability for latent defects warranty shall be limited to a period of five (5) years from the end of Defect Liability Period.	Please confirm that the burden of proof that the damage of the facilities is caused by a latent defect is with the employer.	noted
335	CS-2600-001-9	SECTION-VI, PART-B, SUB SECTION – A-06	4.02.00.e	20 of 29	Shell plate minimum thickness of 15.8mm of welded construction.	Shell plate thickness shall be decided as per relevant code based calculations.	Refer amendment-01
336	CS-2600-001-9	General	-	-	-	Cooling water temperature to the coolers is missing. May please furnish the same.	Will be provided during detailed engineering
337	CS-2600-001-9	General	-	-	-	Generator protection SLD may please be furnished.	May be provided during detailed Engineering
338			BIDDING DOCUMENT NO. CS-2600-001-9 SECTION - I (IFB)	2.0/1 of 8	RDF Handling- Crusher	We presume that this crusher is to shredd MSW and part of pre processing system . Please provide the capacity to be offered.	Not required
339			BIDDING DOCUMENT NO. CS-2600-001-9 SECTION - I (IFB)	2.0/1 of 8	Recycled oil system	Please clarify this requirement of Recycled oil system. Please furnish the detailed specification	Not required
340			BIDDING DOCUMENT NO. CS-2600-001-9 SECTION - I (IFB)		Ash system -Fly ash treatment system	We presume that it is ash conditioning system which comes below ash silo. Please confirm	Bidder understanding is correct
341			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	1.02.0/ Page No.1 of 12	d) Compliance with statutory requirements and obtaining clearances from statutory authorities, wherever required;	Approval on CCOE, IBR, CEIG, Factory Inspector for firefighting & labour inspector shall be included in scope For all other approval, bidder shall provide technical support.	Noted
342			B / VI	6 of 126	The responsibility of coordination with electrical agencies /TAC/Pollution control board and obtaining all necessary clearances shall be of the contractor.		
343			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	1.02.07/ Page No.5 of 12	Condensate polishing unit including regeneration facility (as applicable)	as the steam is used for indirect heating Condensate polishing unit is not required. Please confirm	Not required. Refer amendment-01
344			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section I/ 1.02.06/page no 4 of 12	LP and HP feed water heaters	HP feed water heater is not required for the selected operating cycle . Please confirm .	Bidder understanding is correct

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

345			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section IIA-06/ 6.01.00/page no 25 of 29	EOT crane shall be capable of lifting at least 105% of the weight of single heaviest component/ equipment, including lifting beam and slings etc. (as applicable) to be handled in TG hall for erection as well as maintenance of the equipment provided in AB bay	The TG hall crane shall be designed for maintenance and not for erection. Please confirm	Bidder understanding is not correct. Bidder to comply technical specification.
346			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section IIA-09/ 1.00.00 /page no 1 of 7	One (1) number (working) oil free, rotary screw air compressors for Service Air duty for the complete plant each of adequate capacity & adequate pressure, with their motor drives and other accessories. However minimum capacity of Air compressor shall be 15Nm ³ /min and discharge pressure 8.5Kgf/cm ² (g).	We are recommending for oil injected screw air compressor for service air application. Please confirm	For interchangeability with IA compressor, Service air compressor shall be of oil free type. Hence, Bidder to comply with specification requirement.
347			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section A-06/1.01.00/ Page No.1 of 28	Condenser pressure - 120 mm to 135 mm of Hg (abs) at 40 °C ambient	Both tender clauses are contracting.Please clarify the condenser is to be designed for 120 mm to 135 mm of Hg or 160 mm of Hg with ambient of 40°C	Refer amendment
348			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section A-06/1.01.00/ Page No.2 of 28	TMCR: The term "TMCR" (Turbine maximum continuous rating) appearing in the technical specification shall mean 14.9 MW or more electrical power output at generator terminals under rated steam parameters, 0% cycle make-up and 160 mmHg (abs) condenser pressure unless used in conjunction with a different cycle make-up and/or a different condenser pressure and /or a different throttle steam pressure.		Refer amendment
349			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section A-06/1.01.00/ Page No.1 of 28	Steam Extraction for heating/cooling/industrial use - Internally controlled extraction to provide up to 60% of the steam at the upstream of the extraction point to provide steam at 8 ata at the terminal point.	NTPC to provide the following data 1) terminal point location in layout 2) Codensate return paramters (Flow, Pressure & Temp) We have considered steam temp as - saturation +5°C at terminal point . Please confirm	Bidder to comply technical specification
350			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section A-06/1.16.00/ Page No.10 of 29	Ensure all valves (both in steam and spray water service) to be electro hydraulically operated	Please allow us to use pneumatic operated control valves for the said application	Bidder to comply technical specification
351			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section A-06/1.17.00/ Page No.11 of 29	Ensure normal make-up to cycle in the condenser hotwell at 3% which at times may go upto 5% and emergency make-up shall be sized for 5% BMCR, 10% BMCR & 15% BMCR for Min/Normal/Maximum flow respectively	The make up shall be designed for 5 % maximum. Please clarify the requirement of 10& 15% make up	Bidder to comply technical specification
352			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section A-06/2.00.00/ Page No.12 of 29	Design, manufacturing and testing as per Heat Exchanger Institute, USA (latest edition) for air cooled condenser with proven design. The condenser shall be designed for heat load corresponding to Valves Wide Open (VWO) conditions, 0% make-up, at ambient temp 32 oC, and conditions given in Table A at clause 2.04.00. The value of condenser pressure to be measured at 300 mm downstream of 1st welding joint of turbine exhaust and hot box at VWO output under rated steam conditions, 0% make-up at ambient temperature 40 oC	The condenser shall be designed for 100% TMCR condition flow with back pressure of 120 mm to 135 mm of Hg with ambient of 40°C. In other cases back pressure will be indicated by bidder	Refer amendment
353			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section IIA- 07/1.00.00/ Page No.1 of 1	Raw water intake location is marked in GLP. Construction of complete booster pumping system along with all its accessories, to pump raw water from plant reservoir (tap-off in existing raw water header shall be provided) to waste to energy plant, is in bidder's scope. Capacity of raw water booster pump shall be 2 X 100 %.	The same is not marked in the GLP. Please mark the terminal point for intake water connection and provide the revised GLP	Terminal point to be provided during detail engineering
354			TECHNICAL SPECIFICATIONS SECTION – VI, PART-B BID DOC. NO.: CS-9597-001-9	Sub section A-06/ 2.06.00 /page no 17 of 29	The unit shall consist of 2x100% vacuum pumps for holding operation and one (01) start up hogging pump with all accessories and instrumentation for condenser air evacuation	We are recommending for ejector system instead of vacuum pumps. Please confirm	Bidder to comply the specification requirement.
355			TECHNICAL SPECIFICATIONS SECTION – VI, PART-B-1 BID DOC. NO.: CS-2600-001-9	Sub section A- 03/15.00.00/ page no 30 of 33	Load carrying capacity - 680 Kgs. (equivalent to 10 person) for passenger elevator & 3000 kgs for passenger cum goods elevator	We have considered 500 kg elevator as tender clause 1.01.00 part A	This is the requirement for Boiler area. Specification requirement is clear in this respect. Bidder to comply the specification requirement.

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

356			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section IIA-16 /1.01.00/page no 1 of 2	One (1) nos. panoramic type passenger elevator with five glass panels on rear side having capacity of 08 persons (500 kg.), for TG cum Service building (for TG building & Main control room integral with crane operator).	We have considered 500 kg elevator as tender clause 1.01.00 part A	This is the requirement for TG area and Main control room. Specification requirement is clear in this respect. Bidder to comply the specification requirement.
357			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	3.02.00/ Page No.10 of 13	Emission performance	Please allow us to design the system as per the SWM rules 2016 emission norms	This is a very specific requirement. For WtE plant emission performance is very critical. Bidder to comply the specification requirement.
358			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section III/1.02.01/ Page No.1 of 1	Vapour absorption machines (Approximate capacity of 10,000 TR shall be in the scope of NTPC. However, the contractor shall provide a earmark suitable space for the machines, cooling towers for vapor absorption machines. However bidder shall provide the extraction steam pipe line up to that space.	NTPC to provide the following data 1) Vapour absorption machines location in layout 2) Steam parameters at in the inlet of VAM (Flow, Pressure & Temp) 3) Codensate return paramaters (Flow, Pressure & Temp)	To be given during detail engineering
359			TECHNICAL SPECIFICATIONS SECTION – VI, PART-B1 BID DOC. NO.: CS-2600-001-9	Sub section A02/1.02.00/ Page No.1 of 7	ii) Normal Start up/ Black Start /low load/stabilizing fuel - natural gas	Please provide the detailed analysis of natural gas	Will be provided during detail engineering
360			TECHNICAL SPECIFICATIONS SECTION – VI, PART-B1 BID DOC. NO.: CS-2600-001-9	Sub section A03 /4.01.00/page no 6 of 33	Steam Generator casing/pent house (as applicable) shall be provided. The casing/pent house design shall ensure: (a) Complete enclosure of Steam Generator including superheater & economizer headers. (b) The casing/pent house and its supporting system shall be capable of taking additional loads due to accumulations of ash.	Pent house shall not be required as entire steam generator assembly is within the enclosure.	Specification requirement is clear in this respect without any ambiguity. Bidder to comply the specification.
361			TECHNICAL SPECIFICATIONS SECTION – VI, PART-B1 BID DOC. NO.: CS-2600-001-9	Sub section A06/1.01.00/ Page No.2 of 28	TMCR: The term "TMCR" (Turbine maximum continuous rating) appearing in the technical specification shall mean 4 MW electrical power output at generator terminals under rated steam parameters, 0% cycle make-up and design condenser pressure unless used in conjunction with a different cycle make-up and/or a different condenser pressure and /or a different throttle steam pressure. EMCR: The condition corresponding to economic continuous maximum rating (EMCR) at generator terminal shall be 4 MW output under rated steam conditions with cycle make up of 3% of throttle steam flow and design condenser pressure.	We have considered 14.9 MW is TMCR and EMCR condition and we presume that 4 MW is typhographical error	Refer amendment-01
362			TECHNICAL SPECIFICATION SECTION-VI, PART-E BID DOC. NO.: CS-2600-001-9	Part-E (Tender Drawings) (Doc page 153)	General Layout Plan Dwg No.2600-001-POC-A-001. Rev A	We request you to provide this layout in AutoCAD format.	sharing of Layout in CAD version not invasaged in contract
363			Part B, Sub section A - 12, Water system	1.01.00 & 13 of 35	Pre treatment plant - MBBR system	a. Source of raw water is mentioned as river water, however detailed raw water analysis not available in the tender. Request to provide the same. b. Pretreatment scheme is mentioned as Filtration and dechlorination at one place and MBBR + MBR + HRSCC is mentioned in other place. Clarify on the pretreatment scheme to be followed for water treatment plant. c. If MBR is to be considered in the pretreatment scheme, please clarify on the requirement of UF prior to RO. d. Please clarify the term "Hydraulics of the Complete Sewage treatment Plant shall be designed to take an occasional over loading of 20% over the design flow" mentioned in the pretreatment section.	WTP has been deleted from scope. Please refer amendment-01
364			Part B, Sub section A - 12, Water system	1.02.00 & 14 of 35	Pre treatment plant - MBR process		Refer amendment-01
365			Part B, Sub section A - 12, Water system	1.01.14 & 14 of 35	Hydraulics of the Complete Sewage treatment Plant shall be designed to take an occasional over loading of 20% over the design flow		Refer amendment-01
366			Part B, Sub section A - 12, Water system	1.02.01 & 14 of 35	Further, in case of MBR system, the reactor clarifier at the outlet is not required to be provided and the treated effluent from MBR system will be led directly to the Clarifier water storage tank.		Refer amendment-01
367			Part B, Sub section A - 12, Water system	1.00.00 & 2 of 35	The Plant shall consist of a Pre-treatment section, Reverse osmosis (RO) section and a Post-treatment section. The pre-treatment section will condition the water before it goes into the RO section. The pretreatment section shall include filtration and dechlorination		Refer amendment-01
368			Part B, Sub section A - 12, Water system	1.00.00 & 2 of 35	Bidder to quote for only one (1) option i.e. either UF+RO+EDI or UF+RO+MB		Refer amendment-01
369			Part A, Sub section IB, Project information	1.03.00 & 2 of 8	The Water Requirement for the project is to be met from existing water allocation (15 MGD) of Kawas Gas Power Project. Make-up Water for Kawas GPP is drawn from Singapore Weir constructed across Tapi River near Surat at a distance of approximately 20 Km from the Power Station		Refer amendment-01

