

NO: MTL/PUR/30/EVC-MTR/19-20/Pt.I/11

Date: 27-07-2020

To

**Type of Tender : Limited single bid tender.**  
**Bid closing date : 18/08/2020 at 14.00 hrs.(IST)**  
**Bid opening date :**  
**EMD : As per annexure-I of the NIT**

**ASSAM GAS COMPANY LIMITED** invites quotation for supply of the following items the detail technical specification & Data Sheet given at Annexure – II & III

Sl No	Item Code	Item Description	Unit	Qty
1	0209-8131	Turbine Meter with EVC, G-400	No	05

**Terms & Conditions for Limited Tender**

**1. The bidder should quote their rates with applicable GST, freight etc. as per the FORMAT Given below:-**

Item No./Mat. Code	Material Description	Unit	Rate/Unit (INR) (A)	Freight @% (B)	GST @% (C)	Amount/Unit INR (FOR Duliajan) (A)+(B)+(C)=D	Qty (E)	Total Amount (INR) (D)X (E)

2. The TOTAL AMOUNT shall be in figure as well as in words. No overwriting shall be allowed In case of discrepancy, the rates quoted in words shall be considered to be correct.

3. Sealed envelope containing the bid duly filled in as per above Format on bidders letter head should reach Dy. General Manager (Materials), Assam Gas Company Limited, Duliajan- 786602, Dist.Dibrugarh (Assam) on or before the bid closing date and time as mentioned above. If the bid closing date happens to be holiday /bandh called then the next full working day will considered as bid closing day.

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4. The Sealed envelope containing the bid shall be marked at the top of the envelope with the following.

- a) AGCL Tender No.
  - b) Bid Closing date
  - c) Bidder's Name
  - d) Brief description of supply
- b) Sealed envelope without mention of the above information in the envelope shall not be considered for bid evaluation.

5. **Validity** : The bid must be valid for 180 days from the date of opening of the bid.

6. **Delivery**: The ordered materials shall have to be delivered at AGCL's stores, Duliajan within 90 (Ninety) days from the date of receipt of the Purchase Order by Fax/Email etc. FOR other than Duliajan shall not be considered for evaluation.

7. **Dispatch**: The eligible bidder shall have to dispatch the materials through their transporter whose branch office is located at Duliajan taking maximum care against any damage in transit. The goods should be properly packed to avoid any damage during transit. No additional charge shall be allowed for Packing & Forwarding. The goods should further be insured for the transit period from Vendor's location up to destination in order to avoid any transit loss, damage etc. The insurance is in bidder's scope. Transit insurance document is to be provided at the time of claiming the payment.

8. **EMD**: The bidder has to submit EMD as per Annexure I in the form of Bank Draft drawn in favour of Assam Gas Company Ltd. Payable at Duliajan. The bidder has to pay GST @18% of EMD value along with EMD. The EMD will be released on completion of complete delivery and acceptance of materials. The EMD of unsuccessful bidders shall be refunded after issue of the Purchase Order to the successful bidders. The EMD will be forfeited if the bidder fails to comply as per the P.O.

9. **Liquidated Damage** : The completion of delivery of the entire quantities of Materials as mentioned above within the schedule date of completion of delivery shall be deemed to be the essence of the contract. In case of delay in delivery of the materials within the stipulated period, unless such delay is attributable to owner (AGCL) or due to Force Majeure, there will be reduction in contract value @0.5% (point five percent) for undelivered quantities of materials for each week of delay or part thereof subject to maximum of 5% (five percent) of the total contract value as liquidated damage. The Liquidated Damage charge shall be recovered from the supplier's bill invoice.

#### **10. INSPECTION AND TESTING:**

- Inspection shall be carried out as per Owner's Technical specification.
- Third party Inspection Agency shall carry out stage wise inspection during manufacturing stage/final inspection.
- Supplier shall furnish all the certificates as mentioned in Annexure-II & III from specified authority as per specified standard. If relevant internal test/inspection reports as per owner's Technical specification for 100% material at the time of final inspection of each lot of material should also be furnished.
- Even after third party inspection, owner reserves the right to select a sample randomly from each manufactured Batch and have these independently tested. Should the test results fall outside the limits specified in AGCL Technical specification, then AGCL reserves the right to reject all production supplied from the Batch.

The Inspection test Plan and Factory Acceptance Test (FAT) procedure will also be forwarded to AGCL for their review and approval. No additional Inspection/testing charges will be paid to supplier for arranging the Inspection test.

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The materials should be inspected by any of the following third party inspection agency given below at supplier's cost and inspection report shall be enclosed along with shipping/dispatch documents.

