CITY GAS DISTRIBUTION DEPARTMENT
Assam Gas Company Ltd.
(A Govt. of Assam Undertaking)
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CIN OF AGCL: U11101AS1962SGC001184

EOI No. C&P/CGD/EOI/25-26/01 **Date: 18/03/25**

Expression of Interest (EOI) for "FOR SUPPLY OF G4, G6, G10, G16 AND G25 COMMERCIAL GAS METER"

1. INTRODUCTION

Assam Gas Company Ltd. (AGCL), a Govt. of Assam Undertaking was incorporated on March 31, 1962 in Shillong as a limited company wholly owned by the Government of Assam to carry out all kinds of business related to natural gas in India. The first gas transportation business started in the year 1967 with supply of natural gas to Namrup Thermal Power Station of APGCL. Subsequently, the company grew from strength to strength and stands today as one of the premier natural gas transmission and distribution companies in India.

Assam Gas Company Ltd. has a network of underground natural gas trunk and distribution pipelines that serves about 500+ industrial consumers, 1200+ commercial establishments and about 58,000+ domestic consumers in the districts of Tinsukia, Dibrugarh, Sivasagar, Charaideo, Jorhat, Golaghat and Majuli in Assam. It has its present headquarters in the oil town of Duliajan in the district of Dibrugarh, Assam, India. The Company has a capacity to transport over 5.5 MMSCMD of natural gas. Over the years AGCL has established branch offices in 12 (twelve) different locations in Assam.

AGCL is planning to procure Approx 1000 nos. of different types of Commercial Meters. In this connection, AGCL intends to invites prospective bidders to participate in the EoI along with one presentation covering the below details.

2. PRODUCT SPECIFICATIONS

2.1 G4 Gas Meter:

Max Flow Rate: 6 m^3/h
Application: Primarily used for residential or small commercial spaces (apartments).
Operating Pressure: 0.5 bar
Gas Type: Typically for natural gas.

Other Features: Designed for lower flow rates, suitable for homes or smaller-scale applications.

2.2 G6 Gas Meter:

Max Flow Rate: 10 m^3/h
Application: Suitable for malls, restaurants, hotels, and small commercial establishments.
Operating Pressure: 0.5 bar
Gas Type: Typically for natural gas.

Other Features: A higher flow rate than the G4 meter, designed for slightly larger commercial applications.

2.3 G10 Gas Meter:

Max Flow Rate: 16 m^3/h
Application: Industrial use.
Operating Pressure: 0.5 bar
Gas Type: Typically for natural gas.

Other Features: Larger flow rate suited for medium-sized industrial operations.

2.4 G16 Gas Meter:

Max Flow Rate: 25 m^3/h
Application: Industrial use.
Operating Pressure: 0.5 bar
Gas Type: Typically for natural gas.

Other Features: Even larger flow rate than the G10, used for more significant industrial operations with higher gas consumption.

2.5 G25 Gas Meter:

Max Flow Rate: 40 m^3/h
Application: Industrial use.
Operating Pressure: 0.5 bar
Gas Type: Typically for natural gas.

Other Features: The largest flow rate among these meters, designed for high-demand industrial gas applications.

3. DESIGN CRITERIA

3.1 General

All gas meters shall be designed for continuous operation in the given site conditions with the following design criteria:

- Ease of operation and maintenance;
- Suitability for applicable environmental conditions;
- Suitability for operation in the designated classification of hazardous areas;
- State of art proven technology and instrumentation;
- Safety to operating and maintenance personnel;
- Safety to connected equipment;
- High Redundancy with high reliability (high MTBF and low MTTR) and no single point of failure;
- Minimum cost of ownership.

3.2 Environmental Conditions

The equipment considered and the complete installation shall be suitable for continuous operation under the ambient conditions prevailing at site.