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

370			Part B, Sub section A - 12, Water system	1.02.00 & 2 of 35	The plant (UF+RO+EDI or UF+RO+MB) shall operate at an overall recovery rate 75% (Minimum).	Please note the following: UF recovery - 90 to 95% RO1 recovery - 75% Request to please check and clarify whether the minimum recovery rate mentioned is applicable only for the RO system.	WTP has been deleted from scope. Please refer amendment-01
371			Part B, Sub section A - 12, Water system	1.11.01 & 8 of 35	The period between two successive regenerations and net output between two regenerations for MB units shall be as specified	Net OBR and Operating hours between two successive regeneration of MB not specified in tender document. Request to specify the same.	WTP has been deleted from scope. Please refer amendment-02
372			Part A, Sub section IIA-07, Water system	1.00.00 & 1 of 1	Supply of Mandatory spares (for two years).	List of two years mandatory spares to be provided to enable us to quote for the same.	Bidder to comply the specification. List has been attached.
373			Part A, Sub section IIA-07, Water system	1.00.00 & 34 of 35	The Leachate treatment system shall be based on Evaporation & drying technology only. The process flow diagram of suggested Evaporation & drying technology has been attached herewith as Appendix-A	a. Leachate analysis report not specified in the tender. Request to provide the same. b. Since processed waste is handled in the plant, please clarify on the possibility of leachate being generated from the processed waste. c. Quantity of leachate that will be generated from the processed waste to be specified to size the leachate treatment plant. d. Appendix A - Process flow diagram for leachate treatment plant specified is not available in the tender document. Request to provide the same.	Leachate treatment system has been removed from scope. Please refer amendment-01
374			Section VII	Attachment 3k, 20 of 56	Whether the Leachate treatment system have been in successful operation for a period not less than one (1) year	Scheme for leachate treatment plant is specified as Evaporation and drying technology in tender. However in provenness criteria, it is generally mentioned as leachate treatment plant experience. Please clarify whether vendor having experience of leachate treatment plant using other technologies will be qualified.	Refer amendment-01
375			Section VII	Attachment 3k, 22 of 56	Whether the Liquid effluent treatment have been in successful operation for a period not less than one (1) year	Scheme for liquid effluent treatment plant is not defined in the tender. However in provenness criteria, it is generally mentioned as liquid effluent treatment plant experience. Please clarify whether provenness certificate shall be submitted for ETP with any technology.	Refer amendment-01
376			TECHNICAL SPECIFICATIONS SECTION – VI, PART-B-1 BID DOC. NO.: CS-2600-001-9	4.04.01 Page No. 169 of 292 (Doc. page 4 of 31)	Pre-filter at the suction and fine (micro-vee type) and absolute (HEPA type) filters (wherever applicable) at the discharge of each individual AHU, and heater section in the common discharge of AHUs.	Kindly note HEPA filters are generally used in Pharmaceuticals industries, Nuclear plant, etc to control fine airborne particles whose filter efficiency will be 99.97% down to 3 microns, also which will create a pressure drop ranging between 25 to 60 mmWC and will result in increase in power consumption. Which will also require larger foot space in the layout. Hence we recommend to use only pre filter in AHU's & fine (micro-vee type) filters in common discharge plenum as per regular industrial practices. kindly confirm.	Control room equipments are highly sensitive to dust , hence required hepa filter. Bidder to comply with specification requirement.
377			TECHNICAL SPECIFICATIONS SECTION – VI, PART-B-1 BID DOC. NO.: CS-2600-001-9	4.04.01 Page No. 169 of 292 (Doc. page 4 of 31)	All filter plenum shall be provided with a walking platform inside the plenum chamber for filter cleaning purpose. Inspection door shall be provided at the plenum chamber and a removable type ladder shall be attached to plenum.	For AHU applications, air handling plenum sizes are considerably smaller in size & walking platforms shall not be feasible to provide, however inspection door shall be provided at suitable location. Kindly confirm.	noted
378			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	3.00.00 Page No. 115 of 185 (Doc. Page 5 of 7)	a) Air-conditioning system for Central control Room: There shall be one (1) central, air cooled chiller (scroll/screw type) with AHU to cater to the A/C requirement of the areas identified for main plant areas like Central control room, control equipment rooms, UPS/Battery charger rooms, and programmer room, etc.		
379			TECHNICAL SPECIFICATIONS SECTION – VI, PART-B-1 BID DOC. NO.: CS-2600-001-9	4.03.00 Page No. 169 of 292 (Doc. Page 4 of 31)	NOTE: Up to 50TR cap. Chilling/Condensing unit can be of air/water cooled type however, beyond this cap. unit shall be water cooled type only.	Air cooled chiller (scroll/ screw) shall be provided for Central control room (capacity less than or above 50TR) as per Tender spec., Part-A clause 3.0 & Tender spec., Part-B-1 clause 10.01.00. However, condensing units shall be of Air/water cooled for capacity upto 50TR, and water cooled for capacity exceeding 50TR. Kindly confirm.	All chillers and DX-type condensing unit shall be air cooled only.Bidder to refer amendment-01 in this regard.
380			TECHNICAL SPECIFICATIONS SECTION – VI, PART-B-1 BID DOC. NO.: CS-2600-001-9	10.01.00 Page No. 190 of 292 (Doc. Page 25 of 31) Point no.16	For areas where A/C load is of the order of 25-60 TR, Direct Expansion (D-X) type Condensing unit shall be provided depending on the availability of space/ layout etc (however for centralized control room , air cooled chiller with AHU shall be provided in specified in Part-A of technical specification).		
381			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	2.27.00/sub section IIA-01/Page no 17 of 18	Though supplied fuel is RDF, minimum segregation facility is required at site to prevent undesired material in waste.	Please provide the segregation plant capacity	Refer amendment-01
382			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	3.01.01/Functional guarantees/page no 5 of 13	The quoted heat rates shall not be more than 4200 kcal/kwhr at design ambient temperature of 40 Deg C.	The given heat rate seems to be considered as based on 600 TPD plant . Please recheck and confirm	Bidder to comply technical specification
383			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	3.01.01/Functional guarantees/page no 5 of 13	The vendor shall need to supply the list of Auxiliary consumers considered for the guaranteed consumption. Vendor shall guarantee Maximum Aux. Power Consumption is 14% i.e. 2086 KW at Load Point D in the Firing Diagram (LP D) Bidder shall furnish a list of equipment to be covered under Unit auxiliary system, which is to be considered under auxiliary power consumption. These are subject to Employer's approvals	Aux. Power Consumption is calculated considering the equipments which are required for plant operation. The equipments loads like ETP, Leachate treatment system, HVAC, lighting, transformer losses and other intermittent equipments are not considered. Please confirm	Bidder to comply technical specification
384						For Power evacuation, we understand that the scope work of EPC bidder as below. Kindly confirm.	

CLARIFICATION NO. 01 TO BIDDING DOCUMENTS (TECHNICAL PORTION)

385			Tech. Specification Section VI, Part B / Sub Section I - Intent of Specification	Cl. No. 1.02.14 / Page no. 6 of 12	Electrical Equipments including - Power electricity evacuation (switchyard) - Overhead lines - Switchyard for power evacuation	2 Set of 6.6KV cable power cables from new WTE plant 6.6KV switchgear and second 6.6KV switchgear which located in switchyard area 2KM away from new plant.	Confirmed
386						2 Set of 6.6KV cables from second 6.6KV switchgear and existing 6.6KV switchgear (Terminated at existing colony transformer feeder)	Confirmed
387						For colony switchgear power supply will receive from new second 6.6KV switchgear which located in switchyard area.	Confirmed
388						Interconnection of second 6.6KV switchgear and colony switchgear / transformer is not in EPC bidder scope.	Interconnection between the 6.6KV Switchgear in switchyard end to colony switchgear is in bidders scope.
389						Any switchyard / OH line is not applicable for this project.	Yes, No Switchyard/OH Line is envisaged for this Project
390			Tech. Specification Section VI, Part B / Sub Section IB - Project Information	Cl. No. 1.05.00 / Page no. 2 of 9	Two numbers of 6.6 KV cable feeders shall be laid up to second 6.6 KV switchgear located near the switchyard.	we understand that the second 6.6KV switchgear (located in switchyard area) as new panel and the same is in EPC bidder scope. Also for the feeder list shall be as per tender SLD (2600-999-POE-J-001 / Rev.A). Kindly confirm.	Confirmed
391						We understand that the switchyard area 6.6KV switchgear shall be located in existing switchgear room. Any new building is not required. Kindly confirm.	New building shall be envisaged for 6.6KV Switchgear at Switchyard Area.
392			Tech. Specification Section VI, Part B / Sub Section IIIB - Electrical system / Equipment	Cl. No. 1.04.00 / page no. 2 of 5	Lead acid plante type/ Nickel Cadmium batteries and Float cum boost chargers shall be in the scope of the contractor, as per system requirement.	We have considered VRLA type battery for plant DC system.	Not acceptable. Bidder Shall comply to NTPC Specifications
393			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	Cl. No. 1.02.00 / page no. 1 of 126	The turbo generator unit will be connected to its own step-up transformers for feeding power into the HV grid.	The export power shall be terminated to 6.6KV switchgear only. Any grid is not applicable.	Confirmed
394			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	Cl. No. 1.05.00 / page no. 1 of 126	It shall be designed to limit voltage variations as given below under worst operating condition: a) 11KV/6.6/3.3KV +/- 6%	Voltage variation shall be considered $\pm 10\%$.	Not acceptable. Bidder Shall comply to NTPC Specifications
395			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	Cl. No. 1.07.00 / page no. 1 of 126	33 KV systems - 25KA rms for 1 second	33KV system is not applicable for this project.	Yes, 33KV System is not applicable to this project
396			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	Cl. No. 1.08.00 / page no. 1 of 126	The nominal voltage of main DC system shall be 220V	We have considered plant DC system as 110V.	During the detailed engineering if there is a requirement of DC Motors then system voltage shall be 220V DC. Where as for control and instrumentation bidder may propose 110DC/ 48V DC/24V DC as per system requirement.
397			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	Cl. No. 1.11.00 / page no. 1 of 126	Generator & Generator Transformer	We have considered Generator voltage and plant MV panel voltage as 6.6KV with 40KA fault level. Hence additional Generator transformer is not required and not considered.	Not acceptable. Generator Transformer is required as per SLD and bidder should follow SLD.
398			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	Cl. No. 1.11.00 / page no. 2 of 126	Auxiliary transformers	For in-house loads, we have considered 2 nos. of (2x10%) transformer common for all unit loads (Boiler, STG, ESP & FGD) and 2 nos. of transformer common for all station loads (ACC, WTP, FHS, AHS, AC & ventilation, etc) power supply purpose. Kindly confirm.	Will be confirmed during the detailed Engineering
399			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01		 including owner loads	Please provide the Owners loads (If any) for transformer sizing purpose.	Will be provided during detaileed Engineering purpose.
400			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	Cl. No. 1.11.00 / page no. 3 of 126	LV Switchgears Cable terminations located in cable alley shall be designed to meet the Form IVb Type 7 (as per IEC 60439) for safety purpose	We have cosidered type of LV switchgear shall be Form 4B for all PCC and Form 3B for all MCC.	Shall comply to NTPC Specifications.
401			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	Cl. No. 1.11.00 / page no. 4 of 126	Cables shall be selected to so as to limit maximum voltage drop at equipment terminals during normal operation and starting conditions well within permissible values.	Voltage drop for power cables shall be considered as below - PCC to MCC - 2% - MCC to Motors - 3%	PI.Refer cl 3.00.01-- Voltage drop in cable during motor Starting condition shall be limited to 10% and during full load running condition Shall be limited to 3% of the rated voltage.

