MNGL (INDIA) LIMITED

CITY GAS DISTRIBUTION PROJECT FOR MNGL, PUNE

BID DOCUMENT FOR

TENDER FOR SUPPLY, INSTALLATION & COMMISSIONING OF A CHECK METERING SKID (CMS) WITH PRS AT MNGL's PROPOSED CGS AT BHIKNOOR FOR NIZAMABAD GA.

UNDER OPEN DOMESTIC COMPETITIVE BIDDING

(THROUGH E-TENDERING MODE)

Bid Doc. No.: MNGL/CP/2026-27/139 dated 03.11.2026

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

VOLUME I OF II

SECTION – I

INVITATION FOR BIDS (IFB)

M/s. MNGL (India) Ltd., Pune, invites online bids (Technical & Financial) **UNDER TWO BID SYSTEM** from eligible bidders for the item(s) in complete accordance with the Bid Documents.

1.0 TENDER INFORMATION

Tender Document Number	MNGL/CP/2026-27/139 dated 03.11.2026
ITEM(S)	Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.
TYPE OF BID	Open Domestic Competitive Bidding
TIME SCHEDULE	As per Section V of Vol. II of II
EARNEST MONEY/ BID SECURITY	Rs. 2,00,000/- in the form of Demand Draft / BG to be in favor of "MNGL (India) Ltd." payable at Pune. Account Details for SWIFT / SFMS Statement / Message: Name of the Beneficiary: M/s. MNGL (India) Ltd. Name of the Bank & Address: State Bank of India Branch: Industrial Finance Branch, "Tara Chambers", Pune-Mumbai Road, Wakadewadi, Pune-411 003 A/c No.: 35310073625 IFSC Code: SBIN0008966
BID SECURITY VALIDITY	6 (Six) months from the final bid due date
TENDER FEE (Non-refundable)	Not applicable
BID VALIDITY	4 (Four) months from the final bid due date
Pre-bid meeting date and time	09.11.2026 @ 11:00 Hrs. VC Link: https://meet.google.com/avh-hpsg-zec
Bid submission due date and time	24.11.2026 till 15:00 Hrs. IST
Techno-commercial bid opening date and time	25.11.2026 at 16:00 Hrs. IST
Bid Submission at	https://etenders.gov.in
Price bid opening date and time	Date and time shall be notified later
Address for submission of EMD/Bid Security and venue for pre-bid meeting and opening of bids	General Manager, C&P Department, M/s. MNGL (India) Ltd., Pride Purple Coronet, 2nd Floor, Baner Road, Baner, Pune – 411045
Contact details	Telephone: +91 (20) 25611000/1190/1153 Email: gasaid@mngl.in / akshay.girme@mngl.in

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BIDDER ELIGIBILITY CRITERIA & BID EVALUATION CRITERIA	As per Annexure – I to IFB

Note: Bidders are advised to complete the registration with e-tender portal **(https://etenders.gov.in)** at least two working days prior to bid submission date.

Please note that in accordance with the general conditions of tender, MNGL may amend these dates of the tender process at its sole discretion. In case any of the specified dates are declared a public holiday, the deadline shall be the next working date.

2.0 BIDDING PROCEDURE

Bidding will be conducted through Open Domestic Tendering. Single Stage Two Bid system is adopted for this tender. The submission and opening of bids will be through e-tendering mode at **https://etenders.gov.in/eprocure/app**. Tender document can be downloaded from the website **https://etenders.gov.in/eprocure/app** or from e-tender link given on official MNGL website www.mngl.in.

Note: To participate in the e-tendering, it is mandatory for the bidders to have user ID & password. For this purpose, the bidder must register itself on CPPP's website **https://etenders.gov.in/eprocure/app**. Please also note that the bidder must obtain digital signature token for applying in the tender and in general, activation of registration may take 24 hours' subject to the submission of all requisite documents required in the process.

Note: MNGL in no way shall be responsible if the bidder fails to apply due to non-possession of Digital Signature & non-registration.

(The bids must be submitted online in electronic form at https://etenders.gov.in/eprocure/app only. No physical bids will be accepted.)

3.0 DOWNLOADING OF TENDER DOCUMENT

The tender document is available for downloading from CPPP's e-tendering website **https://etenders.gov.in/eprocure/app** or from the e-tender link given on official MNGL website www.mngl.in for viewing / participation of the eligible bidders. Bidders meeting the bid evaluation criteria who intend to submit their bid may download the tender for submission by the bid due date and time. Bidder shall give an undertaking on his letterhead that the contents of the bidding document have not been altered or modified. Bid evaluation criteria shall be applicable to all the bidders.
Disclaimer clause: Bidders are advised to visit CPPP's e-tendering website and MNGL website regularly for any updates on the tender. The ignorance of visiting

the website will not be accepted as a reason for any gap / missing information, like corrigenda, amendments, clarifications etc.

4.0 PRE-BID MEETING

The bidder(s) or their designated representatives, who have downloaded the bid document, or to whom tender document has been issued and intend to bid are invited to attend the pre-bid meeting. Bidder(s) queries if any, must reach Purchaser office at least one day prior to pre-bid meeting date. The pre-bid meeting can be organized through video conferencing or physically. In case of physical meeting, the venue of pre bid meeting is MNGL office at Pride Purple Coronet, 2nd Floor, Baner Road, Baner, Pune – 411045.

Non-attendance of the pre-bid meeting will not be a cause for disqualification of a bidder. Corrigendum/addendum, if any, to the tender document, shall be hosted on the website after the pre-bid meeting.

Bidders may also note that the registration process for new bidders on e-tender portal shall take a minimum of 24 hrs. Hence, bidders are advised to kindly complete their registration on e-tender portal well in advance of the pre-bid meeting.

In case of pre-bid meeting through video conferencing, Link shall be sent to all the interested bidders by the purchaser.

Instructions to bidders for pre-bid meeting through video conferencing: All bidders intending to attend pre-bid meeting must send their interest through email (at least 2 hours prior to the scheduled time of pre-bid meeting) to the purchaser. E-mail received from bidders within specified timeline shall be invited through email to attend the meeting.

Advisories for the bidders attending the pre-bid meeting:

(1) All the Bidders who have submitted their registration details and interest to attend the pre-bid meeting will be invited to join as guests through the link shared in mail.

(2) All bidders/participants mandatorily must pin MNGL screen on their computer screens during the pre-bid meeting.

(3) Bidders shall be allowed to discuss their queries in sequence of their responses received.

(4) Time slot shall be allotted to each bidder to ask his queries.

(5) Recording of the pre-bid meeting by the bidders is strictly prohibited. After pre-bid meeting, corrigendum shall be issued by the purchaser regarding clarifications or queries raised during meeting.

5.0 OTHERS:

5.1 Bid Document is non-transferable.

5.2 Bids complete in all respects should reach on or before the BID DUE DATE AND TIME. Bids through Fax/ E-mail shall not be considered.

5.3 The Bid Document calls for offers on single point "Sole Bidder" responsibility basis.

Order will be placed on the "Sole Bidder" alone (in whose name the bid document has been issued) who will be responsible for all contractual purposes.

Further the bidders are advised to ensure that their offer is on single bidder responsibility basis and in total compliance of scope of supply as specified in Bid Document.

5.4 The bid should be prepared by the "Sole Bidder" and should be sent to MNGL directly. MNGL reserves the right to reject offers made by intermediaries' representatives.

5.5 Bidder shall ensure that Bid Security having a validity of 6(SIX) months from the bid due date, must accompany the offer in the format made available in the Bid Document.

5.6 This Invitation for Bids (IFB) is an integral and inseparable part of the enclosed Bid Document.

5.7 MNGL reserves the right to accept or reject any or all offers without assigning any reason whatsoever.

5.8 ZERO DEVIATION TENDER

Bidder should note that if any deviations are taken to the under mentioned provisions of Bid Documents by the Bidder the bid is liable to be rejected:

i) Do not meet BEC Criteria
ii) Bid Security
iii) Performance Security (Contract Performance Bank Guarantee), 10% of Purchase Order Value
iv) Delivery Period
v) Terms of Payment
vi) Force Majeure

vii) Resolution of Dispute/Arbitration
viii) Termination of Contract,
ix) Warranty and Guarantee
x) Offer not submitted for complete scope of work
xi) Firm prices
xii) Prices not quoted as per Schedule of Rates formats.
xiii) Bidder has been put on Black / Holiday list by MNGL / MoP&NG / Oil Public Sector Enterprise(s).
xiv) Bidder is under liquidation.
xv) Bids not conforming to technical specifications/requirements.
xvi) Any other such provisions if specifically stipulated elsewhere in the Bid Document.
xvii) Price Reduction Schedule.

However, MNGL reserves the right to request the bidder to withdraw the deviations against above-mentioned provisions of Bid Documents.

THIS IS NOT AN ORDER

Yours faithfully,
For, M/s. MNGL (India) Ltd., Pune

Ganesh Said
General Manager (C&P)

Encl. 1. Vol. I of II & II of II of Bid Document.

Note: Please confirm your intention to quote or not within 5 (Five) days. In case not intending to quote, please give your valuable feedback to us.

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ANNEXURE-I to IFB

BIDDER'S ELIGIBILITY CRITERIA (BEC)

1.0 GENERAL INFORMATION:

This tender deals with supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.

2.0 SCOPE AND QUANTITY OF SUPPLY:

Supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA as per the specifications mentioned in the tender document.

3.0 BIDDER'S ELIGIBILITY CRITERIA (BEC):

A. TECHNICAL:

A.1 The bidder shall be an original equipment manufacturer (OEM) of USM or if the bidder is not an OEM, then the bidder should be an authorized vendor as well as an authorized service partner.

A.2 The bidder should have designed, engineered, manufactured, supplied and commissioned at least the following in the last five years reckoned from the final bid due date.

01 (One) No. of natural gas custody transfer / check metering skid to any CGD / PSU / Government Company in India having a minimum flow rate of 17,500 SCMH.

OR

02 (Two) Nos. of natural gas custody transfer / check metering skids to any CGD / PSU / Government Company in India having a minimum flow rate of 8,750 SCMH.

In support of this, the bidder must submit documentary evidence such as a copy of Purchase Order / Service Order / Work Order / Letter of Award / Letter of Acceptance and its completion/execution certificate/commissioning report issued by the Client or authorized EPC/PMC.

In the absence of requisite documents, MNGL reserves the right to reject the bid without making any reference to the bidder.

B. FINANCIAL (Working calculation enclosed herewith as Annexure-I):

B.1 Turnover:

The bidder should have achieved a minimum annual turnover of Rs. 112.50 Lakhs in any one of the last 3 (Three) audited financial years, i.e. 2023-24, 2024-25 & 2025-26.

B.2 Net Worth:

Net worth must be positive as per the last audited financial statement, i.e. for the year 2025-26.

B.3 Working Capital:

The bidder should have a minimum working capital of Rs. 22.50 Lakhs as per the latest audited balance sheet, i.e. for the year 2025-26.

If the bidder's working capital is inadequate, the bidder should supplement this with a letter from the bidder's bank, having a net worth of not less than Rs. 100 crores, confirming the availability of a line of credit to cover the inadequacy of the previous year and meet the current working capital requirement.

Bidder must submit documentary evidence such as balance sheet & Profit & Loss A/c Statement for the last three audited financial years, i.e. 2023-24, 2024-25 & 2025-26, in support of the above.

If the audited financial results of the immediately preceding financial year, i.e. 2025-26, are not available, then the audited financial results of the year immediately prior to 2025-26, i.e. 2024-25, shall be considered for calculation of Net Worth and Working Capital and Audited Financial Results of the year 2022-23, 2023-24 & 2024-25 shall be considered for calculation of Annual Turnover as specified at Cl. B of BEC-Financial Criteria.

In the absence of requisite documents, MNGL reserves the right to reject the bid without making any reference to the bidder.

4.0 EVALUATION AND AWARD OF CONTRACT:

Evaluation shall be done on an overall least cost basis to the Purchaser.

In case of a tie for the L-1 bidder, the order shall be placed on the bidder having the highest turnover during the preceding 3 Financial Years, i.e. 2023-24, 2024-25 & 2025-26.

SECTION – II

INSTRUCTIONS TO BIDDERS

INSTRUCTION FOR ONLINE BID SUBMISSION

The bidders are required to submit soft copies of their bids electronically on the Central Public Procurement (CPP) Portal i.e. http://etendrs.gov.in/eprocure/app, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

REGISTRATION:

(i) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL:https://etenders.gov.in/eprocure/app) by clicking on the link “Online Bidder Enrolment” option available on the home page. Enrolment on the CPP Portal is free of charge.

(ii) During enrolment/ registration, the bidders should provide the correct / true information including valid email-id & mobile no. All the correspondence shall be made directly with the contractors / bidders through email-id provided.

(iii) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

(iv) For e-tendering, possession of valid Digital Signature Certificate (Class III Certificates with signing key usage) is mandatory which can be obtained from SIFY /nCode/eMudra or any Certifying Authority recognized by CCA India on eToken/ SmartCard.

(v) Upon enrolment on CPP Portal for e-tendering, the bidders shall register their valid Digital Signature Certificate with their profile.

(vi) Only one valid DSC should be registered by a bidder. Bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse and should ensure safety of the same.

(vii) Bidders can then log into the site through the secured login by entering their user ID/ password and the password of the DSC/ eToken.

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SEARCHING FOR TENDER DOCUMENTS:

1) There are various search options built in the CPP Portal to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine several search parameters such as organization name, form of contract, location, date, other keywords, etc., to search for a tender published on the CPP Portal.

2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

3) The bidder should make a note of the unique Tender ID assigned to each tender in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS:

(i) For preparation of bid, Bidders shall search the tender from published tender list available on site and download the complete tender document and should consider corrigendum if any published before submitting their bids.

After selecting the tender document same shall be moved to the 'My favourite' folder of the bidder's account from where bidder can view all the details of the tender document.

(ii) Bidder shall go through the tender document carefully to understand the documents required to be submitted as part of the bid. Bidders shall note the number of covers in which the bid documents have to be submitted, the number of documents – including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

(iii) Any pre-bid clarifications if required, then same may be obtained online through the tender site, or through the contact details given in the tender document.

(iv) Bidders should get ready in advance the bid documents in the required format (PDF/xls/rar/dwf/jpg formats) to be submitted as indicated in the tender document/schedule. Bid documents may be scanned with 100 dpi with black and white options which help in reducing size of the scanned document.

(v) Bidders can update well in advance, the documents such as experience certificates, annual report, PAN, EPF & other details etc., under "My Space/ Other Important Document" option, which can be submitted as per tender requirements. This will facilitate the bid submission process faster by reducing upload time of bids.

SUBMISSION OF BIDS:

(i) Bidder should log into the site well in advance for bid submission so that he/ she upload the bid in time i.e., on or before the bid submission time. Bidder will be responsible for any delay.

(ii) Bidder should prepare the EMD as per the instructions specified in the NIT/ tender document. The details of the DD/BG/others physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise, the uploaded bid will be rejected.

(iii) While submitting the bids online, the bidder shall read the terms & conditions (of CPP portal) and accepts the same to proceed further to submit their bid.

(iv) Bidders shall select the payment option as offline to pay the EMD and enter details of the DD/BG/others.

(v) Bidder shall digitally sign and upload the required bid documents one by one as indicated in the tender document.

(vi) Bidders shall note that the very act of using DSC for downloading the tender document and uploading their offers is deemed to be a confirmation that they have read all sections and pages of the tender document without any exception and have understood the complete tender document and are clear about the requirements of the tender document.

(vii) Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document. For the file size of less than 1 MB, the transaction uploading time will be very fast.

(viii) If price quotes are required in XLS format, utmost care shall be taken for uploading Schedule of quantities & Prices and any change/ modification of the price schedule shall render it unfit for bidding. Bidders shall download the Schedule of Quantities & Prices i.e., Schedule of Rates, in XLS format and save it without changing the name of the file. Bidder shall quote their rate in figures in the

appropriate cells, thereafter, save and upload the file in financial bid cover (Price bid) only.

If the template of Schedule of Quantities & Prices file is found to be modified/corrupted in the eventuality by the bidder, the bid will be rejected and further dealt as per provision of clause no 17.0 of ITB including forfeiture of EMD.

The bidders are cautioned that uploading of financial bid elsewhere i.e., other than in cover 2 will result in rejection of the tender.

(ix) Bidders shall submit their bids through online e-tendering system to the Tender Inviting Authority (TIA) well before the bid submission end date & time (as per Server System Clock). The TIA will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders at the eleventh hour.

(x) After the bid submission (i.e., after Clicking "Freeze Bid Submission" in the portal), the bidders shall take print out of system generated acknowledgement number and keep it as a record of evidence for online submission of bid, which will also act as an entry pass to participate in the bid opening.

(xi) Bidders should follow the server time being displayed on bidder's dashboard at the top of the tender site, which shall be considered valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system.

(xii) All the documents being submitted by the bidders would be encrypted using PKI (Public Key Infrastructure) encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128-bit encryption technology.

ASSISTANCE TO BIDDERS:

(i) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contract person indicated in the tender.

Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24X7 CPP Portal Helpdesk. The 24 x 7 Help Desk Number 0120-4001002, 0120-6277787 and 0120-4001005. The helpdesk email id is **support-eproc@nic.in**

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A. GENERAL

1. Scope of Bid:

1.1 The Purchaser as defined in the General Conditions of Contract, hereinafter "the Purchaser" wishes to receive bids through e-tendering mode for the supply of goods as described in Section-IV, Special Condition of Contract.

1.2 The successful bidder will be expected to complete the Scope of supply within the period stated in IFB.

1.3 Throughout these bidding documents, the terms "bid" and "tender" and their derivatives ("bidder/tenderer", "bid/tendered", "bidding/ tendering", etc.) are synonymous, and day means calendar day. Singular also means plural.

2. Eligible Bidder

2.1 Bidders shall, as part of their bid, submit a written power of attorney, authorizing the signatory of the bid to bind the bidder.

2.2 This Invitation for Bids is open to any bidder and to pre-qualified bidders in case of limited tender.

2.3 Bidders should not be associated or have been associated in the past, directly or indirectly, with a firm or any of its affiliates that have been engaged by the Purchaser to provide consulting services for the preparation of the design, specifications and other documents to be used for the procurement of the goods to be purchased under this Invitation for Bids.

2.4 The bid should be from actual manufacturers.

2.5 The bidder shall not be under a declaration of ineligibility by Purchaser for corrupt or fraudulent practices as defined in ITB.

2.6 While evaluating the bids, pursuant to Bid Evaluation Criteria as specified in the Global notice of lFB, bidders past performance shall also be assessed *for* ascertaining the responsiveness of the bid. In such a case the decision of Purchaser shall be final and binding on the bidder.

2.7 The bidder is not put on Black / Holiday list by MNGL / MoP&NG / Oil Public Sector Enterprise(s).

3. One Bid per Bidder

3.1 Each bidder shall submit only one bid. A bidder who submits or participates in more than one bid will cause all the proposals in which the bidder has participated

to be disqualified. If bid of companies which is managed & controlled by same group of individuals (common owners/ proprietor, common partner/ common directors), the participation in a particular tender by more than one such bidder will not be allowed, and bids will be disqualified.

3.2 Also, if this fact is known at a later stage during bid evaluation or even after finalization of contract, the award will be made null and void and appropriate action including forfeiting of security deposit in any form and putting the firms on holiday list will be taken.

3.3 Alternative bids are not acceptable.

4. Bidder Eligibility

4.1 Experience Criteria as per Invitation for Bid (IFB) (Section – I of this Bid Document)

4.2 Financial Criteria as per Invitation for Bid (IFB) (Section – I of this Bid Document)

5. Cost of Bidding

5.1 The bidder shall bear all costs associated with the preparation and submission of the bid, and PURCHASER (MNGL), will in no case, be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

B. BIDDING DOCUMENT

6. Content of Bidding

6.1 The bidding documents are those stated below Documents and should be read in conjunction with any addenda issued in accordance with ITB Clause

a) Volume I of II - IFB, ITB, GCC, ATC
b) Volume II of II – SCC, MR & TS, SOR, etc.

6.2 The Bidder is expected to examine all instructions, forms, terms and specifications in the bidding documents. The Invitation for Bids (IFB) together with all its attachments thereto, shall be considered to be read, understood and accepted by the bidders. Failure to furnish all information required by the bidding documents or to submit a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in the rejection of its bid.

7. Clarification of Bidding Documents

7.1 A prospective Bidder requiring any clarification of the bid documents may notify the Owner and / or the Consultant as the case may be, in writing or by cable (hereinafter, the term ‘cable’ is deemed to include electronic mail and facsimile) at

the address indicated in the tender. The Owner / Consultant will respond in writing to any request for clarification of the bid documents which it receives after issue of the bid documents but prior to at least one (01) working day before the pre-bid meeting date. Owner will not entertain any queries received after 1800 HRS post one (1) day of pre-bid meeting. Written copies of the Owner's/ Consultant's response (including an explanation of the query but without identifying the source of inquiry) will be hosted on CPPP's e-procurement website https://etenders.gov.in and MNGL website along with the corrigendum before the bid due date. All such clarifications issued shall deem to form a part and parcel of the Bid documents.

8. Amendment of Bidding Documents

8.1 At any time prior to the bid due date, the PURCHASER may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents, by issuing addenda.

8.2 Any addendum /corrigendum/ clarifications to bidders query thus issued shall be part of the bidding documents pursuant to ITB Clause- 7.0 and shall be hosted on the on website www.mngl.in and CPPP's e-tendering website before bid due date. All the prospective bidders who have attended the Pre-Bid meeting/ submitted bid document fee, shall be informed by email/ post about the addendum/ corrigendum/ clarifications to bidder's query for their reference. Bidders desirous to submit its bid must take into consideration of all the addendum(s)/ corrigendum (s)/ clarifications to bidder's query hosted on the above websites before submitting the bid.

8.3 The PURCHASER may, at its discretion, extend the bid due date to allow prospective bidders, a reasonable time to furnish their most competitive bid considering the amendments issue

8.4 Bidders are advised to visit www.mngl.in and CPPP's e-tendering website from time to time to get updated information / documents.

C. PREPARATION OF BIDS

9. Language of Bid

9.1 The bid prepared by the bidder as well as all correspondence/drawings and documents relating to the bid exchanged by bidder and the PURCHASER shall be written in English language, provided that any printed literature furnished by the bidder may be written in another language so long as accompanied by an ENGLISH translation, in which case, for the purpose of interpretation of the bid, the ENGLISH translation shall govern.

9.2 In the event of submission of any document/certificate by the Bidder in a language other than English, the English translation of the same duly authenticated by Chamber of Commerce of Bidder's country shall be submitted by the Bidder. Metric measurement system shall be applied.

10 Documents Comprising the Bids:

10.1 The bid prepared by the bidder shall comprise the following components that are required to be provided on the e-tendering portal:

10.1.1 **Technical cover:**

Scanned documents (duly signed by the authorized signatory) to be uploaded by the bidder on the portal as per list below:

i) Covering Letter as per format “Submission of Tender” / “Submission of Bid” enclosed with Part- A of Vol-I of II.
ii) Bidder’s general/ details information as per format F-1.
iii) Power of Attorney in favor of person(s) signing the bid that such person (s) is/are authorized to sign the bid on behalf of the bidder and any consequence resulting due to such signing shall be binding on the bidder.
iv) Specific experience, annual turnover and equipment deployment details as called for in qualifying requirements.
v) A Bid Form as per format F-2.
vi) Copies of documents as required in list of enclosure.
vii) Documents establishing the eligibility and conformity to the Bid Documents of all Goods and services, which the bidder proposes to supply under the award. Such document may be, literature, drawing or data and shall also include (a) the detailed description of the Good’s essential technical and performance characteristics; (b) a clause-by-clause commentary on Employer’s technical specification and demonstrating supplies substantial responsiveness to the specifications.
ix) Copy of Bid security in accordance with IFB & Clause 17 of ITB to be furnished either in the form of Cashier’s / Banker’s cheque / Bank Draft payable to MNGL at Pune/ Bank Guarantee as per format F-4.
x) Letter of authority in favour of any one or two of bidder’s executives having authority to attend the un-priced and price bid opening on specified dates and venue as per format F-5.
xi) Confirmation of no deviation as per Format F-6.
xii) Present commitments strictly as per form F-9.
xiii) Bidder’s declaration that they are not under liquidation, court receivership or similar proceedings.
xiv) Any other information/details required as per bid document.

10.1.2 **Financial cover:**

Price Bid SOR as per the prescribed format on the e-tender portal.

10.2 All the documents submitted shall be duly signed and stamped on each page by the bidder or an authorized signatory of the bidder.

10.3 Bidders are advised to submit quotations based strictly on the terms and conditions and specifications contained in the bid document and not stipulate any deviations. Should it, however, become unavoidable, deviations should be stipulated only in the prescribed Pro forma. Owner reserves the right to evaluate quotations containing deviations having financial implications after adding the cost for such deviations as determined by Owner.

10.4 Original schedule of rates duly filled in shall not contain any condition whatsoever. Any condition given in this part shall not be considered and shall render the offer liable for rejection.

10.5 All signatures in bids shall be dated, as well as all pages of bids shall be initialed at lower right-hand corner by the Bidder or by a person holding power of attorney authorizing him to sign on behalf of the bidder before the submission of bids.

10.6 The Bidder's bid is central to the evaluation and selection process. Therefore, it is important that the Bidder carefully prepares the bid and answers all questions completely. Missing information and vague answers may delay the evaluation of a bid and may impair the Bidder's chances of success.

10.7 Information received by Purchaser from the Bidder will be disclosed to Purchaser's employees and/or advisers or external consultants for the purpose of evaluating the bid response.

11. Bid Form & Price Schedule

11.1 The bidders shall complete the Bid Form and appropriate, Price schedule furnished in the Vol II of II of Bidding Document, indicating the required information for all the goods to be supplied, a brief description of the goods, their country of origin and quantity.

12.0 BID PRICES

12.1 The Bidder shall e-quote Bid Prices on appropriate format of "Schedule of Rates" (SOR) as enclosed part of bid documents as it proposes to supply under the contract.

12.2 Indian Bidders shall indicate the following separately (as per Price Schedule):

A) Ex-works Price including packing and forwarding charges (such price to include all costs as well as duties and taxes paid or payable on components and raw materials incorporated or to be incorporated in the goods).

B) Goods & Service Tax which will be payable on the finished goods if this contract is awarded.

C) The bidders shall indicate breakup of the quantum of imports involved for import of necessary raw materials and components giving CIF value of Import in applicable currency considered and included in bid price Essentiality certificate may be provided by the Purchaser for Project imports, wherever applicable.

D) The statutory variation in Goods & Service Tax (GST) on finished goods covered under Cl. 12.1 B within the contractual delivery period shall be to MNGL's account. However, any increase in the rate of these taxes and duties beyond the contractual completion period shall be to bidder's account and any decrease in rate shall be passed on to MNGL. Further, any statutory variation in the rate of customs duty (except GST) within contractual delivery period, on-the actual CIF value of import content, but subject to maximum of such duty payable on quoted CIF value, under Cl. 12.1 (A) shall also be to MNGL's account. In case of delay in delivery, any increase in the rate of customs duty beyond the contractual completion period shall be to bidder's account and any decrease in rate shall be passed on to MNGL.

E) The total amount which can be claimed / set off by MNGL for CENVAT (for Goods & Service tax) separately.

12.3 Inland transportation, other local costs incidental to delivery of the goods to its destination (FOT-site) shall be quoted by the Bidder.

12.4 The bidder's break-up of price components in accordance with above sub-clauses will be solely for the purpose of facilitating the comparison of bids and will not in any way, limit the PURCHASER's right to contract on different terms.

12.5 Fixed Price: Prices quoted by the bidder shall be firm and fixed during the bidder's performance of the contract and not subject to variation on any account except for variations permitted under 12.1 D for domestic bidders. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected.

12.6 The delivery terms shall be interpreted as per INCOTERMS 2010.

13 Bid Currencies

13.1 Bidders shall submit their bids in Indian Rupees only.

14 Documents Establishing Bidder's Eligibility and Qualification

14.1 Bid Evaluation Criteria

14.1.1 Pursuant to evaluation Criteria specified in Invitation for Bids (IFB) the bidder shall furnish all necessary supporting documentary evidence to establish the bidder's claim of meeting Bid evaluation criteria.

14.2 Bidders Eligibility Criteria

14.2.1 The bidder shall furnish, as part of his bid, documents establishing the bidder's eligibility to bid and its qualification to perform the contract if its bid is accepted.

14.2.2 The documentary evidence of the bidder's qualifications to perform the contract if his bid is accepted, shall establish to the PURCHASER'S satisfaction:

a) that, in the case of a Bidder offering to supply goods under the contract which the Bidder did not manufacture (or otherwise, produce, the Bidder has been duly authorized by the goods Manufacturer or producer to supply the goods in the Purchaser's country).

b) that the Bidder has the financial, technical and production capacity necessary to perform the contract.

c) that, in case of a Bidder not doing business within the Purchaser's country, the Bidder is or will be (if awarded the contract) represented by an Agent in that country equipped and able to carry out the Supplier's maintenance, repair and spare parts stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications.

14.2.3 The PURCHASER will determine to its satisfaction whether the bidder selected as having submitted the lowest evaluated, responsive bid is qualified to satisfactorily perform the contract. An affirmative determination will be pre-requisite for award of the Contract.

15 Documents Establishing Goods' Eligibility and Conformity to Bidding Documents

15.1 Pursuant to ITB Clause 10, the bidder shall furnish, as part of the bid, documents establishing the eligibility and conformity to the Bidding Documents of all goods and services which the bidder proposes to supply under the Contract.

15.2 The documentary evidence of the goods and services' conformity to the Bidding Documents may be in the form of literature, drawings or data and shall furnish:

a) detailed description of the essential technical and performance characteristics of the goods.

b) a clause-by-clause commentary on the PURCHASER'S Technical specifications demonstrating the goods and services' substantial responsiveness to the specifications.

15.3 For purpose of the commentary to be furnished under Clause-15.2 above, the bidder shall note that standards for workmanship, material and equipment and reference to brand names or catalogue numbers, designated by the PURCHASER in its Technical Specifications are intended to be descriptive only and not restrictive.

16 Period of Validity of Bids

16.1 The bid shall remain valid for acceptance for four (4) months from the bid due date.

16.2 In exceptional circumstances, prior to expiry of the original bid validity period, the PURCHASER may request that the bidder extend the period of bid validity for a specified additional period. The requests and the responses thereto shall be made in writing (by fax/post e-mail). A bidder may refuse the request without forfeiture of his bid security. A bidder agrees to the request will not be required or permitted to modify his bid but will be required to extend the validity of its bid security for the period of the extension and in accordance with ITB Clause 17.0 in all respects.

17 Bid Security

17.1 Pursuant to ITB Clause 10, the bidder shall furnish, as part of his bid, bid security in the amount specified in the Invitation for Bids.

17.2 The bid security is required to protect the PURCHASER against the risk of bidder's conduct which would warrant the security's forfeiture, pursuant to ITB Clause-17.7

17.3 The bid security in US Dollars for bidders quoting in foreign currency and Indian Rupees for bidders quoting in Indian Rupees shall be in the form of Demand Draft/ Banker's Cheque/NEFT/RTGS in favor of Maharashtra Natural Gas Ltd., payable as per IFB (issued by Indian Nationalized /Scheduled bank or first-class international bank) or in the form of Bank Guarantee/ irrevocable Letter of Credit as per format enclosed in the Bidding Document.

MNGL shall not be liable to pay any bank - charges, commission, or interest on the amount of bid security. In case, bid security is in the form of Bank Guarantee or Letter of Credit, the same shall be from any Indian scheduled bank or a branch of an international bank situated in India and registered with Reserve bank of India as scheduled foreign bank.

The Bid Security shall be valid for two (02) months beyond the validity of the Bid as specified in Clause 16.0 of ITB.

17.4 Any bid not secured in accordance with ITB Clause 17.1 and 17.3 may be rejected by the PURCHASER as non-responsive.

17.5 Unsuccessful bidder's bid security will be discharged/returned as promptly as possible after award of contract and signing of agreement.

17.6 The successful bidder's bid security will be discharged upon the bidder's accepting the order, pursuant to ITB Clause-41 and furnishing the Contract Performance Guarantee pursuant to ITB Clause-42.

17.7 The bid security may be forfeited:

a) If a bidder withdraws his bid during the period of bid validity.

b) in the case of a successful bidder if the bidder fails:

i) to accept the Purchase Order in accordance with ITB Clause-41 or

ii) to furnish Performance Guarantee in accordance with ITB Clause-42

iii) to accept correction of errors pursuant to ITB Clause 32.0

c) If the Bidder changes the proposed manufacturer after submission of his bid.

17.8 Bid Security should be in favor of Maharashtra Natural Gas Ltd. and addressed to MNGL. Bid Security must indicate the Bid Document number and the item for which the bidder is quoting. This is essential to have proper co-relations later. The Bid Security in the form of Bank Guarantee or letter of Credit shall be in the form provided in the Bidding Document.

17.9 The Indian / Domestic firms registered with NSIC / MSME, under its single point registration scheme are exempted from furnishing Bid Security, provided they are registered for the items / work they intend to quote and subject to their enclosing with their bid a copy of latest and current registration certificate.

18. Pre-Bid meeting – As per IFB

18.1 The bidder(s) or his designated representative, who have purchased bid document, are invited to attend a pre-bid meeting which will take place as indicated in IFB.

18.2 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

18.3 Text of the questions raised, and the responses given, together with any responses prepared after the meeting, will be transmitted without delay (without identifying the sources of the question) to all purchasers of the bidding documents. Any modification of the bidding documents listed in ITB Sub-Clause 7.1 that may become necessary because of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 8 and not through the minutes of the pre-bid meeting.

18.4 Non-attendance of the pre-bid meeting will not be a cause for disqualification of a bidder.

19 Format and Signing of Bid

19.1 The bid shall be typed or written in indelible ink. Each page of bid offer shall be stamped and signed by the Bidder or a person or persons duly authorized by competent authority in order to bind the bidder to the contract.

19.2 Any interlineations, erasures, or corrections shall be valid only if the person or persons signing the bid initial them. Overwriting will not be treated as correction and may lead to rejection of bid. A correction shall be considered if a part of text or figures or dates needing corrections are deleted and a separate text or figure or date, as the case may be, is written separately having proper link to the place of correction.

19.3 As bidding shall be done through e-tendering, digitally signed documents to be uploaded.

20 Zero Deviation

20.1 Bidders to note that, MNGL will appreciate submission of offer based on the terms and conditions in the enclosed General Conditions of Contract, Special Conditions of Contract (SCC), Instructions to Bidders (ITB), Scope of supply, technical specifications etc, to avoid wastage of time and money in seeking clarifications on technical/ commercial aspects of the offer.

20.2 If any deviations are taken to the under-mentioned provisions of Bid Documents by the Bidder the bid is liable to be rejected:

i) Do not meet BEC Criteria
ii) Bid Security
iii) Performance Security (Contract Performance Bank Guarantee), 10% of Purchase Order Value
iv) Delivery Period
v) Terms of Payment
vi) Force Majeure
vii) Resolution of Dispute/Arbitration
viii) Termination of Contract,
ix) Warranty and Guarantee
x) Offer not submitted for complete scope of work
xi) Firm prices
xii) Prices not quoted as per Schedule of Rates formats.
xiii) Bidder has been put on Black / Holiday list by MNGL / MoP&NG / Oil Public Sector Enterprise(s).
xiv) Bidder is under liquidation.
xv) Bids not conforming to technical specifications/requirements.

xvi) Any other such provisions if specifically stipulated elsewhere in the Bid Document.

xvii) Price Reduction Schedule

However, MNGL reserves the right to request the bidder to withdraw the deviations against the above-mentioned provisions of Bid Documents.

21 Mode of Payment

21.1 Maharashtra Natural Gas Ltd. will issue A/C payee cheque for payment payable at par in case work is awarded to bidder.

22 Agent/ consultant/ Representative/ Retainer/ Associate [Applicable for lCB tenders only].

22.1 MNGL would prefer to deal directly with the manufacturers/ principals abroad but in case they decide to have their Agent/Consultant/Representative/Retainer/ Associate in India and pay commission for their services against a particular tender, it should be bare minimum, and the principal would have to certify that such a commission is commensurate with the services rendered to them by such an Agent/ Consultant /Representative/ Retainer/ Associate in India. The principal will also have to broadly list out services to be rendered by the Agent/ Consultant/ Representative Retainer/ Associate in India.

