

National Mission for Clean Ganga (NMCG)
Department of Water Resources, River Development & Ganga Rejuvenation
Ministry of Jal Shakti

Tender No.: TE-15015/2/2020-TECH- I [2021_NMFCG_648313_1]
TE-15015/2/2020-TECH- II [2021_NMFCG_648331_1]
TE-15015/2/2020-TECH- III [2021_NMFCG_648337_1]

Dated: 27th October 2021

Replies to Prebid Queries

PRE BID QUERIES FOR : Request for Proposal (RFP) for the ‘Empanelment of potential supplier for Supply, Installation and Commissioning of OCEMS Instruments with 5 Years of Operation and Maintenance [for Category I, II and III]

S. No.	Tender Reference	Description as per Tender	Queries/clarifications	Reply
1	IV. TECHNICAL SPECIFICATION OF THE PROPOSED OCEMS SYSTEM 3.5. Specification for Total Nitrogen (TN) Page no. 24	Measurement Principal: Multiparameter Probe, Ion Selective Electrode, Common reference electrode non-porous / non-leaking reference electrode, two measuring electrodes, one compensation electrode	<p>Please note that CPCB approved both ion selective & UV Vis spectroscopy technique for measurement of Ammonia.</p> <p>Please find below advantages of UV Vis spectroscopy after gas stripping technique over ISE:</p> <ul style="list-style-type: none"> - Ease of operation and less maintenance due to simple design of analyser compare to ISE. - Completely interference free measurement which ensures higher accuracy compares to ISE. - Completely drift free measurement no need to frequent calibration of the analyser. <p>So we request you to add UV Spectroscopy method for Ammonia measurement in the RFP document. Also approved other related specifications of Ammonia analyser wrt UV Spectroscopy method.</p>	Please Refer Addendum-1

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2	Page Number 7 of 63	<p>Clause 15 – Award of Contract</p> <p>15.4 The Successful Bidder will be required to execute the contract for the services within a period of fifteen (15) days from the date of issue of Letter of Award.</p>	<p>Please define what is contract of service.</p> <p>Please note that site conditions shall play important role i.e. who shall prepare site etc. like Treated water Tank, Any civil work. Will all Sites have energy?</p> <p>Please explain the same.</p>	<p>All civil, electrical and mechanical allied work required for system will be in bidder's scope.</p>
3	Page Number 9 of 63	<p>Clause III – Eligibility and Evaluation criteria</p> <p>The tenderer shall meet the requirements as mentioned in technical specification (Submit the product literature, catalogues/brochures for all the sensors, Servers, Solar panel (If applicable), software and Hardware as requested in the tender documents).</p>	<p>Please define why solar panels are needed.</p> <p>We presume that all analyzers shall be installed at STP's and thus power shall be available else how shall STP work with their blowers, Pumps etc</p> <p>Please confirm.</p>	<p>Power source shall be made available within boundary of STP premises.</p>
4	Page Number 10 of 63	<p>My Document (Non-Statutory Cover) containing</p> <p>Credential with completion certificates within last Five years under any Govt/Semi Govt. /Statutory or Local Bodies for successful completion of the work for “Online Data Acquisition, Monitoring & Control System through Local & Remote Terminals, based on GSM/WiFi or any other suitable System, including Supply of Field Instruments, for a minimum of 20 nos S.T.Ps / E.T.Ps” having value not less than 40% of the quoted rate with a performance certificate not less than 12 months old from the user body.</p>	<p>Please note that we presume that 20 Nos. of STP/ETP installations in Govt/Semi Govt. /Statutory or Local Bodies are needed with PO & completion certificate is needed.</p> <p>Please confirm.</p>	<p>Please Refer Addendum-1</p>