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402			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	Cl. No. 1.11.00 / page no. 4 of 126	D.C. Systems	We have considered common one set of DC system (2x100% battery + 2 Nos. of FCBC) for entire WTE plant DC power supply purpose.	Shall be as per system requirement
403			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	Cl. No. 1.13.00 / page no. 6 of 126	In fire hazardous areas like gas/ liquid fuel storage/ handling areas, lighting fixtures, switchgears shall be flame proof.	Hazardous area classification is not applicable for proposed plant.	As per the system Requirement.
404			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	Cl. No. 1.15.00 / page no. 6 of 126	Provenness of the Equipment, system, being offered by the bidder should satisfy the criteria indicated in the "Provenness criteria" indicated elsewhere in the specification.	Electrical equipment provenness certificate format are not available in tender bid submission format of attachment 3K. Also we understand that the provenness document for Electrical equipment is not required at bid submission stage. The requirement of the same shall be submit during post order stage. Please confirm	Documents required for Provenness of Equipment, System Shall be provided during the bidding stage. As these documnts will be verified during the QR.
405			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 4.00.00 / page No. 10 of 126	Suitable generator drying arrangement shall be provided.	Generator drying arrangement as per OEM design.	Acceptable.
406			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 5.01.00 / page No. 11 of 126	A complete generator excitation and voltage regulating system shall be provided with the generator.	AVR shall be ABB make unitrol 1020 model with 2A + 2 M channel.	Its depends on the vendor. Hoever the proposed system shall comply to NTPC Specifications
407			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 06.06.00 / page No. 16 of 126	Thickness of panel sides shall be 2mm for Cold Rolled Sheet Steel, 2.5mm for Hot Rolled Sheet Steel.	As per OEM standard design, we have considered panel thickness shall be 1.6mm for non load bearing member and 2.0mm for load bearing member.	Not acceptable. Shall comply to NTPC Specifications.
408			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 06.07.00 / page No. 17 of 126	The panels shall be equipped with an earth bus of at least 50x6mm2 galvanized steel flat bar or equivalent copper.	Earth bus for all the panel shall be considered GS steel only.	Acceptable.
409			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 06.09.00 / page No. 18 of 126	Minimum 2.5 sq mmc able shall be used for realising Control and protection scheme.	Minimum size of control cables shall be considered 1.5Sq.mm	Bidder shall comply to NTPC Specifications.
410			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 1.01.03 / page No. 21 of 126	Generator Busduct Conductor Shall be of high conductivity, aluminum alloy or Copper,	Bus bar material of Generator bus duct shall be considered aluminium alloy.	Acceptable.
411			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 8.00.00 / page No. 23 of 126	The neutral grounding transformer shall be cast epoxy resin type natural air cooled single phase connected between generator neutral and ground.	Neutral grounding resistor is considered for Generator grounding purpose. Any grounding transformer is not required and not considered.	As per system requirement.
412			Tech. Specification Section VI, Part B /	C. No. 1.03.00 / page No. 26 of 126	Motors c) Above 200 KW : 3 phase, 11/6.6/3.3 kV AC	We have considered plant MV voltage and MV motors voltage as 6.6KV. Any separate step down transformer is not considered for MV motors.	Will be discussed during deatiled engineering.
413						For VFD application motors above 200KW shall be 415V.	Acceptable.
414			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 1.08.00 / page No. 27 of 126	VFD driven motors can be offered with forced cooling type with machine mounted fan or pump driven by separate electric motor.	All motors shall be TEFC cooling only. Any forced cooling is not considered.	Bidder shall comply to NTPC Specifications.
415			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 5.01.04 / page No. 31 of 126	Paralleling of two supplies shall be avoided by interlocking except for switchgear where auto-changeover is provided.	Timer based changover shall be provided in LV panel.	Changeover logics will be discussed during detailed Engineering

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416			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 6.01.00-6 / page No. 36 of 126	LV panel Busbars shall be of high conductivity aluminium alloy or copper.	We have considered aluminium bus bar for all LT panels. Kindly confirm.	Acceptable.
417			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 6.04.00 / page No. 37 of 126	Contractor shall provide twenty (20) % or minimum one spare feeder for each type and rating of the out going feeders provided on each Bus section of that MCC.	Apart from that the spare feeders, any spare dummy cubicle are not considered.	Acceptable.
418			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 2.13.00 / page No. 42 of 126	All LT power cables of sizes more than 120 sq.mm. shall be XLPE insulated and sizes shall be of 1Cx150, 1Cx300, 1Cx630, 3Cx150 & 3Cx240 sq.mm	Maximum size of LT power cables shall be considered 3C x 300Sq.mm. Kindly confirm.	Shall be as per system requirement and as per cable sizing calculation document during detailed engineering.
419			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 2.13.00 / page No. 42 of 126	All Cables shall be armoured type	We have considered all the 11KV & 6.6KV cables shall be unarmoured type. Kindly confirm.	Not acceptable.
420			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 1.01.00 / page No. 55 of 126	Cable tray & cable tray supporting arrangement shall be hot dip galvanized.	We have considered the cable trays and support installation as below - Main Support and cable trays jointed with welded - Any two cable trays jointed with bolted.	Bidder shall comply to NTPC Specifications.
421			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 4.02.00 / page No. 68 of 126	415 V/690 V LV VFD: The Variable frequency drive (VFD) system shall be of a modern proven design for similar applications in power plants/industry. The system shall be either Current Source Inverter (CSI) or Voltage Source Inverter (VSI) type with minimum Twelve (12) pulse design. For drives less than 100 KW Six (6) pulse can be offered meeting all other requirements.	We have considered LV VFD below 200KW shall be 6 pulse type and 200KW and above shall be 12 pulse type.	Not acceptable. Shall be as per NTPC Specifications.
422			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 3.00.00 / page No. 92 of 126	Diesel Generator Governor(Electronic Type): A1 type as per BS:5514	IS / IEC standard shall be followed. Any other international standard are not followed.	Acceptable.
423			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 6.00.00 / page No. 118 of 126	Transformer Short circuit test (special test) as per IEC 60076-5.	Similar / Higher rating short circuit test certificate shall be provided. Any new test are not conduct for offered transformers.	Short circuit type test report of similar rating transformer inline with the offered transformer is only acceptable.
424			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	C. No. 1.00.00 / page No. 123 of 126	Dry type Transformers (Indoor)	We have considered all transformers shall be outdoor oilfilled type except lighting / welding transformers.	As per System requirement and will be discussed during detailed engineering.
425			Tech. Specification Section VI, Part B / Electrical specification IIIB - 01	Annexure A / page No. 159 of 164	Lighting lux level	We have considered lighting for within our plant battery limit only. Any non plant building / others supplied package / owners scope of area are not considered in our scope.	Acceptable.
426			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-2600-001-9	Sub section A 26 / 3.05.02/page no 11 of 13	Checks on correct functioning of the Turbine Protection System (TPS), Turbine Supervisory Control System (TSCS) for main turbine, Automatic Turbine Run-up System (ATRS), Automatic Testing of Turbine (ATT) (if applicable)	ATRS & ATT is not applicable for this range machine, hence not offered	Bidder to provide as per applicable practice

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427			TECHNICAL SPECIFICATIONS SECTION – VI, PART-B3 BID DOC. NO.: CS-2600-001-9	Sub section IIIC 04 / 2.01.01/page no 4 of 5	2) Following measurements are envisaged to be provided by the Contractor for supervisory purpose. Based on Manufacturer's standard and proven practice, the Contractor shall clearly identify the applicable measurements for his equipments as applicable, optional and not-applicable-non optional in the Bid. Contractor shall include all the applicable and optional items in his scope of work. (a) Shaft eccentricity detection. (b) Relative shaft vibration measurement, of each bearing in both X & Y direction (both for Turbine and Generator bearing). (c) Differential expansion of rotor and turbine cylinder. (d) Overall expansion. (e) Bearing vibration measurement of each bearing in both X & Y directions (both for turbine and generator bearings). (g) Axial shift of the rotor, (minimum three sensors). (f) Phase marker with associated notch on shaft shall also be provided for zero speed detections and /or vibration analysis system defined below.	The following is not applicable for the offered machine a) Shaft eccentricity detection is not applicable c) , d) & E not offered as per OEM g) Two sensor shall be provided for axial shift i) Not offered as per OEM	Bidder to comply specification. Further, for supervisory measurements standard and proven practice is applicable.
428			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-9597-001-9	1.00.0 /Sub section I/Page No.1 of 12	The WIE plant shall be completely indoor		
429			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-9597-001-9	1.02.11 Page No.5 of 12 (Doc page 11)	Acoustic enclosure system including, - Acoustic enclosure for entire plant / machine along with appropriate architecture to ensure pleasant appearance on par with international standards to promote people acceptance level towards waste to energy plant. - Appropriate ventilation for the acoustic enclosure of the entire plant, in order to maintain comfortable ambient temperature inside the acoustic enclosure.	The acoustic enclosure will be provided individually for each area as below 1) Waste pit & waste receiving hall shall be completely closed 2) Turbine, Compressor, MCC and control system are covered in a building 3) Steam generator is outdoor type hence roof & side cladding shall be provided 4) WTP & ETP equipment are placed in a shed 5) Leachate evaporator is semi outdoor type hence roof & side cladding shall be provided 6) ACC & cooling tower shall be placed outdoor for better heat transfer Please confirm	The aesthetic look of a WIE plant is very essential and critical which decides the acceptance level of nearby residence. Hence the specification requirement is very clear to provide a complete architecture on par with international standards, covering all the facilities so that nothing is visible from outside like no dust / sound/noise pollution /smell/ odour/visual pollution. The final layout will be finalised during detailed engineering. Hence bidder to comply the specification requirement without any deviation
430			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-9597-001-9	2.00.00 /Sub section - IIA - 01/Page No.2 of 18	STEAM GENERATOR AND AUXILIARIES The Contractor's scope of supply & services for Steam Generator (SG) shall include all equipment required for one (01) number of multi pass boiler, balanced draft, outdoor type,		
431			TECHNICAL SPECIFICATIONS SECTION – VI, PART-A BID DOC. NO.: CS-9597-001-9	1.02.11 /Sub section - I/Page No.6 of 12	Acoustic enclosure for entire plant / machine along with appropriate aesthetic architecture to ensure pleasant appearance on par with international standards to promote people acceptance level towards waste to energy plant. - Appropriate ventilation for the acoustic enclosure of the entire plant, in order to maintain comfortable ambient temperature inside the acoustic enclosure		
432			TECHNICAL SPECIFICATIONS SECTION-VI, PART-A BID DOC. NO.: CS-2600-001-9	1.0.0 / Page 1 of 3 (Doc page 160)	CIVIL, STRUCTURAL & ARCHITECTURAL WORKS The scope of work under civil, structural & Architectural works shall include: 1. Topographical Survey 2. Geotechnical Investigation 3. Infrastructure Works (i) Dismantling of existing facilities including foundation as required and disposal of scrap/debris. (ii) Site clearance & Disposal including cutting of shrubs and trees (girth less than 30 centimeters) (iii) Site levelling of total plant area as per Plot Plan (iv) Fencing/Boundary wall around the plant area	Please provide the following details/inputs 1. Topographical Survey (contour data). 2. Geotechnical Investigation- Detailed Soil investigation report of the proposed plant area. 3. Dismantling details of existing facilities including foundation below ground structures if any (pipelines/cables etc) 4. We have considered fencing length as per layout approx. 1600.0m long & In any variation in length (+/-) shall have commercial implication on mutually agreed basis. 5. We have considered boundary wall length as per layout approx. 1320.0m long & In any variation in length (+/-) shall have commercial implication on mutually agreed basis. Kindly confirm for Fencing & Boundary wall.	Bidder is requested to refer amendment to Technical Specification for available preliminary Soil Data and Rainfall Data, Detailed Geo-Technical Investigation, Topographical Survey is in Bidder's scope as stipulated in Scope of Work. Boundary wall and fencing shall be as per tender drawing.
433			TECHNICAL SPECIFICATIONS SECTION-VI, PART-A BID DOC. NO.: CS-2600-001-9	1.0.0 / Page 1 of 3 (Doc page 160)	Administration & Canteen Building	Kindly provide the area of building for Administration & Canteen Building	Bidder to locate facilities during detailed engineering stage in plot plan to be developed by the Bidder
434			TECHNICAL SPECIFICATIONS SECTION-VI, PART-A BID DOC. NO.: CS-2600-001-9	1.0.0 / Page 1 of 3 (Doc page 160)	Security cum Time Office	Kindly provide the area of building for Security cum Time Office	Bidder to locate facilities during detailed engineering stage in plot plan to be developed by the Bidder
435			TECHNICAL SPECIFICATIONS SECTION-VI, PART-A BID DOC. NO.: CS-2600-001-9	1.0.0 / Page 1 of 3 (Doc page 160)	Guests reception, canteen, Model room, Safety gadget hall, Conference halls, office space/ cabins, Kitchen, dining area/hall etc	Kindly provide the area of buildings for these facilities like Guests reception, canteen, Model room, Safety gadget hall, Conference halls, office space/ cabins, Kitchen, dining area/hall etc	Bidder to locate facilities during detailed engineering stage in plot plan to be developed by the Bidder