3.3 EMC Compliance

All gas meters and accessories shall be immune to Radio Frequency Interference (RFI) and Electro Magnetic Interference (EMI). The design and installation of all electrical /electronic equipment shall meet the RFI/EMI requirements according to IEC 61000, emission (IEC61000-6-4) and immunity (IEC-61000-6-2) requirements for an industrial environment.

3.4 Hazardous Area Certification

Gas meters shall be certified for use in designated areas when installed in hazardous area classified zones as per IEC 60079.

3.5 Ingress Protection

Gas meters shall have ingress protection to IP 54 or better in accordance with IEC 60529.

4. TECHNICAL REQUIREMENTS

Gas meters shall be installed at commercial and industrial applications in order to meter the gas consumed by the Customers. Gas meter type shall be decided based on flow capacity, pressure rating and accuracy requirements. These meters shall be designed to operate on clean and dry natural gas. This document specifies all types of gas meters used for commercial and industrial applications in CGD industry. However, the exact requirement shall be as defined in Material Requisition and Datasheets.

4.1 Diaphragm Meter

- Diaphragm meter shall be suitable for measurement of low gas flows in domestic and light commercial metering applications.
- Diaphragm meter shall be designed in accordance to EN 1359:1999 + A1 Amendment 2006 or latest and shall be suitable for outdoor / indoor installations, tamper proof and corrosion resistance for a life period of 10 years.
- Diaphragm meters fall into the positive displacement category as they have well defined measurement compartments that alternately fill and empty as the meter reciprocates or rotates.
- The meter will indicate volumetric flow based on the gear ratio, number of revolutions and fixed volume displaced in each meter revolution.
- Diaphragm meter shall have an accuracy class of 1.5 and rangeability of 150:1 or better. Pressure drop across the meter shall be less than 2 mbar at Qmax.
- Ingress protection of meter shall be IP 54 or better.
- Material of construction of meter shall be steel with suitable coating on inside and outside for corrosion protection of casing.
- Diaphragm material shall be polyester fabric coated with rubber for an endurance life cycle of 80,000 cum.
- Meter shall be in accordance with EN 1359.
- Diaphragm meter shall have 8 digit mechanical index (As per EN1359 – Units in m^3). Index shall be provided with sealing arrangement to avoid tampering.
- Back-run stop is to be provided to prevent the meter from running backwards in case of tampering or back flow condition.
- Transmission system shall be tamperproof non-magnetic with transmission rate of 0.01 m^3 / rotation for G4 & G6 and 0.10 m^3 /rotation for G10 - G25.
- Meter shall be provided with a device in the outlet to prevent reverse flow.
- Over flow protection device (Restriction Orifice) shall be provided at the downstream of meter.
- Material of construction of restriction orifice shall be PTFE and shall be suitable for natural gas application.

- Vendor shall provide brass adaptor with 1" inlet / outlet connection. Washer shall be of PTFE material of construction and provided along with restriction orifice. The end connection of the meters shall be protected with plastic caps.
- In case of flange ends, companion flanges with bolts shall be provided in each end.
- In case the end connections of the meters proposed by the Vendor is not in line with the end connections mentioned in the data sheets, the Vendor shall supply suitable adaptors to suit the desired end connections. Companion flanges with bolts if supplied shall be enclosed within the meter packing box.
- Vendor to provide the type approval certification for meter as per EN 1359 and certification from Weights & Measures Department, India with Model & Make details included.
- Calibration certificate (original + soft copy) shall be provided to Client.
- One copy of the certificate shall be provided within the packing box of each meter.
- Diaphragm meter shall be provided with Automatic Meter Reading (AMR) and either integral or external Electronic Volume Corrector
- (EVC).

