



**CITY GAS DISTRIBUTION PROJECT FOR
AGARTALA CITY**

**PROJECT FOR
CITY GAS DISTRIBUTION FOR AGARTALA**

BID DOCUMENT FOR PROCUREMENT OF

TURBINE METER WITH EVC

**UNDER E - DOMESTIC
COMPETITIVE BIDDING**

Bid Document No.: TNGCL/C&P/Turbine Meter/Commercial/P(608)/2020-21

VOLUME – II OF II

PREPARED AND ISSUED BY

Department of Contracts & Procurement
Tripura Natural Gas Company Ltd.
Shilpa Nigam Bhawan, Khejurbagan
P.O – Kunjaban, Agartala, Tripura-799006
Email: chiranjib@tngclonline.com



**CITY GAS DISTRIBUTION FOR
AGARTALA CITY**

VOLUME-II

CONTENT

<u>Sl.No.</u>	<u>Description</u>
SECTION - VIII	SPECIAL CONDITIONS OF CONTRACT (SCC)
SECTION - IX	DELIVERY SCHEDULE
SECTION - X	MATERIAL REQUISITION & DATA SHEETS
SECTION - XI	BID FORM (Part-II)
SECTION - XII	SCHEDULE OF RATES



**CITY GAS DISTRIBUTION FOR
AGARTALA CITY**

SECTION - VIII

SPECIAL CONDITIONS OF CONTRACT (SCC)



T N G C L

**PROJECT: CNG & CITY GAS DISTRIBUTION FOR
AGARTALA CITY**

SECTION -VIII

SPECIAL CONDITIONS OF CONTRACT (SCC)

C O N T E N T

- 1.0 GENERAL
- 2.0 SCOPE OF SUPPLY
- 3.0 DELIVERY SCHEDULE
- 4.0 PAYMENT TERMS
- 5.0 INLAND TRANSIT INSURANCE FOR PROCUREMENT OF GOODS
- 6.0 REPEAT ORDER
- 7.0 DELIVERY BASIS
- 8.0 EVALUATION BASIS
- 9.0 DELIVERY SCHEDULE

SECTION - VIII

SPECIAL CONDITION OF CONTRACT

GENERAL

Special Conditions of Contract shall be read in Conjunction with the General Conditions of Contract, Specification of work, Drawing and any other documents forming part of this Contract wherever the context so requires.

Notwithstanding the sub-division of the documents into these separate sections and volumes ever part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with in the Contract so far as it may be practicable to do so.

Where any portion of the General Conditions of Contract is repugnant to or at variance with any provisions of the Special Conditions of Contract, unless a different intention appears, the provisions of the Special Conditions of Contract shall be deemed to over-ride the provisions of the General Conditions of Contract and shall be the extent of such repugnancy, or variations, prevail.

Wherever it is mentioned in the specification that the Contractor shall perform certain work or provide certain facilities, it is understood that the Contractor shall do so at his cost and the **Value of Contract** shall be deemed to have include cost of such performance and provisions, so mentioned.

The materials, design, and workmanship shall satisfy the relevant Indian Standard, the Job Specifications contained herein and Codes referred to. Where the job specification stipulate requirements in addition to those contained in the standard codes and specifications, these additional requirements shall also be satisfied.

In case of an irreconcilable conflict between Indian or other applicable standards, General Conditions of Contract, Special Conditions of Contract, Specification, Drawings or Schedule of Rates, the following shall prevail to the extent of such irreconcilable conflict in order of precedence :-

- i) PO/ FOI alongwith Statement of Agreed Variations (If any)
- ii) Schedule of Rates as enclosures to Letter of Acceptance
- iii) Special Conditions of Contract
- iv) Drawings
- v) Technical/ Material Specifications
- vi) Instruction to Bidder
- vii) General Conditions of Contract
- viii) Indian Standards
- ix) Other applicable standards

It will be the Contractor's responsibility to bring to the notice of Engineer-in-charge any irreconcilable conflict in the contract documents before starting the work(s) or making the supply with reference which the conflict exists.