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436			TECHNICAL SPECIFICATION SECTION-VI, PART-A BID DOC. NO.: CS-2600-001-9	1.0.0 / Page 2 of 3 (Doc page 161)	Landscaping	Kindly provide the Landscaping details. Also please note that Considering indoor type plant landscaping is not recommended. Please confirm	Bidder to locate facilities during detailed engineering stage in plot plan to be developed by the Bidder
437			TECHNICAL SPECIFICATION SECTION-VI, PART-A BID DOC. NO.: CS-2600-001-9	1.0.0 / Page 2 of 3 (Doc page 161)	All steel structures shall be fabricated in factory, transported and erected at site. All factory fabricated structures shall have bolted field connections	We have considered welded field connections for steel structures. Kindly confirm.	Bidder to comply technical specification in this regard.
438			TECHNICAL SPECIFICATION SECTION-VI, PART-A BID DOC. NO.: CS-2600-001-9	2.0.0 / Page 3 of 3 (Doc page 162)	Providing first aid facilities at the construction / erection sites, workshops, laboratories, fabrication, pre-assembly & storage yard, Offices and other places of work as per the requirement.	Please provide additional area for storage, pre- assembly, fabrication during construction near to the proposed site.	Bidder to manage in area provided as shown in GLP
439			TECHNICAL SPECIFICATION SECTION-VI, PART-B BID DOC. NO.: CS-2600-001-9	2.01.3/ Page 2 of 16 (Doc page 4)	Wind load on structures shall be as specified in Annexure-II.	Kindly provide the basic wind speed of the plant area, Since the annexure-II was not enclosed.	Bidder is requested to refer amendment-01 to Technical Specification
440			TECHNICAL SPECIFICATION SECTION-VI, PART-B BID DOC. NO.: CS-2600-001-9	2.01.3/ Page 2 of 16 (Doc page 4)	Seismic design shall be done as specified in Annexure-I.	Kindly provide the Seismic zone of the plant area, Since the annexure-I was not enclosed.	Bidder is requested to refer amendment-01 to Technical Specification
441			TECHNICAL SPECIFICATION SECTION-VI, PART-B BID DOC. NO.: CS-2600-001-9	3.12.0/ Page 7 of 16 (Doc page 9)	Buildings with flat roof to be designed for Roof Top Solar PV Panels.	Please confirm in which building is to be designed for Roof Top Solar PV Panels	Buildings with flat roof to be designed for Roof Top Solar PV Panels.
442			TECHNICAL SPECIFICATION SECTION-VI, PART-B BID DOC. NO.: CS-2600-001-9	4.00.0/ Page 7 of 16 (Doc page 9)	Geotechnical data and foundation system for the Waste to Energy package at Kawas site project are enclosed at annexure-V.	Kindly provide the detail soil investigation report of the proposed plant area. (Annexure-V was enclosed with indicative values only, not in detail)	Bidder is requested to refer amendment to Technical Specification
443			TECHNICAL SPECIFICATION SECTION-VI, PART-B BID DOC. NO.: CS-2600-001-9	4.00.0/ Page 7 of 16 (Doc page 9)	The bore logs of vicinity are enclosed at annexure-IV.	Kindly provide the bore logs of vicinity, Since the annexure-IV was not enclosed.	Bidder is requested to refer amendment to Technical Specification
444	A	I	1.0	1 of 12	The WIE plant shall be completely indoor, odorless and emission norm compliant	Kindly clarify whether boiler to be of semi outdoor type of indoor type	The specification is very clear in this respect. Bidder to adhere to the specification requirement.
445	A	I	1.02.01	3 of 12	Waste Reception Hall - Tipping bays and its management system, - Shredder - Waste Grab Crane	Needs Discussion	Query not clear. Bidder to comply the specification requirement
446	A	III	1.02.01 a)	1 of 12	Arrangement for supply of sufficient quantity of RDF and ensuring regular supply of the RDF to site, based on prior information in writing.	WE presume RDF will be provided by purchaser at terminal point	Refused Derived Fuel (RDF) / processed Municipal Solid Waste (MSW) shall be supplied/sourced from Surat Municipal Corporation (SMC)
447	B (1 of 5)	A-01	1.02.00 (f)	1 of 2	The plant should be able to supply upto 60% of the rated steam flow at 8 ata at the input of the vapour absorption chiller (Absorption chiller not in bidder's scope)	Kindly furnish the flow and condensate return	will be provided
448	B (1 of 5)	A-01	1.05.00	2 of 2	Loading Point	Kindly furnish a) The ultimate and proximate analysis with GCV and NCV for the load points furnished in the table b) Please clarify the Load Point and Through are Boiler Load or STG load	Please refer revised firing diagram and waste analysis.
449	B (1 of 5)	A-01	1.05.00	2 of 2	In addition, the vendor needs to provide a margin of 10 % for both Waste throughput and thermal load beyond 100 % as overload area, as shown.	Boiler Thermal Load is 10% margin however as per tender specification Turbine VWO is mentioned for 15% please clarify In Section -VI Part-A Sub Section A-02 Annexure-II Overload is mentioned as 15% Need clarity	May be read as 15%
450	B (1 of 5)	A-02	1.05.01.01 (d)	4 of 7	Primary air fan Suction	Kindly note PA fan not applicable. SA fan provided. Suction will be from atmosphere	Please refer the specification requirement for the type of fan. Fan suction needs to be taken bth from Atmosphere and waste pit as well.
451	B (1 of 5)	A-03	1.01.01 d)	1 of 33	The Bidders are advised to collect waste fuel samples for independent analysis of combustion, slagging/ fouling characteristics etc., to satisfy themselves so as to meet all specified requirements.	We request purchaser to furnish the report	specification requirements are clear. Bidder to comply technical specifications
452	B (1 of 5)	A-06	1.01.00 xi	1 of 28	Steam Extraction for heating/cooling/ industrial use Internally controlled extraction to provide up to 60% of the steam at the upstream of the extraction point to provide steam at 8 ata at the terminal point.	Kindly furnish Flow, Temperature, Condensate Return and Terminal Point. Also please clarify whether these condensate loss to be considered in WTP sizing.	will be provided