- A) DNV
- B) LLOYDS
- C) Dr. Amin Controllers Pvt. Ltd.
- D) SGS
- E) M/s Superintendence Co. of India (P) Ltd.
- F) TUV

11. **Guarantee/Warrantee** : The supplier warrants that the goods supplied under the contract are new, unused and most recent of current models and that they incorporate all recent improvements in design and materials provided otherwise in the contract documents. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials or workmanship or from any act of omission of the supplier that may develop under normal use of the supplied goods.

Failure of the successful bidder to comply with the requirement shall constitute a breach of contract, cause for forfeiture of Bid security & other measures as per standing rules of the company.

All materials shall be supplied strictly in accordance with the specifications, data sheets, other conditions stated in the order. The supplier shall give the guarantee of material supplied for twelve months after commissioning of the materials or eighteen months from the date of the last shipment whichever is earlier.

12. **Performance Bank Guarantee**: Within 15 (Fifteen ) days from receipt of notification of award/Fax of acceptance from the Purchaser, the successful bidder shall; furnish a performance bank guarantee for an amount equal to 10% of the contract value towards faithful performance of the contractual obligations and performance of the materials. The Bank guarantee shall be from any Indian Nationalized/Scheduled bank registered with Reserve Bank of India. The PBG shall be valid for three months more than contract liability period. The PBG shall be furnished on an appropriate value of stamp paper. If the successful bidder fails to deposit PBG within 30 ( Thirty) days from the date of issue of the P.O., the P.O. shall be treated as cancelled.

13. **Payment**: 100% Payment shall be made to the supplier within 30 (thirty) days after receipt and acceptance of materials against submission of original invoice in triplicate along with all relevant documents as per NIT & P.O.

14. Conditional bids are liable to rejection at the sole discretion of the Company.

15. **Applicability of Law & Jurisdiction** : The Order shall be governed and interpreted in accordance with the applicable laws of India and Dibrugarh Courts in the State of Assam shall have exclusive jurisdiction

16. The Company reserves the right of rejecting any or all bids accepting any bid in part, without assigning any reason.

Thanking You,

Yours faithfully,

For and on behalf of **MANAGING DIRECTOR**

**Copy to:** 1. Chief Manager (System)-A soft copy of the NIT is e-mailed to you for web - hoisting in AGCL website.

**ASSAM GAS COMPANY LIMITED**  
**( A Govt.of Assam Undertaking )**  
**P.O.Duliajan – 786 602 Assam**  
**E-mail : agcmat2@ gmail. com. Fax No. 0374-2800557**

**ANNEXURE – I**  
**EARNEST MONEY DEPOSIT : (EMD)**  
**EMD to be deposited by the bidder is as follows:**

<b><u>Bid Offer VALUE ( Rs.)</u></b>		<b><u>EMD ( Rs. )</u></b>
<b>Upto</b>	<b>50,000</b>	<b>NIL</b>
<b>50,001 to</b>	<b>1,00,000</b>	<b>2000.00</b>
<b>1,00,001 to</b>	<b>2,00,000</b>	<b>4000.00</b>
<b>2,00,001 to</b>	<b>5,00,000</b>	<b>10,000.00</b>
<b>5,00,001 to</b>	<b>10,00,000</b>	<b>20,000.00</b>
<b>10,00,001 to</b>	<b>25,00,000 &amp;above</b>	<b>50,000.00</b>

## Annexure – I

### Annexure –I for Technical Specification Sheet of Field Mount Flow Computer Ref: PO. No. MTL/PUR/Scanner Flow Computer/2018-19/95 dtd. 22/04/2019

<b>Technical Description:</b>		
SL NO	TECHNICAL DESCRIPTION	
1	Memory	SRAM: 8MB SDRAM:128 MB FLASH : 128 MB
2	CPU Diagnostics	Battery voltage monitor, external voltage monitor, SRAM battery status
3	SRAM Battery	Lithium coin cell type, Life expectancy of 5-7 years with power;10,000 hours without power
4	Mounting	Direct Mount- To Manifold on pipeline Indirect Mount - 2" Pipe or pole Mount
5	Installation	C1D2/Zone 1
6	Enclosure	Flame proof/ex-proof Enclosure, IP66/NEMA 4× Electronic Housing Materials – Cast Aluminium Sensor Enclosure – Stainless steel
7	Wiring	Size 12 to 28 American Wire Gauge (AWG) (0.3 to 2.0 mm diameter)
8	Wiring Access	4 conduit entry points, <sup>3</sup> / <sub>4</sub> in. NPT(standard) M 20 (optional)
9	Power Supply	
	Battery Option	Optional Rechargeable Lead Acid Battery – Internal mounted 2.9 Ah 6.0 Vdc battery Battery Temperature rating - 25° C to 60° C The battery should be able to power the unit for up to 20 days without any solar charging & can be charged by a 6 –watt solar panel or from a DC supply for backup
	Solar Option	6 watt 6 Vdc solar power
10	Input voltage	5.7 Vdc to 30 Vdc
	Inbuilt sensor Option	DP range: 0 to 250 Inches H2o (623 mbar)
	Static Pressure Input Options	SP Range 1: -14.2 to 500 psig
	Temperature Input (RTD/PRT)	Type: 2-,3-, or 4- wire (software selectable) Measuring Range: -50 to +250° C Resolution: 24 bits