In the absence of any Specifications covering any material, design of work(s) the same shall be performed/ supplies/ executed in accordance with Standard Engineering Practice as per the instructions/ directions of the Engineer-in-charge, which will be binding on the Contractor.

5.0 Scope of Supply

The scope of supply shall be as given in Material Requisition and data sheets (Section-IX of Volume II).

6.0 Delivery Schedule

The delivery schedule is given at section-IX of Vol II of II of tender document.

7.0 Payment Terms

The terms of payment shall be as follows:

For Indian Bidders only

- A) 90 % (Ninety percent) payment on receipt of goods at site along with submission of following documents: -
- i) Invoice in triplicate
 - ii) Inspection Release note by Owner or his appointed or approved agency.
 - iii) GR / LR
 - iv) Packing List
 - v) Insurance cover note covering transit insurance
 - vi) A certificate from manufacturer that the all items/ equipment under supply including its component or raw material used with manufacturing are new and conform to the tender requirement. In case manufacturer is not the contractor the contractor owning overall responsibility will duly endorse this certificate.
 - vii) Performance Bank Guarantee(s) of 10% of Contract Value. If already submitted, a copy of the same.
 - viii) Document related to CENVAT credit/VAT Set off to be claimed by Owner, if applicable.
 - ix) Documents as specified in the Technical Specifications/ Material Requisition, Volume-II of II of the Bid Document.
- B) 10% (ten percent) within 30 (thirty) days after receipt and acceptance of goods at site alongwith submission of following documents: -
- i) Acceptance Certificate
 - ii) No Claim Certificate.

General Notes

- i) All efforts shall be made to release the payment within 30 days after receipt of relevant documents complete in all respects.
- ii) All bank charges incurred in connection with payments shall be to vendor's accounts.
- iii) Unless otherwise specifically stated in bid document, all payments shall be made in the currency quoted.
- iv) No interest charges for delay in payments, if any, shall be payable by Owner.

5.0 INLAND TRANSIT INSURANCE FOR PROCUREMENT OF GOODS

Supplier will be required to submit documentary proof for the transit insurance before despatch.

6.0 REPEAT ORDER

Repeat order upto 50% of contact value within 6(six) months from the date of basic order as per terms of bid document. In case 50% is not a whole number, the same can exceed 50% to make it nearest higher whole number.

7.0 DELIVERY BASIS

Delivery basis to be on FOT site basis.

SECTION-IX
TIME SCHEDULE

SECTION-IX

TURBINE METER WITH EVC

Sl. No.	Item Descriptions	Completion schedule for all type of materials
1	Design, Engineering, Testing, Supply (FOT Site basis) including packaging forwarding, Transit Insurance, transportation, custom clearance, Loading / Unloading, etc. at port as well as TNGCL sites/ designated store.	
1.1	All items	12 weeks from date of Fax of Intent /PO



TRIPURA NATURAL GAS COMPANY LIMITED

(A Joint Venture Of Gail & Govt. of Tripura & Govt of Assam)

Tripura Natural Gas

(A Joint Venture of Gail (India) Ltd., Govt. of Tripura and Govt. of Assam)

SECTION - X

MR

FOR

TURBINE METER WITH EVC

DATA SHEETS FOR

TURBINE METER WITH EVC

Sr. No.	Description	Quantity
1	2" G-65 Turbine Meter	4
2	3" G-250 Turbine Meter	1
3	4" G-400 Turbine Meter	1
4	Electronic Volume Corrector	6

Note:

1. Evaluation will be done as a whole and order will be placed on the lowest bidder as whole.
2. If Authorized Supplier / Indian subsidiary quoted as Bidder for foreign manufacturer, then third party Inspection of material at manufacturer's works has to be arranged by the Bidder for the supplied materials. If bidder proposed Inspection at their works in India then Bidder's proposed facility/ workshop shall be certified by a reputed Inspection / testing agency such as CEIL/ Lloyds/ BV/ DNV/ TUV/ ABS/ Moody/ SGS/ GLI/ Velosi / FCRI / DVGW and bidder shall furnish a certificate from the said agency that the workshop has the capability of testing of SS Fittigs/Valves complying the Specifications of the quoted materials.