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453	B (1 of 5)	A-06	1.01.00	2 of 28	TMCR: The term "TMCR" (Turbine maximum continuous rating) appearing in the technical specification shall mean 4 MW electrical power output at generator terminals under rated steam parameters, 0% cycle make-up and design condenser pressure unless used in conjunction with a different cycle make-up and/or a different condenser pressure and for a different throttle steam pressure. EMCR: The condition corresponding to economic continuous maximum rating (EMCR) at generator terminal shall be 4 MW output under rated steam conditions with cycle make up of 3% of throttle steam flow and design condenser pressure. VVO: The condition corresponding to valves wide open to generate peak output at the generator terminal at rated steam parameters and design condenser pressure.	Please clarify TMCR is mentioned as 4MW. At EMCR Boiler steam temperature will be lesser than the rated parameters	Refer amendment
454	B (1 of 5)	A-06	1.15.00 a) 5) i)	7 of 28	2x100%, DM water cooled having oil pressure greater than water pressure. Lube oil coolers to be provided with Manual 3-way valve on oil side for changeover of coolers.	Whether separate secondary Closed loop system is required.	Query not clear. Bidder to comply the specification requirement
455	B (1 of 5)	A-06	3.02.00 c	17 of 28	Condensate Extraction Pump Alternatively Horizontal, Multistage, Centrifugal, diffuser type with double suction first stage impeller	Considering the capacity the Suction will be single for Horizontal Type CEP. Considering ACC, CEP doesn't require pit hence horizontal type considered.	Refer amendment-01
456	B (1 of 5)	A-06	4.02.00 e	19 of 28	Deaerator All pressure parts like shell, heads and nozzles shall be of carbon steel as per ASTM A-516 Gr. 70. Shell plate min. thickness 15.8mm of welded construction.	Kindly note DA shell and Dish end thickness shall be 10mm max considering feed water temperature of 130DegC	Refer amendment-01
457	B (1 of 5)	A-06	5.05.00	23 of 28	Hydraulic Coupling	BFP shall be directly coupled for these ranges	Refer amendment-01
458	B (1 of 5)	A-06	6.01.00 (ja)	23 of 28	EOT Crane EOT crane shall be capable of lifting at least 105% of the weight of single heaviest component equipment, including lifting beam and slings etc. (as applicable) to be handled in TG hall for erection as well as maintenance of the equipment provided in AB bay.	We will be considering separate crane for erection of STG. Please clarify the sizing criteria of EOT sizing Assembled alternator lift or stator lift	specification requirements are clear ,Bidder to comply technical specifications
459	B (1 of 5)	A-06	6.01.00 j) v)	25 of 28	EOT Crane Operator cabin and Platform	Whether pendant operated EOT crane for STG hall maintenance is acceptable	specification requirements are clear ,Bidder to comply technical specifications
460	B (1 of 5)	A-06	10.00.00	25 of 28	The density of the mineral fiber felt shall be carefully controlled at about 200 kg/m³	LRB density shall be 100 or 120kg/m3 based on temperature	specification requirements are clear ,Bidder to comply technical specifications
461	B (1 of 5)	A-12	1.09.00 c	5 of 35	RO Make : NORRIT-PENTAIR/Approved equiv	Shall we consider DOW/GE membranes	specification requirements are clear ,Bidder to comply technical specifications
462	B (1 of 5)	A-12	1.01.00	13 of 35	MBBR system	Please furnish water analysis to decide on the suitable scheme requirement	WTP has been deleted from scope. Please refer amendment-01
463	B (1 of 5)	A-12	1.00.00	34 of 35	The process flow diagram of suggested Evaporation & drying technology has been attached herewith as Appendix-A.	Scheme not available	Leachate Treatment system deleted from scope. Please refer amendment-01
464	B (1 of 5)	A-12	2.00.00	35 of 35	Total capacity of effluent treatment plant shall be minimum 1.67 m³/h (or 40 KLD). Hydraulics of effluent treatment plant shall be such as to take an occasional overloading of 20% of the design flow rate.	Needs Discussion	Capacity of Effluent treatment plant has been revised. Please refer amendment-01
465	B (1 of 5)	A-14	3.02.01	1 of 9	Compressor Water cooled	Whether air cooled compressor shall be proposed	water cooled compressor is more efficient . Bidder to comply with the specification requirement.
466	B (1 of 5)	A-16	6.09.05	8 of 24	All equipments such as detectors, panels etc shall be approved and listed by UL/FMILPCB/VDS.	Please clarify if UL listed and TAC approval is acceptable	Specification is simply clear. Bidder to comply with the specification requirement.
467	B	2 of 5	1.11.0	5 OF 126	Fault level for Transformer - 2 sec	Kindly accept Fault level for Transformer 1 sec for the capacity.	Bidder should comply NTPC Specifications
468	B	2 of 5	1.02.00	25 OF 126	Continuous duty LT motors upto 200 KW Output rating	As per section 2.03.00, LT motor up to 400kW shall be LT. Please clarify .However motor rating more than 200kW shall be VFD.	Bidder should comply NTPC Specifications
469	B	2 of 5	1.03.00	25 OF 126	Above 200 KW : 3 phase, 11kV/6.3 kV AC	Please note, section 2.03.00. 1. Upto 400 kW : 415V/690V, Low Voltage, Three Phase AC 2. Above 400kW and upto 700 KW : 690V, Low Voltage, Three Phase AC 3. Above 700kW and upto 1500 KW : Medium Voltage, Three Phase AC. However motor rating not more than 500kW. Hence MV voltage shall not be applicable.	Bidder should comply NTPC Specifications
470	B	2 of 5	1.01.03	21 OF 126	Conductor Shall be of high conductivity, aluminum alloy or Copper, sections shall be welded or bolted.	We are considering conductor of high conductivity aluminum alloy and sections shall be bolted.	Acceptable
471	B	2 of 5	9.00.00	23 of 126	11kV/6.3kV system earthing shall be low resistance earthed type to limit earth fault current to 600A. The resistor shall be rated to carry this current at least for 10 seconds.	Please note, 11kV/6.3kV system earthing shall be low resistance earthed type to limit earth fault current to 100A. The resistor shall be rated to carry this current at least for 10 seconds.	Bidder should comply NTPC Specifications
472	B	2 of 5	6.05.00	16 of 126	ABT Based Energy Meters	we are considering one set of ABT Based Energy Meters at generator incomer as per GOVT norms.	Shall be as per Drawing No:8011-999-POE-J-001 in tender document
473	B	2 of 5	06.09.00	18 of 126	VT leads used for tariff metering shall have an equivalent core cross-sectional area of at least 10 mm² CU/equivalent per phase/neutral connection	VT leads used for tariff metering shall have an equivalent core cross-sectional area of 4 mm² CU/equivalent per phase/neutral connection	Bidder should comply NTPC Specifications
474	B	2 of 5	4.00.00	20 of 126	Generator Busduct Conductor/ Joints : 105 deg. C for silver plated joints, 90 deg. C for other joints.	Generator Busduct Conductor/ Joints : 105 deg. C for butt joints, 90 deg. C for other joints	Refer amendment-01
475	B	2 of 5	60.1.00 (6)	36 of 126	Busbars shall be of high conductivity aluminium alloy or copper.	Busbars shall be of high conductivity aluminium alloy	Bidder should comply NTPC Specifications
476	B	2 of 5	4.00.00	43 of 126	1.1 KV Grade Power Cables and control cable	Power cable up to 4 sq.mm shall be copper and above 4 sq.mm shall be Aluminium. Overwer control and instrumentation cable shall be Copper.	Bidder should comply NTPC Specifications
477	B	2 of 5	5.00.00	65 of 126	High conductivity aluminium alloy or copper for the horizontal busbars, vertical droppers and connectors to the fixed end of isolating contacts	High conductivity aluminium alloy for the horizontal busbars, vertical droppers and connectors to the fixed end of isolating contacts	Bidder should comply NTPC Specifications i.e High conductivity Aluminium alloy or copper
478	B	2 of 5	1.00.00	70 of 126	Battery Voltage 220V/125/110V/48 V DC	Battery Voltage shall be 110V DC system.	Bidder should comply NTPC Specifications as per system requirement
479	B	2 of 5	1.09.00	5 of 126	Battery shall be 90AH Ni Cd or 150AH Lead Acid Plante	Battery shall be 150AH Lead Acid Plante	Bidder should comply NTPC Specifications as per system requirement
480	B	2 of 5	1.01.01	107 of 126	Transformer Impedance - As per SLD 2.5MVA - 12.5%, 2.0 MVA -10%, 1.6MVA - 8%, 1.0MVA-5% and 0.36MVA -5%	Please note, Transformer impedance shall be inline with IS 1180. Hence impedance of Tranformer shall not be confined at this stage.	Bidder should comply NTPC Specifications
481	B	2 of 5	4.02.00	68 of 126	415 V/690 V LV VFD: The Variable frequency drive (VFD) system shall be of a modern proven design for similar applications in power plants/industry. The system shall be either Current Source Inverter (CSI) or Voltage Source Inverter (VSI) type with minimum Twelve (12) pulse design. For drives less than 100 KW Six (6) pulse can be offered meeting all other requirements	415 V LV VFD: The Variable frequency drive (VFD) system shall be with minimum Six (6) pulse design , and 690 V LV VFD shall be with minimum Twelve (12) pulse design.	Bidder should comply NTPC Specifications
482	B	2 of 5	1.11.00	03 of 126	All ACDBs, DCDBs, Solenoid Valve DBs and MCCs located on Stack Reclaimer, Paddle feeders and Travelling trippers shall be of Fixed Module type. All 415V Circuit breaker modules and other MCC modules shall be fully draw out type	All ACDBs, DCDBs and MLDB, Solenoid Valve DBs and MCCs shall be of Fixed Module type. All 415V Circuit breaker modules and other MCC modules shall be fully draw out type. However MCCB shall be fixed type.	Acceptable
483				SLD - 2600-999-POE-J-001 Rev A	Nos of Transformer for auxiliary Power	For power plant two numbers of transformer (1W+1S) and VFD drives (1W+1S) and one no of lighting	Total number of Auxiliary service transformers required for the project shall be decided during detailed engineering in line with the redundencies indicated in tender SLD and specifications.
484				SLD - 2600-999-POE-J-001 Rev A	Inter connection	distance between 25MVA Transformer to existing 6.6 switchboard shall be furnished. Terminal point of interconnection shall be furnished.	Terminal points for the bidder i.e. 6.6kV colony feeders in 1CLGA and 2CLGA are located inside main power house building of existing gas project. Bidder is requested to estimate the route length and Total cable requirement accordingly. Bidder is requested to visit site to access the quantum and scope of work in this regard.
485	C		5.06.00	4 of 83	Two (2) English language copies of all national and international codes and/or standards used in the design of the plant, equipment, civil, structural and architectural works shall be provided by the Contractor to the Employer within two calendar months from the date of the Notification of Award.	Kindly note Codes purchased at Bidder name can't be shared in any form as per policy Needs discussion	Bidder should comply NTPC Specifications