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5	Page Number 10 & 11 of 63	<p>Completion Certificate:</p> <p>Completion Certificate of work executed in NMCG will be considered. Completion Certificate of works executed in other Departments of Central/ State Government or Govt. undertaken organizations, may also be considered. Such Completion Certificates are to be issued by an officer not below the rank of Executive Engineer of above stated departments.</p>	<p>Please note that, in some semi government organization Executive engineer may not be there and completion letter can be issued by the authorities like Manager/Chief Manager.</p> <p>Hope that shall suffice.</p> <p>Please Confirm.</p>	Accepted.
6	Page No. 12 of 63	<p>Original Equipment Manufacture Qualification Criteria:</p> <p>OEM TUV/USEPA/EPA/ Company: MCERTS Certificates</p>	<p>OEM Certificate is needed?</p> <p>Please confirm.</p>	<p>Please refer clause III, S.No :2 (Page no 9 of 63)</p>
7	Page No. 13 of 63	<p>Technical Specifications and Salient Features Regarding Online Water Quality Monitoring System.</p> <p>xxvi. MOC of Sensor should be SS316L with compressed air cleaning facility.</p>	<p>Please note that, we have Better MOC for Sensor i.e. titanium and better cleaning by ultrasonic sound based advance cleaning. Over 700+ system running with such advance specs. Please also be noted that just compressor cleaning is restrictive to a / Defined bidders, Every OEM shall have cleaning by Ultrasonic sound based or wiper cleaning which is OEM's technology</p> <p>Please confirm the same.</p>	<p>Accepted, Bidder may propose equivalent or better product as per CPCB guidelines.</p>
8	Page No. 13 of 63	<p>Technical Specifications and Salient Features Regarding Online Water Quality Monitoring System.</p> <p>xxvii. Sensor must measure full spectrum</p>	<p>Please note that it seems that tender has taken TN/TP also via. UV –visible sensor method.</p> <p>Please note that principle for COD/BOD/TSS & TN/TP is different. Above point of wavelength is meant only</p>	Please Refer Addendum-1

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		scanning for each parameter at specific bands of multiple wavelengths and provides sum parameter for COD, BOD, TSS, pH, TN, TP parameters.	for BOD/COD/TSS. Please confirm	
9	Page No. 13 of 63	<p>Technical Specifications and Salient Features Regarding Online Water Quality Monitoring System.</p> <p>xxviii. Extended life of xenon flash lamp in spectrophotometric sensor with minimum 1019 flashes should be available.</p>	<p>Flash monitored as mentioned in tender 1019 are specific to a make, every vendor has different xenon lamp & flashes.</p> <p>Please confirm the same that this shall be open to each OEM as this varied from vendor to vendor</p>	<p>May be read as:</p> <p>xxviii. Extended life of xenon flash lamp in spectrophotometric sensor with minimum 10¹⁴ or above flashes should be available.</p>
10	Page No. 14 of 63	<p>Technical Specifications and Salient Features Regarding Online Water Quality Monitoring System.</p> <p>xxxvi. Individual parameter method analysis, Individual Calibration, Individual Validation without any coefficient calculation from one parameter to another.</p>	<p>Please confirm, explain this in detail .Hope you mean that there shall be independent algorithm for each parameter in measurement.</p>	<p>As per CPCB guidelines.</p>
11	Page No. 14 of 63	<p>Technical Specifications and Salient Features Regarding Online Water Quality Monitoring System.</p> <p>xxxvii. Automatic Sampling during calibration as per published CPCB SOP must be featured as integral part of OCEMS and every sample collection automatic real time monitoring must be part of data submission to NMCG and other agency with sample collection tag number and sample collection timeline. The sample</p>	<p>Does this tender require the auto sampler along with the online monitoring system?</p> <p>Or for calibration purpose we can collect sample manually. Please confirm this and explain in detail.</p> <p>What is frequency of Calibration needed for each parameter? Please define that.</p>	<p>As per CPCB guidelines /norms.</p>

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		must be collected as per USEPA compliance and document in this direction must be submitted by bidder.		
12	Page No. 14 of 63	2.1. Additional Technical Points: i. System should work on wavelength of 200-750nm and all analyses should have independent values.	Please accept 200-720 nm, we have over 1000+ systems in Private/ Govt/ Semi govt and is in line to norms. 200-750 is just for a defined make.	Accepted.
13	Page No. 14 of 63	2.1. Additional Technical Points: vii. System must have Impressive real-time zoom able, scrollable graphical visualization of all historical data including 3D-optical spectra.	Historical Data shall be available well readable, zoom able, scrollable and is probably of a vendor. A good readable data shall be available. This comes in data aesthetes which varied from OEM to OEM Please confirm.	Accepted, historical data shall be available.
14	Page No. 15 of 63	3. Sensors shall meet following specifications: vii. Connection to Data Logger via IP68 connector.	IP 68 connector is for a particular make, IP 68 is only needed when Transmitter portion is emersed in water which is never the case Please note that controller IP 67 as also mentioned for pH transmitter and other locations, thus Please confirm	May be read as: vii. Connection to Data Logger via IP65 and above connector.
15	Page No. 17 of 63	3.2. Specifications for Biochemical Oxygen Demand (BOD) sensor Accuracy: +/- 2.0 % in reference solution. +/- 10% of Parameter value with reference to certified laboratory results or as per latest reference of published CPCB SOP/Guidelines, whichever is less.	CPCB has asked for +/- 10%. Please confirm.	As per bid condition.
16	Page No. 18 of 63	3.2. Specifications for Biochemical Oxygen Demand (BOD) sensor	Please note only water is available at 0°C.	Accepted