4.2 Thermal Mass Meter

- Thermal mass meter shall be suitable for measurement of low gas flows in commercial and light industrial metering applications.
- Thermal mass flow meter offers high sensitivity at low flow rates, high reliability due to no moving parts, high accuracy, high turndown ratio and easy installation. However, the suitability of thermal mass flow meter with the fluid measured is to be checked prior to usage of this meter.
- Thermal mass flow meter shall be designed in accordance to latest version of OIML R137 and shall be suitable for outdoor / indoor installations, tamper proof and corrosion resistance for a life period of 10 years.
- Thermal mass flow meter measures gas mass flow directly without need for pressure and temperature correction. These meters measure the amount of heat transfer between two temperature sensors placed symmetrically in a heated flow sensor. The amount of heat transfer is directly proportional to mass flow rate. The amount of power in the form of heat to the sensor shall be very low, permitting the use of this technology in natural gas and flammable gas applications.
- Thermal mass meter shall have an accuracy class of 1.5 and rangeability of 150:1 or better. Pressure drop across the meter shall be less than 2 mbar at Qmax.
- Material of construction of meter shall be steel with suitable coating on inside and outside for corrosion protection of casing.
- Sensor material of construction shall be in accordance with OIML R137.
- Ingress protection of meter shall be IP 54 or better.
- Meter shall be provided with integral LCD digital display.
- Thermal mass flow meters shall be tamper proof and shall provide all diagnostic information to end user.
- The end connection of the meters shall be protected with plastic caps.
- In case of flange ends, companion flanges with bolts shall be provided in each end.
- In case the end connections of the meters proposed by the Vendor is not in line with the end connections mentioned in the data sheets, the Vendor shall supply suitable adaptors to suit the desired end connections.
- Companion flanges with bolts if supplied shall be enclosed within the meter packing box.
- Vendor to provide the type approval certification for meter as per OIML R137 and certification from Weights & Measures Department, India with Model & Make details included.
- Calibration certificate (original + soft copy) shall be provided to Client.

- One copy of the certificate shall be provided within the packing box of each meter.
- Thermal mass meter shall be provided with in-built Automatic Meter Reading (AMR) with encrypted communication capability via all available technologies except RF technology and integral antenna. Driver software and communication cable is to be submitted with each meter.
- Suitable communication protocol adaptor with 2.5 meters of communication cable along with driver software to communicate with Meter compatible for Windows7 and Windows10 based laptops shall be supplied with each meter with USB port.
- Meter shall be powered by lithium-ion battery. The life of battery shall be optimum with respect to the performance and communication capability of the meter.

Refer EVC Datasheet for detailed specifications.

4.3 Automatic Meter Reading and Electronic Volume Corrector (EVC)

- The AMR system of each meter shall be supplied with integral / external EVC, all available technologies except RF technology to record gas consumption and diagnostics from the meters.
- The meter reading data collected through AMR system shall be uploaded to Bidder's cloud server.
- Electronic Volume Corrector (EVC) with built-in pressure and temperature sensors shall be used to convert measured gas volume from operating conditions to reference pressure and temperature conditions.
- Electronic Volume Corrector (EVC) with integral battery, modem and data logging capability shall be provided with gas meter.
- Vendor shall supply the EVC installed on the suitable mounting frame / arrangement as per site requirements.
- Pressure inputs shall be connected using suitable SS tube fitting and the other end of the tubing will be terminated in a 2-way manifold valve.
- Driver software and communication cable is to be submitted with each meter.
- Suitable communication protocol adaptor with 2.5 meters of communication cable along with driver software to communicate with Meter compatible for Windows7 and Windows10 based laptops shall be supplied with each meter with USB port.
- Bidder to ensure compatibility of gas meter, EVC and modem and their performance shall be demonstrated in presence of Client.
- Gas meters along with EVC & Modem shall be commissioned in presence of meter supplier service engineer only.
- **Bidder shall ensure his presence at time of commissioning and shall include all cost in their rates. Bidder will ensure presence of their representative for technical assistance during commissioning of skid and no extra cost will be payable to Bidder**.
- Bidder shall supply software for remote data monitoring through GSM modem.
- The software shall be installed in office / control room and actual performance of software for remote data monitoring shall be carried out by Bidder.
- All necessary arrangement required to perform software operation shall be done by Bidder at no extra cost.
- **The SIM cards shall be supplied by the Bidder providing service for five years. Monthly charges of the SIM shall be included in supply**.