22.2 In the event bidder has as Agent/ Consultant/ Representative/ Retainer/ Associate/ servicing facilities in India (who is not an employee of the bidder) the bidder should indicate in their offer the name of such an Agent/ Consultant/ Representative/Retainer / Associate, they have for services in India. The bidder must also clearly indicate the commission payable to the Agent/Consultant/ Representative Retainer/Associate in rupees in terms of Agreement (enclosing copy of the same). The bidder, in his bid will indicate the nature and extent of service to be provided by such an Agent/Consultant Representative/Retainer/ Associate on behalf of the bidder and remuneration therefore provided in the price, as a separate item, quoted by the bidder to MNGL. Such remuneration/commission will be paid by MNGL in non-convertible Indian currency in India. Should it be established at any subsequent point of time that the above statement of the bidder is not correct or that any other amount of remuneration commission either in India or abroad is being paid to anyone (who is not an employee of the bidder), the bidder would be liable to be debarred from participating in the future tenders of MNGL.

The following particulars will also be furnished by the bidder:

(i) The precise relationship between the foreign manufacturer/principal and their Agent/Consultant Representative / Retainer/ Associate in India.

(ii) The mutual interest which the manufacturer/principal and the Agent/ Consultant/Representative/Retainer/Associate in India have in the business of each other.

(iii) Any payment which the Agent/ Consultant/ Representative/ Retainer/ Associate receives in India or abroad from the manufacturer/principal whether as a commission for the contract or as a general fee.

(iv) All services to be rendered by the Agent Consultant Representative / Retainer/Associate.

22.3 Overseas bidder should send their bids directly and not through Agent/ Consultant/ Representative / Retainer /Associate Agent Consultant Representative Retainer/ Associate of the overseas manufacturers/suppliers are, however, permitted to purchase bidding documents and attend bid opening provided such as Agent/ Consultant / Representative/ Retainer/ Associate has a power of attorney/ letter *of* authority setting out very clearly his role, which will be limited to such areas of activity as purchase of bidding documents, attending of bid opening and claiming of payment for their services, provided further that such a power of attorney/letter of authority is submitted to MNGL in advance for scrutiny and acceptance or otherwise.

D. SUBMISSION OF BIDS

23.0 PREPARATION OF BIDS

23.1 Scanned documents (duly signed by the authorized signatory) and/or pre-formatted excel files to be uploaded by the bidder on the portal which shall comprise of the documents mentioned in Clause No. 10 of ITB.

Note: All pages of the bid offer to be signed and stamped by an authorized representative (as described in bid document) of the bidder.

Bidder must ensure numbering of all pages submitted in bid document. Further total number of pages submitted in bid document must be mentioned in the covering letter of bid submitted.

23.2 The price bid shall contain Schedule of Rates duly filled in the prescribed format available on the e-portal.

24.0 DEADLINE FOR SUBMISSION OF BID

24.1 The bid must be submitted on the specified e-tendering portal as specified in IFB, not later than the time and date as specified in IFB. The online e-tendering portal will not allow any bid or part thereof whatsoever to be submitted after the due time on the due date.

24.2 The Purchaser may, in exceptional circumstances and at its discretion, on giving reasonable notice by email or any written communication to all prospective bidders who have been issued the bid document, to extend the deadline for the submission of bids in which case all rights and obligations of the Purchaser and bidders, previously subject to the original deadline will thereafter be subject to deadline as extended.

25.0 LATE BIDS

Any Bid Security / EMD received by the Purchaser after the deadline for submission of bid may render the bid to be declared “Late” and such bid is liable for rejection; such EMD may be returned unopened to the bidder at the sole discretion of the Purchaser.

26.0 MODIFICATION AND WITHDRAWAL OF BIDS

26.1 The bidder may modify or withdraw its bid after the bid submission, but, before the due date of submission as per provisions provided on the e-tendering portal. After the bid due date & time however, no modifications whatsoever are allowed in the bid.

26.2 No bid shall be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Bid form. In case of request in written by the authorized signatory for withdrawal of a bid during this interval, the Bidder’s bid security shall be forfeited.

26.3 Upon selecting “withdraw” option on the e-tender portal and providing the reason for withdrawal, the portal will not allow the bidder to re-submit his bid. MNGL shall not be responsible if the bidder is not able to re-submit his bid after withdrawal.

E. OPENING AND EVALUATION OF BIDS

27. Bid Opening

27.1 The Purchaser will open all bids on the e-tendering portal in the presence of bidder(s) representatives who choose to attend, at the time, on the date and place (as specified in IFB). The bidder(s) representatives, who are present, shall sign an attendance sheet evidencing their attendance, if so, required by the Purchaser.

27.2 The Bidder’s names and the presence or absence of requisite Bid Security (EMD) and such other details as the Purchaser, at its discretion, may consider appropriate, will be announced at the opening. No bid shall be rejected at bid opening, except for bids without EMD.

27.3 Bids that are not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances. Bidder’s specific attention is drawn to this stipulation to enable the representative of the Bidder at the bid

opening time to bring out to the attention for the Purchaser any documents pertaining to its bid is not being acknowledged and relevant portions read out.

27.4 The Purchaser will prepare a bid opening statement to be signed by all representatives present during bid opening.

28 Process to be Confidential

28.1 Information relating to the examination, clarifications, evaluation and comparison of bids and recommendations for the order, shall not be disclosed to bidders or any other person officially concerned with such process.

29 Contacting the Purchaser

29.1 From the time of the bid opening to the time of the release of order, if any bidder wishes to contact the Purchaser for any matter relating to the bid, it should do so in writing.

29.2 Any effort by a bidder to influence the Purchaser in any manner in respect of bid evaluation or award will result in the rejection of that bid.

30 Preliminary Examination of Bids

30.1 Technical-Commercial Bid Evaluation

30.1.1 The PURCHASER will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required securities have been furnished, whether the documents have been properly signed and whether the bids are generally in order.

30.1.2 Prior to the detailed evaluation, the PURCHASER will determine whether each bid is of acceptable quality, is generally complete and is responsive to the Bidding Documents. For purposes of this determination a responsive bid is one which conforms to all the terms, conditions and specification of the bidding document, without deviations, objections, conditionally or reservations.

30.1.3 No deviation whatsoever, is permitted in the Bidding Documents and the Priced bids of those bidders whose Un-Priced bids contain any exception to the conditions and stipulations of the Bidding Documents shall not be opened and returned un-opened to such bidder(s).

30.1.4 The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence. If a bid is non-responsive, it will be rejected by the Purchaser and may not subsequently be made responsive by the bidder by correction of the nonconformity.

30.1.5 The Purchaser will carry out a detailed evaluation of the bids previously determined to be responsive to determine whether the technical aspects are in accordance with the requirements set forth in the Bidding Documents. To reach such a determination, the Purchaser will examine and compare the technical aspects of the bids based on the information supplied by the bidders, taking into account the following factors:

(a) Overall completeness and compliance with the Technical Specifications; quality function and operation of the process control concept included in the bid. The bid that does not meet minimum acceptable standard of completeness, consistency and detail will be rejected as non-responsive.

(b) Any other relevant factor, if any that the Purchaser deems necessary or prudent to be taken into consideration.

30.2 Requisite forms contain all necessary information including those, required for meeting qualifying criteria stipulated in the Bidding Document.

31.0 **OPENING OF PRICE BID**

31.1 In case of two-part bidding, the Bidders whose bids are found substantially responsive shall be invited to attend the opening of price bid. Such bidders may be required to attend the price bid opening at a short notice. The place, date and time of price bid opening will be informed to all such Bidders. The Bidder's representatives who are present shall sign a register evidencing their attendance.

31.2 The bid prices stated in the price schedules will be announced during price bid opening.

32 Arithmetic Corrections

32.1 The bids will be checked for any arithmetical errors as follows:

32.1.1 In case of any discrepancy between prices in words and prices in figures, the prices in words shall be valid and binding. In case of any error in total indicated by the Bidder, the unit price alone shall be considered valid and binding on the Bidder.

32.1.2 If the bidder does not accept the correction of errors, his bid will be rejected, and the bid security will be forfeited.

33 Conversion to Single Currency *[Applicable in ICB tenders only]*

33.1 To facilitate evaluation and comparison, the PURCHASER will convert all bid prices expressed in the amounts in various currencies in which bid price is payable, to Indian Rupees at the Bills selling exchange rate declared by the State Bank of India on the working day prior to Priced bid (Part-II) opening.

34 Evaluation and Comparison of Bids

34.1 The PURCHASER will evaluate and compare the bids previously determined to be substantially responsive, pursuant to ITB Clause - 30.

34.2 Bid Evaluation and Comparison Criteria:
The evaluation of all the responsive bids for supplies to be arrived at the lowest evaluated offer as under:

(A) Domestic Bidders:
The evaluated price of domestic bidders shall include the following:

i) The prices quoted by Domestic Bidder for the scope of work defined in the tender documents will include customs duty plus Goods & Service Tax and any additional duty, if any, Goods & Service Tax as applicable which shall be indicated separately

ii) Price quoted by the domestic bidders shall include all costs towards Insurance, all type of handling, transportation, etc. as applicable and payable by the CONTRACTOR under the contract

iii) Goods & Service Tax on the finished goods.

34.3 OWNER'S price evaluation and price comparison of technical-commercially acceptable bids shall take following in account**:**

i) Total value on FOT site basis, including liability towards customs duty, GST, all other taxes & duties, levies, transportation, all insurance, and all other costs as applicable up to Final Acceptance of work complete in all respects covered under Para A above.

ii) Cost of mandatory spares, if any.

iii) The total site price quoted shall be compared.

34.4 Bids not conforming to Bid Qualification criteria and technical & commercial requirements shall be rejected.

35 Domestic Preference

35.1 VOID

35.2 PROCUREMENTS FROM A BIDDER WHICH SHARES A LAND BORDER WITH INDIA:

I. Order (Public Procurement No. 1) dated 23.07.2020, Order (Public Procurement No. 2) dated 23.07.2020 and Order (Public Procurement No. 3) dated 24.07.2020, Department of Expenditure, Ministry of Finance, Govt. of India refers. The same are available at website https://doe.gov.in/procurement-policy-divisions.

II. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the

Competent Authority. For details of competent authority refer to Annexure I of Order (Public Procurement No. 1) dated 23.07.2020. Further the above will not apply to bidders from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Government of India is engaged in development projects. Updated lists of countries to which lines of credit have been extended or in which development projects are undertaken are given in the website of the Ministry of External Affairs, Govt. of India

III. "Bidder" (including the term 'tenderer', 'consultant' 'vendor' or 'service provider' in certain contexts) for purpose of this provision means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency, branch or office controlled by such person, participating in a procurement process.

IV. "Bidder from a country which shares a land border with India" for the purpose of this:

a. An entity incorporated, established or registered in such a country; or

b. A subsidiary of an entity incorporated, established or registered in such a country; or

c. An entity substantially controlled through entities incorporated, established or registered in such a country; or

d. An entity whose beneficial owner is situated in such a country; or

e. An Indian (or other) agent of such an entity; or

f. A natural person who is a citizen of such a country; or

g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

V. "Beneficial owner" for the purpose of above (IV) will be as under:

i. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person(s), has a controlling ownership interest or who exercises control through other means.

Explanation:

1. "Controlling ownership interest" means ownership of, or entitlement to, more than twenty-five per cent of shares or capital or profits of the company.

2. "Control" shall include the right to appoint the majority of the directors or to control the management or policy decisions, including by virtue of their shareholding or management rights or shareholder's agreements or voting agreements.

ii. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership.

iii. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals.

iv. Where no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official.

v. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

VI. "Agent" for the purpose of this Order is a person employed to do any act for another, or to represent another in dealings with third persons

VII. The Successful bidder shall not be allowed to subcontract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

VIII. SUBMISSION OF CERTIFICATE IN BIDS: Bidder shall submit a certificate in this regard as Format F-18. If such certificate given by a bidder whose bid is accepted is found to be false, this would be a ground for immediate rejection of the bid/termination and further action as per "Procedure for Action in case of Corrupt/Fraudulent/ Collusive / Coercive Practices" of tender document.

IX. The registration, wherever applicable, should be valid at the time of submission of bids and at the time of acceptance of bids. In respect of supply otherwise than by tender, registration should be valid at the time of placement of order. If the bidder was validly registered at the time of acceptance / placement of order, registration shall not be a relevant consideration during contract execution.

F. AWARD OF CONTRACT

36 Post Qualification

36.1 In the absence of prequalification, the PURCHASER will determine to its satisfaction whether the bidder selected as having submitted the lowest evaluated, responsive bid is qualified to satisfactorily perform the contract.

36.2 The determination will take into account the bidder's financial, technical and production capabilities. It will be based upon an examination of the documentary evidence of the bidder's qualifications submitted by the Bidder, pursuant to ITB Clause-10, as well as such other information as the PURCHASER deems necessary and appropriate.

36.3 An affirmative determination will be a prerequisite for award of the contract to the bidder. A negative determination will result in rejection of the bidder's bid.

37 Award Criteria

37.1 Subject to ITB Clause 30, the Purchaser will award the contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined to be the lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the contract satisfactorily.

38 PURCHASER's Right to Vary Quantities at Time of Award

38.1 PURCHASER reserves the right at the time of award of ORDER to increase or decrease by upto 20% the quantity of GOODS specified in the Material Requisition, without any change in unit price or other terms and conditions. Variation beyond this limit will be subject to mutual agreement between the PURCHASER and the Seller.

39 PURCHASER's Right to Accept Any Bid and to Reject Any or All Bids

39.1 PURCHASER reserves the right to accept or reject any bid and to annul the bidding process and reject all bids, at any time prior to award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligations to inform the affected bidder or bidders of the ground for the PURCHASER'S ACTION.

40 Notification of Award/ Fax of Intent / Purchase Order

40.1 Prior to the expiration of period of bid validity, the PURCHASER will notify the successful bidder in writing, by fax or email to be confirmed in writing that his bid has been accepted. The notification of award/ Fax of Intent / Purchase Order will constitute the formation of the Contract.

40.2 Delivery shall be counted from the date of Purchase Order.

40.3 Upon the successful bidder’s furnishing of contract performance bank guarantee. Pursuant to ITB Clause-42, the PURCHASER will promptly notify each unsuccessful bidder and will discharge his bid security pursuant of ITB Clause 17.

41 Acceptance of Purchase Order

41.1 PURCHASER will issue the Purchase Order to the successful bidder, who, within 07 days of receipt of the same, shall sign all pages and return the acceptance copy to the PURCHASER.

42 Performance Guarantee

42.1 Unless mentioned in notification of award /Fax of Intent / Purchase Order within 15 days of the receipt of the Delivery Order from the PURCHASER, the successful bidder shall furnish the performance guarantee in accordance with Clause 12 of General Conditions of Contract in the form provided in the bidding documents. The Bank Guarantee/Letter of Credit towards performance guarantee shall be in the currency of the Contract.

42.2 The performance guarantee shall be for an amount equal to 10% of Purchase Order Value towards faithful performance of the contractual obligations and performance of equipment. This Bank Guarantee/Letter of Credit shall be from any Indian scheduled bank or a branch of an international bank situated in India and registered with Reserve bank of India as scheduled foreign bank. This bank guarantee/letter of Credit shall be valid for a period as-stated in Clause-12 of General Conditions of Contract

42.3 Failure of the successful bidder to comply with the requirements of this clause shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security.

43 Income Tax Liability

43.1 The bidder will have to bear all income tax liability, both Corporate as well as for his personnel.

44 Corrupt or Fraudulent Practices:

44.1 MNGL requires that bidders / contractors observe the highest standard of ethics during the execution of contracts. In pursuance of this policy, the Employer:

a) defines, for the purposes of this provision, the terms set forth below as follows:
   i) "corrupt practice" means the offering, giving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution; and
   ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.

b) will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.

c) will declare a firm ineligible and put on holiday, either indefinitely or for a stated period of time if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing a contract.

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

UNDERTAKING ON LETTERHEAD

To,
M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045

Sub.:

Tender No.:

Dear Sir / Ma'am,

We have read the clause regarding Provisions for Procurement from a Bidder which shares a land border with India, we certify that, bidder M/s _____ (Name of Bidder) is:

(i) Not from such a country [ ]

(ii) If from such a country, has been registered With the Competent Authority. (Evidence of valid registration by the Competent Authority shall be attached) [ ]

(Bidder to tick appropriate option above)

We hereby certify that bidder M/s _____ (***Name of bidder)*** fulfils all requirements in this regard and is eligible to be considered against the tender.

Place:
Date:

{Signature of Authorised Signatory of Bidder}
Name:
Designation:

Seal:

SECTION – III
GENERAL CONDITIONS OF CONTRACT
(GCC - GOODS)

1 Definitions

In this document, General Conditions of Contract (GCC-Supply), the following terms shall have the following respective meanings:

1.1 The "APPOINTING AUTHORITY" for the purpose of arbitration shall be the MANAGING DIRECTOR or any other person so designated by the EMPLOYER.

1.2 "APPROVED" shall mean approved in writing including subsequent written confirmation of previous verbal approval and "APPROVAL" means approval in writing including as aforesaid

1.3 BIDDER: Designates the individual or legal entity which has made a proposal, a tender or a bid with the aim of concluding a Contract with the PURCHASER.

1.4 CONTRACT shall mean Purchase Order/Contract and all attached exhibits and documents referred to therein and all terms and conditions thereof together with any subsequent modifications thereto.

1.5 CONTRACT PRICE shall mean the price payable to the Seller under the Contract for the full and proper performance of his contractual obligations.

1.6 COMPLETION DATE shall mean the date on which the goods are successfully commissioned by the Seller and handed over to the PURCHASER.

1.7 COMMERCIAL OPERATION shall mean the condition of the operation in which the complete equipment covered under the Contract is officially declared by the PURCHASER to be available for continuous operation at different loads upto and including rated capacity.

1.8 The "CONTRACTOR" means the person or the persons, firm or Company or corporation whose tender has been accepted by the EMPLOYER and includes the CONTRACTOR's legal Representatives his successors and permitted assigns.

1.9 "CONSTRUCTION EQUIPMENT" means all appliances/equipment and things whatsoever nature for the use in or for the execution, completion, operation, or maintenance of the work or temporary works (as hereinafter defined) but does not include materials or other things intended to form or to be incorporated into the WORK or camping facilities.

1.10 "CONTRACT DOCUMENTS" means collectively the Tender Documents, Designs, Drawings, Specification, Schedule of Quantities and Rates, Letter of Acceptance

and agreed variations if any, and such other documents constituting the tender and acceptance thereof.

1.11 The "CHANGE ORDER" means an order given in writing by the ENGINEER-IN-CHARGE to effect additions to or deletion from and alteration in the works.

1.12 The "COMPLETION CERTIFICATE" shall mean the certificate to be issued by the ENGINEER-IN-CHARGE when the works have been completed entirely in accordance with CONTRACT DOCUMENT to his satisfaction.

1.13 COMMISSIONING" shall mean pressing into service of the system including the plant(s), equipment(s), vessel(s), pipeline, machinery(ies), or any other section or sub-section of installation(s) pertaining to the work of the CONTRACTOR after successful testing and trial runs of the same.

1.14 "COMMISSIONING" can be either for a completed system or a part of system of a combination of systems or sub-systems and can be performed in any sequence as desired by EMPLOYER and in a manner established to be made suited according to availability of pre-requisites. Any such readjustments made by EMPLOYER in performance of "COMMISSIONING" activity will not be construed to be violating CONTRACT provisions and CONTRACTOR shall be deemed to have provided for the same.

1.15 "DAY" means a day of 24 hours from midnight to midnight irrespective of the number of hours worked in that day

1.16 DELIVERY terms shall be interpreted as per INCOTERMS 2010 in case of Contract with a foreign Bidder and as the date of FOT Site in the case of a contract with an Indian Bidder.

1.17 DRAWINGS shall mean and include Engineering drawings, sketches showing plans, sections and elevations in relation to the Contract together with modifications and/or revisions there.

1.18 ENGINEER or Engineer-in-Charge of the Project SITE shall mean the person designated from time to time by PURCHASER at SITE and shall include those who are expressly authorized by him to act for and on his behalf for operation of this CONTRACT.

1.19 FINAL ACCEPTANCE shall mean the PURCHASER’s written acceptance of the Works performed under the Contract after successful completion of performance and guarantee test.

1.20 The "FINAL CERTIFICATE" in relation to a work means the certificate regarding the satisfactory compliance of various provision of the CONTRACT by the

CONTRACTOR issued by the ENGINEER-IN- CHARGE/EMPLOYER after the period of liability is over.

1.21 GOODS shall mean articles, materials, equipment, design and drawings, data and other property to be supplied by Seller to complete the contract.

1.22 INSPECTOR shall mean any person or outside Agency nominated by PURCHASER/CONSULTANT through CONSULTANT to inspect equipment, stagewise as well as final, before dispatch, at SELLER's works and on receipt at SITE as per terms of the CONTRACT.

1.23 INITIAL OPERATION shall mean the first integral operation of the complete equipment covered under the Contract with subsystems and supporting equipment in service or available for service.

1.24 "MOBILIZATION" shall mean establishment of sufficiently adequate infrastructure by the CONTRACTOR at "SITE" comprising of construction equipments, aids, tools tackles including setting of site offices with facilities such as power, water, communication etc. establishing manpower organization comprising of Resident Engineers, Supervising personnel and an adequate strength of skilled, semi-skilled and un-skilled workers, who with the so established infrastructure shall be in a position to commence execution of work at site(s), in accordance with the agreed Time Schedule of Completion of Work. "MOBILISATION" shall be considered to have been achieved, if the CONTRACTOR is able to establish infrastructure as per Time Schedule, where so warranted in accordance with agreed schedule of work implementation to the satisfaction of ENGINEER-IN-CHARGE/ EMPLOYER

1.25 "NOTICE IN WRITING OR WRITTEN NOTICE" shall mean a notice in written, typed or printed characters sent (unless delivered personally or otherwise proved to have been received by the addressee) by registered post to the latest known private or business address or registered office of the addressee and shall be deemed to have been received in the ordinary course of post it would have been delivered.

1.26 PURCHASER/EMPLOYER/OWNER/COMPANY/MNGL shall mean MAHARSHRATRA NATURAL GAS LIMITED (MNGL) having its registered office at Pune (Maharashtra) PURCHASER includes successors, assigns of MNGL.

1.27 "PLANS" shall mean all maps, sketches and layouts as are incorporated in the CONTRACT in order to define broadly the scope and specifications of the work or works, and all reproductions thereof.

1.28 PERFORMANCE AND GUARANTEE TESTS shall mean all operational checks and tests required to determine and demonstrate capacity, efficiency and operating characteristics as specified in the Contract documents.

1.29 PROJECT designates the aggregate of the Goods and/or Services to be provided by one or more Contractors.

Quantities – Bills of quantities
Bills of quantities

Designate the quantity calculations to be taken into account when these calculations are made from detailed or construction drawings, or from work actually performed, and presented according to a jointly agreed breakdown of the Goods and/or Services.

1.30 SELLER/SUPPLIER/CONTRACTOR shall mean the person, firm or company with whom PURCHASE ORDER/AWARD OF WORK/CONTRACT is placed/entered into by PURCHASER for supply of equipment, materials and services. The term Seller includes its successors and assigns.

1.31 SERVICE shall mean erection, installation, testing, commissioning, provision of technical assistance, training and other such obligations of the Seller covered under the Contract.

1.32 SITE designates the land and/or any other premises on, under, in or across which the Goods and/or Services have to be supplied, erected, assembled, adjusted, arranged and/or commissioned.

1.33 SPECIFICATIONS shall mean and include schedules, details, description, statement of technical data, performance characteristics, standards (Indian as well as International) as applicable and specified in the Contract.

1.34 SUB-CONTRACT shall mean order placed by the Seller, for any portion of the contracted work, after necessary consent and approval of PURCHASER.

1.35 SUB-CONTRACTOR shall mean the person named in the CONTRACT for any part of the work or any person to whom any part of the CONTRACT has been sub-let by the SELLER with the consent in writing of the CONSULTANT/PURCHASER and will include the legal representatives, successors, and permitted assigns of such person.

1.36 START-UP shall mean the time period required to bring the equipments covered under the Contract from an inactive condition, when construction is essentially complete to the state of readiness for trial operation. The start-up period shall include preliminary inspection and check out of equipment and supporting subsystems, initial operation of the complete equipments covered under the Contract to obtain necessary pre-trial operation data, perform calibration and corrective action, shutdown inspection and adjustment prior to the trial operation period.

1.37 TESTS shall mean such process or processes to be carried out by the Seller as are prescribed in the Contract or considered necessary by PURCHASER or his representative in order to ascertain quality, workmanship, performance and efficiency of equipment or part thereof.

1.38 TESTS ON COMPLETION shall mean such tests as prescribed in the Contract to be performed by the Seller before the Works are taken over by the PURCHASER.

1.39 "TEMPORARY WORKS" shall mean all temporary works of every kind required in or about the execution, completion or maintenance of works.

1.40 "VALUE OF CONTRACT" or "TOTAL CONTRACT PRICE" shall mean the sum accepted or the sum calculated in accordance with the prices accepted in tender and/or the CONTRACT rates as payable to the CONTRACTOR for the entire execution and full completion of the work, including change order.

1.41 "WORKING DAY" means any day which is not declared to be holiday or rest day by the EMPLOYER.

1.42 "WEEK" means a period of any consecutive seven days.

1.43 "METRIC SYSTEM" - All technical documents regarding the construction of works are given in the metric system and all work in the project should be carried out according to the metric system. All documents concerning the work shall also be maintained in the metric system.

2 Seller to Inform

2.1 The Seller shall be deemed to have carefully examined all contract documents to his entire satisfaction. Any lack of information shall not in any way relieve the Seller of his responsibility to fulfill his obligation under the Contract.

3 Application

3.1 These General Conditions of Contract (GCC-Supply) shall apply to the extent that they are not superseded by provisions of other parts of the Contract.

4 Country of Origin

4.1 For purposes of this Clause "origin" means the place where the Goods were mined, grown or produced, or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembling of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

5 Scope of Contract

5.1 Scope of the CONTRACT shall be as defined in the PURCHASE ORDER/CONTRACT specifications, drawings and Annexure thereto.

5.2 Completeness of the EQUIPMENT shall be the responsibility of the SELLER. Any equipment, fittings and accessories which may not be specifically mentioned in the specifications or drawings, but which are usual or necessary for the satisfactory functioning of the equipment (successful operation and functioning of the EQUIPMENT being SELLER's responsibility) shall be provided by SELLER without any extra cost.

5.3 The SELLER shall follow the best modern practices in the manufacture of high-grade EQUIPMENT notwithstanding any omission in the specifications. The true intent and meaning of these documents is that SELLER shall in all respects, design, engineer, manufacture and supply the equipment in a thorough workmanlike manner and supply the same in prescribed time to the entire satisfaction of PURCHASER.

5.4 The SELLER shall furnish six (6) copies in English language of technical documents, final drawings, preservation instructions, operation and maintenance manuals, test certificates, spare parts catalogues for all equipments to the PURCHASER.

5.5 The documents once submitted by the SELLER shall be firm and final and not subject to subsequent changes. The SELLER shall be responsible for any loss to the PURCHASER/CONSULTANT consequent to furnishing of incorrect data/drawings.

5.6 All dimensions and weight should be in metric system.

5.7 All equipment to be supplied and work to be carried out under the CONTRACT shall conform to and comply with the provisions of relevant regulations / Acts (State Government or Central Government) as may be applicable to the type of equipment/work carried out and necessary certificates shall be furnished.

5.8 The Seller shall provide cross sectional drawings, wherever applicable, to identify the spare part numbers and their location. The size of bearings, their make and number shall be furnished.

5.9 Specifications, design and drawings issued to the SELLER alongwith RFQ and CONTRACT are not sold or given but loaned. These remain property of PURCHASER or its assigns and are subject to recall by PURCHASER. The SELLER and his employees shall not make use of the drawings, specifications and technical information for any purpose at any time except for manufacture against the CONTRACT and shall not disclose the same to any person, firm or corporate body, without written permission of PURCHASER. All such details shall be kept confidential.

5.10 SELLER shall pack, protect, mark and arrange for despatch of EQUIPMENT as per instructions given in the CONTRACT.

6 Standards

6.1 The GOODS supplied under the CONTRACT shall conform to the standards mentioned in the Technical Specifications, or such other standards which ensure equal or higher quality, and when no applicable standard is mentioned, to the authoritative standard appropriate to the GOODS' country of origin and such standards shall be the latest issued by the concerned institution.

7 Instructions, Directions & Correspondence

7.1 The materials described in the CONTRACT are to be supplied according to the standards, data sheets, tables, specifications and drawings attached thereto and/or enclosed with the CONTRACT, itself and according to all conditions, both general and specific enclosed with the contract, unless any or all of them have been modified or cancelled in writing as a whole or in part.

a. All instructions and orders to SELLER shall, excepting what is herein provided, be given by PURCHASER.

b. All the work shall be carried out under the direction of and to the satisfaction of PURCHASER.

c. All communications, including technical/commercial clarifications and/or comments, shall be addressed to PURCHASER and shall always bear reference to the CONTRACT.

d. Invoices for payment against CONTRACT shall be addressed to PURCHASER.

e. The CONTRACT number shall be shown on all invoices, communications, packing lists, containers and bills of lading, etc.

8 Contract Obligations

8.1 If after award of the contract, the Seller does not acknowledge the receipt of award or fails to furnish the performance guarantee within the prescribed time limit, the PURCHASER reserves the right to cancel the contract and apply all remedies available to him under the terms and conditions of this contract.

8.2 Once a contract is confirmed and signed, the terms and conditions contained therein shall take precedence over the Seller's bid and all previous correspondence.

9 Modification in Contract

9.1 All modifications leading to changes in the CONTRACT with respect to technical and/or commercial aspects including terms of delivery, shall be considered valid only when accepted in writing by PURCHASER by issuing amendment to the CONTRACT. Issuance of acceptance or otherwise in such cases shall not be any ground for extension of agreed delivery date and also shall not affect the performance of contract in any manner except to the extent mutually agreed through a modification of contract.

9.2 PURCHASER shall not be bound by any printed conditions or provisions in the SELLER's Bid Forms or acknowledgment of CONTRACT, invoices, packing list and

other documents which purport to impose any conditions at variance with or supplemental to CONTRACT.

10 Use of Contract Documents & Information

10.1 The Seller shall not, without the PURCHASER's prior written consent, disclose the CONTRACT or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the PURCHASER in connection therewith, to any person other than a person employed by the SELLER in the performance of the CONTRACT. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purpose of such performance.

10.2 The SELLER shall not, without the PURCHASER's prior written consent, make use of any document or information enumerated in Article 10.1 except for purpose of performing the CONTRACT.

11 Patent Rights, Liability & Compliance of Regulations

11.1 SELLER hereby warrants that the use or sale of the materials delivered hereunder will not infringe claims of any patent covering such material and SELLER agrees to be responsible for and to defend at his sole expense all suits and proceedings against PURCHASER based on any such alleged patent infringement and to pay all costs, expenses and damages which PURCHASER may have to pay or incur by reason of any such suit or proceedings.

11.2 The SELLER shall indemnify the PURCHASER against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the GOODS or any part thereof in the PURCHASER's country.

11.3 SELLER shall also protect and fully indemnify the PURCHASER from any claims from SELLER'S workmen/employees or their heirs, dependants, representatives, etc. or from any other person/persons or bodies/companies etc. for any acts of commissions or omission while executing the CONTRACT.

11.4 SELLER shall be responsible for compliance with all requirements under the laws and shall protect and indemnify completely the PURCHASER from any claims/penalties arising out of any infringements.

12 Performance Guarantee

12.1 Within 15 days after the SELLER's receipt of Purchase Order, the SELLER shall furnish Performance Guarantee in the form of Bank Guarantee/Demand Draft / irrevocable Letter of Credit to the PURCHASER, in the form provided in the Bidding Documents, for an amount equivalent to 10% of Purchase Order Value.

12.2 The proceeds of Performance Guarantee shall be appropriated by the PURCHASER as compensation for any loss resulting from the SELLER's failure to complete his obligations under the CONTRACT without prejudice to any of the

rights or remedies the PURCHASER may be entitled to as per terms and conditions of CONTRACT. The proceeds of this Performance Guarantee shall also govern the successful performance of Goods and Services during the entire period of Contractual Warrantee/Guarantee.

12.3 The performance guarantee shall be denominated in the currency of the CONTRACT.

12.4 The Performance Guarantee shall be valid for the duration of 90 days beyond the expiry of Warrantee/Guarantee period. The Bank Guarantee will be discharged by PURCHASER not later than 6 months from the date of expiration of the Seller's entire obligations, including any warrantee obligations, under the CONTRACT.

13 Inspection, Testing & Expediting

13.1 The PURCHASER or its representative shall have the right to inspect and/or to test the GOODS to confirm their conformity to the CONTRACT specifications. The special conditions of CONTRACT and/or the Technical Specifications shall specify what inspections and tests the PURCHASER requires and where they are to be conducted. The PURCHASER shall notify the SELLER in writing the identity of any representative(s) retained for these purposes.

13.2 The inspections and tests may be conducted on the premises of the SELLER or his sub-contractor(s), at point of DELIVERY and/or at the GOODS' final destination. When conducted on the premises of the SELLER or his sub-contractor (s), all reasonable facilities and assistance including access to the drawings and production data shall be furnished to the inspectors at no charge to the PURCHASER.

13.3 Should any inspected or tested GOODS fail to conform to the specifications, the PURCHASER may reject them and the SELLER shall either replace the rejected GOODS or make all alterations necessary to meet Specifications' requirements, free of cost to the PURCHASER.

13.4 The PURCHASER's right to inspect, test and where necessary reject the GOODS after the GOODS' arrival in the PURCHASER's country shall in no way be limited or waived by reason of the GOODS having previously been inspected, tested and passed by the PURCHASER, or their representative prior to the GOODS shipment from the country of origin.

13.5 The INSPECTOR shall follow the progress of the manufacture of the GOODS under the CONTRACT to ensure that the requirements outlined in the CONTRACT are not being deviated with respect to schedule and quality.

13.6 SELLER shall allow the INSPECTOR to visit, during working hours, the workshops relevant for execution of the CONTRACT during the entire period of CONTRACT validity.

13.7 In order to enable PURCHASER's representatives to obtain entry visas in time, SELLER shall notify PURCHASER two months before assembly, testing and packing of main EQUIPMENT. If requested, SELLER shall assist PURCHASER's representatives in getting visas in the shortest possible time (applicable only in case of foreign order).

13.8 SELLER shall place at the disposal of the INSPECTOR, free of charge, all tools, instruments, and other apparatus necessary for the inspection and/or testing of the GOODS. The INSPECTOR is entitled to prohibit the use and dispatch of GOODS and/or materials which have failed to comply with the characteristics required for the GOODS during tests and inspections.

13.9 SELLER shall advise in writing of any delay in the inspection program at the earliest, describing in detail the reasons for delay and the proposed corrective action.

13.10 ALL TESTS and trials in general, including those to be carried out for materials not manufactured by SELLER shall be witnessed by the INSPECTOR. Therefore, SELLER shall confirm to PURCHASER by fax or e-mail about the exact date of inspection with at least 30 days notice. SELLER shall specify the GOODS and quantities ready for testing and indicate whether a preliminary or final test is to be carried out.

13.11 If on receipt of this notice, PURCHASER should waive the right to witness the test, timely information will be given accordingly.

13.12 Any and all expenses incurred in connection with tests, preparation of reports and analysis made by qualified laboratories, necessary technical documents, testing documents and drawings shall be at SELLER's cost. The technical documents shall include the reference and numbers of the standards used in the construction and, wherever deemed practical by the INSPECTOR, copy of such standards.

13.13 Nothing in Article-13 shall in any way release the SELLER from any warrantee or other obligations under this CONTRACT.

13.14 Arrangements for all inspections required by Indian Statutory Authorities and as specified in technical specifications shall be made by SELLER.

