File Ref. No. PUR/IICT/DMS/0756/24-25 **Dt: 22-08-2024**
CPPP Tender ID: 2024_CSIR_204819_1

Minutes of Pre-Bid Conference (PBC) held on 22-08-2024 for proposed procurement of "Supply, installation and commissioning of "AUTOMATIC METHANE POTENTIAL TESTING SYSTEM"

Chairpersons / Members of the Technical Sub Committee (TSC) present during PBC including domain experts present during PBC:-

1. Dr. N.Lingaiah, Chairman
2. Dr.PratyayBasak, Member
3. Dr.G.Jithender Reddy, Member
4. Sri. D. Venkateswara Rao, Member
5. Dr.SreepriyaVedantam, Member
6. IO Dr. Sameena Begum

Representatives of the following firm attended the PBC:

1. No firm has reported for PBC meeting.
2. However, on the same day subsequently, queries were received from M/s Arka BRENStech Pvt. Ltd through email dated 22/08/2024 and CSIR-IICT's response to the queries are attached as Annexure – A.

All bidders are requested kindly to take a note of the changes, if any, in tendered specifications subsequent to **PBC** held today, i.e. 22-08-2024 before they start submitting their online bids through CPPP.

(Dr.Pratyay Basak) 29/08/2024
Member

(Dr Jithender Reddy)
Member

(Dr.Sreepriya Vedantam)
Member

(Sri. D. VenkateswaraRao)
Member

(Dr. Dr. Sameena Begum)
IO

(Dr. A. Gangagni Rao)
PL

(Dr N Lingaiah) 29/8/2024
Chairperson

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The following changes has been made in the tendered specification subsequent to PBC held on 22.08.2024

S. No.	Existing Specifications	Revised/Amended Specifications
1	**Biomethane Potential Testing Machine – I (Batch)** • The machine should be capable of handling both organic solid and liquid wastes (food waste, lignocellulosic biomass, organic industrial effluents) for comprehensive biomethane potential testing. • The biomethane potential testing machine should be equipped with bioreactors with mixers, suitable inlet and outlet arrangement for feed in, gas collection port and digestate collection container. • MOC of reactors: HDPE/Glass/Stainless steel • Mode of operation: Batch • Feeding: Manual • No. of reactor in the set: 5 – 20 • Volume of Reactor: 1 - 2 L • Mechanical mixing between 50 – 250 RPM (Variable Speed) • Power supply: 220 VAC • Operational pressure: between 0.1 to 1 bar • Operational Temperature: between 20 °C to 75 °C with precision of ± 0.1 °C • Biogas measurement: Volumetric water displacement method with required tubing's • Measurement resolutions: 5 – 10 ml • HMI/PLC unit with software controlled automatic conversions and calculations **Biomethane Potential Testing Machine – II (Continuous)** • The machine should be capable of handling both organic solid and liquid wastes (food waste, lignocellulosic biomass, organic industrial effluents) for comprehensive biomethane potential testing. • The biomethane potential testing machine should be equipped with bioreactors with mixers, suitable inlet and outlet	**Biomethane Potential Testing Machine – I (Batch)** • The machine should be capable of handling both organic solid and liquid wastes (food waste, lignocellulosic biomass, organic industrial effluents) for comprehensive biomethane potential testing. • The biomethane potential testing machine should be equipped with bioreactors with mixers, suitable inlet and outlet arrangement for feed in, gas collection port and digestate collection container. • MOC of reactors: HDPE/Glass/Stainless steel • Mode of operation: Batch • Feeding: Manual • No. of reactor in the set: 5 – 20 • Volume of Reactor: 1 - 2 L • Mechanical mixing between 50 – 250 RPM (Variable Speed) • Power supply: 220 VAC • **Operational pressure: Between -50 to 50 mbar** • **Operational Temperature: between 20 °C to 60 °C with precision of ± 0.2 °C** • Biogas measurement: Volumetric water displacement method with required tubing's • Measurement resolutions: 5 – 10 ml • HMI/PLC unit with software controlled automatic conversions and calculations **Biomethane Potential Testing Machine – II (Continuous)** • The machine should be capable of handling both organic solid and liquid wastes (food waste, lignocellulosic biomass, organic industrial effluents) for comprehensive biomethane potential testing. • The biomethane potential testing machine should be equipped with bioreactors with mixers, suitable inlet and outlet arrangement for feed in, gas collection port and digestate