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11	Accuracy, Uncertainty, Measurement Error	DP: Base $\pm 0.075\%$ Span
		DP: Static P effect Zero: $\pm 0.05\%$ USL per 1000 psi
		DP: static P effect Span: $\pm 0.02\%$ USL per 1000 psi
		DP: Temp effect: $\pm (0.0175 \text{ USL} + 0.1\% \text{ span})$ per 28C
		DP: Stability: $\pm 0.0125\%$ USL for 5 years
		SP Only: Base $\pm 0.075\%$ Span
		SP Only: Temp effect: $\pm (0.05\% \text{ USL} + 0.125\% \text{ Span})$ per 28C
		Temp: Base: $\pm 0.07^\circ\text{C}$ (-30 to + 60C) $\pm 0.1^\circ\text{C}$ (-60 to + 200C)
		Temp: Ambient T Effect $\pm 0.017^\circ\text{C}$ per 10C
		Temp: CVD curve fit - YES
		AI: Base Accuracy $\pm 0.05\%$ FS
		AI: Temp Effect $\pm 0.05\%$ FS per 10 C
		Fault Mode – Fixed or Last Good
		12
13	Expansion I/O (Optional)	6 IO Point with Mix of AI/AO/DO/DI/PI
14	Communication Ports	3 x Serial Comm Ports, Min 1 x RS232 and 2 x RS232/ RS485 Ports 1 x Optional Ethernet 10/100 Base –T Protocol Support: DNP3 (Level 3), MODBUS Master and Slave
15	Host Communication	WiFi 802.11 b/g
16	Computational Capability	Corrected Volume flow rate calculation as per AGA 3/ISO 5167 standard AGA 7 2006 (pulsed turbine, PD, ultrasonic, and Coriolis meter) AGA 11 2013
17	Engineering Units	US and/or Metric
18	Display capability	Any one of the following at a time as a min: Uncompensated & Compensated vol Flow rate, integrated volume & mass, mass flow rate, density/sp. Gravity, pressure, temp, energy rate, data entry, error codes, selected parameters codes, alarms (process & systems) including diagnostic message, engg. Units
19	Display Type:	Optional backlit liquid crystal display, 20 characters per line; 4 lines in display.
20	Calculation SCAN Time	1 Sec for all calculations
21	Calculation Resolution	64 Bit with Double Precision Rates and Totals
22	Meters Runs	1 or 2 DP / Linear Meter
23	Other Calculations	PID and Simple logic Calcs
24	Certification Approvals	UL, ATEX, IEC Ex NMI, Measurement Canada DGMS Approval
25	Operating temp	$-40^\circ\text{C}$ to $+ 80^\circ\text{C}$

**MANAGING DIRECTOR**

## Annexure-II

<b>Specification required for Turbine Gas Meter G-40,</b>				
<b>SI No</b>	<b>Criteria</b>	<b>Specifications</b>		
01	Regulated Operating Pressure	0.2 Bar (g) to 4.0 Bar (g), As per ANSI 150#		
02	Maximum Pressure	Max Working Pressure 8.0 Bar (g), and design pressure as ANSI 150		
03	Flange size, Max Flow (Qmax) and Rangeability	<b>Meter model</b>	<b>Flange size (as per ANSI 150, 150#)</b>	<b>Max Flow (Qmax)</b>
		G 40	2" (DN 50)	65 m3/hr
04	Medium	Natural Gas		
05	Meter body, rotor	Body: Ductile Iron/ Cast Steel EN-GJS-400-15 (GGG40) Rotor: Aluminum		
06	Specific Gravity	0.57		
07	Approval	EN/OIML/MID certificate for the product offered conforming to EN 12261		
08	Facing & Finish	ANSI 150#, RF SERR FINISH		
09	Material-Body	Compliant to PED 97/23/EC		
10	Bearing & other wetted parts	SS316		
11	Type	Meter should have such type design for easy mounting of EVC		
12	Accuracy	As per EN 12261 standard $\pm 2\%$ from Qmin to 0.2 Qmax and $\pm 1\%$ from 0.2 Qmax to Qmax		
13	Anti Temper	LF pulser should not be temperable. i.e. must be inductive type		
14	Temperature range	- 30 degree C to + 60 degree C as per ATEX/PED		
15	Straightening vanes- Type	REQD- INTEGRAL		
16	Output	One Inductive type		
17	Intrinsically Safe	YES, Ex II 1/2 G Ex ka IIC T5		
18	Mounting	ON METER		
19	Totalizer	9 DIGIT		
20	Flow direction	Left to Right		
21	Thermowell	Should be in-built		
22	Lubrication/ Oil Pump	Should be in-built		
23	Related Certificates to be submitted	(a) EN type approval certificate for Turbine Meter from authorized certifying body		