13.15 **Inspection & Rejection of Materials by consignees**
When materials are rejected by the consignee, the supplier shall be intimated with the details of such rejected materials, as well as the reasons for their rejection, also giving location where such materials are lying at the risk and cost of the contractor/supplier. The supplier will be called upon either to remove the materials or to give instructions as to their disposal within 14 days and in the case of dangerous, infected and perishable materials within 48 hours, failing which the consignee will either return the materials to the contractor freight to pay or

otherwise dispose them off at the contractor's risk and cost. The PURCHASER shall also be entitled to recover handling and storage charges for the period, during which the rejected materials are not removed @ 5% of the value of materials for each month or part of a month till the rejected materials are finally disposed off.

14 Time Schedule & Progress Reporting

14.1 Time Schedule Network/Bar Chart

14.1.1 Together with the Contract confirmation, SELLER shall submit to PURCHASER, his time schedule regarding the documentation, manufacture, testing, supply, erection and commissioning of the GOODS.

14.1.2 The time schedule will be in the form of a network or a bar chart clearly indicating all main or key events regarding documentation, supply of raw materials, manufacturing, testing, delivery, erection and commissioning.

14.1.3 The original issue and subsequent revisions of SELLER's time schedule shall be sent to PURCHASER.

14.1.4 The time schedule network/bar chart shall be updated at least every second month.

14.2 Progress Trend Chart/Monthly Report

14.2.1 SELLER shall report monthly to PURCHASER, on the progress of the execution of CONTRACT and achievement of targets set out in time bar chart.

14.2.2 The progress will be expressed in percentages as shown in the progress trend chart attached to the Time Schedule specification.

14.2.3 The first issue of the Progress Trend Chart will be forwarded together with the time bar chart alongwith CONTRACT confirmation.

14.3.1 PURCHASER's representatives shall have the right to inspect SELLER's premises with a view to evaluating the actual progress of work on the basis of SELLER's time schedule documentation.

14.3.2 Irrespective of such inspection, SELLER shall advise PURCHASER, at the earliest possible date of any anticipated delay in the progress.

14.4 Notwithstanding the above, in case progress on the execution of contract at various stages is not as per phased time schedule and is not satisfactory in the opinion of the PURCHASER which shall be conclusive, or SELLER shall neglect to execute the CONTRACT with due diligence and expedition or shall contravene the provisions of the CONTRACT, PURCHASER may give notice of the same in writing to the SELLER calling upon him to make good the failure, neglect or contravention complained of. Should SELLER fail to comply with such notice within the period

considered reasonable by PURCHASER, the PURCHASER shall have the option and be at liberty to take the CONTRACT wholly or in part out of the SELLER's hand and make alternative arrangements to obtain the requirements and completion of CONTRACT at the SELLER's risk and cost and recover from the SELLER, all extra cost incurred by the PURCHASER on this account. In such event PURCHASER shall not be responsible for any loss that the SELLER may incur, and SELLER shall not be entitled to any gain. PURCHASER shall, in addition, have the right to encash Performance Guarantee in full or part.

15 Delivery & Documents

15.1 Delivery of the GOODS shall be made by the SELLER in accordance with terms specified in the CONTRACT, and the goods shall remain at the risk of the SELLER until delivery has been completed.

15.2 Delivery shall be deemed to have been made:

a) In the case of FOB Contracts, when the Goods have been put on board the ship, at the specified port of loading and a clean Bill of Lading is obtained. The date of Bill of Lading shall be considered as the delivery date. However, for CFR & CIF Contracts delivery date will be receipt of goods at Indian Port.

b) In case of FOT despatch point contract (For Indian bidder), on evidence that the goods have been loaded on the carrier and a negotiable copy of the GOODS receipt obtained. The date of LR/GR shall be considered as the date of delivery.

c) In case of FOT site (for Indian bidders) on receipt of goods by PURCHASER at the designated site(s).

15.3 The delivery terms are binding and essential and consequently, no delay is allowed without the written approval of PURCHASER. Any request concerning delay will be void unless accepted by PURCHASER through a modification to the CONTRACT.

15.4 Delivery time shall include time for submission of drawings for approval, incorporation of comments, if any, and final approval of drawings by PURCHASER.

15.5 In the event of delay in delivery, Price Reduction Schedule as stipulated in Article – 26 shall apply.

15.6 The documentation, in English Language, shall be delivered in due time, in proper form and in the required number of copies as specified in the contract.

15.7 The additional copies of final drawings and instructions will be included in the package of goods, properly enveloped and protected.

15.8 The SELLER should comply with the Packing, Marking and Shipping Documentation Specifications enclosed.

16 Transit Risk Insurance

16.1 All goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery.

16.2 Where delivery is on FOB or CFR basis, marine insurance shall be the responsibility of the Purchaser against the advance information by the contractor with all the details.

Indigenous Bidders : Transit risk insurance till FOT Site shall be arranged and borne by Bidder.

The SELLER shall ensure that in effecting despatch of materials, the primary responsibility of the carriers for safe movement is always retained so that the PURCHASER's interests are fully safeguarded and are in no way jeopardized. The Seller shall furnish the cost of materials against each equipment.

16.2 **PURCHASER's Insurance Agent:**
[The name and address-as mentioned under SCC]

17 Transportation

17.1 Where the SELLER is required under the CONTRACT to deliver the GOODS FOB, transport of the GOODS until delivery, that is, upto and including the point of putting the GOODS on board the export conveyance at the specified port of loading, shall be arranged and paid for by the SELLER and the cost thereof shall be included in the Contract price.

Where the SELLER is required under the CONTRACT to deliver the GOODS CFR or CIF, transport of the Goods to the port of discharge or such other point in the country of destination as shall be specified in the CONTRACT shall be arranged and paid for by the SELLER and the cost thereof shall be included in the Contract price.

18 Incidental Services

18.1 The Seller may be required to provide any or all of the following services:

18.1.1 Performance or supervision of onsite assembly and/or start-up of the supplied Goods.

18.1.2 Furnishing tools required for assembly and/or maintenance of the supplied Goods.

18.1.3 Performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Seller of any warrantee/guarantee obligations under the Contract.

18.1.4 Training of the Purchaser's personnel at the Seller's plant and/or at Site, in assembly, start-up operation, maintenance and/or repair of the supplied Goods at no extra cost. However, Purchaser will bear boarding, lodging & personal expenses of Trainees.

18.2 Prices charged by the Seller for the preceding incidental services, shall not exceed the prevailing rates charged to other parties by the Seller for similar services.

18.3 When required, Seller shall depute necessary personnel for supervision and/or erection of the Equipment at site for duration to be specified by Purchaser on mutually agreed terms. Seller's personnel shall be available at Site within seven days for emergency action and twenty-one days for medium and long-term assistance, from the date of notice given by Purchaser.

18.4 The cost of incidental services shall not be included in the quoted prices. The cost of applicable incidental services should be shown separately in the price schedules.

19 Spare Parts, Maintenance Tools, Lubricants

19.1 Seller may be required to provide any or all the following materials and notification pertaining to spare parts manufactured or distributed by the Seller.

19.1.1 Such spare parts as the Purchaser may opt to purchase from the Seller, provided that his option shall not relieve the Seller of any warrantee obligations under the Contract, and

19.1.2 In the event of termination of production of the spare parts:

i) Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements, and

ii) Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings, and specifications of the spare parts, if any when requested.

19.2 Seller shall supply item wise list with value of each item of spare parts and maintenance tools requirements, along with full details of manufacturers/vendors for such spares/maintenance tools for:

19.2.1 The construction, execution, and commissioning.

19.2.2 2 years' operation and maintenance.

19.3 Spare parts shall be new and of first-class quality as per engineering standards/ codes, free of any defects (even concealed), deficiency in design, materials and

workmanship and also shall be completely interchangeable with the corresponding parts.

19.4 Type and sizes of bearings shall be clearly indicated.

19.5 Spare parts shall be packed for long storage under tropical climatic conditions in suitable cases, clearly marked as to intended purpose.

19.6 A list of special tools and gauges required for normal maintenance and special handling and lifting appliances, if any, for the Goods shall be submitted to Purchaser.

19.7 Bidders should note that if they do not comply with Clause 19.2 above, their quotation may be rejected.

19.8 Lubricants

19.8.1 Whenever lubricants are required, Seller shall indicate the quantity of lubricants required for the first filling, the frequency of changing, the quantity of lubricants required for the one year's continuous operation and the types of recommended lubricants indicating the commercial name (trademark), quality and grade.

19.8.2 If Seller is unable to recommend specific oil, basic recommended characteristics of the lubricants shall be given.

19.8.3 Seller shall indicate various equivalent lubricants available in India.

20 Guarantee

20.1 All Goods or Materials shall be supplied strictly in accordance with the specifications, drawings, data sheets, other attachments and conditions stated in the Contract.

No deviation from such specifications or alterations or of these conditions shall be made without PURCHASER'S agreement in writing which must be obtained before any work against the order is commenced. All materials supplied by the SELLER pursuant to the Contract (irrespective of whether engineering, design data or other information has been furnished, reviewed or approved by PURCHASER) are guaranteed to be of the best quality of their respective kinds (unless otherwise specifically authorised in writing by PURCHASER) and shall be free from faulty design, workmanship and materials, and to be of sufficient size and capacity and of proper materials so as to fulfill in all respects all operating conditions, if any, specified in the Contract.

If any trouble or defect, originating with the design, material, workmanship or operating characteristics of any materials, arises at any time prior to twelve (12) months from the date of the commercial operation of the Plant for which the materials supplied under the Contract form a part thereof, or twenty four (24)

months from the date of last shipment whichever period shall first expire, and the SELLER is notified thereof, SELLER shall, at his own expense and as promptly as possible, make such alterations, repairs and replacements as may necessary to permit the materials to function in accordance with the specifications and to fulfil the foregoing guarantees.

PURCHASER may, at his option, remove such defective materials, at SELLER'S expense in which event SELLER shall, without cost to PURCHASER and as promptly as possible, furnish and install proper materials. Repaired or replaced materials shall be similarly guaranteed by the SELLER for a period of not less than twelve (12) months from the date of replacement/repair.

If the materials supplied do not meet the specifications and/or not in accordance with the drawings data sheets or the terms of the Contract and rectification is required at site, PURCHASER shall notify the SELLER giving full details of differences. The SELLER shall attend the site within seven (7) days of receipt of such notice to meet and agree with representatives of PURCHASER, the action required to correct the deficiency. Should the SELLER fail to attend meeting at Site within the time specified above, PURCHASER shall immediately rectify the work/materials and SELLER shall reimburse PURCHASER all costs and expenses incurred in connection with such trouble or defect.

20.2 PERFORMANCE GUARANTEE OF EQUIPMENT

20.2.1 SELLER shall guarantee that the performance of the EQUIPMENT supplied under the CONTRACT shall be strictly in conformity with the specifications and shall perform the duties specified under the CONTRACT.

20.2.2 If the SELLER fails to prove the guaranteed performance of the EQUIPMENT set forth in the specification, the SELLER shall investigate the causes and carry out necessary rectifications /modifications to achieve the guaranteed performance. In case the SELLER fails to do so within a reasonable period, the SELLER shall replace the EQUIPMENT and prove guaranteed performance of the new equipment without any extra cost to PURCHASER.

20.2.3 If the SELLER fails to prove the guarantee within a reasonable period, PURCHASER shall have the option to take over the EQUIPMENT and rectify, if possible, the EQUIPMENT to fulfil the guarantees and/or to make necessary additions to make up the deficiency at Seller's risk and cost. All expenditure incurred by the PURCHASER in this regard shall be to SELLER's account.

21 Terms of Payment

21.1 The method of payment to be made to the SELLER under this CONTRACT shall be specified in the Special Conditions of Contract.

21.2 The type(s) of payment to be made to the SELLER under this CONTRACT shall be specified in the Special Conditions of Contract.

21.3 The SELLER's request(s) for payment shall be made to the PURCHASER in writing accompanied by an invoice describing, as appropriate, the Goods delivered and services performed, and by shipping documents submitted, and upon fulfillment of other obligations stipulated in the Contract.

21.4 Payment will be made in the currency or currencies in which the Contract Price has been stated in the SELLER's bid, as well as in other currencies in which the SELLER had indicated in his bid that he intends to incur expenditure in the performance of the Contract and wishes to be paid. If the requirements are stated as a percentage of the bid price alongwith exchange rates used in such calculations these exchange rates shall be maintained.

General Notes:

1. All foreign currency payments to foreign bidder shall be released through an irrevocable Letter of Credit, which shall be opened through Government of India Nationalized Bank and hence shall not be confirmed. In case any bidder insists on confirmation, charges towards confirmation shall be borne by him. L/C shall be established within 30 days after receipt of unconditional acceptance of Letter /Fax of Intent together with Performance Guarantee for 10% of Purchase Order Value.
2. For dispatches on FOT dispatch point (in India) basis, the payment shall be through PURCHASER's bank. Payment through Bank, wherever applicable, shall be released as per normal banking procedures.
3. Payment shall be released within 45 days after receipt of relevant documents complete in all respects.
4. All bank charges incurred in connection with payments shall be to Seller's account in case of Indian bidders and to respective accounts in case of foreign bidders.
5. Unless otherwise specifically stated in bid document, all payments shall be made in the currency quoted.
6. No interest charges for delay in payments, if any, shall be payable by PURCHASER.
7. In case of Indian bidder, variation, if any, on account of customs duty on their built-in- import content, as per terms of bid document, shall be claimed separately by bidder after receipt of goods at site (s). However, any price benefits to the PURCHASER, on account of such variation as per terms specified in the bid document, shall be passed on to the PURCHASER alongwith invoicing itself.
8. Agency commission, if any, to Indian agent for foreign bidders, indicated in prices, shall be paid to the agent in equivalent Indian Rupees on receipt and acceptance of material at site.

22 Prices

22.1 Prices charged by the SELLER for Goods delivered and services performed under the CONTRACT shall not, with the exception of any price adjustments authorized by the Contract vary from the prices quoted by the SELLER in his bid.

23 Subletting & Assignment

23.1 The contractor shall not without previous consent in writing of the PURCHASER authority, sublet, transfer, or assign the contract or any part thereof or interest therein or benefit or advantage thereof in any manner whatsoever. Provided, nevertheless, that any such consent shall not relieve the contractor from any obligation, duty or responsibility under the contract.

24 Time as Essence of Contract

24.1 The time and date of delivery/completion of the GOODS/SERVICES as stipulated in the Contract shall be deemed to be the essence of the Contract.

25 Delays in The Seller's Performance

25.1 If the specified delivery schedule is not adhered to or the progress of manufacture or supply of the items is not satisfactory or is not in accordance with the progress schedule the PURCHASER has the right to:

i) hire for period of delay from elsewhere goods which in PURCHASER's opinion will meet the same purpose as the goods which are delayed, and SELLER shall be liable without limitation for the hire charges; or

ii) cancel the CONTRACT in whole or in part without liability for cancellation charges. In that event, PURCHASER may procure from elsewhere goods which PURCHASER's opinion would meet the same purpose as the goods for which CONTRACT is cancelled and SELLER shall be liable without limitations for the difference between the cost of such substitution and the price set forth in the CONTRACT for the goods involved; or

iii) hire the substitute goods vide (I) above and if the ordered goods continue to remain undelivered thereafter, cancel the order in part or in full vide (ii) above.

25.2 Any inexcusable delay by the SELLER or his sub-contractor shall render the SELLER liable, without prejudice to any other terms of the Contract, to any or all of the following sanctions:
forfeiture of Contract performance guarantee, imposition of price reduction for delay in delivery and termination of the contract for default.

26 Price Reduction Schedule for Delayed Delivery

26.1 Subject to Article -29, if the SELLER fails to deliver any or all of the GOODS or performance of the services within the time period (s) specified in the CONTRACT, the PURCHASER shall, without prejudice to his other remedies under the CONTRACT, deduct from the CONTRACT PRICE, a sum calculated on the basis of the CONTRACT PRICE, including subsequent modifications.

26.1.1 Deductions shall apply as per following formula:
In case of delay in delivery of equipment/materials or delay in completion, total contract price shall be reduced by ½% (half percent) of the total contract price per complete week of delay or part thereof subject to a maximum of 10% (Ten Percent) of the total contract price.

26.2 In case of delay in delivery on the part of Seller, the invoice/document value shall be reduced proportionately for the delay and payment shall be released accordingly.

26.3 In the event the invoice value is not reduced proportionately for the delay, the PURCHASER may deduct the amount so payable by SELLER, from any amount falling due to the SELLER or by recovery against the Performance Guarantee.

Both seller and PURCHASER agree that the above percentages of price reduction are genuine pre estimates of the loss/damage which the PURCHASER would have suffered on account of delay/breach on the part of the SELLER and the said amount will be payable on demand without there being any proof of the actual loss/or damage caused by such breach/delay. A decision of the PURCHASER in the matter of applicability of price reduction shall be final and binding.

Price reduction schedule on failure of pipe under field hydrotest and/ or during guarantee/ warranty period shall be as follows (for pipe supplier):

Pursuant to General Conditions of Contract as per Volume-I and clause 14 (new) of the Technical Specification, owner shall be reimbursed by the successful bidders for any pipe supplied against this order that fails under field hydrostatic test and/ or during guarantee/ warranty period, if such failure is caused by a defect in pipes which is outside the acceptance limits of the specifications. The reimbursement cost will be the landed cost of the defective pipes including all cost incurred up to delivery thereof at site and shall also include but not limited to cost of all duties, freight, insurance, labor, material, charges for cutting, removing, re-coating, replacement and relaying of defective pipeline including cost of incidental activities as well as losses suffered by MNGL. The recovery cost shall be calculated at actual but will be subject to the minimum values given below. Recovery shall be applied on the actual or minimum pre-determined rate, whichever is higher. The minimum pre-determined rate shall not need any justification. The minimum pre-determined reimbursement cost of each pipe shall be as below:

i) Rs. 20,00,000/- (Rs. Twenty Lacs only) for bidder quoting in Indian Rupees.

The above cost shall be for each pipe, payable by the vendor to the Owner on demand without necessity of any proof of replacement/ reimbursement cost. Further, in case, the amount payable by the vendor to MNGL become more than what can be adjusted through price reduction, MNGL may recover at its discretion through deduction from any payment due or becomes due to the contractor or by encashing the Bank Guarantee(s) furnished by contractor, the unrecovered part of such payment will be paid by the contractor to MNGL within 15 days of date of notification by MNGL to him.

In the event of conflict between the stipulations of this article and anything contained in the Technical Specification (Material Requisition), the stipulations of this article shall govern.

Necessary tests to establish cause of failure of pipes shall be carried out at Welding Research Institute, Trichi, India and shall be binding on both MNGL and the pipe supplier.

27 Rejections, Removal of Rejected Equipment & Replacement

27.1 Preliminary inspection at SELLER's works by INSPECTOR shall not prejudice PURCHASER's claim for rejection of the EQUIPMENT on final inspection at SITE or claims under warranty provisions.

27.2 If the EQUIPMENTS are not of specification or fail to perform specified duties or are otherwise not satisfactory the PURCHASER shall be entitled to reject the EQUIPMENT/MATERIAL or part thereof and ask free replacement within reasonable time failing which obtain his requirements from elsewhere at SELLER's cost and risk.

27.3 Nothing in this clause shall be deemed to deprive the PURCHASER AND/OR AFFECT ANY rights under the Contract which it may otherwise have in respect of such defects or deficiencies or in any way relieve the SELLER of his obligations under the Contract.

27.4 EQUIPMENT rejected by the PURCHASER shall be removed by the Seller at his cost within 14 days of notice after repaying the amounts received against the SUPPLY. The PURCHASER shall in no way be responsible for any deterioration or damage to the EQUIPMENT under any circumstances whatsoever.

27.5 In case of rejection of EQUIPMENT, PURCHASER shall have the right to recover the amounts, if any, from any of CONTRACTOR'S invoices pending with PURCHASER or by alternative method(s).

28 Termination of Contract

28.1 Termination for Default

28.1.1 The PURCHASER may, without prejudice to any other remedy for breach of CONTRACT, by written notice of default sent to the SELLER, terminate the CONTRACT in whole or in part:

A) If the SELLER fails to deliver any or all of the GOODS within the time period(s) specified in the CONTRACT; or

B) If the SELLER fails to perform any other obligation(s) under the CONTRACT, and

C) If the SELLER, in either of the above circumstances, does not cure his failure within a period of 30 days (or such longer period as the PURCHASER may authorize in writing) after receipt of the default notice from the PURCHASER.

28.1.2 In the event the PURCHASER terminates the CONTRACT in whole or in part, pursuant to Article 28.1.1, the PURCHASER may procure, upon such terms and in such manner as it deems appropriate, goods similar to those undelivered and the SELLER shall be liable to the PURCHASER for any excess costs for such similar GOODS. However, the SELLER shall continue performance of the CONTRACT to the extent not terminated.

28.1.3 In case of termination of CONTRACT herein set forth (under clause 28) except under conditions of Force Majeure and termination after expiry of contract, the VENDOR shall be put under holiday [i.e. neither any enquiry will be issued to the party by MAHARSHRATRA NATURAL GAS LIMITED Against any type of tender nor their offer will be considered by MNGL against any ongoing tender (s) where contract between MNGL and that particular VENDOR (as a bidder) has not been finalized] for three years from the date of termination by MAHARSHRATRA NATURAL GAS LIMITED to such VENDOR.

28.2 Termination for Insolvency

The PURCHASER, may at any time, terminate the CONTRACT by giving written notice to the SELLER, without compensation to the SELLER, if the SELLER becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the PURCHASER.

28.3 Termination for Convenience

28.3.1 The PURCHASER may, by written notice sent to the SELLER, terminate the CONTRACT, in whole or part, at any time for his convenience. The notice of termination shall specify that termination is for the PURCHASER's convenience, the extent to which performance of work under the CONTRACT is terminated and the date upon which such termination becomes effective.

28.3.2 The GOODS that are complete and ready for shipment within 30 days after the SELLER's receipt of notice of termination shall be purchased by the PURCHASER at the CONTRACT terms and prices. For the remaining GOODS, the PURCHASER may opt:

a) to have any portion completed and delivered at the CONTRACT terms and prices, and /or

b) to cancel the remainder and pay to the SELLER an agreed amount for partially completed GOODS and for materials and parts previously procured by the SELLER.

29 Force Majeure

29.1 Shall mean and be limited to the following:

a) War/hostilities

b) Riot or Civil commotion

c) Earthquake, flood, tempest, lightening or other natural physical disaster.

d) Restrictions imposed by the Government or other Statutory bodies which prevents or delays the execution of the Contract by the SELLER.

The SELLER shall advise PURCHASER/CONSULTANT by a registered letter duly certified by the local Chamber of Commerce or statutory authorities, the beginning and end of the above causes of delay within seven (7) days of the occurrence and cessation of such Force Majeure Conditions. In the event of delay lasting over one month, if arising out of causes of Force Majeure, PURCHASER reserves the right to cancel the Contract and the provisions governing termination stated under Article 28.0 shall apply.

For delays arising out of Force Majeure, the SELLER shall not claim extension in completion date for a period exceeding the period of delay attributable to the causes of Force Majeure and neither PURCHASER/CONSULTANT nor SELLER shall be liable to pay extra costs provided it is mutually established that Force Majeure Conditions did actually exist.

SELLER shall categorically specify the extent of Force Majeure Conditions prevalent in their works at the time of submitting their bid and whether the same have been taken into consideration or not in their quotations. In the event of any force majeure cause, the SELLER or the PURCHASER shall not be liable for delays in performing their obligations under this order and the delivery dates will be extended to the SELLER without being subject to price reduction for delayed deliveries, as stated elsewhere.

30 Resolution of Disputes/Arbitration

30.1 The PURCHASER and the SELLER shall make every effort to resolve amicably by direct informal negotiations any disagreement or dispute arising between them under or in connection with the contract.

30.2 If, after thirty days from the commencement of such informal negotiations, the PURCHASER and the SELLER have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanism as specified hereunder.

30.3 The Contract shall be, in all respects be construed and operated as an Indian Contract and in accordance with Indian Laws as in force for the time being and is subject to and referred to the Court of Law situated at Pune.

30.4 Arbitration

All disputes, controversies, or claims between the parties (except in matters where the decision of the Engineer-in-Charge is deemed to be final and binding) which cannot be mutually resolved within a reasonable time shall be referred to Arbitration by a sole arbitrator.

The PURCHASER (MNGL) shall suggest a panel of three independent and distinguished persons to the Seller to select any one among them to act as the sole Arbitrator.

In the event of failure of the Seller to select the Sole Arbitrator within 30 days from the receipt of the communication suggesting the panel of arbitrators, the right of selection of Sole Arbitrator by the other party shall stand forfeited and the PURCHASER shall have discretion to proceed with the appointment of the Sole Arbitrator. The decision of the PURCHASER on the appointment of Sole Arbitrator shall be final and binding on the parties.

The award of the Sole Arbitrator shall be final and binding on the parties and unless directed/awarded otherwise by the Sole Arbitrator, the cost of arbitration proceedings shall be shared equally by the parties. All matters relating to this contract are subject to the exclusive jurisdiction of the courts situated at Pune. Subject to the above, the provisions of (Indian) Arbitration & Conciliation Act, 1996 and the rules framed thereunder shall be applicable. All matters relating to this contract are subject to the exclusive jurisdiction of the Courts situated at Pune, Maharashtra, India.

31 Governing Language

31.1 The Contract shall be written in English language as specified by the PURCHASER in the Instruction to Bidders. All literature, correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in English language. Printed literature in other language shall only be considered, if it is accompanied by an English translation. For the purposes of interpretation, English translation shall govern and be binding on all parties.

32 Notices

32.1 Any notice given by one party to the other pursuant to the Contract shall be sent in writing or by telegram or fax, telex/cable confirmed in writing.

32.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

33 Taxes & Duties

33.1 A foreign Seller shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the PURCHASER's country.

33.2 A domestic Seller shall be entirely responsible for all taxes, duties, license fees etc. incurred until the delivery of the contracted goods to the PURCHASER. However, Sales Tax and Excise duty on finished products shall be reimbursed by PURCHASER.

33.3 Customs duty payable in India for imported goods ordered by PURCHASER on foreign Seller shall be borne and paid by PURCHASER.

33.4 Any income tax payable in respect of supervisory services rendered by foreign Seller under the Contract shall be as per the Indian Income Tax Act and shall be borne by SELLER.

34 Books & Records

34.1 SELLER shall maintain adequate books and records in connection with Contract and shall make them available for inspection and audit by PURCHASER/CONSULTANT or their authorized agents or representatives during the terms of Contract until expiry of the performance guarantee. Fixed price (lumpsum or unit price) Contract will not be subject to audit as to cost except for cost reimbursable items, such as escalation and termination claims, transportation and comparable requirements.

35 Permits & Certificates

35.1 SELLER shall procure, at his expense, all necessary permits, certificates and licenses required by virtue of all applicable laws, regulations, ordinances and other rules in effect at the place where any of the work is to be performed, and SELLER further agrees to hold PURCHASER and/or CONSULTANT harmless from liability or penalty which might be imposed by reason of any asserted or established violation of such laws, regulations, ordinances or other rules. PURCHASER will provide necessary permits for SELLER's personnel to undertake any work in India in connection with Contract.

36 General

36.1 In the event that terms and conditions stipulated in the General Conditions of Contract should deviate from terms and conditions stipulated in the Contract, the latter shall prevail.

36.2 Losses due to non-compliance of Instructions Losses or damages occurring to the PURCHASER owing to the SELLER's failure to adhere to any of the instructions given by the PURCHASER in connection with the contract execution shall be recoverable from the SELLER.

36.3 Recovery of sums due
All costs, damages or expenses which the PURCHASER may have paid, for which under the CONTRACT SELLER is liable, may be recovered by the PURCHASER (he is hereby irrevocably authorized to do so) from any money due to or becoming due to the SELLER under this Contract or other Contracts and/or may be recovered by action at law or otherwise. If the same due to the SELLER be not sufficient to recover the recoverable amount, the SELLER shall pay to the PURCHASER, on demand, the balance amount.

36.4 Payments, etc. not to affect rights of the PURCHASER No sum paid on account by the PURCHASER nor any extension of the date for completion granted by the PURCHASER shall affect or prejudice the rights of the PURCHASER against the

SELLER or relieve the SELLER of his obligation for the due fulfillment of the CONTRACT.

36.5 Cut-off Dates
No claims or correspondence on this Contract shall be entertained by the PURCHASER after 90 days after expiry of the performance guarantee (from the date of final extension, if any)

36.6 Paragraph heading
The paragraph heading in these conditions shall not affect the construction thereof.

37 Import License

37.1 No import license is required for the imports covered under this document.

38 FALL CLAUSES

38.1 The price charged for the materials supplied under the order by the supplier shall in no event exceed the lowest price at which the supplier or his agent/principal/dealer sells the materials of identical description to any persons/organizations including the Purchaser or any department of the Central Govt. or any Deptt. Of a State Govt. or any Statutory Undertaking of the Central or State Govt. as the case may be, during the currency of the order.

38.2 If at any time during the said period, the supplier, or his agent/principal/dealer, as the case may be, reduces the sale price, sells or offers to sell such materials to any persons/organizations including the Purchaser or any Deptt. Of Central Govt. or State Govt. as the case may be, at a price lower than the price chargeable under the order, he shall forthwith notify such reduction or sale or offer of sale to the Purchase Authority who has issued this order and the price payable under the order for the materials supplied after the date of coming into force of such reduction or sale or offer of sale shall stand correspondingly reduced.

The above stipulation will, however, not apply to:

a) Exports by the Contractor/Supplier or
b) Sale of goods as original equipment at prices lower than the prices charged for normal replacement
c) sale of goods such as drugs which have expiry dates.

38.3 The supplier shall furnish the following certificate to the concerned Paying Authority alongwith each bill for payment for supplies made against this order:

> "I/We certify that there has been no reduction in sale price of the items/goods/materials of description identical to those supplied to the MNGL under the order herein and such items/ goods/materials have not been offered/sold by me/us to any person/organizations including the Purchaser or any Deptt. Of Central Govt. or any Deptt. Of State Govt. or

any Statutory Undertaking of the Central or State Govt. upto the date of bill/during the currency of the order whichever is later, at a price lower than the price charged to the MNGL under the order.

Such a certificate shall be obtained, except for quantity of items/goods/materials categories under sub-clause (a), (b) & (c) of sub-para 38.2 above, of which details shall be furnished by the supplier.

39 Publicity & Advertising

39.1 Seller shall not without the written permission of PURCHASER make a reference to PURCHASER or any Company affiliated with PURCHASER or to the destination or the description of goods or services supplied under the contract in any publication, publicity, or advertising media.

40 Repeat Order:

40.1 PURCHASER reserves the right, within 6 months of order to place repeat order upto 50% of the total order value without any change in unit price or other terms and conditions.

41 Limitation of Liability:

41.1 Notwithstanding anything contrary contained herein, the aggregate total liability of Seller under the Agreement or otherwise shall be limited to 100% of Agreement / Order price. However, neither party shall be liable to the other party for any indirect and consequential damages, loss of profits or loss of production.

SECTION - IIIA
FORMS AND FORMATS

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

FORM F-1
BIDDER'S GENERAL INFORMATION
(Information must be provided on bidder's letterhead)

To,
M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045

1-1 Bidder Name: _____

1-2 Number of Years in Operation: _____

1-3 Address of Registered Office: _____

City_____ District _____

State _____PIN _____

1-4 Operation Address
(If different from above): _____

City_____District _____

State _____PIN _____

1-5 Telephone Number: _____
(Area Code) (Telephone Number)

1-6 Mobile Number, if any _____
1-7 E-mail address: _____
1-8 Website: _____
1-9 Fax Number: _____
(Area Code) (Telephone Number)

1-10 ISO Certification, if any {If yes, please furnish details} _____

1-11 Whether Supplier / Manufacturer
/ Dealer / Trader / Service Provider _____

1-12 Types of material / service provided _____

1-13 Bank's Name: _____

1-14 Bank's Branch: _____
1-15 Branch Code: _____
1-16 Bank account Number: _____

1-17 Account type: _____

1-18 IFSC Code: _____

1-19 MICR Code: _____

1-20 Type of Firm: Proprietary/ Partnership/ PVT/Public Ltd.: _____

1-21 If others, please specify _____

1-22 Details of Directors/ Proprietors/ Partners _____

(Kindly attach separate sheets giving details for the names of directors/proprietors and their stakes) along with the supporting documents.

1-23 PAN No.: _____
1-24 EPF No.: _____
1-25 MSME category, if applicable (i) Type of Enterprises: _____

(ii) Social Category of Enterprises: _____

(iii) Gender (Male/Female/Transgender/NA: _____

1-26 GST Registration no.
(If registered) _____

1-27 If unregistered (Reason)

a) Turnover threshold
b) Providing exemption goods/services
c) Others (specify)

(SIGNATURE OF BIDDER WITH SEAL)

Notes:
1 The above-required information is required on the bidder's letterhead.
2 Bidders must submit supporting documents for the above details including the following:
   a. PAN Card copy
   b. GST certificate copy (of the same state as the office address mentioned above)
   c. Cancelled cheque of the bank account mentioned above

(SIGNATURE OF BIDDER WITH SEAL)

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

FORM F-2
BID BOND PROFORMA

Bank Guarantee No.:
Date:

To,
M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045

Dear Sir,

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 (as quoted in price bid) or such other sums as may be ascertained in accordance with the Schedule of Prices.

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 / Delivery Order 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.

We have enclosed Bid Security in the form of Demand Draft/ Bank Guarantee in line with Cl. 17 of ITB for_____(amount in figure & words) valid for 6 (six) months' period as per the requirement of bid document.

Until a formal contract is prepared and executed, this bid, together with your written acceptance thereof in your notification of award (Fax of Intent / Purchase Order) 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 2026

SEAL AND SIGNATURE

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

(SIGNATURE OF WITNESS)
WITNESS NAME:
ADDRESS:

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

PROFORMA FOR BANK GUARANTEE FOR EARNEST MONEY DEPOSIT / BID SECURITY

(To be stamped in accordance with the Stamp Act)

Bank Guarantee No. .....
Ref: ..... Date .....

To,
M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045

Dear Sir(s),
In accordance with Letter Inviting Tender under your reference No. _____ M/s_____ having their Registered/ Head Office at _____
_____ (hereinafter called the Tenderer) wish to participate in the said tender for _____.

As an irrevocable Bank Guarantee against Earnest Money for the amount of _____ is required to be submitted by the Tenderer as a condition precedent for participation in the said tender which amount is liable to be forfeited on the happening of any contingencies mentioned in the Tender Document.

We, the _____ Bank at _____ having our Head Office _____(Local Address) guarantee and undertake to pay immediately on demand without any recourse to the tenderers by Maharashtra Natural Gas Ltd. the amount _____ without any reservation, protest, demur and recourse. Any such demand made by MNGL shall be conclusive and binding on us, irrespective of any dispute or difference raised by the Tenderer.

This guarantee shall be irrevocable and shall remain valid up to _____ [this date should be 6 months after the date finally set out for closing of tender]. If any further extension of this guarantee is required, the same shall be extended to such required period on receiving instructions from M/s _____whose behalf this guarantee is issued.

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

In witness whereof the Bank, through its authorized officer, has set its hand and stamp on this _____ day of _____2026 at_____.

WITNESS:

(SIGNATURE)
(NAME)

(OFFICIAL ADDRESS)

(SIGNATURE)
(NAME)
Designation with Bank Stamp
Attorney as per
Power of Attorney No._____
Date: _____

INSTRUCTIONS FOR FURNISHING BID-GUARANTEE / BANK GUARANTEE

1. The Bank Guarantee by bidders will be given on non-judicial stamp paper as per stamp duty applicable. The non-judicial stamp paper should be in the name of the issuing bank. In case of foreign bank, the said banks guarantee to be issued by its correspondent bank in India on requisite non-judicial stamp paper.

2. The expiry date as mentioned in bid document should be arrived at by adding 2 months to the date of expiry of the bid validity unless otherwise specified in the Bid Documents.

3. The bank guarantee by bidders will be given from bank as specified in ITB

4. A letter along with SWIFT Statement from the issuing bank of the requisite Bank Guarantee confirming that said bank guarantee/ all future communication relating to the Bank Guarantee shall be forwarded to the Employer at its address as mentioned at ITB.

5. Bidders must indicate the full postal address of the bank along with the bank's E-mail/ Fax from where the earnest money bond has been issued.