4.4 Name plate

Each gas meter shall be marked in legible characters, which are permanently visible in accordance with BS EN 1359 / OIML R137 or latest:

a. Type approval mark and number;

b. Manufacturer's name and Identification Mark;
c. Serial Number, Model Name and Model Number;
d. Flow Rate – Max (Qmax) & Min (Qmin) - (m3/h);
e. Maximum Working Pressure pmax (bar);
f. Flow Direction;
g. Nominal value of the cyclic volume, V (dm3);
h. Number and date of EN Standard;
i. Ambient temperature range (°C);
j. Gas temperature range (°C);
k. Accuracy class of the meter, e.g. Class 1.5;
l. Month & Year of Manufacture.

Type approval number shall be issued by Department of Legal Metrology (W&M) (Government of India). ATEX Marking shall be as per directive 94/9/EC on the electrical / electronic device or module certified. Owner unique serial number shall be marked on the meter as per the standard procedure followed by Owner, which will be communicated to the successful bidder.

5. ELIGIBILITY CRITERIA

5.1 Interested bidder must have manufactured G4,G6,G10,G16 & G25 and supplied minimum 50 numbers of Gas Meters in accordance with relevant codes and standards in last 5 years reckoned from the date of bid submission.

5.2 Bidder shall be registered manufacturer with Director of legal Metrology, Government of India. In case, the bidder is importing the offered model of gas meter from overseas (i.e. from outside India), the bidder shall furnish a copy of import registration certificate issued by Director of legal Metrology, Government of India.

5.3 **For Authorized Supplier**

In case, the manufacturer does not sell his products directly as a matter of their corporate policy they may submit their bid through authorized supplier/Indian Subsidiary. In such case the concerned Authorized supplier / Indian subsidiary may submit the offer as "Bidder "subject to fulfilling the BEC criteria: -

a) Manufacturer shall have the prime responsibility of providing unconditional technical guarantee/warranty and after sales support to the purchaser. A confirmation by the manufacturer to this effect shall be submitted along with the bid.

b) The bidder shall furnish a valid authority certificate from the manufacturer confirming the bidder's status as their authorized supplier.

c) The Bidder shall furnish from Manufacturer, a certificate indicating that the Manufacturer as a corporate policy does not quote directly and their materials are quoted through authorized supplier / Indian subsidiary only.

5.4 Bidder must have valid type approval certificate as per EN: 1359 at the time of bid submission.

5.5 Bidder must have valid weights & measures approval certificate at the time of bid submission.

5.6 In case bidder doesn't have valid type approval certificate as per EN: 1359 and valid weights & measures certificate at the time of bid submission, then bidder shall submit an undertaking that these approvals shall be obtained & submitted before the start of first supply.

5.7 Net worth of bidder must be positive for FY 2023-24.

Note:

Bidder shall present minimum following documents to establish their credentials to meet Eligibility criteria-

1. Purchase order copy
2. Copy of SOR of above purchase order clearly describing the scope of supply.
3. Certificate from owner certifying supplied quantity against the said PO and the duration during which this supply took place.
4. Copy of valid EN certificate.
5. Interested bidders are hereby requested to present a PowerPoint presentation about their commercial meters **with eligibility criteria at the following venue and schedule:**

VENUE: AGCL's Guwahati office, 6th Floor, Central Mall,
Christian Basti, Guwahati, Assam- 781006
DATE: 27/03/2025
TIME: 11:00 A.M.

6. If any latest technology is available including Prepaid Facility, same shall be made part of the Power Point Presentation so that AGCL may be able to adopt it as per feasibility.