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		<p>Operating Temperature</p> <p>Operating temperature: -4°C to +50 °C;</p> <p>Storage temperature: -20 °C to +60 °C</p>	Please accept 0°C - 45°C. This is standard followed across.	Not for ambient temperature.
17	Page no 18 of 63	<p>3.2. Specifications for Biochemical Oxygen Demand (BOD) sensor</p> <p>Interface correction to display: MIL</p> <p>Connector. IP-68, RS485, 12VDC.</p>	It seems that the specification is very suitable to one vendor only. Interface between sensor and controller should be in digital connection.	<p>May be read as:</p> <p>Interface connection to display: MIL</p> <p>Connector: IP 65 or above, RS 485, 12VDC, Digital communication.</p>
18	Page No. 18 of 63	<p>3.2. Specifications for Biochemical Oxygen Demand (BOD) sensor</p> <p>Pressure: 10 Bar</p>	<p>Please note that pressure of 10 Bar is not at all is not needed when sensor is either dipped or clamped in the STP</p> <p>1 Bar is more than sufficient.</p> <p>Please Confirm.</p>	<p>May be read as:</p> <p>Pressure: 1 bar.</p>
19	Page No. 21 of 63	<p>3.3. Specifications for Chemical Oxygen Demand (COD) Sensor</p> <p>Display: Colour TFT LCD 640X480 pixels with LED backlight</p>	<p>This is a specific to a defined vendor only requirement. Every good proven vendor shall have its own display size & Pixel.</p> <p>Please confirm a LED Driven display shall be okay which is good In aesthetics.</p>	<p>May be read as:</p> <p>The TFT screen shall be of latest technology and readings shall be visible from a distance of 3 feet.</p>
20	Page No. 24 of 63	<p>3.5. Specification for Total Nitrogen (TN)</p> <p>Reagent Free: The Ammoniacal Nitrogen and Nitrate Nitrogen electrodes should require very little maintenance and they should not require any add on chemical for</p>	<p>Please define you need Ammonical nitrogen+ Nitrate Nitrogen or Total Nitrogen.</p> <p>As heading says TN however specs mention Ammonical Nitrogen and Nitrate Nitrogen. Both are different with different principle altogether. We shall</p>	Please Refer Addendum-1

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		continuous measurement.	suggest to have Ammonical Nitrogen+ nitrate Nitrogen Please clarify.	
21	Page No. 25 of 63	3.6. Specification for Total Phosphorus analyzer	Please define whether you need TP Or PO4 as both are different.	Please Refer Addendum-1
22	Page No. 27 of 63	3.6. Specification for Total Phosphorus analyzer Transmitter Output: Default: 2 X 4-20 mA Additional optional: MODBUS RS485, HART, PROFIBUS.	As mentioned here Transmitter output is HART needed. Please note that 4-20/Modbus is more than sufficient and followed across. Please confirm	Deleted
23	Page No. 29 of 63	3.7. Specification for Smart Controller and Data logger Display: With large (size 9" preferably), both touch screen & key pad type are acceptable. The system should preferably have the facility of Impressive real-time zoomable, scrollable graphical visualization of all historical data including 3D-optical spectra. Display should be with improved reading precision through special backlit graphic touch screen display.	Only Touch screen, in a STP in one case, harsh atmosphere is mentioned and other side a delicate touch base system is asked Please confirm touch/Push Button shall be allowed. Again display mentioned here is of particular vendor. Please keep it open for all good proven vendor.	Touch or Push shall be accepted.
24	Page No. 30 of 63	3.7. Specification for Smart Controller and Data logger Status LED: The system should have a status LED on Data logger terminal as well as on spectrophotometric probe that gives reliable and fast information regarding function and status of system. And the Controller/Probe must show a LED for	Please note that LED can only be there on transmitter. Not logger / Probe can have LED. Please confirm.	Status LED: The system should have a status LED on Data logger terminal as well as on spectrophotometric probe that gives reliable and fast information regarding function and status of