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

FORM F – 3 A

ANNUAL TURNOVER

Bidder must fill in this form

Annual Turnover data for the last 3 years:

Year	Last three financial year	Amount (in INR)
Year 1:		
Year 2:		
Year 3:		

1. The information supplied should be the Annual Turnover of the bidder

2. A brief note should be appended describing thereby details of turnover as per audited results.

SEAL AND SIGNATURE OF THE BIDDER

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

FORM F – 3 B
FINANCIAL STATUS

Bidder must fill this form

FINANCIAL DATA FOR LAST AUDITED FINANCIAL YEAR

Description	Amount (in INR)
1. Current assets	
2. Current Liabilities (including secured and un-secured short-term loans & working capital loans)	
3. Working Capital (Current Assets-Current liabilities)	
4. Net Worth Owners funds (Paid up share capital and Free Reserves & Surplus) (NW)	

Attached are copies of the audited balance sheets, including all related notes and income statement and Auditor's report, for the last Audited Financial year, as indicated above, complying with the following conditions:

- All such documents reflect the financial situation of the bidder
- Historic financial statements must be audited by a certified accountant.
- Historic financial statements must be complete, including all notes to the financial statements.
- Historic financial statements must correspond to accounting periods already completed and audited (no statement for partial periods shall be requested or accepted)

SEAL AND SIGNATURE OF BIDDER

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

FORM F-4
CHECK LIST FOR AGREED TERMS AND CONDITIONS

Sr. No.	DESCRIPTION	BIDDER'S CONFIRMATION
1.	Price & Delivery Basis	FOT- MNGL Store basis at various Locations
2.	Firm & Fixed Prices (As per Tender document)	Accepted
3.	Supply as per scope defined in the Tender documents	Included
4.	All Taxes, duties, levies, etc. included in price	Included
5.	Packing & Forwarding is Included in unit price	Included
6.	Delivery period (As per Tender document)	Accepted
7.	Guarantee/ Warranty Clause	Accepted
8.	Price Reduction Schedule as per Tender document	Accepted
9.	Term of Payments (As per Tender document)	Accepted
10.	Contract-Cum-Equipment Performance Bank Guarantee to be submitted as per tender document	Accepted
11.	Firm Price - during the entire duration of contact (As per Tender document)	Accepted
12.	Validity of bid & bid security	Accepted
13.	Bid Security (EMD) & Details of EMD	Submitted
14.	Price Quoted as per SOR.	Yes
15.	Deviation / exception Form 5	Yes
16.	Defect Liability Period/ Warranty	Accepted
17.	Goods & Service Tax	Included
18.	General & Special Conditions of Contract & Technical terms and conditions of the Tender	Accepted

Name of the Bidder : M/s.

Signature :

Name :

Designation :

Date : Seal:

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

FORM F-5
DEVIATION FORM
(On Bidder's letterhead)

To,
M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045

Notes:

1) BIDDER may give a consolidated list of deviations/clarifications/comments for all sections of the bid documents which for an appropriate offer are considered unavoidable by him.

2) Deviations/clarifications mentioned elsewhere in the offer shall not be binding on the MNGL and any such deviations if indicated elsewhere other than this form will render the offer non-responsive and shall be liable to be rejected.

3) BIDDER shall state the reason for the deviations in the remark column.

4) Only the deviations listed herein, in conjunction with the original Tender shall constitute the contract document for the award of the job to the BIDDER.

5) Any clarification raised by the Purchaser/ Consultant should be resolved within 10 days failing which the bid is liable for rejection.

Sec No./ Clause. No.	Page No.	Requirements as per tender	Deviation by Bidder	Clarification/ Comments by Bidder	Remarks
1)					
2)					
3)					
4)					
5)					
6)					

The bidder confirms that all clauses of the tender document, which are not listed above, have been fully complied by the bidder.

(Signature of the bidder)

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

FORM F-6
DECLARATION ON TENDER DOCUMENT DOWNLOADED
(on Bidder's letterhead)

No. Date:

To,
M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045

Subject:

Sir,

We hereby confirm that we have read each page of the subject tender document along with Corrigendum & Reply to bidder's queries thoroughly and understood the complete Scope of Work and other terms & conditions. We hereby also confirm that the tender terms & conditions are acceptable to us and any deviation other than mentioned in the deviation Form F-5 is not to be taken into account.

Yours faithfully,

Signature
Name & Designation
For and on behalf of

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

FORM F-7
PROFORMA FOR LETTER OF AUTHORITY

No. Date:

To,
M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045

Subject:

Sir,

We _____ hereby authorise following representative (s) to attend the Un-Priced Bid opening and Priced Bid opening against above Bidding Document:

1. Name & Designation _____ Signature _____

2. Name & Designation _____ Signature _____

We confirm that we shall be bound by all and whatsoever our representative(s) shall commit.

Yours faithfully,

Signature
Name & Designation
For and on behalf of

Note: This letter of authority should be on the letterhead of the bidder and should be signed by a person competent and having the power of attorney to bind the bidder.

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

FORM F-8
DECLARATION
(on Bidder's letter head)

To,
M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045

Subject:

We confirm that we are not under any liquidation, court receivership or similar proceedings.

We also confirm that we have not been put on Black / Holiday list by MNGL / MoP&NG / Oil Public Sector Enterprise(s) for any forgery, Corrupt or Fraudulent Practice or unethical behaviour.

SEAL AND SIGNATURE OF BIDDER

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

Form F-9

DETAILS OF LITIGATION
(on Bidder's letterhead)

Bidder shall furnish details of litigation cases of the bidder during the last 5 years if any, in this Form.

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

FORM F-10
COVERING LETTER
(ON LETTERHEAD)

Date:

To,

Subject: Certificate regarding.....

Dear Sir,

We..... (name of the Statutory Auditor/Chartered Accountant) are the Statutory Auditor/Chartered Accountant of M/s..... (name of the bidder).

We hereby confirm that we have issued following certificate:

1.

2.

3.

Thanking You,

Place:

Date:

(Signature)

Name of Authorised Signatory
Membership No.

Encl.: As above

Note: Submission of this form is Mandatory for all the bidders.

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

FORM F- 11

FORMAT FOR STATUTORY AUDITOR'S / CHARTERED ACCOUNTANT CERTIFICATE FOR FINANCIAL CAPABILITY OF THE BIDDER

(For supply of Goods/Works/Services)

We have verified the Annual Accounts and other relevant records of M/s..... (Name of the bidder) and certify the following:

A. ANNUAL TURNOVER OF LAST 3 YEARS:

Year	Amount (Currency)
Year 1:	
Year 2:	
Year 3:	

B. FINANCIAL DATA FOR LAST AUDITED FINANCIAL YEAR:

Description	**Year**
	Amount (Currency)
1. Currency Assets	
2. Current liabilities	
3. Working capital (Current assets-current liabilities)	
4. Net worth (Paid up share capital and free reserves & surplus)	

Name of Audit Firm:
Chartered Accountant
Date:

[Signature of Authorized signatory]
Name:
Designation:
Seal:
Membership no.
UDIN No.

Instructions:

1. The financial year would be the same as one normally followed by the bidder for its Annual Report.
2. The bidder shall provide the audited annual financial statements as required for this Tender Document. Failure to do so would result in the personnel being considered as non-responsive.
3. For the purpose of this Tender document (i) Annual Turnover shall be "Sale value/Operating Income" (ii) Working capital shall be "Current Assets Less Current Liabilities" and (iii) Net Worth shall be "Paid up share capital and Free reserves & Surplus"

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

FORM F-12
FORMAT FOR CERTIFICATE FROM STATUTORY AUDITOR FOR DETAILS OF SIMILAR GOODS/ WORK/ SERVICES SUPPLIED/ DONE DURING PAST 10 YEARS

Sr. no.	Description of the goods/works/services	LOA/PO /WO no. & date	Full proposal, address & phone nos. of client Name, designation & address of engineer/officer-in-charge (for cases other than purchase)	Value of Contract /Order (Specify Currency amount)	Date of Commencement of work/services or supply of goods	Scheduled completion time(months) delivery schedule	Date of actual completion /supply	Reasons for delay in execution, if any	Project cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

Place:
Date:

[Sign. Of authorized signatory of bidder]

Name:
Designation:

Instructions:

1. Copies of letter of awards/order/work orders and completion certificate (in case of works/services) or IRN/Proof of delivery (in case of supplies, if applicable) to be enclosed.

2. The supply/work/services completed earlier than 5 years need not be indicated here.

3. The list of supply/ work/ services not of similar nature need not be indicated here. Failing to comply aforementioned instructions may lead to rejection of bid.

4. Bidders are expected to provide details in respect of each order in this Annex. The orders cited must comply with the bid evaluation criteria specified in Tender Document. Details provided in this section is intended to serve as a backup for information provided in Offer/Quotation. Bidder should also refer to the instructions below.

5. A separate sheet should be filled for each LOA/work order/ purchase order.

6. Certificate from the bidder's statutory auditors must be furnished in the format below for LOA/Work Order/Purchase Order mentioned above (separately for each order).

7. It may be noted that in the absence above certificates, the details would be considered inadequate and could lead to the bid being considered ineligible for further evaluation.

Certificate from the Statutory Auditor regarding Supply of Goods/Works/Services

Based on its books of accounts and other published information authenticated by it, {this is to certify that LOA/PO/WO no. ..... dated.....was awarded to ..... (name of the bidder) by.....(name of the client) to execute.....((name of the supply/work/service). The Supply/ works/services commenced on ..... (date) was/is likely to be completed on.....(date, if any). It is certified that the total value of contract/order executed by..... (name of bidder) was..... (specify currency & amount) and executed value was.....(specify currency & amount).

Name of Audit Firm:

[Signature of authorized signatory]

Chartered Accountant:

Date:

Name:
Designation:
Seal:
Membership No.:

MAHARASHTRA NATURAL GAS LIMITED	Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA. Bid Doc. No. MNGL/CP/2026-27/139

FORM F-13

FORMAT FOR SUPPLY RECORDS FOR MEETING BEC

Sr. no.	Purchase Order no.	Purchaser Name	Ordered Quantity	Supplied Quantity	IRN no./ DCN/ Taxable Invoice no.	Sr. No. of pages
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Bidder shall submit this form along with the relevant document with proper numbering.

For tenders having various items/ parts, the bidder is to submit a separate format for each item/ part quoted.

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

Form F-14
FORMAT FOR BIDDER'S PRE-BID QUERIES

To,
M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045

Subject:

Sr. no.	Section / Tender page no.	Clause no.	Subject	Bidder's Query

Note: The Pre-Bid Queries may be sent by e-mail, before the pre-bid meeting due date, to MNGL. An editable copy of queries may be enclosed while sending signed pre-bid queries.

SEAL AND SIGNATURE OF BIDDER

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

Form F-15
TECHNO-COMMERCIAL PROPOSAL
(To be filled serial-wise on the e-tendering portal bid floor in the provided format)

Wherever remarks are required, bidders are advised to ensure that sufficient information has been provided and remarks such as “attached”, “enclosed”, “submitted” or other such terms alone should be avoided.

Sr.	Requirement	Response
	General Information	
1	Complete Bidder Organization Name	
2	Date of Registration	
3	Company Address(es) in India	
4	No. of years in business	
5	Type of Firm (Proprietary / Partnership / Private Ltd. / Public Ltd.)	
6	Details of Directors / Proprietors / Partners	
7	Phone no. of contact person	
8	Email ID of contact person	
9	GST registration number	
	Technical BEC	
1	As defined in tender document	Agree
	Details in support of Technical BEC	
1	Any one past reference client (Company Name)	
2	Reference client’s PO / work order / Agreement no. and date of award	
3	Reference client’s Completion certificate with clear mention of PO / work order / Agreement no., awarded value/ qty. & executed value/ qty.	
	Financial BEC	
1	Bidder’s turnover for immediate preceding financial year FY _____(as per tender requirement).	
2	Bidder’s turnover for second to last preceding financial year FY _____(as per tender requirement).	
3	Bidder’s turnover for third to last preceding financial year FY _____(as per tender requirement).	
4	Bidder’s net worth for preceding financial year FY _____ (as per tender requirement). Should be positive.	
5	Bidder’s working capital for preceding financial year FY _____(as per tender requirement).	
	Commercial Terms and Conditions	
1	Bidder accepts to keep the bid valid for a period of 4 months from the date of opening of techno-commercial bid	Agree
2	Bidder to submit the original copy of EMD / Bid Security (if applicable) required against tender document within the stipulated time.	Agree
3	EMD / Bid Security DD/BG no. / MSME/NSIC certificate no. and date	
4	Bidder accepts to quote the prices as per SOR enclosed with this	Agree

	tender document	
5	Prices quoted by the bidder shall remain firm, fixed and valid for entire contractual period	Agree
6	Prices quoted by the bidder shall be inclusive of all taxes, duties, levies, fees, insurance, etc.	Agree
7	Bidder understands and accepts the complete scope of work as defined in the tender document	Agree
8	Bidder accepts the contractual validity period as per tender	Agree
9	Bidder accepts the terms of payment as per tender	Agree
10	Bidder accepts to submit the Performance Bank Guarantee(s) as per tender provisions	Agree
11	Bidder accepts the Price Reduction Schedule and other penalties as mentioned in the tender document	Agree
12	Bidder accepts the General / Special / Technical Terms & Conditions of the tender	Agree
13	Bidder accepts all statutory compliances against tender	Agree
14	Bidder has read and accepts the tender document in toto	Agree
15	Any deviation from the tender document sought by the bidder is listed separately in Form-5 only	Agree
16	All the bidders must ensure adequacy and sufficiency of their document while submitting bid in all respects. Bid shall include all documents confirming to the tender terms and conditions, BEC and the tender specifications in toto failing which their bids are liable to be rejected.	Agree

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

DOCUMENTS TO BE UPLOADED ON E-TENDER PORTAL

Sr.	Document Header Name	Document Description
1	Covering Letter/Forwarding Letter	Covering Letter/ Forwarding Letter
2	Bid Signatory PoA / Board Resolution	Power of attorney of the signatory to the bid offer on non-judicial stamp paper / Board resolution of company for authorized signatory.
3	Form-1	Bidder's General Details/ information as per appended format
4	Form-2	Bid Security (EMD) as per format Form F-2
5	Form-3A & 3B	Certificate for financial capability of the bidder as per appended format. In case bidder's working capital is lower than that required as per Tender BEC, letter from bidder's bank showing availability of credit to cover inadequacy of working capital to be attached with this Form-14
6	Form-4	Agreed Terms & Conditions
7	Form-5	Deviation/ Exceptions as per appended format.
8	Form-6	Declaration as per appended format.
9	Form-7	Letter of authority in favour of any one or two of Bidder's executives having authority to attend the un-Priced and price bid opening as per appended format.
10	Form -8	Declaration for bidder not under Liquidation, etc. **(**on Bidder's letter head)
11	Form-9	Information regarding any current litigation in which the bidder is involved in Form F-9.
12	Form-10,11 & 12 Certificates	Certificates as per appended Form- F- 10, 11 & 12
13	Form 13	Supply Records
14	Form 15	Techno-Commercial Proposal as per form 15
15	Copy of GST	Copy of GST (Goods & Service Tax), ESI, PF, PAN registration Certificates
16	Other Documents for Technical BEC Eligibility	Any other documents to show compliance of Technical BEC
17	Corrigenda and Other Docs	Copy of all addenda/corrigenda, if any, along with required documents as stated therein, duly signed and stamped. (In case no addendum/corrigendum has been issued against this tender document, then the bidder may upload a letter stating that "No addendum/corrigendum has been issued against this tender document").

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

Notes:

1. Bidder may attach any other docs, not in the above list but relevant to this tender, at the specified link on the e-tendering portal.

2. Bidder must upload the file as asked above on e-tender portal in .pdf format by keeping the file name as provided in the column "*Document Header Name*" above only.

3. All pages of the bid offer to be signed and stamped by an authorised representative (as described in bid document) of the bidder**.**

4. Bidder must ensure the numbering of all pages submitted in bid document. Further total number of pages submitted in bid document must be mentioned in the covering letter of the bid submitted.

Bidders must upload the unpriced SOR marked "Quoted/ Unquoted" for each item as per excel (named "*Unpriced SOR*") provided on the e-tender portal along with applicable GST rate (in percentage only) and HSN code. If there is any discrepancy observed between the HSN code/ GST rate in unpriced SOR and priced bid, then the GST rate as per unpriced SOR or as agreed during technical- commercial queries shall be considered for evaluation. MNGL also may take necessary clarifications from bidders quoting HSN code or GST rate inconsistent with other bidders or previous contract.

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

Form F-17
CONTRACT PERFORMANCE BANK GUARANTEE
(To be stamped in accordance with Stamp Act)

To,
M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045

Dear Sir,

M/s_____ have been awarded the work of _____ for MNGL (India) Ltd., Pune vide Purchase Order No. _____dated _____.

The Contract conditions provide that the CONTRACTOR shall pay a sum of Rs. _____(Rupees_____) as full Contract Performance Guarantee in the form therein mentioned. The form of payment of Contract Performance Guarantee includes a guarantee executed by Nationalized Bank, undertaking full responsibility to indemnify Maharashtra Natural Gas Ltd., in case of default.

The said _____ has approached us and at their request and in consideration of the premises we having our office at _____ have agreed to give such guarantee as hereinafter mentioned.

1. We _____ hereby undertake and agree with you that if default shall be made by M/s _____ _____ in performing any of the terms and conditions of the tender or in payment of any money payable to Maharashtra Natural Gas Ltd. we shall on demand pay without any recourse to the contractor to you in such manner as you may direct the said amount of Rupees _____ only or such portion thereof not exceeding the said sum as you may from time to time require.

2. You will have the full liberty without reference to us and without affecting this guarantee, postpone for any time or from time to time the exercise of any of the powers and rights conferred on you under the contract with the said _____ _____ and to enforce or to forbear from endorsing any powers or rights or by reason of time being given to the said _____ which under law relating to the sureties would but for provision have the effect of releasing us.

3. Your right to recover the said sum of Rs._____ (Rupees

_____) from us in manner aforesaid will not be affected or suspended by reason of the fact that any dispute or disputes have been raised by the said M/s _____ _____ and/ or that any dispute or disputes are pending before any officer, tribunal or court.

4. The guarantee herein contained shall not be determined or affected by the liquidation or winding up dissolution or changes of constitution or insolvency of the said but shall in all respects and for all purposes be binding and operative until payment of all money due to you in respect of such liabilities is paid.

5. This guarantee shall be irrevocable and shall remain valid up to_____ If any further extension of this guarantee is required, the same shall be extended to such required period on receiving instruction from M/s _____ on whose behalf this guarantee is issued.

6. The Bank Guarantee's payment of an amount is payable on demand and in any case within 48 hours of the presentation of the letter of invocation of Bank Guarantee. Any dispute arising out of or in relation to the said Bank Guarantee shall be subject to the jurisdiction of Pune or High Court of Mumbai.

7. We have power to issue this guarantee in your favor under Memorandum and Articles of Association and the undersigned has full power to do under the Power of Attorney dated _____ granted to him by the Bank.

Yours faithfully,

_____Bank

By its Constituted Attorney

Signature of a person duly authorized to sign on behalf of the Bank.

INSTRUCTIONS FOR FURNISHING PERFORMANCE GUARANTEE

1. The Bank Guarantee by successful bidder(s) will be given on non-judicial stamp paper as per stamp duty applicable. The non-judicial stamp paper should be in name of the issuing bank. In case of foreign bank, the said bank guarantee to be issued by its correspondent bank in India on requisite non-judicial stamp paper and place of bid *to* be considered as Pune.

2. The bank guarantee by bidders will be given from bank as specified in ITB.

3. A letter along SWIFT Statement from the issuing bank of the requisite Bank Guarantee confirming that said bank guarantee and all future communication relating to the Bank Guarantee shall be forwarded to Employer

4. All the Bank Guarantees should be submitted along with SWIFT message against this tender.

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

Form F-18

FORMAT FOR CERTIFICATE FROM BANK
IF BIDDER'S WORKING CAPITAL IS INADEQUATE/NEGATIVE
(To be provided on Bank's letter head)

Date:

To,
M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045

Dear Sir,

This is to certify that M/s ..... (Name of the bidder with address) (Hereinafter referred to as Customer) is an existing customer of our Bank.

The Customer has informed that they wish to bid for MNGL's Tender no. ..... Dated ..... for ..... (Name of the supply/work/services/consultancy) and as per the terms of the said Tender they have to furnish a certificate from their Bank confirming the availability of line of credit.

Accordingly M/s ..... (Name of the Bank with address) confirms availability of line of credit to M/s ..... (Name of the bidder) for at least an amount of Rs. _____.

It is also confirmed that the net worth of the Bank is more than Rs.100 Crores (or Equivalent USD) and the undersigned is authorized to issue this certificate.

Yours truly

For ..... (Name & address of Bank)

(Authorized signatory)

Name of the signatory:

Designation:

Stamp:

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Form F-19
E-Banking Mandate Form
(To be issued on vendor's letter head)

1. Vendor/customer Name:

2. Vendor/customer Code:

3. Vendor /customer Address:

4. Vendor/customer e-mail id:

5. Particulars of bank account
   a) Name of Bank
   b) Name of branch
   c) Branch code:
   d) Address:
   e) Telephone number:
   f) Type of account (current/saving etc.)
   g) Account Number:
   h) RTGS IFSC code of the bank branch
   i) NEFT IFSC code of the bank branch
   j) 9-digit MICR code

I/We hereby authorize MNGL to release any amount due to me/us in the bank account as mentioned above. I/We hereby declare that the particulars given above are correct and complete. If the transaction is delayed or lost because of incomplete or incorrect information, we would not hold the MNGL responsible.

(Signature of vendor/customer)

BANK CERTIFICATE

We certify that ---------- has an Account no. ---------- with us and we confirm that the details given above are correct as per our records.

Bank stamp:

Date: (Signature of authorized officer of bank)

F – 20
[APPLICABLE FOR DOMESTIC TENDERS]
PACKING, MARKING AND SHIPPING INSTRUCTIONS

The Packing, Marking, Shipping and Documentation for Goods shall be as follows:

a) The SUPPLIER shall provide such Packing of GOODS as is required to prevent their damage or deterioration during transit to their final destination as indicated in the CONTRACT. The Packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the GOODS final destination and the absence of heavy handling facilities at all points in transit.

b) The packing, markings and documentation within and outside the packages, shall comply strictly with such special requirements as shall be expressly provided for in the documents.

c) SUPPLIER shall comply with all applicable prescriptions in the specifications. Lack of relevant information and/or documents shall not absolve the SUPPLIER of his responsibilities.

d) Supplier shall ensure that consignments destined for different project sites as detailed in Purchase Order are packed separately and marked clearly.

1.0 **SPECIFICATIONS FOR GOODS BEING PROCURED INDIGENOUSLY**

1.1 **Packing**

1.1.1 The packing specifications incorporated herein are supplementary to the internal and external packing methods and standards as per current general rules of IRCA Goods Tariff Part I. All packaging shall be done in such a manner as to reduce volume as much as possible. Fragile articles should be packed with special packing materials depending on the type of materials.

1.1.2 Items shipped in bundles must be securely tied with steel wire or strapping. Steel reinforcing rods, bars, pipes, structural members etc. shall be bundled in uniform lengths and the weight shall be within the breaking strength of the securing wire or strapping.

1.1.3 All delicate surface on equipment's/materials should be carefully protected and painted with protective paint/compound and wrapped to prevent rusting and damage.

1.1.4 All mechanical and electrical equipment and other heavy articles shall be securely fastened to the case bottom and shall be blocked and braced to avoid any displacement/shifting during transit.

1.1.5 Attachments and spare parts of equipment and all small pieces shall be packed separately in wooden cases with adequate protection inside the case and wherever possible should be sent along with the main equipment. Each item shall be suitably tagged with identification of main equipment, item denomination and reference number of respective assembly drawing. Each item of steel structure and furnaces shall be identified with two erection markings with minimum lettering height of 15 mm. Such markings will be followed by the connection number in indelible ink/ paint. A copy of the packing list shall accompany the material in each package.

1.1.6 All protrusions shall be suitably protected by providing a cover comprising of a tightly bolted wooden disc on the flanges.

1.1.7 Wherever required, equipment/materials/instruments shall be enveloped in polythene bags containing silica gel or similar dehydrating compound.

1.1.8 All pipes and tubes of stainless steel, copper, etc., shall be packed in wooden case or crates irrespective of their size.

1.1.9 Pipes with threaded or flanged ends shall be protected with suitable caps/covers, before packing.

1.1.10 Detailed packing list in waterproof envelope shall be inserted in the package together with equipment/material. One copy of the detailed packing list, shall be fastened outside of the package in waterproof envelope and covered by metal cover.

1.1.11 The supplier shall be held liable for all damages or breakages to the goods due to the defective or insufficient packing as well as for corrosion due to insufficient protection.

1.1.12 Packaged equipment or material showing damage, defects or shortages resulting from improper packaging material or packing procedures or having concealed damage or shortages, at the time of unpacking, shall be to the supplier's account.

1.2 **Marking**

1.2.1 Each package shall be marked on three sides with proper paints/indelible waterproof ink as follows:

(OWNER)
PROJECT
(DESTINATION)

Purchase order No. _____
Net Wt._____ Kgs.
Gross Wt. _____ Kgs.
Dimensions _____X_____X _____CMS.

Package No. (S. No. of total Packages) _____
Supplier's name_____

1.2.2 Additional marking such as 'HANDLE WITH CARE' 'THIS SIDE UP' 'FRAGILE' or any other additional indications for protection and safe handling shall be added depending on the type of material.

1.2.3 Specific marking with white paint for 'SLINGING' and 'CENTRE OF GRAVITY' should be provided for all heavy lifts weighing 5 Tones and above.

1.2.4 In case of bundles/bags or other packages, wherever marking cannot be stenciled, the same shall be embossed on metal or similar tag and wired securely at two convenient points.

1.3 **Dispatch**

(a) Dispatch of materials shall be made in accordance with the relevant terms of the CONTRACT FORM. Any change in mode of transport shall be resorted to only after prior approval in writing. SUPPLIER shall ensure dispatch of GOODS immediately after they are inspected and released and shall intimate status of dispatch by fax to
- General Manager (C&P), MNGL, Pune
- Respective consignee fax nos. at site (to be indicated in Purchase Order).

(b) Dispatch by Road

(i) The SUPPLIER shall be responsible for dispatch of materials through a reliable Bank approved transport company unless, the Transport Company is named by PURCHASER.

(ii) The SUPPLIER shall ensure with Transport Company the delivery of materials within a reasonable transit period. SUPPLIER shall also obtain from transporter particulars of Lorry Number, transporter's Challan Number, destination of Lorry (if transshipment is involved), Transporter's Agent at destination, if any, etc. and intimate same following: -
- General Manager (C&P), MNGL, Pune
- Respective consignee fax nos. at site (to be indicated in Purchase Order).

(c) Shipment by Air

Whenever SUPPLIER is instructed by the PURCHASER or its representative to airfreight any material, the SUPPLIER shall take prompt action for the same. Immediately after air shipment is affected, the SUPPLIER shall intimate by Fax the details of Airway Bill number and date, Flight number, number of packages etc. to the OWNER'S and PURCHASER'S authorities at destination Airport City. Details of MNGL's agents shall be intimated later.

(d) Advance Information

Immediately after a shipment is made SUPPLIER shall send advance information such as the particulars of materials, value, Purchase Order Number, date of dispatch, Railway receipt Wagon Number/ GOODS Consignment note number, Truck number, name of transport company and their destination Office/ Associate's address etc., by way of Fax to following:

- General Manager (C&P), MNGL, Pune
- Respective consignee fax nos. at site (to be indicated in Purchase Order).

(e) Transmission of Dispatch Documents

SUPPLIER shall, within 48 hours of the dispatch of the GOODS depending upon the payment terms of the CONTRACT FORM either negotiate through PURCHASER'S Bankers or forward direct to PURCHASER at respective consignee address by Registered Post the following Documents in Original.

(i) Two copies of the SUPPLIER invoice showing descriptions of the GOODS, Quantity, unit price and total amount.

(ii) Delivery Note/Railway Receipt/Truck Receipt.

(iii) Manufacturer's/Supplier's Guarantee Certificate

(iv) Inspection Certificate issued by the PURCHASER/CONSULTANT and/or its representative and the SUPPLIER'S factory inspection report. Copies of the above documents shall be sent to the following addresses:

A M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045
Ph. No. – 020 25611000
Email – gasaid@mngl.in

B Office In Charge
M/s. MNGL (India) Ltd.,
Respective MNGL Site(s) address. (The Bidder shall request for add. 15 days in advance before dispatch)

(f) The SUPPLIER shall be responsible for any delay in clearance of the Consignment at destination and consequent wharfage/demurrage, if any, due to delay in transmittal of the Lorry/Railway receipt Consignment Note, etc.

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FORMAT FOR TENDER ACCEPTANCE LETTER

(To be given on Company Letterhead)

Date:

To,
M/s. MNGL (India) Ltd.,
Pride Purple Coronet, 2nd Floor,
Baner Road, Baner, Pune – 411045

Sub.: Acceptance of Terms & Conditions of Tender.

Tender Reference No.:

Name of Tender / Work.:

Dear Sir / Madam,

1. I/ We have downloaded/obtained the tender document(s) for the above-mentioned 'Tender/Work' from the website (s) namely: _____ as per your advertisement, given in the above-mentioned website(s).

2. I / We hereby certify that I/we have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc.,), which form part of the contract agreement and I/we shall abide hereby by the terms/conditions/clauses contained therein.

3. The corrigendum(s) issued from time to time by your department/organization too have also been taken into consideration while submitting this acceptance letter.

4. I / We hereby unconditionally accept the tender conditions of the above-mentioned tender document(s) / corrigendum(s) in its totality/entirety.

5. I / We do hereby declare that our Firm has not been put on Black / Holiday list by MNGL / MoP&NG / Oil Public Sector Enterprise(s).

6. I / We certify that all information furnished by our Firm is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/ organization shall without giving any notice or reason thereof summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,
(Signature of the Bidder, with Official Seal)

SECTION – IV
BREIF AGREED TERMS & CONDITIONS

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

BRIEF SUMMARY OF AGREED TERMS AND CONDITIONS

Following shall be duly filled in and should be returned by the bidder along with each copy of Unpriced Part of Bid / Offer:

Sl. No.	Description	Bidder's Confirmation
1	**Bidder's details:** a) Name b) Full address c) Tel. No. d) Fax No. e) E-mail f) State / UT where Registered Office of Company is located g) State / UT where Manufacturing Facilities of the Company is located h) Name and Designation of the person signing the Bid	
2	**In case the bidder is not manufacturer:** a) Name b) Full address c) Tel. No. d) Fax No. e) E-mail f) Name and Designation of the contact person	
3	**The followings are to be enclosed along with the bid:** a) Power of Authority of the person signing the bid	
	b) Letter of Authority of the person attending the bid opening.	
	c) In case bidder is not manufacturer:	
	Letter of authority from the manufacturer that they will meet the commitment of the bidder and supply the material in time, as required.	
4	Indicate Country of origin of offered GOODS	
5	Indicate dispatch point (Place of dispatch)	
6	**Bid Security Details:** a) Name and Address of Issuing Bank: b) Security No. & Date: c) Value (Rs. _____) d) Validity (Valid Minimum for 6 (Six) months from the final date of submission of offer e) Details of Issuing Bank i) Name: ii) Full Address: iii) Tel. No.: iv) Fax. No.: v) E-mail: vi) Name & Designation of the contact person	

7	**Validity of Bid:** {Valid minimum for Four (4) months from the final date of submission of offer.}	
8	a) Please confirm that the scope of work is complete as per tender requirement.	
	b) If reply to (a) is 'No', have all 'Exception & Deviation' been furnished in the format attached with bid document.	
	c) Confirm there are no 'Exception & Deviation' other than those indicated as (b) above and if indicated in offer elsewhere the same shall be considered 'NULL & VOID'.	
9	**Delivery Period / Completion Period:** Confirm your acceptance of delivery period completion period as per requirement Specified in bid Document in 'Time Schedule' on FOT Project Site Basis to be reckoned from date of Purchase Order (PO).	
10	**Currency of Offer:** a) Please indicate the currency in which the offer is submitted. (for foreign bidder US Dollar for foreign component and / or Indian Rupee). b) For Domestic bidder in Indian Rupees c) Please confirm that currency once quoted shall not be permitted to be changed.	
11	**Correspondence Language:** a) Confirm that all correspondences will be in English language only.	
12	**Price:** a) Ensure and confirm that unit prices Quoted in 'Price Schedule', (i.e. Schedule of Rates) on FOT Site Basis.	
	b) Confirm that price quoted are as per 'Price Format' given in tender document without any change.	
	c) Confirm that quoted prices will remain firm and fixed till complete execution of the order. Purchase Order (PO), placed within offer validity, shall be considered as 'Notification of Award of Contract'.	
	d) Confirm that the tender document is carefully studied & understood and has taken into full consideration in the quoted prices.	
	e) Confirm that Blank SOR submitted with the unpriced part of the bid contains the following:	
	i) Each 'Cell' of the schedule has been marked "Quoted" or "Not Quoted" and none of the 'Cell' has been left blank.	
	ii) All information on the top of the SOR or at the 'Note' of the SOR has been provided in totality.	
13	**Spares (Article – 19 of GCC):** Confirm that 2 years Spares if required in Bid Document, has been quoted on FOT Site and or FOB port of exit Basis and Freight charges have also been indicated separately.	

14	**Freight Charges:** **For Indian bidder** -Ensure & confirm that firm freight charges up to Project Site has been quoted separately for each item in SOR.	
15	**Transit Insurance and all other insurances:** a) Transit Insurance and all other insurance shall not be arranged by the Purchaser. Confirm that Insurance charges have been included in Quoted Price.	
16	**Goods & Service Tax (GST) for Indian bidders:** Indicate rate of taxes & duties applicable, as quoted in price schedule a) Goods & Service Tax	
	b) Confirm that GST indicated above is what has been indicated in blanked SOR and also in Priced SOR submitted.	
	c) In case of Discrepancy, rate indicated here shall be considered for bid evaluation. However, order will be placed on the lower one. Difference will be borne and paid by bidder.	
17	**Taxes & Duties for Indian bidders:** All taxes, duties, levies, License fee etc. incurred until delivery of the contracted goods, shall be borne, and paid by the bidder. However, Goods & Service Tax on finished products shall be reimbursed by the Owner (limited to provisions in the quoted price as per bid document). The statutory variation in taxes & duties (payable on finished product) if any, within the contractual delivery period shall be to the Owner account. Further, variation in basic charge on Goods & Service Tax within contractual delivery schedule, shall be borne and paid by the Owner. (However, limited to provision in bid documents).	
18	**Goods & Service Tax for Indian bidders:** a) Indicate present rate of terminal Goods & Service Tax (GST) applicable on the supplies and as quoted in price schedule. In case, Bid Document calls for Spares, (Mandatory/2 years) where, generally more than one rate of GST is applicable then such rates as considered in offer are to be indicated in the itemized Spare parts list.	
	b) If there is any variation in Goods & Service Tax at the time of supplies for any reason, other than statutory, including due to turnover, confirm the same will be borne by bidder.	
	c) It is noted and confirmed that statutory variation in GST within contractual delivery shall be to Owner's account.	
	d) If GST is presently not applicable, confirm whether the same will be borne by bidder in case it becomes leviable later.	
	e) In case (b) or (d) is not acceptable, indicate maximum rate of GST chargeable (same shall be considered by Owner for price	

	evaluation & comparison).	
19	**Price Reduction Schedule:** a) Confirm acceptance of Price Reduction Schedule (PRS) as per clause 26 of GCC and modified as per SCC i) For delay in completion/ delivery beyond contractually agreed delivery schedule as specified in the Bid Document. ii) for deficiency in performance & services as per provision of Bid Document. The invoice shall be submitted for the amount duly reduced to the extent of PRS. Otherwise, purchaser/owner reserves the right to deduct the same.	
	b) Confirm in case of delay in delivery beyond CDD, any new or additional or increase in taxes and duties imposed after contractual delivery the same shall be to Bidder's account.	
20	**Terms of Payment as specified in Special conditions of Contracts:** a) Confirm acceptance of terms of payment. b) It is noted and confirmed that deviations to 'Terms & Conditions of Payment' may lead to rejection of offer, as Owner considers fit. c) All the Deviation have been indicated in 'Exception & Deviation' format (including annexure, if any) and have not been repeated in the bid/offer and if repeated, the same shall be considered " Null & Void"	
21	**Guarantee / Warranty:** Confirm that the GOODS shall be guaranteed against defective materials/workmanship, etc., for a period of 24 months from the last Shipment or 12 months from the commissioning date, whichever is earlier, as per Guarantee/warranty conditions of Bid Document.	
22	**Contract-cum-Performance BG:** Confirm that Contract-cum-Equipment-Performance Bank Guarantee (CPBG) for 10% of Purchase Order Value shall be furnished as per provision of bid document, valid for 3 months beyond the expiry of Guarantee/Warranty or Defect Liability period, as applicable as per terms of Bid Document.	
23	**Inspection (Article – 13 of GCC):** a) Confirm acceptance to inspection requirement as per Bid Document. b) As inspection & certification of all goods may also be conducted by OWNER. Confirm there shall be no extra charges, since all personal & incidental expenses of Owner's Inspectors shall be borne by the Owner.	
24	**Part order:** Confirm acceptance to PART ORDER. In case of part ordering any value of part ordering, charges if quoted lumpsum and/or applicable to more than one item, shall be prorated on value	

	basis.	
25	**Quantity Variation:** PURCHASER reserves the right at the time of award of ORDER to increase or decrease by up to 20% the quantity of GOODS specified in the Material Requisition, without any change in unit price or other terms and conditions. Variation beyond this limit will be subject to mutual agreement between the PURCHASER and the Seller.	
26	**Advance Payment:** Please note that No Advance payment shall be made by Purchaser / Owner	
27	**MISCELLANEOUS:** a) Confirm that all Bank charges associated with Bidder's Bank shall be borne by Bidder. b) Confirm that all documents, as per Article -10 of ITB 'Documents comprising after by Bidder', have been enclosed. c) Confirm that owner reserves the right to make any change in the terms & conditions of the Bid Document and to reject any or all bids including those received late or incomplete.	
28	**Declaration by Bidder:** a) Confirm acceptance in toto of the Terms & Conditions contained in the bid document. Deviation, if any, have been listed in 'Exception & Deviation' format. b) Confirmed that all the terms & conditions have been indicated in this format (including annexure, if any) and have not been repeated in the bid elsewhere. It is noted and confirmed that Terms & Conditions indicated elsewhere including any Printed Terms & Conditions, shall not be considered by Owner. c) Confirm that any of the Directors of bidder is not a relative of any Director of Owner or the Bidder is a firm in which any Director of Owner or his relative is a partner or the Bidder is a private company in which any Director of Owner is a member or Director. d) Confirm that you have not been put on Black / Holiday list by MNGL / MoP&NG / Oil Public Sector Enterprise(s). If you have been banned delisted, then this fact must be clearly stated. e) Confirm that bidder has not under litigation including arbitration for 20 years i) If answer is No, then confirm that complete details of litigation and/or arbitration have been furnished in the offer.	