	arrangement for feed in, gas collection port and digestate collection container. The reactor should be equipped with temperature sensors • Reactor Type: Continuous stirred tank reactors with continuous automatic feeding system, digestate collection and gas withdrawal mechanism • MOC of reactors: Stainless steel • Mode of operation: Continuous • No. of reactor in the set: set of 4 or 6 or 8 reactors • Volume of Reactor: 5 - 10 L • Feeding: Automatic feeding with a feeder volume of 1 – 2 L • Feed flow rate: 0.1 to 1 L/day • Mechanical mixing between 50 – 250 RPM (Variable Speed) • Power supply: 220 VAC • Operational pressure: between 0.1 to 1 bar • Operational Temperature: between 20 °C to 75 °C with precision of ± 0.1 °C • Biogas measurement: Gas flowmeter with real-time monitoring system • PLC unit with Software controlled automatic conversions and calculations **General Requirements:** • Installation to be done in CSIR-IICT followed by its demonstration to project staff • Standard operating procedure manual • Warranty on the item and supply of spares	collection container. The reactor should be equipped with temperature sensors • Reactor Type: Continuous stirred tank reactors with continuous automatic feeding system, digestate collection and gas withdrawal mechanism • MOC of reactors: Stainless steel • Mode of operation: Continuous • No. of reactor in the set: set of 4 or 6 or 8 reactors • Volume of Reactor: 5 - 10 L • Feeding: Automatic feeding with a feeder volume of 1 – 2 L • Feed flow rate: 0.1 to 1 L/day • Mechanical mixing between 50 – 250 RPM (Variable Speed) • Power supply: 220 VAC • **Operational pressure: Between -50 to 50 mbar** • **Operational Temperature: between 20 °C to 60 °C with precision of ± 0.2 °C** • Biogas measurement: Gas flowmeter with real-time monitoring system • PLC unit with Software controlled automatic conversions and calculations **General Requirements:** • Installation to be done in CSIR-IICT followed by its demonstration to project staff • Standard operating procedure manual • **Comprehensive onsite warranty for 12 months on the item and supply of spares**

All the other tender terms remain unchanged. Bidders may please submit their bids accordingly.

29/08/2024
(Dr.Pratyay Basak)
Member

(Dr Jithender Reddy)
Member

(Dr.Sreepriya Vedantam)
Member

(Sri. D. VenkateswaraRao)
Member

(Dr. Dr. Sameena Begum)
IO

(Dr. A. Gangagni Rao)
PL

29/8/2024
(Dr N Lingaiah)
Chairperson

Annexure – A

Inquiriesreceived and responsesfortheTENDERNo.-PUR/IICT/0756/24-25/EQPT
Supply,Installationandcommissioningof"AutomaticMethanepotentialtestingsystem(AMPTS)Batchand Continuous"

S. No	Observations			Queries received from the bidder	Response from CSIR-IICT
1.	Warranty	Page-60 4.3-InspectionandTesting 4.3.1- General 1.TotalCostmustinclude24 months comprehensiveonsite warranty (labor + parts, etc.)onthecompletesystem.	AtPage62 4.4Warranty– 12monthscomprehensiveonsitewarrantyfromthe date of successful installation and finalacceptanceofthesuppliedsystembyCSIR- IICT user.	Whichistobeconsidered12monthsor 24 months.	Comprehensive onsite warranty for 12 months can be considered fromthe date of successful installation and finalacceptanceofthesuppliedsystembyCSIR- IICT user
2.	Technical Specifications	Page59 4.2-ScopeofSupplyand incidental work Detailed Technical Specifications Biomethane Potential TestingMachine–I(Batch)	Themachineshouldbecapableofhandling both organic solid and liquid wastes (food waste, lignocellulosic biomass, organic industrial effluents) for comprehensive biomethane potential testing.	Ok	-
			The biomethane potential testing machine should be equipped with bioreactors with mixers,suitableinletandoutletarrangement for feed in, gas collection	The biomethane potential testing machineshouldbeequipped with bioreactors with mixers with speed	Each reactor in the equipment should have arrangement of sample ports to collect the samples for analysis, gas collection ports, mixer for