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486	C		13.01.00 I	23 of 83	All the first fills of consumables and one years topping requirement of consumables such as greases, oil, lubricants, servo fluids / control fluids, gases and essential chemicals etc. which will be required to put the equipment covered under the scope of specifications, into successful commissioning / initial operation and to establish completion of facilities shall be supplied by the Contractor. Suitable standard lubricants as available in India are desired. Efforts should be made to limit the variety of lubricants to minimum. Bidder shall supply a quantity not less than 10 % of the full charge or one (1) year topping requirement mentioned above (whichever is higher) of each variety of lubricants, servo fluids, gases, chemicals etc (as detailed above) which is expected to be utilized during the first year of operation. The additional quantity shall be supplied in separate container.	Needs Discussion	Noted
487	C		Annexure-VII	83 of 83	Areas of training requirement	Kindly note product design calculation preparatory in nature will be not covered under training. Please confirm scope of the travelling and boarding charges expenses	This is a specific requirement. Bidder to comply with the specification requirement. Further, the cost of travel to be borne by NTPC and Cost of Boarding and lodging is to be borne by Bidder.
488					General Comments	Kindly furnish the pile capacity, depth, dia to be considered for working	It is in bidder scope. Bidder to arrange themselves by geo technical survey
489						Shall we consider belt conveyor for RDF. Since same is suitable for RDF	Shall be finalized during detail engineering
490						Request to share Layout in CAD version	sharing of Layout in CAD version not invasable in contract
491	SECTION - I INVITATION FOR BIDS (IFB)			7 of 191	Refuse receiving, Refuse bunker, Crusher, Refuse handling (cranes, hopper, and chutes), Recycled oil system, Leachate handling and treatment	Wherever "Refuse" is specified it shall be understood as "Refuse Derived Fuel (RDF)". Also bidder understands that RDF preparation is excluded from the Bidder's scope of supply.	Bidder understanding is correct.
492	SECTION - I INVITATION FOR BIDS (IFB)			7 of 191	Bottom ash treatment system (extractor, conveying, etc.), Bottom ash crane, Fly ash conveying system, silos, Fly ash treatment system	There shall be Bottom/Fly Ash Handling System and not Bottom/Fly Ash Treatment System. Bottom Ash Crane is not applicable.	Noted. However, Bottom Ash Crane shall be applicable in case Bidder provide Bottom ash PIT for storage.
493	SECTION - I INVITATION FOR BIDS (IFB)			11 of 191	Wherever the term "Waste" is appearing above, "Waste" shall be deemed to include Municipal Solid Waste (MSW)/ Refused Derived Fuel (RDF).	We understand that "Waste" is only Segregated Combustible Fraction (SCF) or Refuse Derived Fuel (RDF) and not Municipal Solid Waste (MSW).	Bidder understanding is correct.
494	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			7 of 185	The WIE plant shall be completely indoor, odorless and emission norm compliant.	We understand that only the Waste Reception Hall shall be indoor however the Boiler shall be outdoor. Please clarify.	Tender condition is clear and it will prevail.
495	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			7 of 185	The peak capacity of the plant shall be designed to incinerate up to 265000 metric tons annually of RDF/ combustible fraction having GCV of 2500 kcal/kg to convert it efficiently into Power, assuming 330 days of plant operation.	We understand that the Boiler has to be designed so as to operate at peak load of 15% continuously. Considering this the actual design capacity of waste incineration shall be 2 x 400 TPD considering Peak load. Please clarify. Also please inform the duration of peak load operation in a day.	Bidder understanding is correct. Peak load may be continuously required.
496	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			7 of 185	The average incineration capacity of the plant shall be 750 tonnes per day with average GCV of 2500 kcal/kg.	Average incineration capacity of 750 TPD means 2 x 375 TPD WIE project but tender specifies 2 x 350 TPD. Kindly confirm and clarify. For design we shall consider the calorific values specified in Annexure-1 Firing Diagram.	spec requirements are clear in this regard
497	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			7 of 185	However, generator name plate rating shall be corresponding to the incineration capacity of 600 tonnes per day with GCV of 2500 kcal/kg as this corresponds to the minimum guaranteed waste disposal capacity of 200000 tonnes annually assuming 330 days of plant operation in a year.	Please clarify why generator name plate rating has to be corresponding to incineration capacity of 600 TPD?	Tender condition will prevail
498	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			7 of 185	The plant name plate rating shall not be less than 14.9 MW and plant overload capacity shall be at least 15% higher than the name plate rating to take care of grid frequency response and sudden surge in waste quantity and calorific value. The plant should be able to operate at its peak capacity continuously when the need arises.	We understand that the overload / peak capacity of both Boiler and Turbine shall be 15% higher than the name plate rating. However we request Client to specify the duration of overload / peak load.	Tender condition will prevail. Peak load may be continuously required.
499	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			7 of 185	Plant shall also be capable to supply steam for generating hot water or chilled water or for industrial use. The extraction quantity shall be up to 60% of the steam flowing upstream of the extraction point through internally controlled extraction to ensure high efficiency with variation in demand of steam.	Please confirm quantity and parameters of steam required.	Intent has been specified and tender condition will prevail
500	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			8 of 185	Compliance with statutory requirements and obtaining clearances from statutory authorities, wherever required	IBR, CEIG, Labour commissioner and CCOE approval are considered by Bidder. For rest, necessary documentation shall be provided, however approval and clearances from statutory authorities shall be in Client's scope.	It is in Contractor's scope as per tender condition. So tender condition will prevail.
501	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			9 of 185	1.02.01 Shredder	We understand that the fuel is sized since it is RDF/SCF. Kindly clarify the requirement for Shredder. As of now we have not included the same.	refer amendments-01
502	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			15 of 185	Oversize waste shall have a separate bay for transferring the oversized waste into the shredder input so that it can be shredded before dumping it into the waste bunker for further processing.	Refer response to point above.	refer amendments-01
503	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			16 of 185	Operate the plant for initial period of 5 years.	As per other sections of the tender document the O&M of the plant is to be carried out for initial period of minimum 2 years. Please clarify.	May be read as "Operate the plant for initial period of 2 years".
504	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			20 of 185	Sub QR for critical equipments(s)/systems(s) and bought out items	If the QR of main equipment is through then we understand that separate QR is not required for it's sub-components (e.g. if QR of Fan vendor is through then we understand that QR for it's sub-components like nuts, bolts, bearing, etc. is deemed approved).	Please refer sub QR requirements mentioned in the specification. Bidder to meet the sub QR qualification as well. Refer your query at sl.no 15
505	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			20 of 185	The critical equipment, auxiliaries, systems and bought out items offered shall be proven and should have been in successful operation for a minimum period of two (2) year in a waste fired unit of at least 300 TPD incineration capacity. Documents in support of the above shall be submitted along with the bid.	Items like Fans, BFW Pumps, Fabric Bag Filters, Steam Coil Air Pre-Heaters, Cooling Towers, Cooling Water Pumps, Air conditioning System, Ventilations System, Compressed Air System, Ash Handling System, etc. are used for any Power Plant or Boiler and are not specifically used only for WIE Plants. Hence for these equipments the QR criteria should be minimum 2 years of successful operation in any Boiler / Power rather than being specific to WIE Plant.	Specification requirement is clear in this respect. Bidder to comply the specification requirement.
506	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			26 of 185	As shown in tender drawing number 8002-001-9-POC-A-001	We are unable to locate any drawings in the tender document. Kindly provide the same.	Tender drg may be read as 2600-001-POC-F-001 RevA
507	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			27 of 185	Maintaining adequate temperature of 950 Degree for 2 sec as per statutory requirement	As per SWM 2016 guidelines the criteria is 950 °C for 2 seconds but globally it is 850 °C for 2 seconds. Though we can design for the tender condition however we request to reconsider the same.	Tender specification prevail. Please follow the specification requirement
508	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			27 of 185	Vendor needs to visit the existing waste processing plant at Surat to collect RDF sample and study for all the necessary required characteristics.	Request Client to provide the fuel characteristics along with the segregation report i.e. percentages of constituents like paper, plastic, wood, leaves, textile, green matter, etc.	Intent has been specified and tender condition will prevail. However waste analysis is being provided
509	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			31 of 185	Annexure-2 RDF Characteristics	The NCV of RDF specified is 2300 kCal/kg but as per Firing Diagram the design calorific value is 2100 kCal/kg. So, the performance shall be provided based on the firing diagram for point LPD as defined in page 68 of 185. Also request you to provide the chemical analysis of RDF with ranges to be considered for design.	Intent has been specified and tender condition will prevail. Refer revised Firing drg
510	SECTION - VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			33 of 185	Climatological table	Considering the Climatological table we shall consider Ambient Temperature and Relative Humidity for performance as 30 °C and 70% respectively.	Intent has been specified and tender condition will prevail

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511	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			38 of 185	Vertical radiation pass made of membrane evaporator walls with refractory lining	Optimised use of refractory / Inconel should be the criteria.	Tender requirement is clear. Bidder to comply the specification requirement.
512	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			39 of 185	The furnace temperature shall never be more than the ash fusion temperature, so as to avoid slag or clinkering formation in the boiler.	At the grate the temperature shall be near the adiabatic flame temperature which might be greater than the ash fusion temperature. However slag formed on the grate is positively removed by the grate itself.	Tender requirement is clear. Bidder to comply the specification requirement.
513	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			44 of 185	ID fan shall be provided with bearing lubrication unit(s) consisting of: (1) 2x100% oil pumps each with motor, coupling and coupling guard. (2) 2x100% oil coolers. (3) 2x100% filters, differential pressure switches, etc. (4) One (1) oil storage tank.	We propose ID fan with grease lubrication. Same has been provided in many of our installations and are working satisfactorily.	The specification requirement is clear without any ambiguity. Bidder to comply the specification requirement.
514	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			45 of 185	One (1) number PA fan for each steam generator, with VFD drive system with motor, base plates, foundation bolts, drain line, inlet box, inlet bird and trash screen, diffuser, coupling, coupling guard and silencer. (b) Lubrication for each fan consisting of: (1) 2x100% oil pumps, each with motor, coupling and coupling guard. (2) 2x100% oil coolers. (3) 2x100% oil filters along with differential pressure switches etc. (4) One (1) oil tank.	We propose FD / SA fan with grease lubrication. Same has been provided in many of our installations and are working satisfactorily.	The specification requirement is clear without any ambiguity. Bidder to comply the specification requirement.
515	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			46 of 185	2 x 100% burner cooling air fans shall be provided.	Separate Burner Cooling Air Fans is not required. Air for same can be drawn from FD/SA fans.	The specification requirement is clear without any ambiguity. Bidder to comply the specification requirement.
516	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			46 of 185	Oil storage system such as oil tanks	Kindly specify the storage time required for oil tanks.	Intent has been specified and tender condition will prevail
517	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			46 of 185	Integration with the furnace safeguard and supervisory system	We shall be Burner Management System (BMS) with necessary interlocks and safety, BMS is same as FSSS.	Query not clear. Intent has been specified and tender condition will prevail
518	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			50 of 185	Skin casing temperature of any surface in Contractor's scope is not more than 60 deg.C. with ambient temperature of 45 deg.C. and air velocity of surface air being 0.25 m/s when the steam generator is operating at Full load.	As per ASME PTC for evaluating the Radiation and Surface Convection Losses the consideration is 50°F (27.8 °C) differential between ambient air temperature and surface temperature with wind velocity of 100 fpm (0.5 m/s). Considering the above and as per clause no. 10.00.00 (d) on page 93 we request Client to consider the surface temperature of 60 °C with ambient temperature of 40 °C with wind velocity of 0.5 m/s. Request Client to reconsider the same.	The specification requirement is clear without any ambiguity. Bidder to comply the specification requirement.
519	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			52 of 185	Bidder shall supply multi level (atleast two level) SNCR system so as to reduce the NOx.	The number of levels is totally governed by the design of the boiler hence there should not be any limiting criteria for SNCR. This will enable us to have a better offering.	Multi level SNCR is required as per the specification, bidder to comply the specification.
520	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			52 of 185	Segregation Facility	The receipt of RDF will be through closed trucks and it will be unloaded in the pit. It will be difficult to segregate once the fuel is unloaded in the pit. If segregation has to be done it will be by the Grab Crane operator based on his skill.	Not required. Refer amendment.
521	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			60 of 185	Fisher grab (in addition to waste crane) of suitable capacity and size to be provided above feed hopper	Usually the Grab Crane itself is utilised to remove the RDF from feed hopper in case of feed hopper chocking / jam / fire in the hopper etc.	This is a specific requirement for Fisher grab. Bidder to comply the specification requirement.
522	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			64 of 185	One fabric bag filter for each Steam Generator of 1 x 500 TPD units complete in all respects including all components and accessories stated in this section.	We assume that 1 x 500 TPD is typo error and it should be 1 x 350 TPD. Kindly clarify.	Noted.
523	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			64 of 185	Opacity monitors complete with all accessories at the outlet of each filter chamber in parallel (if applicable) of fabric bag filter upstream of the ID Fan.	Dust shall be monitored by SPM analyser which is part of CEMS. Opacity can be calculated from the output of SPM analyser.	Opacity measurement shall be as per the specification requirement ie at the outlet of each filter chamber. Bidder to comply the requirement.
524	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			69 of 185	Steam Turbine Rating	Our Boiler design can easily deliver Main Steam parameters of 67 Ata & 440 °C. Request Client to consider the same for evaluation.	Heat rate evaluation credits have been provided. However bidder to consider adequate design provisions at elevated parameters to ensure trouble free operation over the life of the plant
525	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			91 of 185	Constant speed squirrel cage induction motor with hydraulic coupling between motor and main pump.	Considering the capacity of BFW Pumps we recommend Variable Speed Drive with resilient coupling instead of Constant Speed with Hydraulic Coupling	Intent has been specified and tender condition will prevail
526	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			92 of 185	BFP lube oil system	The BFW Pump shall be with ring oil lubrication system which does not require lube oil system (shaft driven lube oil pump, AC motor driven auxiliary oil pump, working oil cooler / lube oil cooler / oil filters / strainers, valves, fittings, instruments etc.).	Intent has been specified and tender condition will prevail
527	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			97 of 185	The density of the mineral fiber felt shall be carefully controlled at about 200 kg/m³	The insulation LRB mineral fiber mattress shall have a density of 100 or 120 kg/m³.	Bidder to comply with the specification requirement.
528	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			122 of 185	One (1) nos Bottom Ash Crane system shall be provided	Kindly clarify the requirement of Bottom Ash Crane. The bottom ash can be conveyed by belt conveyor to a Silo from where it can be loaded onto the trucks directly as specified in clause no. 1.01.04 on page 125. Kindly clarify.	Bottom Ash Crane shall be applicable in case Bidder provide Bottom Ash Pit for storage of Bottom ash. Bidder to refer amendment in this regard.
529	SECTION – VI (PART-A) TECHNICAL SPECIFICATION FOR EPC PACKAGE			178 of 185	CO 40 mg/Nm³	The CO emission of 40 mg/Nm³ seems very stringent. As per SWM 2016 it is 100 mg/Nm³. Kindly reconsider.	Specific requirement for CO is prescribed in the specification. Bidder to comply with the specification requirement.
530	PART – B (MECHANICAL) SECTION - VI			9 of 292	Normal Start up/ Black Start /low load/stabilizing fuel - Natural gas	We understand that the secondary / startup / low load operation fuel shall be LDO instead of Natural Gas. Please clarify.	Shall be both ND/LDO
531	PART – B (MECHANICAL) SECTION - VI			23 of 292	Minimum transverse tube pitching in the direction of gas flow path	The pitching of any pressure part like Superheater, Economiser, Evaporator shall be as per the technology provider based on the experience on similar WTE executed projects.	Tender requirement is clear. Bidder to comply the specification requirement.
532	PART – B (MECHANICAL) SECTION - VI			24 & 25 of 292	1.5 m clear cavity height between two sections /banks of horizontal heat transfer surfaces for personnel access.	The cavity height shall be minimum 800 mm which is sufficient for personnel access for Superheater, Economiser or any pressure parts. Please reconsider.	This is a specific requirement based on experience. Bidder to comply the specification requirement.
533	PART – B (MECHANICAL) SECTION - VI			24 & 25 of 292	Stainless Steel Erosion shields for all bends of outer most tube/coil	The requirement of such items for Superheater, Economiser, Evaporator or any pressure parts should be based on the provenness of the technology provider. Kindly reconsider.	This requirement is based on customer experience. Bidder to comply the specification requirement.
534	SECTION - VI PART – A SUB SECTION - I INTENT OF SPECIFICATION Clause 1.01.0			1 of 12	Plant shall also be capable to supply steam for generating hot water or chilled water or for industrial use. The extraction quantity shall be up to 60% of the steam flowing upstream of the extraction point through internally controlled extraction to ensure high efficiency with variation in demand of steam.	Please specify Quantity of steam requirement for controlled extraction for performance case/Design case/ TMCR	Tender requirement is clear. Bidder to comply the specification requirement.