Bidder Signature:
Name:
Designation & Stamp:

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

VOLUME II OF II

C O N T E N T

Sl. No.	**Description**
SECTION - V	SPECIAL CONDITIONS OF CONTRACT (SCC)
SECTION - VI	SCOPE OF WORK
SECTION - VII	UNPRICED SCHEDULE OF RATES

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

SECTION - V

SPECIAL CONDITIONS OF CONTRACT (SCC)

C O N T E N T

1.0 SCOPE OF SUPPLY

2.0 QUALITY ASSURANCE / QUALITY CONTROL

3.0 QUANTITY VARIATION

4.0 DISPATCH INSTRUCTIONS

5.0 INSPECTION

6.0 REJECTION

7.0 DELIVERY SCHEDULE

8.0 TERMS OF PAYMENTS

9.0 PRICE REDUCTION SCHEDULE

10.0 REPEAT ORDER

11.0 GENERAL INFORMATION – CONSIGNEE ADDRESS, PAYING AUTHORITY, ETC.

SECTION - V
SPECIAL CONDITIONS OF CONTRACT (SCC)

The following articles should supplement the Instructions to Bidders and General Conditions of Contract (GCC). In case of any conflict between General Conditions of Contract and Special Conditions of Contract, the latter shall prevail to the extent applicable.

1. SCOPE OF SUPPLY / WORK:

The scope of supply shall be as given in Section-VI of Volume II.

2. QUALITY ASSURANCE / QUALITY CONTROL:

2.1 The supplier shall prepare a detailed Quality Assurance Plan for the execution of Contract for various facilities, which will be mutually discussed and agreed to.

2.2 The supplier shall establish document and maintain an effective quality assurance system outlined in the recognized code.

2.3 The Purchaser, while agreeing to a Quality Assurance Plan shall mark the stages where they would like to witness the tests; and review any or all stages of work at shop/site as deemed necessary for quality assurance.

3. QUANTITY VARIATION:

The tendered quantity may vary depending upon the project requirement. MNGL reserves the right to decrease/increase the quantity of any SOR item subject to the overall ceiling of contract value depending upon its requirement.

Quantities indicated in the tender / ARC are as per our projected requirement. MNGL cannot assure any firm commitment for procurement of entire quantities in the tender / ARC. After the issue of ARC, Delivery Order (DO) shall be placed for each & every requirement.

4. DISPATCH INSTRUCTIONS:

4.1 Seller shall obtain dispatch clearance from the Purchaser prior to each dispatch.

4.2 Copy of Inspection Release Certificate, Dispatch Clearance and Statement showing the name of the Vessel / Trailers, description and weight of the material and shipping marks etc. to be submitted along with the documents.

5. INSPECTION:

MNGL (India) Ltd. reserves the right to engage their own personnel and or MNGL's inspection agency. All the charges towards all kinds of tests shall be included in the quoted rates. No additional payment to this effect will be made. The charges towards MNGL's Inspection Agency, if engaged, shall be borne by MNGL.

6. REJECTION:

6.1 Any materials/goods covered under scope of supply, which during the process of inspection by an appointed third party, at any stage of manufacture/fabrication and subsequent stages, prior to dispatch, is found not conforming to the requirements/specifications of the Purchase Requisition / Order, shall be liable for immediate rejection.

6.2 Supplier shall be responsible and liable for immediate replacement of such material with acceptable material at no extra cost or impact on the delivery schedule to EMPLOYER.

7. DELIVERY SCHEDULE:

SCHEDULE FOR SUPPLY:

Delivery order shall be released by MNGL in quantities required as per our target and plan. The bidder should agree to supply the quantity mentioned in the delivery order as per the time schedule as under:

Sl. No.	Item Description	Completion Schedule
1	Design, Engineering, Manufacturing, Testing, Name Plate Marking, Painting, Inspection, Packing & Forwarding, Transportation, Shipment, Calibration & Supply (including insurance, customs clearance, handling and unloading at port as well as at MNGL's Stores / Site (at Bhiknoor, Nizamabad GA)) of Check Metering skid with filtration and PRS and panel-mounted Flow Computer, Gas Chromatograph, Spares including assistance in configuration, interfacing, erection, installation, testing and commissioning inclusive of comprehensive AMC for the first year. Process Parameters /Details: 35000 SCMH Metering skid with 3 Stream PRS (2 streams of 100% capacity & 1 stream of low flow capacity) along with a 2-stream metering system 1 USM & 1 RPD (G-100) & 1 stream with spool piece, along with field instruments, panel-mounted flow computer (FC), Gas Chromatograph (GC) & associated items with material instruments, vents, piping, valves, Flanges & fittings, etc.	The delivery period, including installation & commissioning for the above skid shall be within 20 (Twenty) weeks from the date of written intimation / Delivery Order by MNGL.

	Product: Natural Gas, Max Flow (SCMH): 35000, Design Pressure: 49 Kg/cm2g (300#), Design Temperature (Min/Max): (-)29°C to 65 °C, Inlet Pressure (Min/Max): 30 to 45 Kg/cm2g, Outlet Pressure (Min/Max): 19-25 Kg/cm2g Inlet Presuure Size/Rating = 6 inch 300# Outlet Pressure Size/Rating = 6 inch 300# Filtration: Flow (SCMH) (Min/Max): 600 / 35000, Inlet Pressure (kg/cm2g) (Min/Max): 30/45 Meter (Ultrasonic High Flow): Flow (SCMH) (Min/Max): 4500 / 35000, Inlet Pressure (kg/cm2g) (Min/Max): 30/45 Meter (RPD): Flow (SCMH) (Min/Max): 80 / 4500, Inlet Pressure (kg/cm2g) (Min/Max): 30/45 PRS (High Flow): Flow (SCMH)(Min/Max): 4500 / 35000, Inlet Pressure(kg/cm2g) (Min/Max): 30/45, Outlet Pressure (kg/cm2g) (Min/Max): 19/25 PRS (Low Flow): Flow (SCMH)(Min/Max): 600 / 4500, Inlet Pressure(kg/cm2g) (Min/Max): 30/45, Outlet Pressure (kg/cm2g) (Min/Max): 19/25	

Date of Delivery: The date of receipt of material at MNGL Stores shall be taken as the date of delivery.

Note: Dispatch details shall be provided at the time of dispatch.

8. PAYMENT TERMS:

The terms of payment shall be as follows:

For Indian Bidders Only:

85% + 15% payment as mentioned in Section-VI of Volume II within 45 days from receipt of goods at the site, along with the following dispatch documents.

i) Cen-vatable Invoice in triplicate
ii) Inspection Release note by Owner or his appointed or approved agency.
iii) GR / LR
iv) Packing List
v) A certificate from manufacturer that 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.
vi) Performance Bank Guarantee(s) of 10% of Purchase Order Value. If already submitted, a copy of the same.
vii) Document related to CENVAT credit to be claimed by Owner, if applicable.
viii) Documents as specified in the Technical Specifications / Material Requisitions, Vol. II of II of the Bid Document.

9. PRICE REDUCTION SCHEDULE:

The supplier agrees that the time of supply of Stores / Works shall be of the essence of the Contract. If the supplier fails to supply Stores / Works within the respective scheduled/fixed date for supply, the Company may without prejudice to any other right or remedy available to the Company:

a. Recover from the supplier as certain and agreed, genuine pre-estimate price reduction and not by way of penalty, a sum equivalent to ½% per week or part thereof for each week's delay, prorated for part thereof beyond the scheduled supply date each subject to maximum of 10% of Purchase Order Value, even though the Company may accept delay in supply after the expiry of the scheduled supply date.

b. Arrange to get supply from elsewhere on account and at the risk of the Supplier, such decision of the company being final and binding on the supplier.

OR

c. Terminate the contract or a portion of the supply work thereof, and if so desired, arrange for the supply in default by the supplier to be attained from elsewhere at the risk and cost of the supplier.

10. REPEAT ORDER:

MNGL reserves the right to place a repeat order within 6 months from the date of purchase order up to 50% of purchase order value on same rates, terms, and conditions.

11. GENERAL INFORMATION RELATING TO CONSIGNEE ADDRESS, BANKER'S NAME, PAYING AUTHORITY, INSURANCE AGENT, ETC.:

- **Location & Address of project Consignee**:
  M/s. MNGL (India) Ltd.,
  Pride Purple Coronet, 2nd Floor,
  Baner Road, Baner, Pune - 411045

  Address of Stores at Nizamabad:
  Will be intimated at the time of dispatch.

- **Name & Address of the Bankers**:
  State Bank of India,
  Industrial Finance Branch,
  Tara Chambers, Pune Mumbai Road,
  Wakdewadi, Shivajinagar, Pune-411003

- **GST Number for Maharashtra**: 27AAECM5536G1ZF

- **Paying Authority**: **CFO**
  M/s. MNGL (India) Ltd.
  Pride Purple Coronet, 3rd Floor,
  Baner Road, Baner, Pune – 411045

- **Name & Address of consignee for import at seaport/ airport of entry**: Mumbai

- **Whether Certificate for availing concessional project rate of custom duty will be given:** No

- **Name & Address of insurance agency:**
  To be intimated at the time of placement of PO.
- Mode of Payment: A/C Payee Cheque / NEFT
- Preferred mode of dispatch:
  Imports: Sea
  Domestic: By Road
- Inspection agency for indigenous items: MNGL / Third-party inspection agency appointed by MNGL.

SECTION – VI

SCOPE OF WORK

Design Requirements

- The metering skid shall feature a **twin-stream configuration**, ensuring operational flexibility and reliability.
- **Stream 1**:
  Equipped with an **Ultrasonic Meter (USM)** for precise flow measurement with provision of a bypass stream, ensuring uninterrupted operation during maintenance or calibration, along with the PRS.
- **Stream 2**:
  Equipped with an **RPD G-100** for low flow measurement with provision of bypass stream, ensuring uninterrupted operation during maintenance or calibration along with the PRS .
- **Stream 3**:
  - Designed with a spool piece to facilitate future installation of a USM.
  - This stream will also serve as a bypass stream, ensuring uninterrupted operation during maintenance or calibration.

- The skid shall be designed to handle:
  - A **maximum inlet pressure of 49 bar**.
  - A **design pressure class of 300#**.
  - A **maximum flow rate of 35000 SCMH** through the USM.

- The metering skid shall incorporate the following additional components:
  - **One Flow Computer** to process and record gas flow data.
  - **One Gas Chromatograph** for detailed analysis and accurate measurement of gas composition.
- **Outlet Stream Design**:
  - One stream dedicated to **online compressors**, without pressure reduction or control.
  - One stream intended to **feed the city network**, without pressure reduction or control, currently to be blind flanged for future use.
  - One stream designed to feed the city network through a **PRS skid** (Active, Monitor, and SSV in both streams in each stream) with an outlet pressure of **19-25 bar**.
- **System Integration Responsibilities**:
  - The vendor/bidder shall assume full responsibility for the seamless integration of the of the metering skid, ensuring compatibility with the Flow Computer and Gas Chromatograph.

- The integrated system must deliver accurate and reliable gas flow measurements, meeting all specified requirements and operational standards.

1.0 GENERAL

1.1

MNGL intends to Install USM & RPD mete r based Check metering system & pressure regulating skid complete with Flow Computer, Gas Chromatograph and related accessories at its City gas station in Bhiknoor(Kamareddy District) Nizamabad GA.

This document describes in detail the scope of work, scope of supply and responsibilities of bidder for installation of Ultra Sonic Gas Flow Meter based natural gas metering and pressure regulating system for MNGL. The system envisaged in this project, shall be installed at MNGL Bhiknoor(Kamareddy District) Nizamabad GA, where MNGL will be receiving Gas from PIL.

The scope of work/ supply includes Design, Engineering, Manufacturing, Inspection, Testing, Wet calibration, assembly & integration , Erection, Installation & commissioning of metering & PRS System consisting on-line Gas Chromatograph with flow measurement & Modem for wireless communication or Modbus protocol along with piping, instruments & fittings as indicated in the typical P&ID. The typical P&ID is attached for reference purpose in the tender, the bidder has to envisage line sizing and required instruments and get the same approved from MNGL during detail engineering.
The Hook-up of Existing Odorising Unit with Flow Computer will be in bidder's Scope. The flow computer data will be required at MNGL central control room through Modem/Modbus Protocol, all necessary hardware & Software for polling the data will
be in bidder's scope.

The details mentioned in tender are tentative. Hence, it is advisable to visit the site for better estimation before bid submission.

The Required capacity, Pressure Rating, Quantity and Location of the Metering System is as under:

Item No.	Max. Flow Capacity of Metering Systems	Location	Pressure Rating		Qty. (Nos.)
			Inlet	Outlet	

1.	35000 SCMH Metering skid with filtration and 3 stream PRS stream [2 stream of 100% capacity & 1 stream low flow capacity] and 2 Stream Metering System with 1 USM and 1 RPD (G-100) ,along with field instruments Flow Computer (FC), Gas Chromatograph & associated items with materials instruments , vents, piping, valves, flanges & fittings etc.. Inlet Pressure Rating: 300# Outlet Pressure Rating: 300#	MNGL's CGS at Bhiknoor(Kamareddy District),Nizamabad GA	300 #	300 #	01

Delivery Period: The delivery period including installation & commissioning for the above skid shall be Within 20 (Twenty) weeks from the date of written intimation / Delivery Order by MNGL.

Repair & Maintenance Services: Vendor shall provide warranty period for 1 year for the system to be counted after commissioning of skid and during the warranty period, vendor shall provide on-site repair & maintenance services which includes supply of all the spares required for attending the supplied system without any extra cost implication to MNGL.

1.2 The description and requirements contained in this specification are concise by necessity and cannot include all the details. However, it is the responsibility of the bidder to execute the job on a LSTK basis in accordance with the specifications and internationally recognized good engineering practices.

1.3 Any activity specifically not listed in this document, does not absolve the bidder of their responsibility to include such activities in their scope of work and supply, which otherwise is necessary, to complete instrumentation work for the project. All such activities shall be carried out by the bidder without any time / cost implication to MNGL.

1.4 **In the event of any conflict between these specifications, related standards and codes, any other attachment to this package, the bidder shall follow the following documents in the order of their priority:**

a) Job Specifications for Gas metering & PRS package

b) Data Sheets and Typical P&ID

c) Standard specifications and standards

In case of any conflict in various documents, same shall be referred to MNGL for clarification. Bidder shall not proceed without getting written approval in such a case.

2.0 SCOPE OF WORK & RESPONSIBILITY of BIDDER

2.1 SCOPE OF WORK

2.1.1 General: Bidder shall be responsible for execution of the package on turnkey basis with scope of work as listed below but not limited to the following:

1. Design and Engineering
2. Integration/Assembly/Procurement/ Supply, Inspection, Factory testing and Acceptance.
3. Erection, Installation, field calibration/ testing and commissioning.

2.1.2 **Design and Engineering:**

(a) Owner shall provide the bidder with this bid package consisting of typical Piping & Instrumentation Diagrams and process data sheets. The bidder shall be responsible to carry out the design and detailed engineering based on the data provided in the bid package and in line with other technical requirements specified elsewhere in this document. Scope shall also include sizing and sizing verification for all items including where data is dependent upon detailed engineering, detailing of basic engineering designs, preparation of data sheets, coordination drawings for instruments and system oriented items, engineering drawings etc. The bidder should furnish the 3 D model of the typical GA drawing before the execution of work at site for approval from MNGL.

(b) Residual Engineering

The bidder shall also be responsible for carrying out any residual basic engineering necessary for proceeding with detailed engineering like equipment/ instrument sizing, utility consumption, specifying derived data in process data sheets, type and material selection of instruments/ equipment's wherever required.

(c) Control Room Engineering:

Scope of bidder for control room engineering is as explained below; the complete skid data (including gas composition, flow computer data, Pressure, Temperature is required to be sent to remote station through GSM Modem/Modbus Protocol. Gas metering panel shall be complete with Flow computers, GC Controllers, Receiver instruments like signal selector, Power supplies, Isolating IS barriers & accessories, lamps, Odoriser controller and GSM Modem/Modbus Protocol etc. duly mounted completely wired, A separate terminal strip (designate as Telemetry Interface to RTU) shall be provided for terminating the signals to/from SCADA in this metering panel. GSM Modem/Modbus Protocol shall be required for establishing communication (and data transfer) with GC, Flow computers etc. Suitable hardware/ software including cable is to be supplied for GSM connectivity. GSM Modem/Modbus Protocol supply shall be in the scope of bidder.

(d) Engineering Drawings & Documents

i) Contactor Data Requirements attached in the list of drawings and documents required to be supplied by the bidder, as a minimum. Bidder to note that list specifies only the major deliverables. Documents and drawings not listed but necessary for proper engineering, construction, operation and maintenance shall also be prepared by the bidder.

ii) Bidder shall be responsible for preparation of all engineering drawings and documents including those necessary for construction like instrument index, tray layouts, location plans, cable schedules, installation standards, bill of material etc.

iii) Bidder shall also be responsible for providing all drawings and documents for package/ sub package units.

iv) It is expected that bidder utilizes uniform data sheet formats enclosed along with this document, for preparing specifications for various instruments, including those, which are being prepared by package/ sub package vendors. Items for which no format has been attached with the document, bidder may use standard ISA formats. Use of manufacturer standard formats shall be avoided.

v) The bidder shall supply all the documents in both hard copy and magnetic media. This includes all the documentation including those for package units.

(e) The design and engineering work shall also include review of post-order vendor drawings and documents for all instruments and system oriented items.

Following methodology must be followed for drawings and documents being forwarded to MNGL.

i) The Bidder shall thoroughly review and approve vendor drawings for all instruments including sub-package items, before forwarding to MNGL. Only the approved drawings duly stamped and signed by a competent representative/ engineer of Bidder shall be forwarded.

ii) The Bidder shall be responsible for all System Engineering documents for the Gas metering systems. This shall include all related documents such Functional design specifications, sizing calculations, pressure drop calculation etc. and Engineering documents such as functional loop schematics, instrument details and cable schedule, Power supply distribution schemes, procedures (FAT, SAT, wet calibration, etc.,), etc. These documents shall be reviewed and approved by Bidder based on philosophy specified/ agreed for the engineering before forwarding to MNGL.

iii) All multidisciplinary fabrication and construction drawings shall be reviewed and signed by bidder's respective departmental representatives before forwarding to MNGL for review/ approval/record.

f) Bidder shall be fully responsible for co-coordinating with all agencies concerned to ensure proper, uniform and smooth engineering. This shall include coordination with:

i) All individual item suppliers for uniformity in engineering and documentation supplied by them including P&ID's, instrument specifications, installation standards etc. and obtaining all requisite drawing and documents for review, record and final documentation.

ii) All instrument item suppliers including suppliers/ manufacturers of various system oriented items.

iii) Bidder's own inter-departmental coordination with departments like mechanical, piping, electrical, QC etc. This shall include furnishing all necessary engineering data in the form of drawings & documents and review of drawings & data supplied by other departments.

g) Bidder shall be responsible for preparation & submitting of all As-Built drawing / documents in hard & soft including

i) All P&IDs and GADs

ii) All Datasheets, specifications of instruments.

iii) All Purchase documents.

iv) All System documents including hardware and software documentation.

2.1.3 Procurement/ Supply, Factory testing and Acceptance

a) Engineering for procurement shall include preparation of various material requisitions which shall include process data sheets, typical data sheets for instruments, instrument standard specifications, special requirements etc., evaluation of offers received from various manufacturers/vendors, preparation of Technical Bid Analysis, preparation of purchase requisition and review/ approval of vendor drawings, incorporation of MNGL comments.

b) All Instrument items and Gas metering systems shall be procured from reputed vendors having proven track records. MNGL shall reserve the right to reject any instrument or system if the bidder fails to submit proper credentials of the OEM/vendor as specified above. In that case, bidder has to replace the said instrument with reputed make.

c) Bidder shall prepare purchase requisitions for all instruments/ systems which shall consist of a consolidated purchase document including all purchase specifications including data sheets, special instructions/ requirements (if any), standard specifications/ purchase specifications, testing requirements, quality requirements etc. All purchase requisitions shall be furnished to MNGL for information/ review/ approval as applicable.

d) Testing & calibration of all instruments, Factory Acceptance Test (FAT) and Site acceptance Test (SAT) shall be carried out by the bidder. Range/ calibration span, set points, reports etc. shall be modified as per MNGL's requirement by the bidder during FAT and SAT. MNGL / its representative shall witness testing of any or all items at various stages during manufacture and/or at final stage before shipment at their discretion. Testing shall be carried out as per approved procedures. No instrument shall leave manufacturer's works without factory acceptance test. All necessary changes shall be incorporated/ implemented as suggested by MNGL during FAT/ SAT etc. As build drawing/ documentation to be submitted by the bidder shall contain all such changes.

2.1.4 Installation, Field Calibration/ Testing and Commissioning

a) Installation inside the System

i) Bidder shall carryout installation of all instruments in the System as described in standard specification for instrumentation work described elsewhere in this document. Installation shall include but not limited to

installation of all field instruments, installation System assemblies explained in this package, installation of junction boxes, interconnection between instruments and junction boxes, fabrication, laying and painting of cable trays, supply & laying of all single pair and multi pair cables in the System, JB earthing / grounding, Field Instruments/ signal earthing / Grounding, tagging, ferruling, cable glanding and pair/ core identification of all field cables.

ii) Distribution of power to various instruments in the System from single point in the System. Separate JB is required for different type of signals and also for power to field instruments (Power supply to USMs and other Field Instruments shall be in separate JBs).

iii) Installation shall be carried out as per MNGL standards or as recommended in the tender. For special instruments, the installation may be carried out as per vendor/ manufacturer's recommendations however all such installation standards shall be subject to MNGL's review.

iv) Bidder's scope of supply/ work shall include required numbers of maintenance free earthing cable/ strips (as applicable) etc. (along with cable tray with supports for installation) in the System/ JB/ control room, as per the requirements of various instruments.

v) Due to limitations in transportation of the System, the System has to be transported to site in different modules. Individual modules shall be so designed that there are no / minimum cabling interconnections between various modules and such interconnections if any shall be in the bidder's scope.

b) Bidder shall quote for Lum Sum rate for services as per Scope defined in Annexure I for erection, installation and commissioning & transportation, unloading of the complete Systems. The quoted rates for installation site services shall be valid for 10 months from date of issuance of FOI/PO. Bidder shall depute qualified and competent person for installation / commissioning and rates shall be inclusive of transit insurance upto the installation at site.

C) Testing & Calibration

Bidder scope of work includes testing of all items and systems including impulse lines, pneumatic signal tubes and instrument cables and special instruments/ items if any. Bidder shall also carryout testing and calibration of all instruments as per the requirements specified elsewhere in tender document. Testing and calibration of Gas metering system shall be as
described elsewhere in the document.

d) Commissioning

It is the responsibility of Bidder to co-ordinate and make available the services of vendors/ sub-vendors for gas metering system package etc. and other special instruments/ equipment's like Gas flow meters, integration with existing Flow computers/ metering supervisory system

during installation, testing, FAT, Site acceptance, startup/ commissioning of the station. The bidder shall provide assistance to MNGL during commissioning without any additional cost condition/ pre-requisite. It is the responsibility of the vendor to get the certification from MNGL site Engineer. Installation of all the loose supplied items, its interconnection etc. shall be in the scope of supplier. In case of any dispute / conflict arising due to difference in opinion/ interpretation, the interpretation of MNGL / its representative shall be considered final.

2.1.5 SCOPE OF SUPPLY

Supply of all items as indicated on the typical Piping & Instrumentation diagrams (P&ID) and other technical documents attached with this document.

The scope of supply shall include but not limited to the following as a minimum:

a) Check gas metering & pressure regulating system package (including software program), in all respect as per P&IDs, Process data sheets & as described in Job specification for Gas metering system package.

b) All field instruments such as Pressure Transmitters, Temperature Transmitters & RTDs and isolation valves as applicable.

c) All installation and erection materials such as impulse piping, pipe fittings and valves, tubing, tube fittings, cable tray and supports, foundation bolts of the System, gaskets, companion flanges for inlet and outlet of the System, all type of consumables and accessories for mounting of instruments, instrument supports, tray supports, canopies/ sunshields for all field mounted instruments & housing of USM.

e) Supply & Laying/blowing of all the cable required between fields to Control room & electrical room will be in bidder's scope. The bidder may visit the site & estimate the actual distance.

f) Perforated tray, angle tray, accessories required for cable laying and routing up to the control room through cable trench etc. will be in bidder's scope.

g) Junction boxes and cable glands (as per the requirement of area classification) for different types of signals such as intrinsically safe and non-intrinsically safe 4- 20 mA dc, alarm, power etc. should be supplied and mounted/ installed in metering System. Preferably, all JBs shall be mounted in System at height of 1.3 meter from ground/ finished floor level/ System base frame and accessible / approachable from outside. JBs shall not to be installed inside System.

h) Painting of pipes, equipment's, instruments, platforms, jump-overs/ crossovers, as required; in line with the painting specifications attached elsewhere in this document.

i) Galvanized copper earthing strip and earthing cables for maintenance free earthing of all instrumentation items including junction boxes etc. to instrument earthing system. (Supply of earthing strip / cable is in bidder's scope. Laying of earthing cable/ strips from earthing pit is also in bidder's scope.

j) Suitable cabinet for custody transfer field instruments for environmental effect protection with a provision of locking. Any other erection material necessary for installation and commissioning of special instruments, if any.

k) Platforms & cross-over(s) / jump-over(s) to be provided for the operation and maintenance of the equipment's/ instruments/ JBs installed in the System. Proper spacing to be maintained between the equipment's for operation & maintenance. All flanges shall be connected through flexible jumpers of Minimum 3 mm thickness and 20 mm wide copper strips.

l) Special tools/ tackles including extractor tool is in bidders scope.

m) All the software used in the system and as specified elsewhere, shall be licensed in the name of MNGL.

o) Drawings and documents as listed elsewhere.

p) All pipes, tubing, fittings, valves, gaskets, bolts, nuts, spades, etc., within the System battery limit.

q) A structural System complete with necessary drip pan, walkways, staircase, platforms, gratings, handrails for access for operation and maintenance.

r) Lifting lugs and spreader beam / frame, foundation Anchor bolts for the System.

s) Stainless steel nameplate for each System, each tagged equipment and component.

t) All Tie-ins (flanged connections) with nuts and bolts.

u) Inlet and Outlet matching flanges and Studs & nuts shall also be supplied along- with the System.

v) Operation and maintenance manual, for instruments/ equipment's, as built drawing/ documentation.

AREA CLASSIFICATION

The metering skid shall be installed outdoors and shall be suitable for installation in Zone 1 Gas Group IIA / II B Temp Class T3 hazardous area. The electronic equipment installed shall be certified by a recognized certifying authority in the country of origin or by an internationally recognized certifying authority and approved by the local authorities. The electronic equipment shall be suitable for continuous operation in the designated hazardous area. Intrinsically Safe (IS) shall be the preferred mode of protection for all instruments. Only where IS certified instruments are not available flameproof EEx 'd' certified instruments shall be considered. The junction boxes shall be certified as increased safety (EExe). Conduit connection shall not be used. Intrinsic Safety (IS) protection shall be achieved by providing Fused Galvanic Isolators with status indicating LEDs, located in the respective Metering Panels/ cabinets in the control room/ local equipment room in a safe area.

2.2 Further Scope of Work and supply:

i) Vendor scope includes Design, Engineering, Manufacturing, Inspection, Testing, supply, Transportation, Installation & commissioning of complete work of check metering & pressure regulating skid Systems consisting of flow measurement (through multipath ultrasonic gas flow meter), Pressure Instruments, Temperature Instruments, complete integrated field instruments, piping, fittings and valves in a System.

ii) Check Metering Systems shall consist of complete metering package with PRS along with upstream, downstream along with flow profiler. The Vendor's scope of work shall include supply of the complete System with all the applicable components like Field instruments along with Isolation valve in accordance with this specification and any other codes, standards and regulations stated herein.

iii) The scope of supply as a minimum and as shown on the P & I D shall include, but not limited to the following:

a) Gas metering system with one metering stream of multi-path (minimum 4 path) ultrasonic gas flow meters along with flow profiler and meter runs & another standby stream with spool piece. Flow computer & GC shall be used for meter

stream with all interface accessories. Metering stream shall be designed for 100 % of capacity.

b) System mounted field instruments like Pressure & Temperature transmitters, temperature elements & thermo wells shall be supplied along-with the System.

c) The metering stream (flow meter, up-stream & downstream meter tube, flow profiler, impulse tubing of Pressure transmitter, thermo-well) shall be completely insulated to ensure an even heat transfer throughout the meter run when subjected to ambient environment.

d) The custody transfer equipment's at field like transmitters (pressure & temperature) shall be installed in an environmental enclosure to minimize the effects of ambient temperature variations and shall be lockable for prevention of unauthorized data entry. The size of the cabinet shall be suitable for removing and fixing of transmitters for ease of maintenance. The transmitters shall be fixed in mounting brackets inside the cabinet. The cabinet shall be mounted and fixed on the System.

e) Supplies of all pipes, fittings, valves, gaskets, bolts, nuts, spades, etc., within the System battery limit are in bidder's scope. Supply of all tubing and fittings, pipes, pipe fittings etc. within the System are in bidder's scope.

f) All cables (including earthing cable), cable trays, earthing strips for grounding/ earthing of System and wiring within the System; and from System to metering control panel (Only approved, standard armored cable to be considered for this project). All Interconnecting cables between System Instrument/ Junction box to metering control panel and inside control panel (to be located in Local equipment room in safe area). Bidder to supply required mounting accessories for Cabling, tray work etc.

g) Junction boxes (as per the requirement of area classification) for power, signal, alarm, instrument and control cables with suitable cable glands are in bidder's scope.

h) A structural System complete with necessary drip pan, walkways, staircase, platforms, crossover, gratings, handrails for access for operation and maintenance are in bidder's scope. Details of System assembly, supporting positions, Anchor bolt layout and equipment weights foundation drawings to be provided prior to equipment supply;

i) Lifting lugs and spreader beam / frame, foundation Anchor bolts, copper

jumpers for flanges for the System, Stainless steel nameplate for each tagged equipment and component; All Tie-ins with flanged connections shall be in bidder's scope. Earth bonding system and earthing boss for metering System are in bidder's scope.

j) Inlet and Outlet matching flanges (if required) and Studs & nuts (for System interconnection and Inlet & Outlet piping connection), suitable Gaskets shall also be supplied along-with the System.

k) The sun/ rain protection shed for electronic instruments shall also be supplied by the bidder.

l) The Vendor's scope of work shall also include:

a. Inspection and testing of all components, sub-assemblies, and complete assemblies of items manufactured at Vendor's works, and other sub- vendor's works in accordance with approved QA/QC procedure;

b. Shop assembly and hydro-test;

c. Factory Acceptance Test (FAT) for the complete package at VENDOR's works as per approved FAT procedure in presence of 2 MNGL officials.

d. Installation, start-up and

commissioning of the complete package at site. Site acceptance test (SAT) for the complete System as per approved SAT procedure.

e. Preparation for shipment, packing and delivery, unloading of all packages, equipment and material to site.

f. Installation of complete System & Start-up and commissioning assistance at site.

g. Preparation and submission of all documents as per requisition with the bid and after award of contract.

h. Preparation and submission Final Documentation / Completion files as per this specification. Four copy (hard copy and soft copy) shall be submitted along with the complete system at stores / site.

2.1.1 Any work not specifically mentioned but otherwise required, as per statutory rules/ codes and standards/ specifications and/or for the completion and operation of equipment to the entire satisfaction of MNGL must be done by the VENDOR without any commercial implications to MNGL.

2.1.2 The scope of work also includes the mechanical and structural detailed design of the System, procurement of materials, preparation of fabrication drawings, detailing of internals, fabrication, inspection and testing of the piping and structural items at fabrication shop, painting, internal coating if any, preservation, loading, unloading at site / stores transportation and undertaking Guarantee for the equipment.

2.1.3 The scope of supply of metering System also includes commissioning & mandatory spares mentioned elsewhere.

2.1.4 The VENDOR shall assume single point responsibility for all aspects of the work. This shall include timely completion, liaison with VENDOR, liaison with VENDOR of specified items, co-ordination of the work, quality and guarantee for the equipment.

2.1.5 Where parts of the package are subcontracted and purchased by the VENDOR, these become part of the VENDOR's package and it is the VENDOR's responsibility to ensure that the complete package complies with the specifications, codes and standards and statutory regulations.

2.1.6 The VENDOR shall be responsible for obtaining necessary approvals, authorization and certification from local Government / Local Statutory bodies, Authorized Inspector and Third-Party Inspection Agency as applicable. Wherein, statutory application, paperwork and payments will be borne by MNGL.

2.1.7 The equipment shall be suitable for the site conditions specified. All components/ consumables used shall be new and of current manufacture vendor to provide self-attested certificate for the same.

2.1.8 In the event of any conflict between this specifications, data sheets, related standards codes etc., vendor shall refer the matter to the PURCHASER for clarifications and only after obtaining the written clarification shall proceed with the manufacture of the items in question.