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		diagnostic purposes on the front. These LED should show diagnostic alert about normal and malfunctions of the system at a glance.		system. And the Controller or Probe must show a LED for diagnostic purposes on the front. These LED should show diagnostic alert about normal and malfunctions of the system at a glance.
25	Page No. 31 of 63	3.8. Specification for Electromagnetic Flow meter FLOW SENSOR	Accuracy asked in 0.25 percent. Across globally 0.5 accuracy is asked/ Accepted.	May be read as : Accuracy shall be +/-0.5 %
26		Payment Terms	Please be noted that since numbers are not defined and can be more / less, thus please suggest and confirm that payment shall be made to vendor and vendor can invoice supply 15 sets and then take payment . It may not be feasible to supply all in one shot and often sites may also not be ready. Thus billing supplying in a Set of 15-20 shall be ideal. Please confirm.	This shall be decided at the time of work order by Executing Agency.
27		Power Supply	Please also define at least ball park as to how many STPs shall have power as running with / without power shall be a lot different in terms of cost. Please confirm.	Power source shall be made available within boundary of STP premises.
28	TE-15015/2/2020-TECH-1 Page 9 of 63	ELIGIBILITY AND EVALUATION CRITERIA Technical	We request you to modify the ELIGIBILITY AND EVALUATION CRITERIA , something like below which will help us and many other reputed Brand/OEM to participate in this prestigious tender.	Please Refer Addendum-1

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		<p>1. Having successfully completed the work for “Online Data Acquisition, Monitoring & Control System through Local & Remote Terminals, based on GSM/WiFi or any other suitable System, including Supply of Field Instruments, for a minimum of 20 nos S.T.Ps / E.T.Ps” under any Govt. ,Semi Govt., Govt. Undertaking body, within last five years and having a satisfactory performance certificate not less than 12 months old from the user body. (Performance certificate submitted should be signed from the end user by an officer not below the rank of Executive Engineer, is mandatory).</p>	<p>1. Having successfully completed the work for “Online Data Acquisition, Monitoring & Control System through Local & Remote Terminals, based on GSM/WiFi / Telemetry or any other suitable System, including Supply of Field Instruments, for a minimum of 20 nos telemetry/GSM/Wifi based system in any S.T.Ps / E.T.Ps/WTPs/Distribution of water, Waste water Project/Industries ” under any Govt. ,Semi Govt., Govt. Undertaking body, within last ten years and having a satisfactory performance certificate not less than 12 months old from the user body. (Performance certificate submitted should be signed from the end user by an officer not below the rank of Executive Engineer, is mandatory).</p>	
29		<p>3. The Bidder/ Bidders’ Manufacturer should have supplied, installed & Commissioned Real Time Sewage Water Quality Monitoring System for stations with minimum 5 water quality Parameters.</p>	<p>3. The Bidder/ Bidders’ Manufacturer should have supplied, installed & Commissioned Field Instruments.</p>	Please Refer Addendum-1
30		<p>Total Nitrogen Specification</p>	<p>B) Total Nitrogen:Nitrogen in freshly polluted water is originally present in the form of organic nitrogen and ammonia. Natural biochemical processes slowly convert the organic nitrogen into ammonia, which is the form of nitrogen best able to be utilized as a nutrient by microorganisms in the treatment process. (Some waste waters may be nitrogen deficient and require supplemental ammonia for adequate reproduction. Under aerobic conditions the conversion of organic nitrogen into ammonia reaches a peak and, under the</p>	Please Refer Addendum-1

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			appropriate biological conditions, is biochemically oxidized first into nitrite, then into nitrate. When nitrite and ammonia nitrogen are at minimum concentration (at or near zero) and nitrate is at a maximum value, the wastewater has been fully nitrified. A fully nitrified wastewater will have little or no organic nitrogen. So by measuring Ammonium and Nitrate solve the purpose of TN, since TN needs reagent based system where as Ammonium and Nitrate can be measured by Ion Selective Electrode which is reagent free method. We suggest to use Ammonium and Nitrate instead of Total Nitrogen.	
31	TE-15015/2/2020-TECH-1 Page 14 of 63	1) System Should work on Wavelength 200-750nm and all analyser should have independent value	Request you to also consider 200-800nm as per CPCB Norms	Range may be accepted, However bidder to provide full spectrum.
32	Page 16 of 63 TE-15015/2/2020-TECH-1	3.1) Transmitter Optional	Default 2 -4.20ma. Please clear additional Optional Modbus RS 485 Or Hart Or Profibus or any one of them.	Bidder understanding is correct.
33	Page 16 of 63 TE-15015/2/2020-TECH-1	Enclosure Material Stainless Steel Epoxy Coating	Request you to consider non corrosive Polycarbonate .or SS Enclosure	May be read as: Enclosure Material Stainless Steel Epoxy Coating or Polycarbonate (Note: The same shall be with lock and key arrangement.)
34	pH Sensor	ISE - Potentiometric -combined,	Please accept combination glass electrode method	May be Accepted, in