			port and digestate collection container.	controller, suitable inlet arrangement for feed in, gas collection port and digestate collection container.	mixing the feed material at a set RPM.
			MOCofreactors:HDPE/Glass/Stainless steel	Ok	-
			Modeofoperation:Batch	Ok	-
			Feeding:Manual	Ok	-
			No.ofreactorintheset: 5–20	No.ofreactorintheset: 18 working (max).	Acceptable, as the number of reactors fall within the range given in the general specifications
			VolumeofReactor:1 -2L	VolumeofReactor:0.5-1L(max)	Reactor volume with less than 1 L is not acceptable
			Mechanicalmixingbetween50–250RPM (Variable Speed)	Mechanicalmixingbetween 50– 220RPM(Max) (VariableSpeed)	The RPM falls within the range specified in the general specifications and hence is acceptable
			Powersupply:220VAC	Powersupply:12V DC/1.0A with100-240VAC	Acceptable, as the given range also meets the requirement of 220VAC
			Operationalpressure:between0.1to 1 bar	Operationalpressure:between-50 – 50 mbar	Operational pressure between -50 to 50 mbar is acceptable. The general specifications will be updated accordingly
			OperationalTemperature:between 20°Cto75 °C with precision of ± 0.1 °C	Operational Temperature: Upto 60'Cwithprecisionof±0.2° C	Variable temperature between 20 to 60°C is acceptable with a precision of 0.2°C
			Biogasmeasurement:Volumetricwater	Ok	-

			displacementmethodwithrequiredtubing's		
			Measurementresolutions:5–10ml HMI/PLCunitwithsoftwarecontrolled automatic conversions andcalculations	Measurementresolutions:9ml	The measurement resolution is within the range specified in the general specifications
3.	Technical Specifications	Page59 4.2- ScopeofSupplyand incidental work Biomethane Potential Testing Machine – II (Continuous)	Themachineshouldbecapableofhandling both organic solid and liquid wastes (food waste, lignocellulosic biomass, organic industrial effluents) for comprehensive biomethane potential testing.	Ok	-
			The biomethane potential testing machine should be equipped with bioreactors with mixers,suitableinletandoutletarrangement for feed in, gas collection port and digestate collection container. The reactor should be equipped with temperature sensors.	Ok	-
			ReactorType:Continuousstirredtankreactors with continuous automatic feeding system, digestate collection and gas withdrawal mechanism	Ok	-
			MOCofreactors:Stainlesssteel	MOC of reactors: HDPE/Glass/Stainless steel	Stainless Steel only
			Modeofoperation: Continuous	Ok	-
			No.ofreactorintheset:setof4or6or8 reactors	Ok	-

			VolumeofReactor:5 -10L	VolumeofReactor: upto2L	Not acceptable as the volume required is between 5 to 10 L
			Feeding:Automaticfeedingwithafeeder volume of 1 – 2 L	Feeding:Manual	Not acceptable as automatic feeding with feeders is required
			Feedflowrate: 0.1to1L/day	Feedflowrate:Asperexperiment required OLR	Not acceptable as the designed working flowrate is between 0.1 to 1 L/day
			Mechanicalmixingbetween50 –250RPM (Variable Speed)	Mechanicalmixingbetween50– 220RPM(Max) (VariableSpeed)	The RPM is within the range specified in the general specifications
			Powersupply:220VAC	Ok	-
			Operationalpressure:between0.1to 1 bar	Operationalpressure:between-50– 50 mbar	Operational pressure between -50 to 50 mbar is acceptable. The general specifications will be updated accordingly
			OperationalTemperature:between20°Cto 75 °C with precision of ± 0.1 °C	Operational Temperature: Upto 60'Cwithprecisionof±0.2°C	Variable temperature between 20 to 60°C is acceptable with a precision of 0.2°C
			Biogas measurement:Gasflowmeter with real-time monitoring system	Ok	-
			PLCunitwithSoftwarecontrolledautomatic conversions and calculations	Inbuiltsoftwareforautomatic control.	Acceptable
4.	Form-2	Page-74 Form-2		Requiredifftheapplicantfallin Class-II categoryofMIIpolicy	Manufacturer's authorization form required
5.	Form-7	Page-79 Form-7		WhetherthetheForm7shouldbesubmitted with the tender	Yes

				documents along with technical proposal because it includes informationabouttheprodu ct'spriceand discount."	