2.1.9 Vendor shall take single point responsibility for the engineering, design, certification, procurement, inspection, testing, supply & performance of the check Metering & pressure regulating skid Systems along with all instruments, equipment and valves of the Systems based on the data sheets and the specifications furnished and taking into consideration successful operation, safety and the established International standards for the complete Systems. As a part of System design & engineering, the following shall be undertaken/ decided/ furnished by vendor:

- Calculation of only metering system uncertainty based on the approved design and it shall be within +/- 0.3 %. (Vendor shall submit the Calculation for overall system uncertainty including all components of the metering system). Wet Calibration of US Meters shall be done by the bidder considering the above mentioned overall uncertainty. The calibration shall be done at minimum 7 points with 2 verification points. The calibration shall be done at the following nominal flow rates: 0.025 qmax, 0.05 qmax, 0.1 qmax,
  0.25 qmax, 0.5 qmax, 0.75 qmax, and qmax. The calibration reports for USM should also contain verification for minimum two flow readings after adjustment of factors as per AGA 9.
- Instrument ranges to meet the Process operating and design conditions
- All the instruments/ equipment's to be procured from reputed vendors having good track records.

2.2 All the major items like valves (plug, globe and Ball), Flow computers (if required), Pressure transmitters, Temperature instruments etc. shall be supplied of reputed make and the offered model of equipment's shall have proven track record of successful operation for at least 1 year till bid submission date.

2.3 Vendor shall be fully responsible for proper integration of their supplied systems with MNGL's SCADA (RTU) systems and shall provide all the technical details to MNGL for configuration at SCADA end. Configuration in the supplied control panel shall be bidder's responsibility.

2.4 The meter signal processing unit shall be microprocessor – based electronics suitable for installation in the field under the ambient condition specified. Meter electronics shall be weather proof to IP 65 and flameproof certified suitable to install in applicable area classification.

Technical Specifications of Pressure Regulator:

1) General :

This specification covers the design, engineering, manufacture, testing, inspection, painting, packing and supply of pressure regulators suitable for installation in a Pressure Reduction System (PRS) handling natural gas.The regulator shall be suitable for continuous operation under specified inlet and outlet pressure conditions and shall ensure stable downstream pressure control under varying flow conditions.

2) Type & Configuration
Type: Gas pressure regulator for High Flow Stream
Service: Natural Gas
Application: Pressure reduction in PRS
Installation: Skid-mounted / pipeline-mounted

Operation: Automatic, self-actuated

3) Applicable Codes & Standards

The PRS and its components shall comply with the latest editions of: EN 334 – Gas pressure regulators
EN 12186 – Gas pressure regulating stations PED 2014/68/EU or equivalent
ASME B31.8 / B31.3 (as applicable)
ASME B16.5 / B16.34 – Flanges & valves ISO 9001 – Quality management
OISD / PNGRB guidelines (where applicable)
Any other statutory requirements applicable in India

Notwithstanding anything stated or omitted in this technical specification, the bidder/vendor shall be solely and fully responsible for the correct selection, design, engineering, manufacture, inspection, testing, supply, and performance of the pressure regulator offered for the Pressure Reduction System (PRS).The pressure regulator supplied shall strictly comply with all applicable national and international codes, standards, statutory regulations, safety norms, and industry best practices, including but not limited to standards governing natural gas pressure regulators, pressure containment, materials, hazardous area requirements, and operational safety, whether or not such requirements
are explicitly mentioned in this specification. Any error, omission, ambiguity, inconsistency, or inadequacy in this specification shall not absolve the bidder/vendor of responsibility to supply a complete, correctly rated, fully functional, safe, and fit-for-service pressure regulator suitable for continuous PRS operation under the specified inlet and outlet pressure conditions. It shall be the sole responsibility of the bidder/vendor to ensure that the regulator offered is properly sized, correctly rated
(ANSI Class 600#), compatible with natural gas service, and capable of maintaining stable downstream pressure over the full operating range. No additional cost or time extension shall be admissible on account of compliance with any applicable codes, standards, or statutory requirements, whether mentioned herein or otherwise.

Technical Specifications of Control Room Mounted Flow computer

The flow computers shall be microprocessor based, with digital display, data entry keypad and alphanumeric display with AGA firmware for natural gas flow measurement. Flow computer electronics shall be protected from industrial interferences; and shall be shock and vibration proof shall have low power consumption.

The flow computers shall compute and display the instantaneous and totalized flow rate for each stream corrected for pressure and temperature variations. The flow computers receive data from the Gas chromatograph for calculation of compressibility factor as per ***AGA-8 detail method.*** The flow computers shall be linked to the RTU for providing the flow measurements of the individual stream runs and related process variables.

The flow computer shall be certified for custody transfer applications by laboratory / institutes authorized by weights and measures authorities of their country such as NMI,

PTB, Pigsar, Measurement Canada etc. The flow computers shall have an audit trail facility. It should be able to store data for 45 days. The bidder has to submit the flow chart for FDS (Functional Design Schematic) of the flow computer. All the configuration software shall be supplied with each skid. The license shall be in the name of "MNGL".

Mounting shall be Flush panel type in General purpose enclosure.
POWER SUPPLY: 230 V AC ± 10%, 50 Hz ± 3% (UPS) or 24 VDC. The same shall be compatible of available power at control panel mentioned elsewhere. 230 Volts ac, 50 HZ shall be provided at single point in the control panel.

INTERFACE CAPABILITY WITH OTHER FOREIGN DEVICES:
Vendor shall provide serial links along with cables and connectors at both ends for all the signals with MODBUS protocol. The communication between flow computers and on line GC & SCADA, shall be through serial communication and also through GPRS enabled GSM Modem/Modbus Protocol in-built or separately installed with the flow computers.

INTERFACE WITH GAS CHROMATOGRAPH
Flow computer shall be interfaced with Gas chromatograph for feeding online gas composition to flow computer through a Modbus serial link. Vendor shall be responsible for proper integration of their flow computer with gas chromatograph. Vendor shall provide all necessary hardware, software etc. in vendor's supplied systems and other details required for interfacing of their Flow computers. The flow computer shall calculate the Gross Energy, Net energy, Gross heating value and the Net Heating value of the flowing gas based on the GC data as per GPA 2145 and GPA 2172 and ISO 6976 (User configurable).

INTERFACE WITH RTU (For all flow computers):
Flow computers shall be interfaced with RTU to get gas temperature and pressure, energy flow rate and total energy, corrected & un-corrected volumetric flow rate and total flow, last day's cumulative energy and volume, current day's running volumetric total and energy total, volume and energy integrated at 6 a.m., gas composition (mole% C1, C2, C3, iC4, nC4, iC5, nC5, C6+, N2, CO2, Specific gravity, Gross and Net Calorific value) etc. Vendor to note that SCADA vendors shall provide RS 232 serial link at the RTUs for interfacing of intelligent electronic devises like flow computers. For flow computer interface to RTU, vendor shall accordingly provide RS 232 link (Modicon Modbus ASCII & RTU protocol supporting IEEE single precision floating point no. with user configurable register). The digital and analog data shall be made available to RTU (SCADA) and it shall be mapped in the contiguous registers so that data can be fetched / written in minimum transactions. Provision shall also be kept at flow computer for writing data from RTU like gas compositions, calorific value etc. from RTU.

Vendor shall furnish all details like pin configuration and signal wise MODBUS address mapping list etc. for smooth interfacing of this communication link with RTU (SCADA).
Vendor shall also furnish the details of implemented MODBUS protocol like function codes for read and write, CRC implementation, BCC implementation, register addressing methods/mapping etc. during detail engineering for serial interfaces to SCADA (RTU).

Vendor shall supply interface cables (RS232) between the Flow computer and RTU as well as Gas Chromatograph and RTU along with connectors at both ends & necessary converters and other cables accordingly for each flow computer and GC.

KEYBOARD CAPABILITY:
The data entry keyboard shall have the provision to enter the following:

(a) Pressure and temperature base conditions, **Atmospheric pressure as per site condition**

(b) Specific gravity

(c) Mol % or composition of the gas to be metered

(d) Report headings, frequency and timing of reports

(e) Selection of parameter to be displayed and on-demand printing of reports

(f) Calorific value (GCV and NCV)

(g) Pressure, Temperature and Specific gravity values and give compensated flow for any external conditions

(h) Linearization of error curve & change of K-factor, Meter factor.

(i) Other standard features available
The flow computer shall have provision to enter default values of all inputs (inclusive of gas chromatograph) except flow, low/high alarms for all inputs (inclusive of gas chromatograph) and shall be user configurable. The flow computer shall use the default values in case any input goes beyond low/high limit.
OUTPUT CAPABILITY:

(a) 4-20 mA compensated volume flow rate, line pressure, line temperature and energy rate (or mass flow rate) (4 Nos.)

(b) Contact alarms output for unit malfunction, process alarm like low pressure etc. (3 nos.).

(c) RS 232/ 485/ 422 (selectable as per user requirement) serial output link for telemetry link for all signals as specified elsewhere.

(d) RS232C serial link for owner's PC for reports

(e) Serial port for printers
(f) Other standard outputs available. (Galvanic / Optical - isolation is required for all inputs and outputs)

(g) Additional USB port for connecting laptop (internal or external shall be provided with each flow computer for connecting it to USB port of Laptop for configuration). Connecting cable from Flow computer to USB Port of laptop shall also be supplied for each skid.

COMPUTATIONAL CAPABILITY:

(a) Volume flow rate at standard, normal or operator specified base conditions (sm3/hr). Initially configured at Base pressure: 1.0332 kg/cm2 abs, Base temp: 15.56 °C

(b) PID algorithm for Flow control.

(c) Integrated corrected volume in SCM

(d) Energy flow rate and integrated energy (user configurable in MCal, MMBTU).

(e) Heating value calculation as per ISO 6976 / GPA 2145 / GPA 2172 (User configurable). Initially configured as per GPA 2145 - 2172.

(f) Linearization of error flow curve.

(g) Generation of standard and user defined reports at printer. All reports shall be user configurable.

(h) Calculation of compressibility factor as per AGA-8 detail method / AGA-8 Gross-1 / Gross-2 method (user selectable).

(i) Previous day's flow / energy (i.e. yesterday's Base time total volume / energy to today's Base time total volume / energy) & current running total for the day (i.e. volume totalizer
/ integrator value at Base time from first day) to be stored in a separate

location (register) and base time shall be user configurable.

(j) Today's accumulated flow /energy (running total since Base time to current time) and base time shall be user configurable.

(k) Generation of reports for totalized volume & energy at daily, weekly, fortnightly &

monthly intervals, flow rate, pressure, temperature, Uncorrected Flow/ DP, compressibility factor, alarms etc. shall be user configurable.

All the above data shall also be made available by vendor in the serial links to

RTU. STANDATRDS USED:

For the above, applicable standards are:

(a) AGA report 9 for flow rate and total flow for all tags of Flow meter.

(b) AGA-8 detailed characterization method to determine density, compressibility, super compressibility factor etc. for flow computers

(c) AGA Report 5 / GPA 2145 / GPA2172 / ISO 6976 (user configurable) for energy rate and integrated energy.

(d) AGA Report 10 for Speed of Sound calculation. ENGINEERING UNITS (User Configurable):

Corrected Volume flow rate -Sm3/hr, Mass - kg/hr, Pressure - kg/cm2g, Energy – MMBTU / MCal / MJ / (user selectable), Temperature - °C,

Primarily the unit of measurement for Pressure, Temperature, total energy and Energy flow rates shall be Kg/Cm2g, Deg. C, MCal / MMBTU (user selectable) and MCal / Hr or MMBTU / Hr (User selectable) respectively.

MEMORY TYPE:

Nonvolatile A/D

AND D/A CONVERTORS:

Calculation accuracy shall be better than ± 0.05% of full scale including linearity, hysteresis, repeatability and resolution. Accuracy for analogue inputs to be minimum 0.075% and for analogue outputs accuracy shall be minimum 0.1%.

SCAN PROCESSING TIME:

a) The interval between computer readings of Process variables shall not exceed 1 sec

b) The interval between each cycle for computation of instantaneous flow rate and totalized flow shall be less than 1 sec.

c) Algorithm and rounding off error for computation shall be with in ±0.001% of computed value.

SECURITY:
3-Level password protection should be a standard feature in Flow computer.

DISPLAY CAPABILITY:
The flow computer shall have the capability to display the following parameters: Uncompensated volume flow rate, Compensated volume flow rate, Integrated volume (corrected and not corrected), Mass flow rate, Integrated mass, Density / Specific gravity, Pressure, Temperature, Energy rate & total energy, Complete gas composition, Calculated parameters (compressibility factor etc.), Current accumulation, previous day accumulation, Data entry, Error codes, Selected parameter codes, Alarms (process and systems) including diagnostic message, Engg. Units as per selected parameter, other standard displays available, and Custody transfer flow computers shall have the facility of audit trail. All the above data shall also be made available by vendor in the serial links to RTU.

DISPLAY TYPE: Alphanumeric LCD

display DIAGNOSTICS:
Flow computers shall have elaborate and sufficient on-line diagnostics to ascertain accurate and proper functioning of the flow computer. Results of diagnostics / checking shall be displayed. Provision for high and low limit check for each input, sensor break, saturation and alarms shall be provided.

Flow Computer Validation Software:
Supplier to provide one licensed Software in the name of Client, MNGL for authenticating the algorithm written in the Flow Computers as per AGA-7/ 9 (as applicable).

General Remarks:

a) The software for Configuration of flow computer, Audit trail and history retrieval from flow computer shall be supplied by bidder.

b) Master / Slave configuration should be possible in Flow Computer for Serial communication with MNGL GC. Sufficient output ports shall be envisaged to establish communication with 2 sets of Flow computers installed at different locations.

c) The Flow computer should reject the GC data during GC calibration / Cal. Check and should use the previous data for calculation.

d) Audit Trail feature should display detailed description, old and new value of parameter changed along with time stamp.

e) The Flow computers should accept GC data through GPRS enabled GSM Modem/Modbus Protocol or SCADA or Serial link (user selectable). Spare port shall be provided in Flow computer for SCADA communication via RS 422/ 485/ 232 (user selectable).

TECHNICAL SPECIFICATION FOR ONLINE GAS CHROMATOGRAPH

Online gas chromatographs are proposed to be installed at following locations for analysis of natural gas under custody transfer to determine various parameters including composition, heating value, specific gravity etc. These parameters will be used for determining the energy value in the gas being transferred, flow measurement, report generation at installation and onward transmission through existing SCADA / DCS/DCS system.

S/N	TERMINAL NAME	QUANTITY
(A)	**MNGL' CGS at Bhiknoor, (Kamareddy District), Nizamabad GA**	**01**

Design, engineering, material selection, manufacturing, supply, nameplate marking, inspection, testing, calibration, shipping, erection, testing and commissioning of Online Gas Chromatograph natural gas application with associated hardware to achieve the functionality as specified in this document. This specification, together with the data sheets attached herewith, covers the minimum requirements for the scope mentioned. Bidder shall include supply of all the parts / components, may or may not be listed herewith, for smooth operation, maintenance, satisfactory performance of the system for the purpose mentioned in this document and does not limit only to the mentioned topics, but include all that is required for ensuring the delivery of system totally capable of providing the required functions and quality. The related standards referred to herein and mentioned below shall be of the latest editions prior to the date of the enquiry.

IEC – 79 : Electrical Apparatus for Explosive Gas Atmosphere.

IEC – 529 : Degree of Protection provided by Enclosures.

American National Standards Institute (ANSI) / American Society of Mechanical Engineers (ASME)

B. 1.20.1 : Pipe Thread

B 16.5 : Steel Pipe Flanges and Flanged Fitting

B 16.20 : Ring joint Gaskets and Groove for Steel Pipe Flanges

API American Petroleum Institute MPMS (Relevant Portions) CENELEC EN 50020 Electrical Apparatus for Potentially Explosive Atmospheres EN 10204 Document on Material Testing

IS- 2147 : Degree of Protection Provided for Enclosures. IS – 2148 : Flame proof Enclosures of Electrical Apparatus.

IEC – 801 : Electromagnetic compatibility for Industrial Process Measurement and Control Equipment.

IEC – 62305 : Protection against Lightning

In the event of any conflict between this specification, data sheets, related standards, codes etc. the vendor should refer the matter to the purchaser for clarification and only after obtaining the same vendor should proceed with the manufacture of the items in question.

Data sheets indicate type, minimum sampling system requirements and material of construction for Gas Chromatograph and its sampling system. However, this does not absolve the vendor of the responsibility for proper selection with respect to the following:

a Proper design of the sampling system and gas chromatograph to measure the component of interest to the stated accuracy.

b Selection of materials for all the parts of the gas chromatograph system so as to be compatible with the process stream and surrounding atmosphere as per purchaser's data sheets.

c The Chromatograph & Sample handling system shall be designed in such a way that the same can be used in associated/wet natural gas as well as dry natural gas.

Vendor shall note that the offered instruments shall be suitable for the following ambient conditions:
Temperature Range: +55
(MAX), Humidity: 100 %
(max)

Vendor shall be responsible for selection of the correct model no. of instruments to meet the specifications contained in this spec. In case model no. is required to be changed at later date, the same shall be done by the vendor without any price or delivery implications

Offer shall be clear, un-ambiguous (with no alternatives) and complete with all data sheets, catalogues etc.

Vendor's scope of supply shall include supply of following major components as per specification as a minimum:

a. Auto retractable Sample probe & sample tubing.

b. Sample Conditioning system suitable for both associated/wet as well as dry natural gas.

c. Field Mounted GC Analyser unit.

d. Panel mounted Controller either as an integral or remote part of the gas chromatograph.

e. Control Panel for mounting of remote controller.

f. The GC control panel shall be equipped with GSM Modem/Modbus Protocols to communicate (read as well as write) with the multiple flow computers remotely connected.

g. One laptop for configuration, analysis & report generation & trouble shooting with serial port shall be supplied with each online GC.

h. The communication between the GC with MNGL's DCS/SCADA / DCS system shall have an option either to communicate with the MNGL's SCADA / DCS system through the OFC network of MNGL or through GSM Modem/Modbus Protocol. Separate GSM Modem/Modbus Protocol shall be supplied with each GC for this purpose.

i. GC operating software suitable for diagnostics and maintenance activity.

j. Printer if not in-built connected to control unit along with connecting cables, shall be loose supplied.

k. All Cables, Glands, Terminals, Tubing, structural items, cable trays, supports, panel accessories, enclosures, mounting accessories required for installation of the system.

l. All necessary software for operation & maintenance of the system licensed in MNGL's name.

m. Cable & connectors for interconnection with flow computer & SCADA / DCS, interfacing software (GC side).

n. Hardware & software for data transmission between chromatograph and flow computers as well as SCADA / DCS system

o. Canopy / shelter to protect the field equipment's from direct sunlight & rain.

p. Necessary locking arrangement for restricting the access to the GC panels where applicable.

q. Special & standard tools and tackles required for operation & maintenance of GC.

r. Hard & soft copies of hardware & software manuals, GA drawing, wiring diagram, calculations, and all other relevant documentation.

s. Spares & all consumables for commissioning.

t. Calibration gas & carrier gas Cylinders which will be skid mounted in field and suitable for installation in hazardous area and specified weather condition. This shall also include the pressure regulators, gauges etc.

The vendor's scope of work shall also include the following as a minimum:

a) Factory Acceptance Test (FAT) for the complete package at vendor's works
b) Installation of the gas chromatograph including auto retractable sampling probe in the process line, field unit, control room unit, cabling from field to control room, etc.
c) Panel wiring, testing & commissioning of the GC, establishing communication with flow computer, SCADA / DCS, etc.
d) Training of the field staff at site.
e) Validation of analyser during commissioning by using certified calibration sample gas.
f) Painting of complete system for protection against saline & tropical atmosphere.
g) Site Acceptance Test (SAT) for the complete package at site.
h) Inspection and testing of all components, sub-assemblies, and complete assemblies of items manufactured at vendor's works, and other sub-vendor's works.

Any work not specifically mentioned but otherwise required, as per statutory rules / codes and standards / specifications and/or for the completion and operation of equipment have to be done by the vendor without any commercial implications.

GC Controller, as a remote part of the gas chromatograph, along with Barriers/Isolators shall be fully wired and mounted in the control Panel.

Online Gas Chromatograph shall be connected to flow computers. Hence suitable interface & integration with the Flow Computers is under Vendor's scope. All necessary hardware / software for establishing communication with flow computers shall be in vendor's scope. Establishing communication between Gas Chromatograph & MNGL's SCADA / DCS system through existing MNGL's OFC communication or through GSM Modem/Modbus Protocol shall be in the vendor's scope.

Separate Analyser shelter, necessary Sample Handling System, Tubing from main pipeline to Analyser Cabin, helium & calibration gas cylinders, Skid for mounting are under Vendor's scope. Vendor shall provide certificate for all the tests indicated in this specification. In addition, vendor shall provide the 'Manufacturer's certificate of Conformity' to purchaser's specifications as per clause 2.2 of EN 10204.
Spare Parts:-

a) Consumables as a part of the offer.
b) Commissioning spares as a part of the offer.

Special Tools and Tackles for Operation & Maintenance of GC shall be in vendor's scope. List must be furnished along with the offer.
All units of measurement for various items in vendor's specification sheets shall be to the same standards as in purchaser's data sheets. All instruments shall be graduated in the same engineering units as indicated in purchaser's data sheets.
All the materials specifications for various parts in the vendor's specification sheet shall be to the same standards as that in purchaser's data sheets e.g. ASTM, BS etc.
Vendor shall not offer any prototype instruments in his bid. All instruments offered should have been proven in refinery or petrochemical plants before bidding.

DRAWINGS & DATA
Vendor shall submit all the data/drawings/documents as indicated below,

A: Along with the offer
Vendor's Offer shall include a detailed specification sheet for Gas Chromatograph system which shall contain the following information:

a. All the details regarding type, construction, materials, accessories etc. of the On- line Gas Chromatograph along with technical catalogue.
b. Detailed sketch showing various components of sampling and sample conditioning system.
c. Sample flow rates required for achieving response time, the recommended length and size of the sampling tube between process tap and sampling system.
d. Any special cabling requirements including shielding and grounding requirements and maximum permissible distances of separation between the field and the control room mounted units etc.
e. A Copy of the Certificate of intrinsic safety/ flameproof from statutory body like BASEEFA, FM, PTB, CMRI etc. as applicable.
f. Consumption figures of electrical power and other utilities for each gas chromatograph system.
g. Overall dimensions of major units dimension of the skid to be mounted in field.

B: After Placement of Order

Vendor shall submit certified drawings and specification sheets for Gas Chromatograph which shall include the following Bill of Material of the complete G.C system.

a G.A. drawing with overall Dimension of both Sampling unit & 19" Rack.
b Certificates of the Standard gas and manufacturer of the standard to be supplied along with each GC.
c Sampling interconnection details identifying each component with make and model number.
d Detailed interconnection diagram for process, piping and tubing. (Hook up Diagram)
e Installation drawings.
f Cabling details including shielding / grounding requirements.
g Utility consumptions.
h Technical Literatures, Installation & Commissioning Manuals for all supplied items.
i Quality Assurance Plan.
j Software required for the systems.
k Wiring Diagram of control room mounted controller.
l Cable Parameters (Capacitance, inductance, L/R ratio) for interconnection cable between field and the control room mounted units for intrinsically safe system.
m The details of the heat load, humidity particulate / chemical filtration etc. of the system.
o Vendor shall provide certificate for all the tests for this specification. In addition, vender shall provide the "manufacturer's certificate of Conformity" to purchaser's specifications.
p Foundation details if applicable

Note: The documents shall be submitted within 2 weeks of placement of

order. DESIGN AND CONSTRUCTION

Essential Criteria: The offered ONLINE GAS CHROMATOGRAPHS shall comply with the following essential criteria failing which the offered bids shall be liable for rejection

a. The GC offered against this tender, shall be from the bidder's existing range of production & bidder shall certify to this effect.

b. The offered gas chromatograph system shall be certified as compliant for Natural Gas custody transfer application, by one of the nationally/internationally reputed agencies like NMI, PTB, or equivalent who are authorized to issue such certificates. (With respect to measurement of Calorific value as per ISO 6976 / GPA 2172 and for communicating data to electronic

volume corrector / flow computer for flow calculation and super compressibility correction as per AGA 8 detailed). Certificates for the same should be furnished along with technical bid. If the same is not English version, duly translated copy in English should be furnished by the Vendor.

c. The method of calculation i.e. ISO 6976 or GPA 2172 shall be user selectable. The methods shall be the latest versions at the time of commissioning.

d. Bidder shall offer GC certified with 24 Hour Environmental Test Chamber test meeting the complete ambient operating temperature range from -18 to + 55 Deg C & meeting the specified repeatability limits. Bidder to submit sample environmental test chamber test certificate along with the Bid

e. For Ease of Maintenance & operation, the offered GC shall be able to operate both i.e with as well as without any need of instrument air in the field.

f. The split ratio of C6, C7, C8, and C9 for C6+ estimation shall be user defined ratio. Provision shall be given for the user to enter any ratio.

g. The Gas Chromatograph and the sample handling system shall be designed in such a way that it should work on associated/wet as well as dry natural gas system.

The design shall ensure that components or any sub-assembly that requires removal for maintenance shall be removable without any need to disassemble any other component. Such components include items like stream selector valve, sample injects valves, filters, pressure regulators, flow indicators, detectors, plug-in circuit cards / electronic modules & detector cell etc.

All interconnecting wiring shall be color coded/numbered & terminal blocks shall be clearly identified.

Material of construction:

Unless otherwise specified the material of construction of all components wetted by the sample, shall be 316 stainless steel, as a minimum. Vendor shall ensure the compatibility of material of each component with the process fluid.

The material of all soft parts like diaphragms and O-rings shall be PTFE. Other vendor standard materials can also be acceptable provided these are compatible with the specified process conditions.

Non-metallic materials for casings, enclosures & instrument covers shall be

avoided Process Stream sampling shall be continuous.

The Gas Chromatograph performance shall be within specifications when the supply voltage varies by ± 10% of specified value and supply frequency varies by ± 3 HZ of specified value.

Unless otherwise specified material of all components wetted by sample shall be ANSI – 316 SS.

Unless otherwise specified, the following shall govern:

Threaded connections shall be NPT to ANSI / ASMEB1.20.1

Flanged connection shall be as per ANSI / ASME B 16.5.

Grooves of ring type joint flanges shall be octagonal as per ANSI /ASME B 16.20.

SI / ASME B 16.5. The face finish as specified in data sheet shall have serration as follows:

a. Serrated : 250 to 500 AARH

b. 125 AARH : 125 to 200 AARH

c. 63 AARH : 32 to 63 AARH

Gas Chromatograph enclosures and accessories shall be suitable for the electrical area classification indicated in purchaser's data sheets. Unless otherwise specified, the enclosures shall be to the following standards:

Weather proof housing: IP 65 as per IEC – 529 / IS – 2147 Flame proof housing: Flame proof Ex (d) as per IEC – 79/IS-2148
Lightning protection conformity: As per IEC 62305 for field mounted GC as well as for control unit are to be provided separately.
Flameproof equipment shall also be made weather-proof.
Intrinsically safe version of Gas Chromatograph shall be suitable for the area classification indicated in purchaser's data sheets. Unless otherwise specified, the intrinsic safety shall be to the following standards:
Intrinsically safe BS 5501/CENELEC EN 50020. All such Gas Chromatographs shall also be weather-proof to IP 65 as per IEC- 79 / IS – 2147. The intrinsically safe and explosion proof equipment shall be certified by statutory y bodies like BASEEFA, FM, PTB, CMRI etc.
In addition to the certificate from statutory body, for instruments supplied for projects in India, approval form PESO shall also be furnished by vendor irrespective of their place of manufacture and the same is mandatory. In case PESO certificate is not available now, vendor to confirm to supply the same for each item before shipment.
All interconnecting wiring shall be colour coded / numbered and terminal blocks clearly

identified.

The sampling system, Gas Chromatograph Analyser, Bottles etc. shall be supplied pre – mounted on cabinet of self-standing skid, in general. The foundation of skid shall have holes to anchor it to the ground with anchor bolts.

The design of Gas Chromatograph system shall be in compliance with the electromagnetic compatibility requirements as per IEC – 61000-4.

The Gas Chromatograph shall provide isolated analog current output as specified in data sheet.

Process sample return point and utilities as required will be made available near the Gas Chromatograph at pressure and temperature conditions specified in the data sheet for each Gas Chromatograph as single point supply and return. In general, all the offered items are to comply with maximum pressure and temperature data specified in data sheets. In exceptional cases, standard cell or such part of instrument with a rating lower than maximum pressure and temperature can be offered provided suitable conditioning means and hardware are provided and adequate safety devices with proper hook up enabling discharge to a flare header is provided. Multi – point distribution of utilities and process sample, is to be arranged by vendor following good engineering practices.

NAMEPLATE

The Gas Chromatograph and its accessories shall have a SS nameplate firmly attached to it at a visible place, furnishing the following information as applicable:

a. Tag number as per purchaser's data sheets.
b. Manufacturer's Serial No. and Model No.
c. Manufacturer's name / trade mark.
d. Range
e. Area classification in which the equipment can be used.

INSPECTION AND TESTING

Respective site Officer In-Charges of MNGL will nominate person(s) for the inspection, testing & review of all the certificates & documents.
Unless otherwise specified, purchaser reserves the right to test and inspect all the items at the vendor's works. Vendor shall provide necessary facilities, utilities, labour and consumables required for carrying out the job.
Vendor shall submit the following test certificates and test reports for purchaser's review:

a. Dimension verification certificate for each analyser.
b. Material test certificate for all wetted parts like valves, regulator body, pipe / tube, fittings, etc. (MIL certificates).
c. Manufacturer's test reports for all wetted parts.

d. Leak test report of gas chromatograph system including sample handling system using nitrogen or instrument air at 1.5 times the maximum working pressure.
e. Twenty-Four-hour environmental test chamber repeatability test report for establishing the repeatability of the offered GC for the complete operating temperature range.
f. Calibration report for Gas Chromatograph.
g. Effect of interfering components present in the process sample.
h. Certificates from statutory bodies for use in area classification indicated in data sheet.
i. Test reports for calibration gas, carrier gas.

Witness Inspection

The Gas Chromatographs shall be subjected to pre – dispatch inspection by the purchaser. Following tests shall be carried out, as a minimum: -

a. Physical dimensional verification and workmanship.
b. Bill of material check for gas chromatograph & its sample handling system.
c. Leak checking of complete system using nitrogen or instrument air.
d. The Gas Chromatographs shall be calibrated using a test sample 50% of scale reading for the component of interest.
e. Repeatability shall be demonstrated for a period of at least 8 hours continuously using a standard sample.
f. Effect of variation in the power supply, voltage and frequency, to be verified. The Gas Chromatograph must function satisfactorily.
g. Review of all test certificates and test reports.

SHIPPING

All threaded and flanged openings shall be suitably covered to prevent entry of foreign material.

Each major part shall be sealed in thick plastic bags. Suitable moisture absorbent shall be provided for electronic components.

REJECTION

Vender shall make his offer in detail, with respect to every item of the purchaser's specifications. Any offer not confirming to this shall be summarily rejected.

All documents and literatures are to be supplied in English Language. The Unit of measurement for all the parameters will be as per Data sheet.

The entire Field mounted equipment's, Control room mounted instruments and necessary tubing, cables, enclosures; mounting accessories are in vendor's scope. The system should be supplied in a ready to install condition at site. All the operation, performance and maintenance guideline to be demonstrated during Inspection and documents to be furnished along with dispatch of the Equipment's.

SPECIFICATIONS FOR ONLINE GAS CHROMATOGRAPH

- **Application**

  Dry as well as associated/wet Natural gas for check application

- **Service**

  Measurement / calculation of the following parameters for check:
  - Analysis of gas composition up to C6+ (in mole %). Including CO2 & N2
  - Gas Specific Gravity
  - Gas Calorific Valve (Net & Gross in Kcal/SCM)
  - Compressibility Factor

- **Detail Specification**

1. **Type**
   Continuous On–line Gas Chromatograph microprocessor controlled
2. **No. of Streams**
   a) 1 sample stream + 1 calibration stream.
3. a) **Column**
   Column with high resolution & low carrier gas consumption
   b) **Column size (length / dia.)**
   By Vendor
4. **Analysis Output**
   Full composition of any natural gas up to C6+, CO2 & N2, Heating & value (NCV
   GCV), Density, Wobbe index.
5. **Repeatability**
   +/-0.025% of CV or +/- 0.25BTU/100BTU over -18 to 55DegC
6. **Detector**
   High performance Thermal conductivity type
7. **Carrier gas**
8. **Calibration/Standard gas**
9. **Cycle time**
   Minimum 7 Min.
10. **Sample Handling System**:

    a. In general Gas Chromatograph and sampling systems shall be designed and constructed in accordance with API – MPMS (Relevant portions).

    b. Sample conditioning system shall consist of pressure, flow & temperature regulation, sampling valves, tubes, filters, fittings etc.

    c. A fast loop set up shall be provided on the sample conditioning system to ensure fresh representative gas analysis will be available at all times.

d. The sampling system shall be designed to move the sample from the process to the Gas Chromatograph in the shortest possible time.

e. Sampling system shall include block valves on all process sampling lines.

f. The sample handling system shall be designed in such a way that it should take care both type of gas i.e. associated/wet as well as dry natural gas.

g. Sample conditioning system & gas chromatograph & analyser electronics shall preferably be mounted in a cabinet with enough working space. Cabinet shall be field mounted & weather-proof to NEMA 4 / IP55 with cabinet door having elastomer gasket. Cable entry shall be provided from lower side of the cabinet & tubing entry shall be from side.

h. Sample shall be returned to the atmosphere at a safe height.

i. Mounting

The sample conditioning system shall be mounted within an enclosed cabinet / box and shall be in the field adjacent to the pipeline within the available area. In case temperature is required to be maintained, suitable hardware needs to be provided.

11. **PROBE**

a. Single probe for single sample system.
b. Sample probe shall be provided to obtain representative sample from the pipeline. The sample probe shall be inserted in the pipe through a full bore ball valve which shall also be part of vendor scope of supply.
c. 316 SS auto retractable probe. The Sampling Probe shall be auto – retractable type & it should be possible to retract the probe without shutting down the process.
d. The probe shall be designed in such a way that it should take care both type of gas i.e. associated/wet as well as dry natural gas.
e. Pipeline Flange.
f. 1½" A 105, RF, SERR. FINISH to ANSI B 16.5, rating same as line rating.
g. Line isolating valve
h. 1½" FB ball valve rating same as line rating.
i. Probe Housing material - SS/Carbon steel
j. Probe Insertion - Standard
j. Probe length - By vendor

GAS CHROMATOGRAPH FIELD UNIT

The chromatograph chamber of gas chromatograph which houses the columns shall be maintained at a constant temperature level.

Solid–state electronics protected from industrial EMI/ RFI interference as per IEC 801 & complying with Lightning Protection standard as per IEC 62305
Scope and hook up arrangement - By vendor
Area Classification - NEC Class I, Div I, Gr. C & D, temp. Class T3. Power supply

a. MNGL will provide 230V AC, 50 HZ point at its electrical room. If any other voltage level is required by the vendor for its supplied equipment's, the supply of necessary converter/ rectifier shall be in the scope of the vendor.

b. Vendor shall supply for explosion proof isolator switches for main power supply in Gas Chromatograph cabinet.

Cable entry

a. Vendor to furnish cable entry size for signal, power & control cables.
b. Cable supply from field to control room shall be in vendor's scope. The approximate distance from field unit to control room shall be approx. 100 mtr.

Gas Chromatograph field equipment's shall be suitable for the ambient conditions and shall guarantee that the performance of the GC shall not deteriorate up to the specific ambient conditions. All associated field mounted electronic equipment's supplied with GC system shall be complying with the Lightning Protection standard IEC 62305 (wherever applicable). Documentary proof shall be furnished in support of performance. Vendor to provide suitable provision such as shelter/cabinet; full details to be submitted with the offer.

The analyser Unit shall be fully microprocessor controlled with heated oven, Detectors column flow adjustments Access panel, purge air controls, carrier gas controls etc. and certified for Hazardous area installation in the field.

The Detector system and electronics shall withstand high and low temperatures.

The Gas Chromatograph shall have retention time reproducibility character with analyser programs stored in EEPROM and with battery backed CMOS memory. The GC shall store the data (of 3 shifts per day of 7 minute cycle average up to a month) for minimum one month. Vendor shall furnish the maximum capacity of the GC to store the data in the offer. Each analysis data are to be stored in a predefined file of the connected PC/Laptop. At least 100 analysis data should be available in the file. Print out can be taken as and when required basis.

The offered GC should have extensive data storage/retrieval capacity to keep valuable data / results for future use. The GC archive shall store minimum most recent 1200 cycles & average result of last 64 days. Details have to be furnished in the offer. The Gas

Chromatograph shall have auto diagnosis feature and shall display error/ warn messages about the status of every parameter and eventful malfunctioning.