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	Specifications Measuring Principle	non-porous reference electrode	approved by CPCB.	addition to pervious specification. In case of any damage same shall be replaced without any additional cost implication.
35	Material of construction of sensor	The MOC must be SS316L / Titanium or equivalent to sustain the sensor in Sewage wastewater application.	Please accept PPS also which is intended for waste water application and it has very high chemical resistance, Excellent temperature resistance etc.	As per bid document.
		BIOCHEMICAL OXYGEN DEMAND (BOD)		
36	Basic Requirement	<ul style="list-style-type: none"> • Continuous Effluent Monitoring of BOD, COD, TSS with UV-Vis Full Spectrum dual beam technology • System should work on wavelength of 200-750nm as per the CPCB guidelines and all analyses should have independent values. • System should have spectrophotometric probe made of SS316L/Titanium or equivalent • Multi Parameter probe ideal for monitoring of BOD/COD/TSS in Municipal Wastewater • The Sensor should have optimized function check referencing for excellent zero point and long-term stability. • The Sensor should provide compensation of interferences by evaluation of the whole measured spectrum. • System should be UV-Visible double 	<p>Please allow 680°C Catalytic Combustion with NDIR detection instruments to measure COD and BOD which is approved by CPCB and also international approval method refer APHA 5310A / 5301B for waste water application for measuring sum parameter for organic pollutants.</p> <p>Please note Indian municipal waste is very complex as many other pollutants also mixes as our drainages are open type and many anthropogenic activities and non-point source pollutants mixes with sewage, hence UV VIS sensor cannot measure many potential contaminants. APHA 5310B method was best can measure any types of pollutants including not easily oxidizable.</p> <p>No analyzer or sensor has any such features for automatic water matrix change adaption. This is only software function based on AI but such technology may give wrong prediction as UV – VIS sensor cannot</p>	As per bid document.

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		<p>beam spectrometry</p> <ul style="list-style-type: none"> • System should have unlimited multipoint calibration facility as per CPCB SOP published on CPCB website in July 2020 • System should be complied as per latest CPCB Direction, SOP& Guidelines. • Should produce analytically valid results with precision and repeatability. • The instrument/Analyzer should be robust and rugged, for optimal operation under extreme environmental conditions, while maintaining its calibrated status. The Analyzer should have inbuilt features for automatic water matrix change adaption. • The instrument / Analyzer should have onboard library of calibration spectr as for different industrial matrices with provision of accumulating further calibration matrices • For each parameter there should be provision for independent analysis, validation, Independent parameter calibration & data transmission <p>Sensor integrated cable should be with IP68 rating and specially designed for submerged installations.</p>	<p>measure many potential containments which was mentioned by USEPA and DIN 38404-3official documents. It is also possible even such sensor don't work but they may be giving data by their software, as they never directly give their sensor output to the user server , hence many manipulation can occur.</p> <p>As per our knowledge only one particular brand mentions such specs in their product brochure/ web-site which is misleading information. These are only their own statements and such claims cannot be proved</p>	
37	Measuring Principle	UV-Visible is double Beam Spectrophotometry with multi point calibration from wavelength 200 – 750 nm, as per the CPCB Guideline, xenon flash lamp, 256 photo diodes, two beam measurement, complete spectrum	Please allow 680°C Catalytic Combustion with NDIR detection instruments to measure COD and BOD which is approved by CPCB and also international approval method refer APHA 5310A / 5301B for waste water application for measuring Organic sum parameter pollutants.	As per Bid document

S. No.	Tender Reference	Description as per Tender	Queries/clarifications	Reply
38	Measurement	Must be direct In-Situ/Submersible measurement in Outlet or Inlet of waste water treatment plant	Please allow dual channel analyzer to measure inlet and outlet sequentially	As per bid document.
39	Inbuilt Cleaning	The sensor must have automatic mechanical cleaning facility with integrated system for cleaning at a predefined interval. Chemical cleaning is not recommended.	680°C Catalytic Combustion with NDIR detection instruments has best features like cleans the sample homonizer for each sample measurement continuously	As per Bid document.
40	Certifications	TUV/MCERT/USEPA	Please note TUV/USEPA don't give any product or OEM certificate for product suitability of said application, only MCERT has certification program for online waste water analyzers. USEPA only specified the methods does not issue any certificate for any OEM or products. Also, CPCB only asked certified analyzers for online Stack gas analyzers (CEMS) not for online waste water monitoring system. To our surprise many suppliers of UV – VIS product claiming their ISO certificate from TUV as product or OEM certification which is completely misleading. Please either remove or define what certifications you are really looking for.	Accepted. Product facility must have ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018/ Product conformity certificate by MCERTS/ TUV/Equivalent.
41	Automatic compensation cross sensitivities	Turbidity / solids and temperature	680°C Catalytic Combustion with NDIR detection instruments has capability to measure Organic pollution in sample having suspended solids form. Hence don't need any cross sensitive compensation.	As per Bid document
		CHEMICAL OXYGEN DEMAND (COD)		
42	Basic Requirement	<ul style="list-style-type: none"> • Continuous Effluent Monitoring of BOD, COD, TSS with UV-Vis Full Spectrum dual beam technology • System should work on wavelength of 200-750nm as per the CPCB guidelines 	Please allow 680°C Catalytic Combustion with NDIR detection instruments to measure COD and BOD which is approved by CPCB and also international approval method refer APHA 5310A / 5301B for waste water application for measuring sum parameter for organic	As per Bid document