Specification required for Turbine Gas Meter G-65				
SI No	Criteria	Specifications		
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	Meter model	Flange size (as per ANSI 150, 150#)	Max Flow (Qmax)
		G 65	2" (DN 50)	100 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 (b) EN/ OIML/MID certificate issued by PTB, Nmi or equivalent for Turbine Meter. (c) 3.1 Material Certification (d) Test & Calibration certificate issued by PTB, Nmi or equivalent authority for individual meters (e) Technical documents, brochures (f) User manual and supporting documents
----	--------------------------------------	---

Specification required for Electronic Volume Corrector for G-65 Gas Flow Meter		
SI No	Criteria	Specifications
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 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.
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.
		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 ³ /hr, Nm ³ /h
		Corrected totalized volume in sm ³ , Nm ³
		Pressure in bar
		Temperature in deg C
		Uncorrected flow rate in sm ³ /hr, Nm ³ /h
		Uncorrected total volume in m ³
		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) EN/ MID/ ATEX certificate issued by PTB, Nmi or equivalent authority for EVC (b) Technical documents, brochures (c) User manual and supporting documents

Specification required for G-250 and G-400 Turbine Gas Meter		
Sl.	Criteria	Specification
1	Regulated Opening Pressure	0.5 Kg/cm ² (g) to 1.5 Kg/cm ² (g), As per ANSI 150#
2	Maximum Pressure	Maximum working pressure 4 Kg/cm ² (g) and design pressure as per ANSI 150
3	Maximum Flow	250 M ³ /Hr
4	Rangeability	1:30 for G-250 1:20 for G-400
5	Medium	Natural Gas
6	Meter Body, Rotor	Body: Ductile Iron/ Cast Steel EN-GJS-400-15 (GGG40) Rotor: Polyacetal / Alluminium
7	Specific Gravity	0.57
8	Line Size/ End Connection	DN 80 for G160 As per ANSI 150, 150#
9	Approval	EN/ OIML/ MID certificate for the product offered conforming to EN 12261
10	Facing & Finish	ANSI 150#, RF SERR FINISH
11	Material-Body	Compliant to PED 97/23EC
12	Bearing & other wetted parts	SS316
13	Model	Electronic Volume Corrector (EVC)
14	Type	Meter should have such type design for easy mounting of EVC
15	Accuracy	As per EN 12261 Standard $\pm 2\%$ from Qmm to 0.2 Qmax and \pm
16	Anti Temper	LF pulser should not be temprable i.e. must be inductive type
17	Temperature Range	- 30 degree C to + 60 C as per ATEX/ PED
18	Straightening Vanes- Type	REQD-INTEGRAL
19	Output	One inductive type
20	Intrinsically safe	YES, Ex II ½ G Ex ka IIC T5
21	Mounting	ON METER
22	Totalizer	9 DIGIT
23	Flow Direction	Left to Right
24	Thermowell	Should be in-built
25	Lubrication/ Oil pump	Should be in-built
26	Related Certificates/ documents	(a) EN type approval certificate for Turbine Meter from authorized certifying body (b) EN/ OIML/MID certificate issued by PTB, Nmi or equivalent for Turbine Meter. (c) 3.1 Material Certification (d) Test & Calibration certificate issued by PTB, Nmi or equivalent authority for individual meters (e) Technical documents, brochures (f) User manual and supporting documents