The Gas Chromatograph shall have method linking feature so that the analyzer shall be programmed to perform automatically and sequentially different determinations on a mixed sampler batch with each sample analyzed according to its own method.

Design: Gas Chromatograph shall be compact, rugged and of proven design to meet the specific needs of energy measurement for natural gas.

Accessories

a. Carrier gas cylinders with 2 stage pressure regulators shall be supplied in dual cylinder with manifold. The system shall be a dedicated one to each chromatograph providing automatic switchover to standby cylinder when the first cylinder is exhausted. All the accessories required for this purpose shall be provided by vendor. Two Numbers of cylinders to be supplied by vendor. Vendor should submit carrier gas consumption details. Vendor needs to ensure supply of atleast 2 years carrier gas along with main GC system supply. calculations shall be supported by proven datasheet and actual site data.

b. One no. Of Calibration gas cylinder with 2 stage pressure regulators shall be supplied with each online GC.

c. All gas cylinders shall be located near the gas chromatograph & shall be supplied with gas cylinder rack with free standing support.

d. One no. of laptop with serial port to be supplied with online GC. The laptop shall have Intel Core i7 Processor (64 Bits-licenced version); Windows 7/8 Professional or Higher, 8 GB RAM, 1 TB Hard Disc, Microsoft Office 13 Professional.

e. If not in-built, one no. of laser printer to be supplied with online GC.

Controller / Programmable Control

Unit Type

Microprocessor based device & shall directly interact with gas chromatograph to control its various functions

The programmer shall be dedicated to each chromatograph & shall be integral to gas chromatograph or split mounted remote to gas chromatograph.

Functions: It shall be capable of performing the following functions as a minimum: Control of analysis functions in a cycle from operation of sampling valves to detection of peaks, precise calculation for peak measurements, area integration, internal normalization, etc. including chamber temperature control Automatic zero adjustment & calibration of the GC Configuration of the GC, Display analysis results & diagnostic

messages Provide serial output for components being analysed for communication with flow computers, SCADA / DCS, etc.
Other diagnostic parameters
Generation of Gas Analysis Report (scheduled or on- demand) and Automatic Generation of 24 hrs. Average Report for:
(a)Gas Composition, (b) Calorific Valve Gross (c) Calorific Valve Net (d) Specific Gravity and (e) H2S.
24Hrs. average Caloric value (NCV & GCV) report shall be stored in user configurable modbus address for connectivity. The average GCV & NCV shall be available with 3 digit round-off after decimal point at the modbus address.
The calculation of heating value (NCV & GCV) shall be in user configurable as per but not limited to the following standard:

a) GPA 2172 in accordance with GPA 2145 (at 14.686 psia & 60 deg F)
b) ISO 6976 (at 1.0332 kg/cm2a & 15 Deg C)

The unit for heating value (NCV & GCV) shall be user configurable (Kcal/scm, MMBTU/Scm, MMBTU/ft3, and MJ/scm). The default configuration in the modbus shall be in Kcal/scm.

The programmer shall have an alphanumeric display for input / output signals, Diagnostics results and other parameters with integral alphanumeric keyboard for data entry and other manual commands.
The controller located remotely to the GC, following functions should be ensured in control room:

i. Display of various parameters
ii. Printing facility in control room
iii. Troubleshooting from control room
iv. Facility to switch between streams, performs calibration, change cycle times, access alarms & reset the same, etc.

The programming shall be user friendly. Field modifications of data tables and chromatogram application shall be possible under password protection.
The system (i.e. gas chromatograph & programmer) configuration & application program shall be stored on a non-volatile memory. Battery backup shall be provided in case memory is volatile. The design shall ensure that the application program and data tables remain unaffected in case of power fluctuation or failure.
The programmer shall be capable of stream selection in case of multi stream gas chromatograph. The selection shall be automatic in a pre-programmed sequence or manually from programmer fascia or programming PC as applicable. In automatic sequence the program shall allow any combination of stream selection such as any dedicated channel or cyclic selection of streams. Control unit to be installed in the control room. The printer will be connected to the unit for getting the

printouts of analysis.

Calibration

Automatic calibration with user selectable time intervals.

Diagnostics: Online automatic diagnostics for periodic self-checking of system integrity & alarming.

Inputs / outputs /Serial port

I. Operator inputs via keyboard.
II. Field Unit input to controller via RS232/485
III. Potential free Contact output for malfunction.
IV. **Analog Output**: Minimum 4 Nos. Analog Output (4 – 20 mA, isolated) signals for driving 600 ohms load resistance each for user configurable outputs. The tentative outputs shall be as under:
    1. Gas Calorific Value (Net)
    2. Gas Calorific Value (Gross)
    3. Mole % CO2
    4. Specific Gravity
    5. Mole % N2
    6. Spare

Serial Port: Minimum 04 mos. of serial port apart from one which are required to connect the field unit to control room unit are to be provided with each GC.

Printer Port: If not in-built in the controller, one additional port to connect the serial printer/ One additional USB port to connect Laser Printer.

Note : Complete details and documentation with respect to protocol details with message structure, frame structures, synchronizing / timing signals, memory locations for data addressability and interface software driver details shall be furnished in order to successfully implement a serial link with the RTU (by Purchaser).

Communication Interface

Apart from the direct connectivity between the GC, flow computers & SCADA / DCS for Modbus TCP/IP and PC link, following communications through GSM Modem/Modbus Protocols (at least 02 no. of GSM Modem/Modbus Protocols with each online GC) shall also be included in the scope of the vendor:

One GSM Modem/Modbus Protocol to communicate between the GC with the multiple flow-computers remotely located.

One GMS Modem/Modbus Protocol to communicate between the GC and the MNGL's SCADA / DCS network.

Cabling

Vendor to provide required interconnecting cables. All cables to be supplied with cable glands of double compression type and certified suitably.

Printer

Printer in-built or separate shall be supplied for printing the Gas Analysis Report, an average report in a format indicating data, time & day, type of analysis etc. The Printer shall also be for Alarm Printing, Alarm Reports, Event log etc. Printer table shall also be included in the scope of the Bidder.

If not in-built with the controller, the Printer shall be laser type to connect through separate printer port.

Laptop

Laptop shall be supplied for configuration, gas analysis report generation & trouble shooting. A Intel Core i7 Processor (64 Bits- licensed version) ; Windows 11 Professional or Higher, 8 GB RAM, 1 TB Hard Disc, Microsoft Office 13 Professional with 17" LCD display to be supplied along with online GC. The laptop shall have a serial port.

3.0 DESIGN PHILOSOPHY

3.1 GENERAL

3.1.1 This Document together with the attachments covers the minimum requirements for the design and engineering of metering System complete with all accessories. Bidder shall be responsible for Design, engineering, sizing, selection, manufacture and/ or procurement, of materials, components and equipment necessary for complete package.

3.2 CODES AND STANDARDS

3.2.1 Design and terminology shall comply, as a minimum, with the latest edition prior to the date of bid enquiry of following codes, standard practices and publications:

AGA	American Gas Association, Gas Measurement Committee Report No.3 – Orifice Metering of Natural Gas.

Report No.7 -Measurement of Gas by Turbine

Meters. Report No.9 -Measurement of Gas by

Ultrasonic Meters

ANSI / ASME American National Standards Institute/ American Society of Mechanical Engineers.

B 1.20.1 Pipe Threads.

B 16.47 Steel Pipe Flanges and Flanged Fittings.

B 16.20 Ring Joint Gaskets and Grooves for Steel Pipe

Flanges. ANSI/FCI American National Standards Institute/Fluid

Controls Institute

70.2 Control valve seat leakage classification.

API American Petroleum Institute

RP 520 Sizing, selection and installation of pressure relieving system in refineries. Part-I - Sizing and selection Part-II - Installation

RP 521 Guide for pressure relieving and depressurizing

systems P 526 flanged steel safety relief valves.

RP 527 Seat tightness of pressure relief valves.

MPMS Manual of Petroleum Measurement Standards.

RP 551 Process Measurement Instrumentation. Part 1 - Process Control and Instrumentation

RP 552 Transmission Systems

S 1101 Measurement of Petroleum liquid hydrocarbon by Positive Displacement meter.

S 2000 Venting Atmospheric and low pressure storage tank.

S 2534 Measurement of liquid hydrocarbons by turbine meter

systems. S 670 Vibration, Axial-Position and Bearing-Temperature

Monitoring

Systems.

ASTM American Society for Tests and Materials.

BS British Standards
BS-1042 Measurement of fluid flow in closed conduits. BS-4368 Compression coupling for tubes.
BS-4800 Colors for ready mixed paint.
BS-5308 Part-2 Specification for PVC insulated cables. BS-6364 Specification for valves for cryogenic service. BS-7244 Flame Arrestors for general use
DIN-43760 Temperature vs Resistance curves for RTDs.
DIN-19234 Electrical Distance Sensors; DC interface for Distance Sensor and Signal Converter.
IBR Indian Boiler Regulations.

IEC International Electro-technical Commission.
IEC 60079 Electrical Apparatus for Explosive Gas atmosphere
IEC 60085 Thermal Evaluation and Classification of Electrical Insulation IEC 60332 Test on bunched wires or cables. Part 3 Cat 1
IEC 60331 Fire resistance characteristics of electrical cables
IEC 60529 Classification of degree of protection provided by enclosures. IEC 60534-2 Industrial Process Control Valves-Flow capacity
IEC 60584-2 Thermocouples - Tolerances
IEC 60584-3 Thermocouples extension and compensating cables, tolerances and Identification system.
IEC 60751 Industrial platinum resistance thermometer sensors

IS Indian Standard
IS-5 Colours for ready mixed paints.
IS-319 Specification for free cutting Brass bars, rods and sections IS-1239 Mild steel tubes, tubular and other wrought steel fittings.
IS-1271 Specification of Thermal Evaluation and Classification of Electrical Insulation.
IS-1554- PVC insulated (heavy duty) electric cables- working Part I voltage up to and including 1100 V.
IS-2074 Ready mixed paints, air drying, red oxide- zinc chrome.
IS-13947 Degree of Protection provided by enclosures for low voltage switch gear and control gear.
IS-2148 Flame proof enclosures for electrical apparatus. IS-3624 Specification for pressure and vacuum gauges IS-5831 PVC insulation and sheath of electric cables.
IS-7358 Specifications for Thermocouples

ISA Instrument Society of America.
S-5.2 Binary logic diagrams for process operations. S-7.3 Quality standard for instrument air.
S-75.01 Flow equations for sizing control valves.
ISO 5167 Measurement of fluid flow by means of orifice plates, nozzles and venture tubes inserted in circular cross-section conduits.
NEC National Electric Code.
NFPA National Fire Protection Association.
NFPA-496 Purged and pressurized enclosures for electrical equipment. EN European Standard
EN334 European standard for pressure regulators up to 100 bar
EN12186 Gas Pressure Regulating Stations for Transmission and distribution EN14382 Safety systems for Gas distribution.

3.2.2 In general, Bidder shall carryout engineering as per IEC/ BIS standards.

Any other standard, if necessary, can also be referred by bidder during the execution of the job, without diluting the basic requirements, however with prior information to Owner/ Owner's Representative. In any case bidder must furnish a list of codes and standards other than those specified in this document, which shall be followed by them during engineering.

3.3. INSTRUMENT DESIGN CRITERIA

3.3.1 The Equipment's and instrumentation selected for the metering Systems shall be rugged in design and must be well proven in the hydrocarbon industry. Prototype design or equipment of experimental nature or design undergoing testing etc. shall not be selected and supplied. Following criteria must be applied before selecting a particular instrument item: "The instruments as being offered/ supplied should have been operating satisfactorily in hydrocarbon industry like Refinery, Petrochemical and Gas Processing Plant under similar process conditions for at least 4000 hrs. From the bid due date."

3.3.2 All the ball valves of complete System package shall be full bore type.

3.3.3 The complete station shall be designed in such a way that the mean gas velocity remains within 20 Meter per second. The complete System shall be designed for 100 % of the maximum flow capacity. Whereas, the maximum velocity will remain within 30 m/s.

3.3.4 Instrument Requirements for classified areas:

a) All electronic/electrical instruments and equipment's shall be suitable for area classification as per IEC codes and shall be tested by any recognized authority like BASEEFA, FM, PTB, CMRI etc. and shall be certified by CCOE. All the configurators, gas cylinders shall be certified by CCOE.

b) Certified Intrinsically Safe (IS) equipment as per IEC-60079-11 shall be used, in general, in hazardous area. In case intrinsically safe equipment is not available, flameproof enclosures as per IEC-60079.01 may be considered.

c) Junction boxes and accessories required for flameproof instruments shall also be certified flameproof.

d) All non-flameproof panels and cabinets installed in classified area shall be purged as per requirements specified in NFPA-496, as a minimum.

e) Other type of protection as specified in IEC-60079 shall not be used.

f) All tubing and fittings used for impulse piping shall be of SS 316. Tube fittings shall be flare less compression type of three-piece construction consisting of ferrule, nut and body suitable for use on SS tubes. Instrument valves and manifolds shall be of SS316 construction of forged type.

3.3.6 Statutory Approvals

a) Bidder shall be responsible for obtaining all statutory approvals, as applicable for all instruments, equipment's, calibration gas cylinders and control systems.

b) In addition, equipment's/instruments/systems located in the hazardous area shall be certified by the local statutory authorities for their use in the area of their installation. In general following certification shall be given:

- For all intrinsically safe/ explosion proof/ flameproof equipment's/ instruments/ systems or equipment's with any other type of protection allowable as per this package which are manufactured abroad and certified by any statutory authority like BASEEFA, FM, UL, PTB, LCIE etc. should also have the approval of Chief Controller of Explosives (CCOE), Nagpur.
- For all flame proof equipment's manufactured locally (indigenously), the testing shall be carried out by any of the approved test house like CMRI/ERTL etc. The equipment shall in addition bear the valid approval

from Chief Controller of Explosives, Nagpur and a valid BIS license.

- Custody transfer approval from Nmi/ PTB/ NPL or equivalent body from the country of origin.
- All the supplied gas cylinders shall have CCOE approval.
- CCOE certificate for the foreign items shall be submitted during detailed engineering, however appropriate approval certificates from the country of origin shall be provided with the bid.

3.3.7 All instruments in the System shall be certified for IEC Zone 1 Gas Group IIA/IIB, T3.

3.3.8 Instruments, which are not available as per their standard design from any reputed manufacturer as intrinsic safe, can be supplied in flameproof design. All such instruments shall be certified flameproof for the area classification and requirements indicated in clause 3.3.4 above.

3.3.9 Flame-proof (explosion proof) junction boxes as applicable shall be certified for IEC-Zone-1, IIA/IIB for all the classified areas for flame proof instruments.

3.3.10 Any change in instrument size or revision in line sizes because of sizing shall be carried out by bidder without any financial implications to MNGL.

3.3.11 All surface type temperature elements and line mounted temperature elements shall be RTD type as per IEC 60751. Mounting of surface RTD is as per enclosed drawing elsewhere in this package.

3.3.12 All the instruments shall be provided with canopies of adequate size to protect instruments from direct rain & sunlight. All such canopies shall be prefabricated type.

3.3.13 The equipment's at field like transmitters (pressure & temperature) shall be installed in environmental enclosure to minimize the effects of ambient temperature variations and shall be lockable for prevention of unauthorized data entry. The size of the cabinet shall be suitable for removing and fixing of transmitters for ease of maintenance. The transmitters shall be fixed in mounting brackets inside the cabinet. The cabinet shall be mounted and fixed in the System.

3.3.14 All the field switches shall be suitable for Flameproof and weather proof

enclosure contacts. The process switch shall be silver plated with contacts rated for rating of 30 V DC, 1 Amp. This requirement shall also be applicable for any other switch contact like push button, selector switches in the intrinsically safe service. The field switches shall be normally closed type and open to alarm. Switch contacts shall be SPDT. For all field switches (except Limit Switches), differential of switch shall be less than 60% of difference between set value & operating value.

3.3.15 Tube Fittings used for the installation of instruments shall be tested as per BS 4368 or equivalent standards. Sample tubing should be of silicosteel to handle H2S

3.4 JUNCTION BOXES AND CABLING PHILOSOPHY

3.4.1 Cable Routing

3.4.1.1 Single / multiple pair cables from instrument to junction box shall be through perforated trays. Cable glands shall be provided at instrument end and junction box end. Supply of Cables from System to the control panel and Cable glands (required for control panel end and System end) for these cables shall be in bidder's scope. However cable laying/blowing shall be in the scope of Bidder.

3.4.2 Junction Box

3.4.2.1 In general separate junction boxes shall be used for the following: a) 4-20 mA DC signals (IS) b) LEL detector signals c) USM Signals d) GC Signals e) Contact signals (Field switches, Limit switches, push buttons etc.) f) Interlock and shutdown signals (Solenoid valves) g) Power supply h)RPD Signals to various instruments (GC, USM) Separate JBs and cable are required for power supply to USM and GC. The JBs shall have side entry for Branch cable/ single pair cable and Bottom entry for multi-pair cable entry. No top entry shall be considered.

3.4.2.2 The multi-cable entry for 6-pair JB and 12 pair JB shall be 1" NPT (F) and 1.5" NPT (F) respectively. Each junction box shall be provided with 2 multi-cable entries from the bottom of the junction box with one plugged with weather proof plugs.

3.4.2.3 Junction boxes, cable glands and accessories shall be weather proof in general. Slipper type PVC sleeves shall be used over cable glands for all cable entries in junction boxes to avoid water entry in junction boxes. In case of explosion-proof components used (only for packages), the respective junction boxes, cable glands and accessories shall be certified weatherproof and explosion proof.

3.4.2.4 Only one multi-cable entry shall be used in the junction box. The other cable entry shall be plugged.

3.4.2.5 The junction boxes in the field as well as in local panel shall be provided with sufficient number of terminals to terminate all the pairs of multi-cable (including spare pairs) and shields of individual pairs as applicable.

3.5 INSTRUMENT PAINTING REQUIREMENTS

3.5.1 All instrument impulse lines (except SS 316 Tubing) and instrument structural items shall be painted by the bidder.

3.5.2 The painting/ coating shall be performed in totality for all instrument items such as:

a) All line mounting and equipment mounted instruments.
b) All instrument impulse piping (except SS 316 Tubing)
c) All instrument structural items like M.S. cable trays, instrument supports and tray supports, instrument stanchion, impulse line supports, etc.
d) All surfaces of GI items wherever repair has been carried out shall also undergo painting.
e) All cabinets/panels, base frames which have undergone repair at site shall also be painted.
f) The final coating on external surfaces shall be applied just before handing over the plant or commissioning of the plant.
g) Name of the manufacturer, color and quality of all types of primers and paints shall be subject to approval of the owner/owner's representative.

3.5.3 Painting of other equipment's shall be as per painting specifications attached elsewhere.

3.6 POWER SUPPLY & POWER SUPPLY DISTRIBUTION

3.6.1 230 V / 110 V AC shall be available for control Panel. Vendor to suitably install Rectifiers in the control panel for powering panel and field instruments both.

3.6.2 Bidder to note that 230 / 110 Volts power supply, shall be floating neutral type. Vendor to provide isolation transformer, in case vendor requires grounded neutral.

One feeder shall be provided by Bidder in the Control panel for connecting incoming power cable. Further distribution for all the vendor supplied instruments/ equipment's in control room and at field are in Bidder's scope.
24 V

DC power required for the barriers, isolators and field contact interrogation and relays etc. shall be provided by the vendor through dual redundant power packs. Power packs shall be sized with the safety factor of 1.5 of the actual load requirement.

4.0 PROCESS DESCRIPTION

4.1. The bidders shall design the System considering the worst case process condition scenario.

Specific Gravity of natural gas shall be considered for the purpose of sizing. 10 % of the maximum flow capacity shall be considered as the minimum flow.
Design Temperature: -20 to 60 deg. C.
Design flow: 100% of maximum flow capacity.
For components sizing calculations, Compressibility factor of 0.98 shall be considered.

4.2 Detailed Process conditions:

Item No.	Item Description	Inlet Pressure Range	Inlet Temperature Range	Class Rating Inlet/ Outlet	Design Temperature Range (0C)	Permitted Differential pressure across the System for designing
1	35000 SCMH Metering skid with filtration and 3 stream PRS stream [2 stream of 100% capacity & 1 stream low flow capacity] and 2 Stream Metering System with 1 USM and 1 RPD (G-100) ,along with field instruments Flow Computer (FC), Gas Chromatograph & associated items with materials instruments , vents, piping, valves, flanges & fittings etc.. Inlet Pressure Rating: 300# Outlet Pressure Rating: 300#	30 to 45 Kg/cm2g	0 to45 0C	300#	-29 to 65	As per process parameter

The quoted System shall be designed for flow capacity of 100% of maximum flow mentioned above and shall be suitable for Gas compositions mentioned below. The Heating value of Natural Gas (GCV) shall be 9200 to 9880 KCal/SCM.

Typical Gas Composition for designing the System shall be as follows:

	Lean Gas	Rich Gas
Name of Component	Composition 1	Composition 2
C6+	0.05	0.20
N2	0.20	0.20

H2S	3 to 30 PPM	3 to 30 PPM
CO2	0.50	4.00
C2	5.10	7.00
C3	1.10	3.75
IC4	0.20	0.70
NC4	0.30	0.80
IC5	0.02	0.20
NC5	0.01	0.20
C1	Balance	Balance

4.3. All the calculations for the sizing of the valves, meters etc. shall be based on the design flow capacity with worst case Process Temperature and Pressure, however for mechanical strength of the equipment's, design temperature / pressure shall be considered.

All the Equipment's shall be able to withstand maximum/ minimum design Pressure and temperature. Worst case process pressure and temperature with design flow is to be considered for noise calculation of valves.

5.0 JOB SPECIFICATION

5.1 GENERAL

This document defines the instrument job requirements over and above various Standards attached along with this document.

The selection of type of instruments is Bidder's responsibility. For the instruments where type is already identified in the P & IDs / data sheets, the Bidder shall follow the same. However, during the engineering procurement stage if it is found that a different type of instrument is most suited for a particular application then the same shall be referred to MNGL for review, and if suitable, the changed instrument shall be supplied by the bidder. Bidder shall also be responsible for selecting and reviewing the type of instrument where specifically indicated in P& ID.

Instrument selection and specifications shall be carried out as per specification, typical instrument data sheets and Standard Specifications in general, as appended by special requirements specified here in.

5.2 JOB SPECIFICATIONS FOR GAS METERING SYSTEM PACKAGE

Refer Job specification for Gas Metering package. The referred job specification

together with the P&IDs, Process data sheets, data sheets, standard specifications attached with the Package, defines the requirement for the design, engineering, manufacture, fabrication & assembly, integration, calibration, factory testing, supply, packaging, shipping and documentation including deliverables, statuary and other special approval, inspection, testing overall System performance guarantee of Gas custody transfer. If required, then installation supervision, commissioning of the same at the same terms & condition of the contract/ tender.

6.0 TESTING AND INSPECTION

6.1 GENERAL

6.1.1 All pressure boundary materials shall have certified material test reports (CMTRs) or certificate of compliance per the design code. Certifications shall be to EN 10204 Type 3.1 for pressure parts and Type 2.2 for other parts. A system of positive material identification (PMI) shall be implemented for the items mentioned in PMI specification attached elsewhere.

6.1.2 Vendor shall submit the QAP, FAT, & SAT Manual/ procedure to MNGL for review and approval.

6.1.3 All materials and equipment shall be factory tested before shipment in the presence of Purchaser's representative. No material shall be transported to site until all required tests have been carried out and equipment is certified as ready for shipment. Acceptance of equipment or the exemption of inspection or tests thereof, shall in no way absolve vendor of the responsibility for delivering equipment's meeting the requirements of the specifications.

6.1.4 Vendor shall furnish the following

Material test certificate, Hydrostatic test certificate, Certificates of radiography for all line mounted items/ instruments on the System. Certificates from statutory body for hazardous area approval for all electrical items mounted on the System.Calibration certificates, certificates for custody transfer,Certificates for the conformity to the standards to be submitted. All other certificates mentioned in individual general specification. Certificate of master instruments used for calibration.

6.1.5 Supplier shall perform the usual standard tests to maintain quality control procedures. These test certificates shall be submitted for review before starting inspection by Purchaser. Supplier shall be responsible for testing and complete integration of the system. Detailed procedures of test and inspection shall be

submitted by the supplier for review before order and mutually agreed upon.

6.1.6 Vendor shall include inspection by MNGL & third party personnel at vendor's shop. For this inspection, labour, consumable, equipment, transportation, and utilities as required shall be in vendor's scope. Third Party Inspectors shall be deployed by bidder with due approval from MNGL.

6.1.7 Other inspection and testing requirements shall be as per respective Standard specifications of various instrument items.

6.2 SYSTEM:

The following tests shall be conducted for the System

a. Hydro testing for the integrated System / individual pipe spools.
b. Pneumatic Leak test of complete System at 1.5 times of operating pressure.
c. System functional testing.
d. System piping material testing and NDT of welds as per piping material specifications. Radiography/ X-ray shall be mandatorily carried out for all welded joints including Ultrasonic meter & Radiography report shall be reviewed & certified by TPI of respective country where it is carried out and vendor shall furnish test certificate for the same. Dye-penetration test certificate shall be provided for joints wherever radiography/ X-ray is not possible.

e. Radiography/ X-ray, Charpy impact testing for line mounted instrument items such as Ultrasonic meters runs etc.
f. Testing and inspection requirements for System piping materials shall be as per specifications attached elsewhere in the bid package.

6.3 System Equipment's

The following tests shall be conducted:

6.3.1 Requirements of non-destructive testing like radiography, magnetic particle test, hardness test, hydro-test, Charpy test for Ultrasonic meters, Profiler and meter runs shall be carried out strictly as per following specification.

a) 100% radiography shall be carried out on all weld joints. Radiography procedure and area of casting to be radiographed shall be as per ANSI B16.34 and acceptance criteria shall be as per ANSI B16.34 Annexure B. The radiography shall be conducted as per ASNT Level 2 procedure from approved vender list of GAIL/EIL.

b) 100 % Radiography/ X-ray shall be carried out for all welded joints and

vendor shall furnish test certificate for the same. UT shall be provided for joints wherever radiography/ X-ray are not possible.

c) Each meter runs shall be subjected to hydrostatic test with a pressure of 1.5 times the design pressure.

d) Charpy impact test on each heat of base material shall be conducted as per A370 for all pressure containing parts such as body, end flanges and welding ends as well as bolting material for pressure containing parts. Unless specified otherwise, the Charpy impact test shall be conducted at 0°C. The Charpy impact test specimen shall be taken in the direction of principal grain flow and notched perpendicular to the original surface of plate or forging. The minimum average absorbed energy per set of three specimens shall be 27J with an individual minimum per specimen of 22 J.

6.3.2 Flow Meter, Meter run and accessories shall be offered for pre-dispatch inspection to MNGL and / or MNGL's representatives. Following tests, checks shall be conducted:

a) Meter shall be “zero calibrated” (“dry calibrated”) with nitrogen. Test results shall be furnished. In the dry calibration set up, the gas velocity observed on all the acoustic paths shall be zero. The speed of sound of the individual acoustic path in the dry calibration set up shall not exceed +0.2% of the mean velocity of all the paths.

b) Physical/ dimensional checks and workmanship. Checking of meter tube roughness. Calibration including establishing linearity and repeatability over the entire range. Wet calibration of Ultrasonic Gas Flow Meter at average metering pressure shall be performed along with the meter runs and flow profiler.

c) Functional and simulation tests including checking of hardware and software for Flow computers, Ultrasonic flow meters and Gas chromatographs with all its sub- systems in fully integrated configuration.

d) Review of all certificates and test reports. In the event the purchaser is unable to witness a test, the test shall anyway be completed by the vendor and documents for the same shall be submitted for scrutiny before shipment.

e) All tests as per Standard specifications attached with this bid document.

6.3.3 Following tests, inspection, review shall be carried out by vendor at their works and test certificates shall be furnished:

Calibration of all instruments and generation/ review of calibration/ test certificates for all instruments. Calibration test reports for flow meters duly

signed and certified from the recognized International laboratories / statutory weights and measures authority. Statutory body certificates for instruments. Type test report for enclosure of all electronics/ electrical equipment's.

6.3.4 In addition, the vendor shall also refer the inspection & testing requirements of the standard specifications attached to this requisition and follow the same.

6.3.5 The following certificates are required to be submitted during inspection for review before dispatch of materials:

- Verification of certificates as applicable for the material certificates, NDT reports like radiography/ X-ray/ die-penetration/ MP, etc., statutory certificates (from CCOE) for intrinsic safety and explosion proof, certificates of conformity etc.
- Visual verification for quantity, quality and workmanship.
- Hydro testing and pneumatic testing as applicable.
- Functional and performance testing including calibration, accuracy, repeatability testing.
- Calibration report of PT, TT, USM with meter run and profiler.
- Radiographic test for thermo-wells etc.
- Bidder must detail out performance specifications of each item which shall be verified by bidder or bidder appointed agency/ Owner/ PMC during factory testing.
- Inspection and testing requirements as per the respective standard specification shall be referred.
- Bidder shall submit all test records / test results for records to purchaser as bound volume along with the test procedure for each test carried out.
- Acceptable criteria for Radiography and other NDT requirements for all the instruments / instrument castings shall be in line with those specified in 'valve/ piping specifications' for the similar service. Valve specifications/piping specifications have been attached elsewhere in this package.
- CCOE certificate shall be supplied by the bidder for all instruments installed in hazardous area.
- Custody transfer application certificate for meters.

6.3.6 Wherever inspection at manufacturer's shop is waived because of any reason, the bidder shall carry out the inspection at vendor/ sub-vendor's shop and Bidder shall forward these inspection reports for verification by MNGL before dispatch. In no case, items shall be released without proper inspection/ verification.

6.3.7 The inspection and testing shall be carried out as per related specifications,

international codes and practices/standards, approved documents and/or any other document attached along-with specifically suggesting extent of testing to be carried out at manufacturer's works.

6.3.8 Items for which 'Witness Inspection' is specifically exempted, manufacturer shall forward the test certificates as desired for review.

6.3.9 Testing and inspection for all items shall be carried out as per approved factory testing procedures. The material shall be dispatched only after obtaining written dispatch clearance. For items where no testing is witnessed by the purchaser test certificate shall be forwarded for review before dispatch of such equipment

6.3.10 Vendor must detail out performance specifications of each item which shall be verified by vendor or vendor appointed agency/ Owner/ PMC during factory testing.

6.3.11 Inspection and testing requirements as per the respective standard specification shall be referred.

6.3.12 Vendor shall submit all test records / test results for records to purchaser as bound volume along with the test procedure for each test carried out.

6.3.13 Acceptable criteria for Radiography and other NDT requirements for all the instruments/ instrument castings shall be in line with those specified in 'valve/ piping specifications' for the similar service. Valve specifications/piping specifications have been attached elsewhere in this package.

6.3.14 CCOE certificate shall be supplied by the vendor for all instruments, HHC, cylinders installed/ for use in hazardous area.

7.0 DOCUMENTATION

7.1 Minimum 06 number of reproducible and prints should be dispatched to the address mentioned, adhering to the time limits indicated.

7.2 Final drawings from the Vendor shall include dimensional details, weight, mounting & foundation details and any other special requirements etc. for the systems. All dimensions in general shall be in millimeters.

7.3 Vendor shall furnish all the required manuals necessary to test, operate and maintain the system. All the certificates etc. shall be provided.

8.0 MISCELLANEOUS

8.1 NAME PLATE IDENTIFICATION

In addition to the instruments and equipment nameplate, the structural System shall be supplied with a permanent, weather resistant, stainless steel nameplate affixed to the System, with the following details, as a minimum: Project title and number

- Owner and Owner name
- Equipment name and tag number
- Manufacturer's name and serial number
- System overall dimension data.
- System weight data.

Each System and all the instruments in the System shall have a S.S nameplate attached firmly to it at a visible place furnishing the following information:

- Tag number of the System.
- Project Name with location: "---------- (name of site/ station)"
- Inlet size (in inch) and Outlet Size (in inch) with class rating
- Min/ Normal/ Max. Flow capacity in SM^3/Hr.
- Tag number of Instruments, JB as per purchaser's data sheets
- Body sizes with class rating in inches and the Valve Cg value or meter G rating
- Flow range in SM^3/hr for Flow meters
- Rating for all the individual instruments
- Manufacturer's name and model number

All cable should have tag no. at JB/ panel end and Instrument end. All wires terminated inside System and control panel should have identification mark, ferrules etc. (for the termination of supplied cables, Identification Tag no, Ferrule etc. shall be provided by bidder).

9.0 SHIPPING & PACKAGING

- Vendor shall indicate the shipping and packaging methodology for each pieces of System along with its size, weight and no. of pieces.
- Vendor shall try to fix as many types of equipment/ instruments as possible in System and control panel before shipment.
- If any of the items are shipped loose, then it shall be properly packed inside metallic or wooden cartoon with identification tags painted on it. Loose materials, spares etc. for any two System shall not be mixed in one cartoon/ package. A System of tagging, segregation to be

followed for easy identification of parts and due care to be taken to avoid intermixing of some parts of different Systems.

10.0 PERFORMANCE GUARANTEE

10.1 The VENDOR shall guarantee that all work/ job will be performed in accordance with good and sound engineering and construction practices and within the requirements of this specification. The equipment, accessories and all the materials supplied by the VENDOR shall be free from defects, shall be suitable for the use for which they are intended and shall perform in accordance with the requirements of this specification.

10.2 The VENDOR shall furnish a guarantee for the entire System package comprising of its entire component/ equipment's including instruments, piping, valves, fittings, internals, etc., for a period of 24 months from the date of commissioning or 30 months from date of receipt of goods at site, whichever is earlier.

10.3 The VENDOR shall take single point responsibility for the complete System, including the sub-vendor supplied components, the proprietary equipment and components included in System package and supplied loose in accordance with this specification.

11.0 INSTALLATION AND COMMISSIONING OF METERING SYSTEM

11.1 The VENDOR shall provide qualified and experienced personnel for installation, field-testing and commissioning of the equipment's.

11.2 INSTALLATION REQUIREMENTS:

- All instruments shall be accessible from grade or a platform for operation and maintenance.
- Bidder shall consider the, "MNGL installation standards "as attached or equivalent for installation of each instrument. In case, any instrument require a special installation or any instrument not provided with installation standard the bidder shall prepare the standard and get it approved from MNGL along with other documents.

- Impulse tube/ pipe of size ½" shall be used as impulse lines. The Impulse pipe/ pipe fittings for instrument installation shall be as per the piping material specifications of respective process lines. Tubing when used between manifold and the instrument shall be, 12mm OD with SS316 material of construction as a minimum. The material selected shall be suitable for the process fluid conditions.

- Instrument in gas service are to be installed only above or at least parallel to the tapping with a slope in the impulse towards the tapping to achieve self- draining condition.

- No unions shall be used in impulse lines instead break flanges shall be used.

- Ball valves in combination with Plug / globe valve shall be used for equalizing service and vent & drain valves.

- Minimum ½" sized needle valves shall be used for Instrument isolation.

- Impulse piping is to be suitably painted (except SS 316 tubing)

- Schedule 80 seamless pipe with at least 3000 lb rating fittings should be used as a minimum for impulse piping.

- Tube fitting shall be double ferrule type.

- Based on the installation standards for each type of instrument, bidder shall prepare Bill of materials (BOM) which indicates the requirements of different materials for installation of each instrument. However completeness of BOM is bidder's responsibility.

- Mounting of field instruments (if remote mounted)/ JBs on the stanchion or instrument support shall be at the height of 1.3M from the grade level / finished floor level.

- The installation and erection materials like, cables (signal, control, thermocouple extension and power), cable glands, junction boxes, instrument valves and manifolds, impulse pipe and pipe fittings, pneumatic signal tubes, instrument airline fittings and valves and cable trays required for installation of complete instrumentation shall be as per standard specifications enclosed in this tender. Power supply for different instruments/ equipment's having different power/ voltage rating shall be installed in different JBs.

11.3 LOOP CHECKING AND COMMISSIONING

11.3.1 Bidder is fully responsible for all work related to loop checking (inside the System), including cable laying, tray work, dressing, identification, ferruling, calibrations, loop testing. However, cable laying from System JB to control panel and/or electrical panel in control and or electrical room is in bidder's scope.