S. No.	Tender Reference	Description as per Tender	Queries/clarifications	Reply
		<p>and all analyses should have independent values</p> <ul style="list-style-type: none"> • System should have spectrophotometric probe made of SS316L/Titanium or equivalent • Multi Parameter probe ideal for monitoring of BOD/COD/TSS in Municipal Wastewater • The Sensor should have optimized function check referencing for excellent zero point and long-term stability. • The Sensor should provide compensation of interferences by evaluation of the whole measured spectrum. • System should be UV-Visible double beam spectrometry • System should have unlimited multipoint calibration facility as per CPCB SOP published on CPCB website in July 2020 • System should be complied as per latest CPCB Direction, SOP & Guidelines. • Should produce analytically valid results with precision and repeatability • The instrument/Analyzer should be robust and rugged, for optimal operation under extreme environmental conditions, while maintaining its calibrated status. • The Analyzer should have inbuilt features for automatic water matrix change adaption • The instrument / Analyzer should have onboard library of calibration spectras for different industrial matrices with provision of accumulating further 	<p>pollutants.</p> <p>Please note Indian municipal waste is very complex as many other pollutants also mixes as our drainages are open type and many anthropogenic activities and non-point source pollutants mixes with sewage, hence UV VIS sensor cannot measure many potential contaminants. APHA 5310B method was best can measure any types of pollutants including not easily oxidizable.</p> <p>No analyzer or sensor has any such features for automatic water matrix change adaption. This is only software function based on AI but such technology may give wrong prediction as UV – VIS sensor cannot measure many potential containments which was mentioned by USEPA and DIN 38404-3official documents. It is also possible even such sensor don't work but they may be giving data by their software, as they never directly give their sensor output to the user server , hence many manipulation can occur.</p> <p>As per our knowledge only one particular brand mentions such specs in their product brochure/ web-site which is misleading information. These are only their own statements and such claims cannot be proved</p>	

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		calibration matrices. • For each parameter there should be provision for • independent analysis, validation, Independent parameter calibration & data transmission • Sensor integrated cable should be with IP68 rating and specially designed for submerged installations		
43	Measuring Principle	UV-Visible is double Beam Spectrophotometry with multipoint calibration from wavelength 200 – 750 nm, as per the CPCB Guideline, xenon flash lamp, 256 photo diodes, two beam measurement, complete spectrum	Please allow 680 ⁰ C Catalytic Combustion with NDIR detection instruments to measure COD and BOD which is approved by CPCB and also international approval method refer APHA 5310A / 5301B for waste water application for measuring Organic sum parameter pollutants.	As per Bid document
44	Measurement	Must be direct In-Situ/Submersible measurement in Outlet or Inlet of wastewater treatment plant	Please allow dual channel analyzer to measure inlet and outlet sequentially	AS per Bid document
45	Inbuilt Cleaning	The sensor must have automatic mechanical cleaning facility with integrated system for cleaning at a predefined interval. Chemical cleaning is not recommended.	680 ⁰ C Catalytic Combustion with NDIR detection instruments has best feature cleans sample homonizer for each sample measurement continuously.	As per Bid document
46	Automatic compensation cross sensitivities	turbidity / solids	680 ⁰ C Catalytic Combustion with NDIR detection instruments has capability to measure Organic pollution in sample having suspended solids form. Hence don't need any cross sensitive compensation.	As per Bid document
		TOTAL SUSPENDED SOLIDS (TSS) SENSOR		