		<p>(b) EN/ OIML/MID certificate issued by PTB, Nmi or equivalent for Turbine Meter.</p> <p>(c) Test &amp; Calibration certificate issued by PTB, Nmi or equivalent authority for individual meters</p> <p>(d) Technical documents, brochures</p> <p>(e) User manual and supporting documents</p>
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**Annexure-III**

<b>Data Sheet for Electronic Volume Corrector for G-40 Gas Flow Meter</b>		
<b>SI No</b>	<b>Criteria</b>	<b>Specifications</b>
01	Make & Model	Specification Requirement
02	Standard	Offered EVC must be approved by NMi as per EN12405 for custody transfer application of Natural Gas. According to European regulation, the EVC PTZ bears the CE marking and complies with the following directives: 94/9/EC for potentially explosive atmospheres directive & 89/336/EEC for electromagnetic directive
03	Approval	Vendor to furnish type approval & certificates details
04	Power supply option	Internal battery operated
05	Service Media	Natural Gas- non corrosive
06	Area classification	As per IEC 79: Zone I, Group IIC, T4 (without internal modem) and Group IIB T3 (with internal modem)
07	Protection Class	Enclosure: IP 65
08	Temperature Sensor (External Type)	Temperature shall be an external 4 wire PT1000 sensor in accordance with IEC/EN60751 standard. The sensor, equipped in a stainless steel tube having an IP67 protection degree, can be inserted into a thermowell of 6 mm diameter (recommended 1/3 to 2/3 of the ID of the pipe). The sensor is provided with a cable of length 2.5m. Its operating range is (-) 40 to (+) 70 deg C.
09	Pressure Sensor (External Type)	Measuring pressure range 0.2 to 10 bar (a) with an IP66 protection level as per EN60529. The sensor connects via a 2.5 cable to a pressure tapping point provided in the TFM or RPD meter through a G ¼ “ BSP (M) Connector. The sensor can withstand according EN12405 an overpressure of 1.25 times its maximal pressure [i.e. up to 12.5 bar (a)] for 30 minutes.
10	Pressure sensor rangeability	1:11 or better
11	PTZ compressibility Factor	Following formula should be programmable: SGERG 88, AGANX 19 (std.), AGANX 19 (modified), AGA 8 Gross method 2, 16 coefficients (table of Z), AGA 8 detailed and fixed compressibility value.
<b>SI No</b>	<b>Criteria</b>	<b>Specifications</b>



12	Accuracy	According to EN 12405, the EVC must have accuracy on conversion within +/- 0.5% at reference conditions. Typical accuracy is better than 0.25%.
13	Inputs	The EVC accepts LF pulse inputs from the TFM
14	Power supply option	The EVC should be powered by a lithium battery pack, which is certified for intrinsic safety and has an autonomous life of 5 years under typical use. The battery pack can be changed in hazardous area without interrupting the normal operation of the device.
15	Display	The EVC should have a large graphical LCD, which allows display of all metrological and alarm status, iconic indications, compressibility ratio, conversion factor, measured volume and converted volume.
16	Communication Port	Two communications port
		Serial RS232 port, which allows either a local communication with a laptop or a PC through an intrinsic safe isolation OR a remote communication to SCADA interface through GSM modem using Modbus protocol. For G-100 Meter, provision for RS-485 port is also to be provided in addition to serial RS232 port.
		Optical port, which allows local communication with a laptop or PC via a Windows based software for uploading/ downloading of data or software.
17	Operation during communication	The EVC should be able to perform its metrological function even while the communication is in progress & it has memory to store the data pm Hourly, Daily & Monthly basis
18	Parameters to display	Corrected flow rate in sm <sup>3</sup> /hr, Nm <sup>3</sup> /h
		Corrected totalized volume in sm <sup>3</sup> , Nm <sup>3</sup>
		Pressure in bar
		Temperature in deg C
		Uncorrected flow rate in sm <sup>3</sup> /hr, Nm <sup>3</sup> /h
		Uncorrected total volume in m <sup>3</sup>
		Alarm output for unit malfunctioning
		Low battery alarm
19	Data to store	Monthly log last 24 months minimum
		Daily Log 120 days Minimum
		Hourly log 1440 Hrs Minimum
		Interval log up to 5900 records
		Event log for 600 events
20	Data Protection	Hardware lock & password access should be available
21	External Sealing provision	Should be available

22	Related Certificates/ documents required	(a) Approval Certificate (b) Technical documents, brochures (c) User manual and supporting documents
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