Specification required for Electronic Volume Corrector for G-250 and G-400 Gas Flow Meter		
1	Make & Model	Specification requirement
2	Standard	Offered EVC must be approved by NMI as per EN 12405 for custody transfer application of Natural Gas.
3	Approval	Vendor to furnish type approval & certificates details
4	Power supply option	Internal battery operated
5	Service Media:	Natural Gas- non corrosive
6	Area classification	As per IEC 79: Zone I, Group IIC, T4 (without internal modem) and Group IIB T3 (with internal modem)
7	Protection class	Enclosure: IP 65
8	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 thermo-well 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.
9	Pressure Sensor (External Type)	Measuring pressure range: 0.9 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: SGERG88, AGANX19 (modified), AGA8 Gross method 2, 16 coefficients (table of Z),AGA 8 detailed and fixed compressibility value.
12	Accuracy	According to EN12405, 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 data and alarm status, iconic indications, compressibility ratio, conversion factor, measured volume and converted volume.

16	Communication port	Two communication ports
		Serial RS232 and RS485 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.
		Optical port, which allows local communication with a laptop or PC via a Windows based software for uploading/ downloading of data o 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 on Hourly, Daily & Monthly basis.
18	Parameters to Display	Corrected flow rate in sm ³ /hr/ Nm ³ /h
		Corrected totalized volume in sm ³ / Nm ³
		Pressure in bar
		Temperature in deg C
		Uncorrected flow rate in m ³ /hr
		Uncorrected total volume in m ³
		Alarm output for unit malfunctioning
		Low battery alarm
19	Data to Stores	Monthly log last 24 months Min.
		Daily log 120 days Min
		Hourly log 1440 Hrs Min.
		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 to be submitted	(a) EN/ MID/ ATEX certificate issued by PTB, Nmi or equivalent authority for EVC (b) Technical documents, brochures (c) User Manual and supporting documents



**PROJECT: CNG & CITY GAS DISTRIBUTION FOR
AGARTALA CITY**

SECTION – XI

BID FORM



**PROJECT: CNG & CITY GAS DISTRIBUTION FOR
AGARTALA CITY**

SECTION – 1

BID FORM – PART - II

To: (Name and address of PURCHASER)

Date:

Gentlemen,

Having examined the Conditions of Contract and Specifications including Addenda Nos. (Insert Numbers) the receipt of which is hereby duly acknowledged, we the undersigned, offer to supply and deliver (Description of Goods and Services) in conformity with the said Drawings, Conditions of Contract and specifications for the same for (total bid amount in words and figures*) or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this bid.

We undertake, if our bid is accepted, complete delivery of as agreed and specified in the IFB document. If our bid is accepted, we will obtain the guarantee of a Bank in a sum not exceeding (10)% of the Contract price for the due performance of the Contract.

We agree to abide by this bid for a period of 4(four) months from the date fixed for bid opening under Instructions to Bidders and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal contract is prepared and executed, this bid, together with your written acceptance thereof in your notification of award (Fax of Intent) shall constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any bid, you may receive.

Dated this Day of 2020

Signature

.....
In the capacity of Duly authorized to sign bid for and on behalf of

Witness

Address

Signature

(*) : Quoted amount should be filled in this bid form when it is being submitted as part of price bid i.e. being enclosed with Part – II of the bid.



TNGCL

**PROJECT: CNG & CITY GAS DISTRIBUTION FOR
AGARTALA CITY**

SECTION – XII

SCHEDULE OF RATES/ PRICE SCHEDULE

 T N G C L	PROJECT: CNG & CITY GAS DISTRIBUTION FOR AGARTALA CITY	
---	---	--

Schedule of Rates towards Procurement of Turbine Meter with EVC

Sr. No.	Description	UOM	Quantity	Unit Rate	GST on Unit Price @ ____%	Unit Freight Charge	GST on Freight Charge @ ____%	Per Unit Rate FOT Site	Total FOT Project Site
	Complete Design, Engineering, Manufacturing and Supply of Gas Turbine Meters of the following Specs.								
1	2" G-65 Turbine Meter	No.	4						
2	3" G-250 Turbine Meter	No.	1						
3	4" G-400 Turbine Meter	No.	1						
4	Electronic Volume Corrector	No.	6						
	Grand Total								