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47	Basic Requirement	<p>Continuous Effluent Monitoring of BOD, COD, TSS with UV-V is Full Spectrum dual beam technology</p> <p>System should work on wavelength of 200-750nm as per the CPCB guidelines and all analyses should have independent values.</p> <p>System should have spectrophotometric probe made of SS316L/Titanium or equivalent</p> <p>Multi Parameter probe ideal for monitoring of BOD/COD/TSS in Municipal Wastewater.</p> <p>The Sensor should have optimized function check referencing for excellent zero point and long-term stability.</p> <p>The Sensor should provide compensation of interferences by evaluation of the whole measured spectrum.</p> <p>System should be UV-Visible double beam spectrometry</p> <p>System should have unlimited multipoint calibration facility as per CPCB SOP published on CPCB website in July 2020</p> <p>System should be complied as per latest CPCB Direction, SOP & Guidelines.</p> <p>Should produce analytically valid results with precision and repeatability</p> <p>The instrument/Analyzer should be robust and rugged, for optimal operation under extreme environmental conditions, while maintaining its calibrated status.</p>	<p>Measurement of TSS by using absorbance in Visible range light is not approved by international standard method, the approved method is IR light scattering principal is very good results, hence amend the specs for same.</p> <p>It looks one particular supplier specifications are just copied paste for each and every parameter separately, there is no meaning of specifying all the same specifications for TSS and same is the case COD and BOD though same specs again written separately. Please kindly note and change the same.</p>	As per Bid document

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		<p>The Analyzer should have inbuilt features for automatic water matrix change adaption</p> <p>The instrument / Analyzer should have onboard library of calibration spectras for different industrial matrices with provision of accumulating further calibration matrices</p> <p>For each parameter there should be provision for independent analysis, validation, Independent parameter calibration & data transmission.</p> <p>Sensor integrated cable should be with IP68 rating and specially designed for submerged installations.</p>		
		TOTAL NITROGEN (TN)		
48	Basic Requirement	<p>Total Nitrogen Sensor Specifications:</p> <p>Integrated measurement for parameters compensation should be provided in the Total Nitrogen Sensor.</p> <p>Calibration history should be stored automatically in the sensor.</p> <p>Field calibration facility</p> <p>Signal Output –Digital</p> <p>Sensor Check function/Diagnostics should be available in the Total Nitrogen Sensor.</p> <p>Protection type: IP 68 for both Sensor and Cable</p> <p>Preferably built-in automatic sensor aperture cleaning assembly</p>	<p>Nowhere in the world it has been mentioned that TN can be measured with sensors. The specified multi probe, it looks just by measuring Nitrate and Ammonia with sensors it can calculate or measure TN,. This is absolutely wrong and no scientific evidence.</p> <p>TN = Total Organic Nitrogen (TON)+ Total Inorganic Nitrogen (TIN).</p> <p>The following only two methods can measure TN as per international methods:</p> <ol style="list-style-type: none"> 1. Based on EN 12260/ASTM D-8083-16 (High Temperature @720°C Catalytic thermal decomposition and Chemiluminescence detection) 2. APHA 4500-N (Colorimetric measurement at 546 nm using hydrazine reduction and NEDD color solution 	Please Refer Addendum-1

S. No.	Tender Reference	Description as per Tender	Queries/clarifications	Reply
			<p>after persulphate digestion in alkaline medium)</p> <p>Please kindly amend this specs , we don't understand who is suggesting these specs which is completely misleading to the users with wrong information.</p> <p>Please note as you are accepting chemical method for Total Phosphorus with multi stream , hence kindly allow dual channel analyser for COD,BOD,TN so that single analyser can be used for inlet and out let sequentially.</p>	
		PHOSPHORUS ANALYZER		
49	Measurement Range	Auto-ranging: 0.0016 to 16.3 ppm (Total Phosphorus)	<p>Normally the ranges are specified like 0 – 15 mg/L or 0 – 20 mg/L with specifying minimum detection of</p> <p>We could not understand this odd range specified?</p>	Please Refer Addendum-1
50	CHEMICAL METHOD Phosphate	Phosphomolybdenum blue	<p>The method was not fully specified please note the following</p> <p>Based on reference methods EPA - 365.2 or APHA 4500-P, it specified as follows :</p> <p>Colorimetric measurement at 430/630 nm using sulphuric/ascorbic acid reduction and molybdate colour solution after digestion in acidic medium).</p>	Please Refer Addendum-1
50	CHEMICAL METHOD Background color correction	Compensated at the measurement wavelength	Most important is the analyzer should have digester or oxidizer , please specify otherwise it cannot measure accurately.	Please Refer Addendum-1
		SMART CONTROLLER AND DATA LOGGER		