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535	SECTION - VI PART – A SUB SECTION - I INTENT OF SPECIFICATION Clause 1.02.7		5 of 12	Condensate polishing unit including regeneration facility (as applicable)	Please specify parameters & quality of return condensate to be considered	Not required. Refer amendment-01
536	SECTION - VI PART – A SUB SECTION - I INTENT OF SPECIFICATION Clause 1.02.7		5 of 12	Construction of complete leachate treatment system, is in bidder's scope.	Please furnish quantity & quality of leachate generated by the SCF/RDF	Leachate Treatment system deleted from scope. Please refer amendment-01
537	SECTION - VI PART – A SUB SECTION - II PROJECT INFORMATION Clause 1.03.00		2 of 9	The Water Requirement for the project is to be met from existing water allocation (15 MGD) of Kawas Gas Power Project. Make-up Water for Kawas GPP is drawn from Singapore Weir constructed across Tapi River near Surat at a distance of approximately 20 Km from the Power Station.	Please clarify make up water for proposed power plant is available in Kawas Gas Power Project, also please confirm location	Please refer amendment-01
538	SECTION - VI PART – A SUB SECTION - IIA-03 STEAM TURBINE AND AUXILIARIES Clause 1.01.00		1 of 29	Steam Extraction for heating/cooling/ industrial use: Internally controlled extraction to provide up to 60% of the steam at the upstream of the extraction point to provide steam at 8 ata at the terminal point.	Please specify Quantity of steam and temperature requirement for controlled extraction and location of terminal Point	Tender requirement is clear. Bidder to comply the specification requirement.
539	SECTION - VI PART – A SUB SECTION - IIA-03 STEAM TURBINE AND AUXILIARIES Clause 1.16.00		10 of 29	Ensure turbine bypass aggregate capacity not less than 65% of the main steam flow at BMCR condition. The bypass system shall have 1X100% or 2x50% capacity valves as per bidder's standard practice. Ensure all valves (both in steam and spray water service) to be electro hydraulically operated.	Considering low capacity of STG, kindly accept pneumatic by pass control valves in lieu of electro hydraulically operated.	Tender requirement is clear. Bidder to comply the specification requirement.
540	SECTION - VI PART – A SUB SECTION - IIA-03 STEAM TURBINE AND AUXILIARIES Clause 2.00.00		12 of 29	CONDENSING PLANT Design, manufacturing and testing as per Heat Exchanger Institute, USA (latest edition) for air cooled condenser with proven design. The condenser shall be designed for heat load corresponding to Valves Wide Open (VWO) conditions, 0% make-up, at ambient temp 32 oC, and conditions given in Table A at clause 2.04.00.	Please confirm abiguty in ACC design ambient temperature	Refer amendment-01
541	SECTION - VI PART – A SUB SECTION - IIA-03 STEAM TURBINE AND AUXILIARIES Clause 2.01.01		14 of 29	Provision for isolating the individual street (from steam, condensate and air evacuation side) for maintenance purpose while unit is on load.	Isolation of individual street with dampers while unit is on load will adversely effect the vacuum and is not recommended	Tender requirement is clear. Bidder to comply the specification requirement.
542	SECTION - VI PART – A SUB SECTION - III TERMINAL POINTS & EXCLUSIONS Clause 1.02.01		1 of 1	Mechanical a) Arrangement for supply of sufficient quantity of RDF and ensuring regular supply of the RDF to site, based on prior information in writing.	Please clarify Supply of RDF up to bunker bay is in Client / SMC scope.	SMC scope.
543	SECTION - VI PART – A SUB SECTION - III TERMINAL POINTS & EXCLUSIONS Clause 1.03.00		1 of 1	CONSTRUCTION POWER Bidder shall make his own arrangement to meet the construction power requirement of the project	Requ Coast Client to provide construction power at one point in the construction Site at chargeable basis. In case same same shall be provided to bidder on chargeable basis, kindly inform the rate applicable	Only required input feeder(415V) at single point shall be provided on chargeable basis. Further safely distribution of construction power is in bidder scope(cabling, installation of PDB, LDB, meter etc). However, if load requirement of bidder is not supported by our feeder then bidder has to arrange their construction power by their own. For rate refer existing Gujarat SEB commercial tariff rate.
544	SECTION - VI PART – A SUB SECTION - IV FUNCTIONAL GUARANTEES Clause 3.01.01		7 of 13	The Annual Operational Availability	If the quality / quantity of RDF/SCF leads to operating the plant outside the Firing Diagram then the Bidder should not be held responsible for non-availability.	Tender requirement is clear. Bidder to comply the specification requirement.
545	SECTION - VI PART – B SUB-SECTION-A-12 WATER SYSTEM Clause 1.00.00		34 OF 35	The Leachate treatment system shall be based on Evaporation & drying technology only. The process flow diagram of suggested Evaporation & drying technology has been attached herewith as Appendix-A.	Appendix-A is not available in the tender document	Leachate Treatment system deleted from scope. Please refer amendment-01
546	SECTION - VI PART – B SUB-SECTION-A-12 WATER SYSTEM Clause 3.00.00		1 OF 35	Total make-up water available for the entire WTE plant is 20cum/hr. Make-up water shall be drawn from existing raw water reservoir through 2x100% raw water booster pumps.	Please confirm location of existing raw water reservoir	Refer Part-E(Revised General Layout plan)
547	PART – C GENERAL TECHNICAL REQUIREMENTS SECTION – VI		36 of 310	No welding shall be carried out on cast iron components for repair.	Minor repairs may be carried out using qualified WPS.	specification requirements are clear ,Bidder to comply technical specifications
548	PART – C GENERAL TECHNICAL REQUIREMENTS SECTION – VI		36 of 310	Unless otherwise proven and specifically agreed with the Employer, welding of dissimilar materials and high alloy materials shall be carried out at shop only.	Welding of dissimilar materials may be carried out of shop with approved WPS and welders.	specification requirements are clear ,Bidder to comply technical specifications
549	Section-VI, Part-B-2 electrical , Clause No.6.05.00		Page No.-18 of 164	Electrical Single line diagram for WTE Project (Drawing no:8011999-POE-J-001)	Document not found in tender. Please furnish	Refer Part-E
550	Section-VI, Part-B-2 electrical , Clause No.1.14.00		Page No.-8 of 164	The responsibility of coordination with electrical agencies /TAC/Pollution control board and obtaining all necessary clearances shall be of the contractor	Only Electrical statutory approval of installation shall be in bidder scope & fees shall be paid by client. TAC/Pollution control board not applicable for electrical.	Acceptable in case of No TAC/Pollution clearance is required.
551	Section-VI, Part-A, Clause No.1.05.00		Page No.-27 of 185	The Generation voltage shall be transformed to 6.6 KV level through suitably rated Generator Transformer, which shall be connected to 6.6 KV Switchgear near WTE plant end. Two numbers of 6.6 KV cable feeders shall be laid up to second 6.6 KV switchgear located near the switchyard. From this switchgear, two numbers of cable feeders shall be connected to the existing 6.6 KV boards 1CLGA & 2CLGA by relocating the existing colony transformer feeders from the respective boards to this new 6.6 KV board at switchyard end.	please furnish plot showing existing 6.6 KV boards 1CLGA & 2CLGA & relocating the existing colony transformer feeders.	Will be provided.
552	Section-VI, Part-A, Clause No.1.03.00		Page No.-166 of 185	ELECTRICAL Terminal Points As per Electrical Single Line Diagram	Document not found in tender. Please furnish	Will be provided
553	General		-	Hazardous Area Requirements / Area Classification	Boiler & BOP Electrical Equipment's shall be considered as Safe & non-hazardous area.	Acceptable.
554	General		-	Makes of instruments	Please furnish the NTPC approved makes list for electrical 1) Motor shall be Hybrid Permanent Magnet Motor (HPM) /Squirrel Cage Induction Motor (SCIM) and same shall be as per compressor OEM standard for compressor application. 2) Motor name plate voltage rating shall be 400V/415V. 3) Motor efficiency and make of Motor be as per OEM's standard. 4) Type-2 co-ordination for switchgears mounted inside compressor skid can't be provided.	Will be provided during detail engineering
555	General		-	Air compressor package ELECTRICALS		Bidder shall comply to NTPC Specifications mentioned under Chapter : Motors
556	General		-	EOT ELECTRICALS	EOT crane motor make & efficiency, VFD make & its panel constructions as per OEM	EOT Crane motor shall be inline with specifications of motor mentioned in technical specifications