S. No.	Tender Reference	Description as per Tender	Queries/clarifications	Reply
51	Basic Requirement	<p>Controller should have the latest features of highly advanced Multi Parameter Controller having capability of handling at least 5 (five) Sensor sin a single controller configuration for the parameters COD, BOD, TSS, pH, TN, TP and must be expandable for more parameters & sensors as and when required.</p> <ul style="list-style-type: none"> • With Sensor ID recognition • High EMC interference immunity • Control unit should be latest touch screen display for the quick selection of software functions • Integrated lightning protection • With integrated back up controller function • The system should start automatically after the power is reset to the system (in case of power failure). • The system should have Service mode for cleaning/ calibration/maintenance activities. • High-end IoT (Internet of Things) terminal preferably based on an • industrial PC, minimum IP65 grade. • Large graphic display (minimum 9”) with backlight with adequate contrast for clear viewing in low ambient light and sunlit bright outdoor lighting conditions. • Sensor and station management of up to 20 parameters: automatic cleaning, data logging, sample & calibration incl. history and multipoint calibration, sensor 	<p>This one is particular brand specification, please be generic and give flexibility for supplier to give suitable one.</p> <p>Please allow individual controllers for individual analyzers.</p> <p>By this way analyzer/sensor check, user management, Diagnostics will be easy to perform.</p> <p>Please accept to show the parameters in their respective controllers or also a PC can be arranged with software which will be easy to operate and all the data can viewed, Report can be downloaded, trends can viewed in the dashboard of the monitor.</p>	Please Refer Addendum-1

S. No.	Tender Reference	Description as per Tender	Queries/clarifications	Reply
		<p>function check, user management, easy data transfer via USB-stick etc.</p> <ul style="list-style-type: none"> • The Controller should preferably be able to power all the sensors and terminals or accessories attached to it without having to need any additional power sources in the system for increased protection against lightening and possible electromagnetic interference. The controller shall be low power operation and operable in 220VAC / DC (to be generated within the controller itself). • IoT (Internet of Things) and M2M (Machine to Machine)connectivity: Minimum 1 Gb/s Ethernet, 300 Mb/s Wi-Fi 802.11a/b/g/n and optional worldwide HSPA+ 3G interface, remote control (http), data transfer into cloud via FTP, SSH and TML • Process interface to SCADA via: Modbus RTU/TCP, SDI-12, Profibus DP, analog 0/4-20mA and relay outputs • Integration of third party sensors via: analog 0/4-20 mA and digital(solid state) inputs, Modbus RTU/TCP • Easily extendable: 8 slots to customize I/Os, additional software features like online data validation and event detection optional 		

S. No.	Tender Reference	Description as per Tender	Queries/clarifications	Reply
52	Page 9	Online Data Acquisition, Monitoring & Control System through Local & Remote Terminals, based on GSM/WiFi or any other suitable System, including Supply of Field Instruments, for a minimum of 20 nos S.T.Ps / E.T.Ps”	Online Data Acquisition, Monitoring & Control System through Local & Remote Terminals, based on GSM/WiFi or any other suitable System, including Supply of Field Instruments, for a minimum of 5 nos S.T.Ps / E.T.Ps”	Please Refer Addendum-1
53	Page 9	Bidder or OEM should be directly operational in India minimum last 5 years from the N.I.T. date. with office set up in India.	Bidder or OEM should be directly operational in India minimum last 3 years from the N.I.T. date. with office set up in India."	Please Refer Addendum-1
54	Clause no 1 Page No 9	Having successfully completed the work for “Online Data Acquisition, Monitoring & Control System through Local & Remote Terminals, based on GSM/WiFi or any other suitable System, including Supply of Field Instruments, for a minimum of 20 nos S.T.Ps / E.T.Ps” under any Govt. ,Semi Govt., Govt. Undertaking body, within last five years and having a satisfactory performance certificate not less than 12 months old from the user body. (Performance certificate submitted should be signed from the end user by an officer not below the rank of Executive Engineer, is mandatory).	We have installed in various govt organization but through private players, if you can consider those credentials, it will help others to participate and it will be and healthier competition.	Please Refer Addendum-1
55	Clause no 3 Page No 9	The Bidder/ Bidders’ Manufacturer should have supplied, installed & Commissioned Real Time Sewage Water Quality Monitoring System for stations with minimum 5 water quality Parameters.	Initially, as per CPCB guidelines, only 4 quality parameter were there. We can supply any sensor now. But kindly consider 4 quality parameters for qualifying criteria	Please Refer Addendum-1

S. No.	Tender Reference	Description as per Tender	Queries/clarifications	Reply
56	Clause no 9 Page No 9	The Minimum required annual turnover in respect of Procurement of Supply, Installation, and commissioning of goods for the successful Bidder/ Bidders' Manufacturer in the last three (3) years shall be minimum INR 10 Crore (Ten Crore)	due to covid , there is downfall in turnover, so kindly consider as 8 crore as qualifying criteria	Please Refer Addendum-1