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557	General			-	Generator Voltage & frequency variation	Voltage variation for the Generator shall be +/-10%, frequency variation of $\pm 5\%$, with a combined variation of 10% (absolute). Power factor shall be 0.8 (lag)	Volatge variation of $\pm 5\%$ and frequency variation of +3% and -5% and 5% combined variation of voltage and Frequency. Power factors between 0.85 lag to 0.95 lead
558	Section-VI, Part-A, Sub section-II-C, Clause No.19.00.00			Page No.-14 of 14	MAINTENANCE AND CALIBRATION EQUIPMENT - Maintenance and Calibration equipment's/devices of proven type, for maintenance & calibration of instruments shall be provided as a minimum by the Contractor. The Contractor shall be responsible for supplying all accessories and any necessary additional tools as required for proper maintenance and calibration of the installed C&I devices/systems	Client to provide the list of Maintenance and Calibration Equipment's with make & model no. This will help to consider the correct equipment's/instrument as per clients requirement & bring all the bidders on same platform.	specification requirements are clear ,Bidder to comply technical specifications
559	Section-VI, Part-A, Sub section-II-C, Clause No.20.00.00			Page No.-14 of 14	TOOLS & TACKLES - The Contractor shall furnish a complete new set of all special tools and tackles of reputed make and model which are required for erection, ease in maintenance to have minimum down time, testing and calibration of all the equipment and systems to be provided by the Contractor under this specification for C&I systems.	Client to provide the list of Tools & Tackles with make & model no. This will help to consider the correct items as per clients requirement & bring all the bidders on same platform.	specification requirements are clear ,Bidder to comply technical specifications
560	Section-VI, Part-A, Sub section-II-C-14, Clause No.2.11.00			Page No.-2 of 3	SIL CERTIFICATION - All actuators shall be certified for SIL 2 or better.	We have considered safe area for all the actuators as plant is in safe area.	specification requirements are clear ,Bidder to comply technical specifications
561	Section-VI, Part-A, SUB-SECTION – IIIC - 02, Clause No.-1.00.00			Page No.-1 of 21	The basic configuration of DDCMIS shall be as indicated in the DDCMIS configuration drawing No. 0000-999-POI-A-001.	Please furnish the DDCMIS configuration drawing No. 0000-999-POI-A-001 as same is not found in Tender docs.	Refer Part-E
562	General			-	Plant Control Philosophy	bidder will provide Centralized DCS System for Operation, Interlocking, Protection, Monitoring & Control of all the Power Plant Aux. - Sub Control Systems like - Ash Handling System, Fuel Handling System, WTP etc. all the logic & interlocks shall be provide in DCS system. - Sub Systems like-ESP, Air Compressors, Fire Fighting System, Air Conditioning System shall be controlled through dedicated microprocessor based controller. Important signals shall be interfaced through hardwired signals to DCS. - STG Governor control shall be controlled through Woodward 505 Controller & STG aux. shall be controlled through DCS System. - Plant shall be controlled from main CCR.	specification requirements are clear ,Bidder to ocmply technical specifications
563	General			-	Hazardous Area Requirements / Area Classification	Boiler Equipment's / Instruments shall be considered as Safe & non-hazardous area.	Bidder to comply technical specifications
564	General			-	Makes of instruments	Please furnish the NTPC approved makes list for C&I	Will be provided during detail engineering
565	Section-VI, Part-A (Sub-Section-I), Clause no. 1.02.01, 1.02.02, 1.02.03, 1.02.04, 1.02.05, 1.02.06, 1.02.07, 1.02.08, 1.02.09, 1.02.11, 1.02.12, 1.02.13, 1.02.14, 1.02.15.			3,4,5 of 12	The scope of works for WTE package to be considered by the bidder are mentioned in clause no. 1.02.01 to 1.02.15. The scope of civil works for many of the systems mentioned in these clauses are not mentioned in the Clause no.5 of Section-VI, Part-A (Sub-Section-IID)	Bidder understands that the Civil scope of work to be considered by the bidder shall be only as per Clause no.5 of Section-VI, Part-A (Sub-Section-IID). Please confirm.	Civil scope of work shall be as per Section-VI, Part-A
566	Section-VI, Part-B (Sub-Section-01) Clause no.3.10.0			5 of 16	Road Work	The specification mentions that all roads shall be of rigid pavements. Bidder request client to provide the width, thickness & specifications of road to be considered by the bidder.	Plant approach road shall be double lane road as shown in tender drawing no. 2600-01-POC-A-001. Internal plant road shall be as per system requirement.
567	Section-VI, Part-B (Sub-Section-01) Clause no.3.12.0			6 of 16	Sewage Treatment Plant	Bidder understands that the waste water / sewage water treated in Sewage treatment plant shall be connected to the nearest storm water drain along road. Whereas the system for disposal of sludge is not in the scope of the bidder. Please confirm.	Bidder understanding is correct.
568	Section-VI, Part-B (Sub-Section-01) Clause no.3.12.10			7 of 16	Landscape Development	Bidder request client to exclude the landscaping works from bidder's scope of work.	Bidder is requested to adhere to the provisions of Bid Documents
569	Section-VI, Part-B (Sub-Section-01) Clause no.4.01.02			7 of 16	Soil Data	Bidder shall carryout geotechnical investigation during execution. However, any major variation found between the Soil data during execution and that provided during the bid stage shall be jointly discussed and compensated to the successful bidder by NTPC. Please confirm.	As specified in clause no.4.01.01 of Technical Specification, geotechnical investigation report shall be approved by owner before execution. As specified in clause no.4.01.02 of Technical Specification,the Bidder should note that nothing extra whatsoever on account of variation between soil data collected by Owner and that found by the Bidder during geotechnical investigation by him or during execution of works, shall be Payable.
570	Section-VI, Part-B (Sub-Section-01) Clause no.4.02.03			9 of 16	Pile Foundations	As per the Geotechnical Recommendations given by NTPC. Pile foundations are needed to be considered for heavily loaded structures. In case, Pile foundations are adopted, the detailed Soil bore log is needed to understand the Soil strata to consider maximum Pile length and decide the Pile termination criteria. Also bidder need to understand the type of soil to decide the measures to be taken while excavation / boring. Therefore bidder request client to provide detailed Soil bore log along with the NIT documents.	Bidder is requested to refer amendment to Technical Specification for available preliminary Soil Data. Detailed Geo-Technical Investigation is in Bidder's scope as stipulated in Scope of Work
571	Section-VI, Part-A (Sub-Section-IID), Clause no.3.i			1 of 3	Dismantling of existing facilities including foundation as required and disposal of scrap/debris.	Bidder understands that the dismantling & disposal of existing facilities above ground shall be considered by the bidder. However, during execution if any underground facilities are needed to be dismantled or re-routed, extra cost shall be mutually discussed and paid to the bidder by client.	Bidder is requested to adhere to the provisions of Bid Documents
572	Section-VI, Part-A (Sub-Section-IID), Clause no.3.iii			1 of 3	Site clearance & disposal including cutting of shrubs and trees.	Bidder understands that the dismantling & disposal of existing facilities above ground shall be considered by the bidder. However, during execution if any underground facilities are needed to be dismantled or re-routed, extra cost shall be mutually discussed and paid to the bidder by client.	Bidder is requested to adhere to the provisions of Bid Documents. Bidder is requested to refer cl.no. 1.00.0, 3(i),i,iii,iv of Technical Specification in this regard.
573	Section-VI, Part-A (Sub-Section-IID), Clause no.1.00.0			1 of 3	Area paving works	Bidder request client to elaborate the paving requirement for the package.	Quirey not clear.Bidder to comply technical specification.
574	Section-VI, Part-A (Sub-Section-IID), Clause no.3.iii			1 of 3	Infrastructure works - Site levelling of total plant area as per Plot Plan.	Bidder understands that the filling of thickness 2.5m to 3.0m has been done over the NGL to achieve the FGL of (+)5.5m as indicated in the Plot plan. Therefore, bidder understand that only micro area grading & levelling in variation of 0.5m shall be considered by the bidder. Please confirm.	Finished Ground Level (FGL) generally corresponds to RL (+) 5.5 m for proposed area. Filling of thickness 2.5 to 3.0 m has been done over Natural Ground Level (NGL) to achieve the FGL as indicated in General Layout Plan. However, grading/minor levelling of the area is in Bidder's scope.
575	Section-VI, Part-A (Sub-Section-IID), Clause no.5.xiii			1 of 3	Effluent treatment plant	Bidder understands that the disposal system for residue of effluent treatment plant is not in the scope of bidder. Please confirm.	Bidder to comply technical specification.
576	Section-VI, Part-A (Sub-Section-IID), Clause no.5.xvi , 5.xvii			1 of 3	Security cum time office, Weigh bridge control room	Bidder understands that these facilities as indicated in the Plot plan are located on the Approach road to WTE plant (double lane) which is excluded from the bidder's scope. Bidder request client to confirm whether these facilities are needed to be considered in civil scope of works.	As specified, Security cum time office, Weigh bridge control room are in bidder's scope

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577	Section-VI, Part-A (Sub-Section-IID). Clause no.5.xv, 5.xvii			1 of 3	Administration & Canteen Building, Guests reception, canteen, model room, safety gadget hall, conference halls, office space/ cabin, kitchen, dining area/hall etc.	As these facilities are not marked on plot plan, bidder request client to confirm the scope of same. If these facilities are needed to be considered in this package, bidder request client to show the same in Plot plan and provide the tentative sizes of the buildings / capacities for estimation purpose.	Bidder to locate facilities during detailed engineering stage in plot plan to be developed by the Bidder
578	Section-VI, Part-A (Sub-Section-IID). Clause no.10			2 of 3	Roads & Drains - connection of the drains to main drain for disposal of storm water.	Bidder understands that the Road inside the plot plan for this package shall terminate at the nearest intersection of new road & Approach road to WTE plant (Double lane). The drain along road of this package shall also discharge the storm water into the drain along the Approach road as shown in Plot plan. Please confirm.	Road & Drian in plant and Approach to plant is in bidder scope. Connection of road & drain to existing main road & drain is also in bidder's scope
579	Section-VI, Part-A (Sub-Section-IID). Clause no.14			2 of 3	Submission of plant design memorandum for Civil, Structural & Architectural works and getting approval of the same from Employer prior to design.	Bidder understands that the Design Basis Report and General Notes & Standard detail drawing for Civil, Structural & Architectural drawings shall be submitted to Employer. Please confirm.	Provision of Technical Specification is amply clear in this regard.
580	Section-VI, Part-A (Sub-Section-IID). Clause no.15			2 of 3	All foundations & building design and drawings shall be got vetted by reputed engineering institutes.	Bidder proposes to submit the detailed drawings along with design document & design calculations to client for approval and not to other reputed institutes. Please confirm.	Bidder is requested to adhere to the provisions of Bid Documents
581	Section-VI, Part-A (Sub-Section-IID). Clause no. 2.00.0			2 of 3	Construction Power - Contractor shall make his own arrangement for Construction power	The utilization of DG sets for construction power shall be very expensive. Therefore, if available with client, bidder request client to provide the Construction power on free / chargeable basis at one location within the battery limits.	Only Input feeder for construction power will be provided by NTPC on chargeable basis
582						Please clarify scope of supply of following service / materials	
						Supply of water treatment chemicals for WTP and ETP	Bidder scope
						Provision of heavy vehicles (pay loader, dozer etc.)/ special equipment required for fuel / waste handling	Bidder scope
						Provision of fuel/diesel for heavy machinery	Bidder scope
						Gate pass and entry documentation for fuel / waste trucks	Bidder scope
						Unloading of waste trucks	Bidder scope
						Disposal for ash / boiler waste	Bidder scope
						Disposal for contaminated water / effluent	Bidder scope
						Fire fighting set up like fire bowzers, vehicles along with trained staff inside power plant complex	Bidder scope
						Medical, first aid, ambulance facilities	Bidder scope
						Gardening / horticulture services	Bidder scope
						Cleaning of plan roads, office buildings and common area	Bidder scope
						Warehousing of material at plant store	Bidder scope
						Provision of office, store, workmen rest room infrastructure	Bidder scope
						Plant security, deployment of security guards	Bidder scope
						Traffic management inside plant	Bidder scope
						Liasoning with local municipality for fuel supply	NTPC Scope
						Liasoning with state grid for power dispatch	NTPC Scope
						Liasoning with state grid for load scheduling	NTPC Scope
						Liasoning with pollution control bodies	Bidder scope
						Liasoning with other statutory bodies like boiler inspector, electrical inspector	Bidder scope
						Supply of operation consumables like dosing chemicals, sprays for waste pile	Bidder scope
						Supply of lab chemicals	Bidder scope
						Supply of capital spares like motors, gear boxes, sensors, automation parts etc.	Bidder scope
						Supply of fire extinguishers	Bidder scope
						Protection relay testing	Bidder scope
						Annual shutdown services	Bidder scope
						Supply of pressure parts, tubes, valves, pipes etc.	Bidder scope
						Provide mechanised cleaning equipment like vacuum pump, road sweeper etc.	Bidder scope
						Provide IT infrastructure like LAN network etc.	Bidder scope