11.3.2 Bidder shall be responsible for commissioning of each & every equipment's installed in the System. (Functionality, simulation for all these equipment's shall be demonstrated during FAT).

12.0 BIDS:

Bidders Proposal shall include the following (as minimum):

12.1 Bidder's proposal shall include the detailed specifications for all items of Metering Systems packages and Metering packages. The proposal shall include:

i) Make, Model number and detailed specification along with technical details and catalogue for each applicable item of metering System like flow meter, meter tube details, pressure transmitter, Temperature transmitters, Ball valves, Globe valves, GC & FC etc.

ii) Sizing calculations and pressure drop calculations for inlet and outlet pipeline, flow meters. Calculation for Gas velocities meter runs at maximum flow and minimum pressure to be submitted. The entire system (including all the components, equipment's, Instruments) shall be selected and offered in such a way that the overall pressure drop across the entire System shall be minimum. Detailed sizing calculation for individual components and pressure drop for entire System (including diff. Pressure across individual components of metering System) to be provided.

iii) All design and performance characteristics.

iv) P&ID for metering System to be prepared by bidder based on the Typical P&ID and other documents provided with tender.

v) Completely filled Datasheet of all the components/ items of System with selected single and Model of equipment/ Instrument. (Multiple make/ model shall not be mentioned/ offered).

vi) Overall dimensions of each item.

vii) Overall dimensions of each System with proposed modules of each System considered along with estimated dimensions:

viii) Weight of each System

ix) Foundation details (suggestive) of Metering System.

13 Payment Terms:

i) **85% (Eighty five Percent) Payment** shall be released against receipt of materials at site on

submission of dispatch documents, manufacturer's certificates, invoice, packing list, insurance policy, guarantee/warranty certificate, inspection release note, Goods Receipt Voucher (GRV) & dispatch clearance issued by the Owner.

ii) **15% (Fifteen Percent) Payment** shall be released on installation, Testing & Commissioning of equipment.

DATASHEETS

DATA SHEET FOR FLOW COMPUTER			
1.	**Type**	:	Electronic microprocessor based, data entry key board, online user Configurable Flow Computer
2.	**Make**	:	*
3.	**Model No.**	:	*
4.	**Input**	:	a) Dual frequency signals from Ultrasonic Flow Transmitter (meter mounted electronics). b) 4-20mA DC (2 Wire) from 'SMART' Pressure transmitters representing line pressure. c) 4-wire RTD Input b) & c) Shall be a part of intrinsically safe circuits. Transmitters shall have a load driving capacity of 600 ohm at 24.VDC. Vendor shall note this while choosing the precision resistor inside the flow computer for converting 4-20mA signal to voltage signal. Maximum value of this resistor shall not exceed 250 ohm. d) RS 485/422 MODBUS from ultrasonic flow meter electronics for meter diagnostics and healthiness parameter. e) RS-485/422/232 MODBUS from Gas Chromatograph f) Discrete inputs from ultrasonic meter electronics. g) Additional 4-20mA DC (2 Wire) superimposed with digital signal (HART Protocol) from 'SMART' Pressure Transmitters representing inlet line pressure h) Additional 4-wire RTD input representing inlet line temperature i) Other Standard Inputs available
5.	**Interface Capability**	:	a) Flow computers shall be interfaced with Gas Chromatographs for feeding online gas composition to flow computer through RS485/232 MODBUS serial link. b) Flow computers shall be interfaced with RTU for flow metering data as well as temperature and pressure, energy flow rate and total energy, corrected volumetric flow rate and total flow, yesterday's energy total and volume total, today's running volumetric total and energy total, volume and energy integrated at 6 a.m. etc.

6.	**Keyboard Capability**	**:**	The data entry keyboard shall have the provision to enter the following: a) Pressure and Temperature base factor b) Specific gravity and scaling factor c) Mole % or composition of the gas to be metered d) Report headings, frequency and timing of reports e) Selection of parameter to be displayed and on- demand printing of reports f) Calorific Value g) Flow, Pressure, temperature and density values and give compensated flow for any external conditions h) Gas compressibility i) The flow computer shall have provision to enter default values of all inputs (inclusive of gas chromatograph) low/high alarms for all inputs (inclusive of gas chromatograph) and shall be user configurable. The flow computer shall use the default values in case of any input goes beyond low/high limit. j) Other Standard features available.
7.	**Outputs**	**:**	a) 4 – 20 mA DC analog output for corrected volumetric flow rate, line pressure, line temperature and energy rate (4 Nos.) b) Output for corrected totalised volume and uncorrected totalised volume. c) Contact Alarm outputs for unit malfunctioning, process alarm like low pressure etc. (3 Nos.) d) RS 485/232C serial output link for SCADA for all signals as specified in clause no. 3 of this data sheet. e) RS232 serial port for laptop connectivity. f) 4-20mA analog output for I/P of Flow control valve. g) Other standard outputs available.
8.	**Isolations**	**:**	a) Power supply shall be galvanically isolated. b) Analog I/Os and Digital I/Os shall be opto-isolated.

9.	**Computation**	**:**	a) Volume Flow rate at standard, normal or operator specified base conditions (Sm3/ hr) b) Integrated corrected volume. c) Energy flow rate and integrated energy. d) Linearization of temperature input.

			e) Generation of Standard and user defined reports at printer. All reports shall be user configurable. f) Co-efficient of deviation from ideal gas law as per AGA-8 on the basis of specific gravity, temperature, pressure and mole % of N2 and CO2 and other compositions for flow computers. Flow computer shall have capability for both AGA-8 and AGA-Nx-19 with user selectable upon application requirement. g) Previous day's flow/energy (i.e. yesterday's 6.0 a.m. total volume/energy to today's 6.00 a.m. total volume/energy) & current running total for the day (i.e. volume totalizer / integrator value at 6.00 a.m. from first day) to be stored in a separate location (register) and these shall be user configurable. h) Today's accumulated flow/energy (running total since morning 6.00 a.m. to current time) and shall be user configurable. i) Generation of reports for totalized volume & energy at daily (6 a.m.) weekly, fortnightly & monthly intervals etc. shall be user configurable. j) All the above data shall also be made available by vendor in the serial links to RTU
10.	**Features**	**:**	a) Built in online diagnostics to detect proper functioning. b) Parameters and programmed constants to store in EEPROM/non-volatile memory. c) Super capacitor capable of storing data for three months without power. d) A minimum memory to log 240 alarms and 240 events for 15 days. e) Archival of data for up to 15 history points for 35 days. f) Built-in Closed loop Controller (PID) functionality.
11.	**Database**	**:**	a) Current value of each input and output. b) Minimum and maximum values of selected variables for a period of two days. c) Values of selected variables by minute for last 60 minutes and by hour for last 30 days. d) Daily averages or accumulations of selectable variables for each contract day for up to 30 days. e) Event log databases for last 240 parameter

			changes. f) Alarm log database for minimum 15 days alarms set and cleared
12.	**Calculation Standard**	**:**	a) Volume flow rate & Total Flow: AGA Report 9(Latest) b) Compressibility: AGA 8 (Latest) and AGA Nx-19 c) Energy Rate & Integrated Energy: AGA 5 (Latest).
13.	**Accuracy**	**:**	Calculation accuracy shall be better than + 0.05 % of full scale including linearity, hysterisis, repeatability and resolution. Accuracy for analog inputs to be + 0.005 % of FSD at 23°C and Analog O/P accuracy to be + 0.1 % at 23°C.
14.	**Scan Processing Time**	**:**	a) The interval between computer readings of process variables shall not exceed 1 sec. b) The interval between each cycle for computation of instantaneous flow rate and totalized flow shall be less than 1 sec. c) Algorithm and rounding off error for computation shall be within + 0.001 %
15.	**Security**	**:**	Multilevel software password protection shall be provided.
16.	**Display**	**:**	Alphanumeric LCD with selectable decimal. Displaying all units, messages alarms etc. in English. Flow computer shall have the capability of displaying any of the following parameters with Engg. Units. a) Uncompensated volumetric flow rate b) Compensated volumetric flow rate c) Totalised corrected flow, d) Totalized uncorrected flow e) Today's flow rate f) Yesterdays flow rate g) Density / Sp. Gravity h) Pressure i) Temperature j) Energy Rate & Total Energy k) Complete Gas Composition l) Calorific value. m) Data entry n) Error codes o) Selected parameter codes p) Alarms (Process and Systems) including

			diagnostic message (i.e. Pressure out of range, Temp. out of range, Flow over range, Fault in measurement, Battery low etc.) q) Other standard displays available r) Audit Trail for Custody Transfer. s) All the above data shall also be made available by vendor in the serial links to SCADA.
17.	**Unit of Display**	**:**	a) Corrected flow rate: Std. Cubic meter/hr (SCMH) b) Corrected totalized volume: Std. Cubic meter. c) Pressure: Kg/cm^{2}g d) Temperature: °C e) Energy: Kcal/m3
18.	**Power Supply**	**:**	24VDC
19.	**Configuration Setup**	**:**	Configuration and monitoring of operation of flow computer shall be done through configuration software running on IBM compatible PC.
20.	**Ambient Condition**	**:**	Temperature: -25 to 60 ° C. Humidity: 5 to 95 % non-condensing. Vibration: As per ISA S75-13-1989, sec 4.2 & 5.35 ECD susceptibility: Should meet IEC 801-2, level 3. Base Pressure: 1.0332 Kg/cm^2 Base Temperature: 15°C
21.	**Enclosure**	**:**	General Purpose
22.	**Mounting**	**:**	Flush Panel
23.	**Quantity**	**:**	*
24.	**Approved Make**	**:**	Daniel, Instromet, RMG, FMC, SICK.

Notes :

1. '*'Vendor to furnish.
2. Original Licensed software for retrieving the stored data, programming the Flow Computer using Laptop, software based on Windows 10/2000 shall be offered.

DATA SHEET FOR GAS CHROMATOGRAPH		
Sr. No.	**Description**	**Requirement**
1	Gas Chromatograph	Online
2	Application	Natural Gas
3	Type	Single Stream continuous on line gas chromatograph through stream switching unit
4	Area Classification	IEC Zone 1, Gas Group IIA, IIB, Temperature T3
5	Enclosure and Protection	All electrical components of sampling system, analyser & its associated electrical components & all electronics in the field shall be whether proof & flame proof to NEMA 4 & NEMA 7 certified, suitable for the specified area classification by statuary body like CSA, CENELEC, UL, BASEEFA, PTB etc.
6	System Power Requirement	As per manufacturer Std.
7	**Gas Chromatograph**	
	Chromatograph valves	Pneumatic operated with life time warranty
	Valves Operated by:	Carrier Gas
	Columns:	Micro Packed five years warranty
	Carrier Gas:	Helium (purity 99.999%). Vendor needs to ensure supply of at least 2 years carrier gas along with main GC system supply
	Detector Type:	Thermal Conductivity Detector
	Cycle Time:	Operator assignable (07 min or better)
	Repeatability:	+/- ½ BTU per 1000 BTU
	Accuracy and Repeatability:	Should be as per International Bench mark
	Number of Streams for gas analysis	One
	Number of calibration streams	One
	Grab sample Cylinder Analysis Provision	Not require
	Controls Chromatograph:	Valves and electronics

	Analogue Output (4-20mA) with software calibration (250 ohm load standard / 750 ohm using external 24 V source)	Up to 2 Programmable by user standard, provision for additional requirement optionally.
8	Communication Port	4 Nos. RS-485/422
9	Measurement:	Stream measurement Unit : Mole % Stream Components:
	H2S	3 to 30 PPM
	Hexane + (C6+)	(0 to 0.05%)
	Propane (C3)	(0 to 4.0%)
	Iso Butane (iC4)	(0 to 1.0%)
	N- Butane (nC4)	(0 to 1.0%)
	Iso- Pentane (iC5)	(0 to 0.5%)
	N-Pentane (nC5)	(0 to 0.5%)
	Nitrogen (N2)	(0 to 1.0%)
	Methane(C1)	(84 to 95%)
	Carbon Dioxide (CO2)	(0 to 4.0%)
	Ethane (C2)	(0 to 7.0%)
	Stream measurement and calculation	Composition Data in Mole %
		Composition Data in Volume % (selectable)
10	Report Generation	Calculation of Gas Properties Calorific Values (dry, wet),
		Compressibility factor (as per AGA-8), Specific gravity etc. as per latest ISO 6976.
		Energy calculation in Kilo Calary
		Calorific value unit shall be selectable between btu/ft3 and Kcal/m3 at 15 deg. C and 1.01325 Bar A or 1.03323 kg /cm2g
		The last Measured concentration value for each component and calculated values. The analysis report shall be in mole % (user selectable) and total shall be add up to 100
		Daily Averages of component concentration and calculated values to be printed automatically or / on demand
11	Programming and Diagnostic Software	Last current Chromatogram
		Real time chromatograph & valves status

	Diagnostic Software Sampling system	Historical analysis data in report format
		Storing facility of chromatogram for minimum of 35 days
		facility to average the value (hourly/shift/daily basis)
		Serial port connected with GC should act as Master and flow computer should be slave so that data can be transmitted to Flow computer on predefined interval.
		Configuration / application software should be Window based and user friendly
		i) Sample conditioning system and gas chromatograph & analyser electronics shall preferably be mounted in a free standing cabinet with all operational area around 1.4 meter above the finished grade level . Cable entry shall be provided from lower side of the cabinet and tubing entry shall be from the side. Cabinet shall be located in field and cabinet shall be weather proof to NEMA 4 / IP 55 with cabinet door having elastomer gasket.
12		ii) supply of all the components, inter connecting tubing , tube fitting both for fast loop and sample return shall be included in the vendor scope.
13	Probe Probe Length	iii) Sample shall be returned to the atmosphere at a safe height. The sample return line and fast loop line shall be combined together by vendor and finally vendor shall provide ¾', 600# RF, ASTM 105 flanges connection outside the cabinet leaving sufficient space for bolting. The vent piping from the flange to final venting to atmosphere shall not be in vendor's scope.
		SS 316 or as per vendor, Retractable prove only
		By vendor, suitable for the 16" 600# pipe line size and the flange connection as specified above (probe length should be 18")
14	Probe Insertion	Probe should go approx. 1/3' of pipe line size
15	Pipe Line Flange	1- 1/2" RF 600# (A105) smooth finish to ANSI B 16.5 Prove rating shall be same as line rating
16	Line Isolating Valves	By vendor (1- 1/2" full bore ball valve). Valve flange and rating as per the pipe line flange as per the above
17	Cable Entry	3/4 " NPT separate for power and signal
18	Process Line size for stream 1 & 2	As per Process Parameter

19	Operating Pressure	As per Process Parameter

20	Maximum Pressure	As per Process Parameter
21	Operating Temperature	As per Process Parameter
22	Maximum Temperature	As per Process Parameter
23	Flow	As per Process Parameter
24	Molecular weight	As per Process Parameter
25	Documentation	Parameter Listing and system drawings
26		Environment chamber test procedure
27	Inspection and Testing Dispatch	GC Demo CD
		Operators Manuals
		Gas Chromatograph Hardware reference Manual
		Gas Chromatograph software Operation
		Software user manual
		Gas Chromatograph should be carrying out the internal testing and inspection. Unit level test and Environmental Test Report from 0 Deg. C to 60 Deg. C and other test reports shall be required for review before dispatching the material.
		Material shall be dispatched only after written dispatch clearance
28	Important Note	System should be programmable for high & low limits for individual component analysis. Alarm light on control module should active in case value measured beyond the set limit.
29		The system shall provide default values in case of failure of Sampling system

DATASHEET FLANGES AND BLINDS		
SR.NO	**DESCRIPTION**	**SPECIFICATION**
GENERAL		
1	Size	AS per approved design Calculations
2	Pressure Rating	300#
3	Design Standard (**Guideline: PNGRB T4S Standard)**	ASME B16.5/ASMEB 16.47/ASME B 16.48
4	Corrosion allowances	1.5mm
5	Design factor	0.4
SERVICE CONDITION		
7	Design Pressure	19 barg
8	Design Temperature	300# = -15 to 65 deg.
9	Service Fluid	Natural Gas
10	Operating temperature	300# = -10 to 50 deg.C
11	Operating Pressure (Max)	19barg -300#/
CONSTRUCTION DESIGN		
12	Allowable Stress	ASME B 31.8
13	Flange Type	WNRF/BLRF/SORF/BLIND
14	Flange Facing	Raised Face (125 AARH)
15	Bevel End & Bevel Angle for WNRF	ASME B 31.8
MATERIAL SPECIFICATION		
	PART	**SPECIFIED MATERIAL**
16	Material Construction	ASTM A 106 Gr. B/API 5L Gr. B and ASTM A 234 GR.WPB & ASTM A 105 The carbon Contents is greater than 0.12% in product analysis, the CE(IIW) shall not exceed than 0.40% and if the carbon content is less than 0.12% in product analysis, the CE(Pcm) Shall not Exceed 0.20%

TESTING & INSPECTION		
17	Charpy Impact Test	As per material of Construction Standard In Case Charpy Test not specified in relevant codes and standard than charpyshall be carried out at 0 deg C and absorbed energy Valve shall be average 35J and minimum 28 J respectively.
18	Hardness test	ASTM A 106 Gr. B/API 5L Gr. B and ASTM A 234 GR.WPB & ASTM A 105 Incase hardness Valve not given in MOC thenHardness Valveshall not exceed 235 HBN
19	Tensile Test	As per relevant Code and Standard
20	Yield Strength	As per relevant Code and Standard
21	Elongation	As per relevant Code and Standard
22	UT	100% Surface
23	MPT	100% at Bevel Ends
24	DPT	100% at bevel end for 50 mm width
25	Marking	MSS SP 25 and MNGL Specification
NOTE		
1)Bidder shall clearly mentioned deviation, if any, and must get approval for MNGL for any deviation		

DATASHEET FOR DIFFERENTIAL PRESSURE GAUGE			
SR. N O	**DESCRIPTION**	**SPECIFICATION**	
1	Type	Suitable for gas skid	
2	Mounting	Local	
4	Standard (**Guideline: PNGRB T4S Standard)**	As Per IS 3624/EN 837	
5	Dial Size	100mm	
6	Colour	White (Non rusting plastic with black engraving)	
7	Case material	SS304/SS316	
8	Bazel Ring	Bayonet	
CONSTRUCTION			
9	Window material	Shatterproof Glass	
7	Enclosure	IP 67	
8	Sensor	Piston Type	
9	Pointer	Black Aluminum	
10	Accuracy	±2% FSD	
11	Zero Adjustments	Vendor to Furnish	
12	Connection	1/2" NPT (M)	
13	Connection Location	Horizontal	
14	Movement	Vendor to furnish	
15	Over-Range Protection	Vendor to furnish	
16	Blow out Protection	Vendor to furnish	
17	Make	Reputed make, to be approved by MNGL	
18	Manifold	5 way 3 valve manifold	
19	Model	Vendor to Indicate	
20	Fluid	Natural Gas	
	TAG	**Range**	**Working Pressure**
	DPG-0101	0-1000 mbar	19 Bar G
Note – Vendor Shall Provide Calibration Certificate			

DATASHEET FOR REGULATOR		
SR.NO.	**MNGL SPECIFICATION**	**REQUIREMENTS**
GENERAL		
1	Make	As per Approved vendor Specification
2	Type/Model	As per Approved vendor Specification
3	Type	Pilot Acting Fail to open
4	Maximum Temperature	60 deg. C
5	Minimum Operating temperature	-10 deg. C
6	Regulating Accuracy (AC)	+/- 1 % of set outlet pressure (G) or Better
7	Lockup (SG)	+/- 5 % or better
8	Standard	As per PNGRB Guidelines
9	Fire safe design	API 607 / API 6 FA' (Latest)
10	Connection Details	Raised Face Flanged ends – ANSI 300#
MATERIAL OF CONSTRUCTION		
11	Body	Steel ASTM A216 Gr. WCB or equivalent to suitable for withstanding the pressure & temperature Requirements
12	Internals	SS or Brass or suitable material for withstanding the pressure requirements
13	Diaphragm	Synthetic rubber or suitable material for withstanding the pressure requirement
STANDARDS		
14	Regulators	EN 334 : 2005 (+A1:2009)
15	Components for Gas Supply	DIN30690-1:2006/DIN 30690-2: 1980 OR Equivalent

DATASHEET FOR ISOLATION BALL VALVE (BELOW 2''-800#)		
SR. NO	**DESCRIPTION**	**SPECIFICATION**
GENERAL		
1	Valve Size	Below-2"
2	ANSI RATINGS	ANSI 800#
3	Design Standards (**Guideline: PNGRB T4S Standard)**	BS EN ISO 17292 (Latest)
4	Corrosion allowances	1.5mm
5	Design factor	0.4
SERVICE CONDITIONS		
6	Service	Natural Gas
7	Design Pressure	138 bar-g
8	Design Temp.	-15 to 65ºC (for Operating Pressure 19bar-g)
9	Operating Pressure (maximum)	Up to 19 bar (g)
10	Fire safe design	API 607 / API 6 FA' 2008
11	Operation temp	-10to 50ºC (forOperating Pressure49 bar-g)
VALVE CONSTRUCTION DESIGN		
12	Location	Above Ground
13	Valve type (Floating/Trunnion Mounted)	Floating
14	Bore (Full/Reduced)	Full Bore
15	End Connection	Socket Welded (as per ASME B 16.11) with pups
16	Locking Devices	Locking facility in fully open Position
17	Shutoff Class	VI
18	Construction	Two/Three Piece Construction required /Bolted
19	Bi-directional	Required
20	Double Block & Bleed	Not Required
21	Blow out proof	Required
22	Anti-Static device	Required
23	Lever Operation	Required

VALVE MATERIAL SPECIFICATIONS		
	PART	**SPECIFIED MATERIAL**
24	Body	ASTM A105
25	Ball (Solid)	ASTM A479 SS316/ASTM A351 CF8M + 80 micron ENP
26	Seat	RPTFE
27	Stem (Anti blow out)	ASTM A 479 SS316 (No Casting)
28	Stem Seal	As per manufacturer's recommendation
29	Stud bolts/Nuts	A193 Gr.B7/A 194 Gr.2H
30	Gland Packing	GRAFOIL
31	Anti-Static Device	SS302

DATASHEET FOR ISOLATION BALL VALVE 2''& ABOVE		
SR.NO	**DESCRIPTION**	**SPECIFICATION**
GENERAL		
1	Valve Size	2"& above
2	ANSI RATINGS	ANSI 300#/300#
3	Design Standards(**Guideline: PNGRB T4S Standard)**	API 6D (Latest)
4	Corrosion allowances	1.5mm
5	Design factor	0.4
SERVICE CONDITIONS		
6	Service	Natural Gas
7	Design Pressure	19 bar-g
8	Design Temp.	300# : -15 to 65ºC
9	Operating Pressure (maximum)	19 bar(g) /
10	Operation temp	300#: -10 to 50ºC
11	Fire safe design	API 607 APL 6 FA' (Latest)
VALVE CONSTRUCTION DESIGN		
12	Location	Above Ground
13	Valve type	FOR 300#, 6"ABOVE SHALL BE TRUNNION MOUNTED
14	Bore (Full/Reduced)	Full Bore
15	End Connection	Flange End (as per ASME B 16.5) Raised face
16	Locking Devices	Locking facility in full open Position
17	Shutoff Class	VI
18	Construction	Two/Three Piece Construction required
19	Bi-directional	Required
20	Double Block & Bleed	Applicable only for 600#
21	Blow out proof	Required
22	Anti-Static device	Required
23	Valve Operator	FOR 2" TO 4" – LEVER OPERATED FOR 6" AND ABOVE - GEAR OPERATED
24	Openand Close Ballposition indicator	Required

VALVE MATERIAL SPECIFICATIONS		
	PART	**SPECIFIED MATERIAL**
25	Body	ASTM A 105
26	Ball (Solid)	ASTM A479 SS316/ASTM A351 grade CF8M + 80 micron ENP
27	Primary Seat	ASTM A479 SS316/ASTM A351 grade CF8M
27	Seat insert	RPTFE
28	Stem (Anti blow out)	ASTM A 479 SS 316 (No Casting)
29	Stem seals(Renewable with valve open on stream)	As per manufacture recommendation
30	Stud bolts	A 193 Gr.B7/A 194 Gr 2H
31	Anti-Static device	ASTM A 479 Gr. SS 302

DATASHEET FOR JUNCTION BOX		
GENERAL		
Sr.No.	**DESCRIPTION**	**SPECIFICATION**
1	Make	Vendor to specify
2	Enclosure	EX-d as per IS 2148/81
3	Protection	IP 67 as per IS 13947/93 (Part-1)
4	Area Classification	Gas Groups IIA IIB as per IS 21248/81
5	Material	Dia. Cast Aluminium alloy LM-6
6	Thickness	min 5 mm
7	Gasket	Endless, Moulded neoprene
8	Earthing	1 no. inside& 2 Nos. outside M6
9	Size	As per mfg. std.
10	Finish	Epoxy light grey shade as per IS-5
11	Painting	2 Coats of lead free base primer &2 Coats of Leadfree Epoxy base paint applied on both for interior and exterior Surface
12	Engraving	Engraved/internally cast on the cover isolate power supply elsewhere before opening
13	Cable Entry	Vendor to specify
14	Bottom Entry	Vendor to specify
15	Top Entry	Vendor to specify
16	Left Side Entry	Vendor to specify
17	Right Side Entry	Vendor to specify

DATASHEET FOR PAINTING			
SR. No.	**Technical Description**	**Filter, Pressure Safety Valve, Regulator, Creep Relief Valve, Ball Valve, Globe Valve, Check Valve, Base frame & Support**	**Piping**
GENERAL			
	Standard (**Guideline: PNGRB T4S Standard)**	IGE/TD/13	
1	Surface Preparation	SA 2.5 finish as per ISO 8501 - 1 and profile up to 50 to 80 micron	SA2.5 finish as per ISO 8501 -1 &profile up to 30 to 50 micron. After galvanizing sweep blast and profile up to 10 to 15 micron
		Blasting Surface shall be freefrom loose mill scale, rust, dirt, oil grease, any foreignparticles, etc.	Blasting Surface shall be free from loose mill scale, rust, dirt, oil grease, any foreign particles, etc.
2	Hot Dip galvanizing	Not Applicable	Thickness (micron) as per ASTM A153 for all pipe, pipe fittings and fasteners.
			Pipe Min. 86 micron
			Pipe Fittings Min. 86 Micron
			Fasteners-Min53 micron for more than 9.6 mm Dia
			Fasteners Min 43 micron for under 9.6 mm
3	Colour Coating	Primer Epoxy Based Zinc Primer 60 microns (min) thick	Finish Coat: Epoxy polyamide paint - 100 microns (min) thick/coat Two number of coat
		Intermediate Coat : Polyamide Epoxy- 80 microns (min) thick	

		Finish Coat: Acrylic polyurethane - 60 microns (min) thick	

		Total DFT : 200 microns (approx.)	Total DFT: 200 microns(approx.)- Excluding galvanizing DFT
4	Colour Code	Pipe Lines	Golden Yellow (IS 356)
		Structural Support	Smoke Grey: powder coating (IS 692)
		Ball, Globe, Check valves	Oxford Blue (IS 105)
		SSV, PCV	Oxford Blue (IS 105)
		CRV, PSV	Fire Red (IS 536)
		Filter	Silver or Smoke Grey(IS 628 or IS692)
		Canopy (Powder Coated)	Silver (RAL 7001)
5	MNGL Branding	Canopy	Eco solvent Print with 3mm PVC,1mm MS sheet fromboth sides No flexor Sticker accepted

NOTE:

1. Vendor shall prepare Internal report for surface preparation for all piping and shall be reviewed by TPI.
2. Vendor shall prepare internal report for painting for all piping and shall be reviewed by TPI.

DATASHEET FOR PRESSURE GAUGE		
SR.NO	**DESCRIPTION**	**SPECIFICATION**
GENERAL		
1	Type	Direct
2	Mounting	Local
3	Dial Size	100 mm
4	Standard (**Guideline: PNGRB T4S Standard)**	As Per IS 3624/EN 837
5	Design	Solid Baffle wall and blow out back as per EN837-1, Glycerine filled
6	Colour	Aluminium dial with black engraving
7	Case material	SS304
8	Bazel Ring	Vendor to Furnish
CONSTRUCTION		
9	Window material	Shatterproof Glass
7	Enclosure	IP 67
8	Pressure Element	C Type Bourdon Tube
9	Element Material	SS316
10	Socket material	SS316
11	Accuracy	±1% FSD
12	Connection	1/2" NPT (M)
13	Connection Location	Bottom
14	Movement	SS316
15	Over-Range Protection	130.00%
16	Blow out Protection	Required
11	Manifold	3 way 2 valve manifold
12	Make	Vendor to Furnish
13	Model	Vendor to Indicate
14	Fluid	Natural Gas
15	Make	Reputed Make, to be approved by MNGL
Note – Vendor Shall Provide Calibration Certificate		

DATASHEET FOR SEAMLESS FITTINGS		
SR. N O	**DESCRIPTION**	**SPECIFICATION**
GENERAL		
1	Size	AS per MNGL approved design Calculations.
2	Pressure Rating/Schedule No.	
2a	Butt-welded Fittings/Weld-O- let	STD/SX/XXS SCH.40, SCH 80, SCH160
3	Design Standards (**Guideline: PNGRB T4S Standard)**	ASME B 16.9/ASME B 16.11/MSS SP 75/MSS- SP 97/ASMEB1.20.1/ASME B16.48
4	Corrosion allowances	1.5mm
5	Design Factor	0.4
SERVICE CONDITION		
11	Service Fluid	Natural Gas
12	Design Pressure	19 Bar-g
13	Design temperature	1.300# = -15 to 65 deg. C
14	Operating Pressure (Max)	300#=19 Bar G
15	Operating Temp	1) 300# = -10 to 50 deg C
CONSTRUCTION DESIGN		
16	Bevel Angle	ASME B 31.8
MATERIAL SPECIFICATION		
	Part	**Specified material**
17	Material Construction	ASTM A 234 GR WPB,ASTM A 105

DATASHEET FOR SOCKET WELDED AND THREADED GLOBE VALVE (BELOW 2''-800#)		
SR.NO.	**DESCRIPTION**	**SPECIFICATION**
1	Valve Size	Below 2"
2	Pressure class Rating	800#
3	Corrosion allowance	1.5 mm
4	Design Standard(**Guideline: PNGRB T4S Standard)**	BS EN ISO 15761
5	Design Factor	0.4
SERVICE CONDITIONS		
7	Service	Natural Gas
8	Design Pressure	138 Bar-g
9	Design Temperature	-15 to 65°C (for Operating pressure 19 bar-g) 2.- 15 to 65°C (for Operating pressure 49 bar-g & 98 bar-g
10	Operating temp.	-10 to 50°C (for Operating pressure 19 bar-g) -10 to 50°C (for Operating pressure 42 bar-g & 98 bar-g)
11	Operating Pressure(Maximum)	Up to 19 Bar-g / 42 Bar-g/98 Bar-g
VALVE CONSTRUCTION DESIGN		
12	Location	Above Ground
13	End Connections	1. Socket Welded (As per ASME B 16.11) 2. Threaded-ASME B 1.20.1.
14	Body/ Bonnet connection	Bolted
VALVE MATERIAL SPECIFICATION		
	PART	**MATERIAL SPECIFICATIONS**
15	Body	ASTM A 105
16	Bonnet	A216 Gr. WCB
17	Stem (ANTI BLOW OUT)	ASTM A 479 Gr. SS 316 (No Casting)
18	Disc (Plug Type)	ASTM A 479 Gr. SS 316 Stellited
	PART	**MATERIAL SPECIFICATIONS**
19	Disc Nut	ASTM A 479 Gr. SS 316
20	Body Seat Ring	ASTM A 479 Gr. SS 316 Stellited
21	Gland/Gland Flange	ASTM A 479 Gr. SS 316
22	Gland Packing	GRAFOIL
23	Stem seals	As per Manufacturer's recommendation
24	Stud bolts/Nuts	A 193 Gr B7/A 194 Gr 2H

25	Bonnets Gasket Type	SP WND CNAF filler + Inner and Outer SS316 ring
26	Seat and back seat arrangement	Renewable
27	Screw type	OS & Y
29	Position indicator	Open and close indicator required
30	Hand wheel	CS/MS coated with PVC grip

DATASHEET FOR SWING TYPE CHECK VALVE			
Sr.No	**DESCRIPTION**	**SPECIFICATION**	
GENERAL			
1	Valve Type	Swing Check Valve	
2	Valve Size	Vendor to Furnish	
3	Valve Pressure Class	300# /300# / 600#	
4	Design Standard(**Guideline: PNGRB T4S Standard)**	API 6D	
SERVICE CONDITIONS			
		For 300#	**For 300# and 600#**
5	Service	Natural Gas	Natural Gas
6	Design pressure	19 Bar-g	49 bar-g/98 bar-g
7	Design Temperature	-15 to 65 °C	-.15 to 65 °C
8	Operating Temperature	-10 to 50 Deg. C	-.10 to 50 °C
9	Fire safe design	API 6 FA' 2008	
VALVE CONSTRUCTION			
10	Location	Above Ground	Above Ground
11	Corrosion Allowance	1.5	1.5
12	Shut off Class	IV	IV
13	End Connections	Flanged End (As per ASME B 16.5) as per piping material specification	
14	Flange Facing	RF-125 AARH (ASME B 16.5)	
MATERIAL OF CONSTRUCTIONS			
15	Body	ASTM A 216 Gr. WCB (Charpy test at 0 Deg C)	ASTM A 352 Gr. LCB/LCC
16	Cover	ASTM A 216 Gr. WCB (Charpy test at 0 Deg C)	ASTM A 352 Gr. LCB/LCC
17	Disc/Plates	ASTM A 216 Gr. WCB +13 Cr Steel	ASTM A 352 Gr. LCB/LCC + 13 Cr. Steel
18	Body Seat ring	ASTM A 216 Gr. WCB +13 Cr Steel	ASTM A 352 Gr. LCB/LCC + 13 Cr. Steel
19	Disc Hinge	ASTM A 216 Gr. WCB +13 Cr Steel	ASTM A 352 Gr. LCB/LCC + 13 Cr. Steel
20	Hinge pin	ASTM A 479 Gr. SS410/SS316	
21	Stud Bolts & Nuts	ASTM A 193 Gr. B7/ASTM A 194 Gr. 2H, Hot Dipped Galvanized as per ASTM A 153.	ASTM A 320 Gr.L7 NUT: ASTM Gr. 7, Hot Dip Galvanized as per ASTM A 153.
22	Gasket	SS316 Spiral Wound with CNAF Filter	
23	Spring	SS316	

DATASHEET FOR WAFER TYPE CHECK VALVE (NRV) (2'' & Above)			
SR.NO	**DESCRIPTION**	**SPECIFICATION**	
GENERAL			
1	Tag No.	Vendor to furnish	
2	Valve Size	Vendor to Furnish	
3	Make	As per MNGL Approved Specification.	
4	Service	Natural Gas	
5	Governing Standard(**Guideline: PNGRB T4S Standard)**	API 6D	
SERVICE CONDITION			
		For 300#	For 300# and 600#
6	Design Pressure and Class	19 bar-g	49barg/99 bar-g
7	Design Class	300#	300#/600#
8	Design Temperature	0 to 65°C	-10 to 65°C
9	Operating Pressure	As per P & ID	As per P & ID
10	Operating Temperature	0 to 50°C	-10 to 50°C
11	Fire safe design	API 6 FA' 2008	
CONSTRUCTION OF VALVE			
12	Location	Above ground	Above ground
13	Valve Type	Wafer Type	Wafer Type
14	End Connections	Sandwich type	Sandwich type
15	Flange facing	RF-125 AARH(ASME B 16.5),300#	RF-125 AARH(ASME B 16.5) 300#/600#
16	Shutoff Class	IV	IV
MATERIAL OF CONSTRUCTION			
17	Body of material	ASTM A 216Gr. WCB with Charpy Test at 0 °C	ASTM A352 Gr. LCB/LCC
18	Disc / Plates	ASTM A 217 Gr. CA15	ASTMA182 F6 (13% Cr Steel)
19	Body Seat Ring	ASTM A216 Gr WCB+13% Cr.Steel	ASTMA 352 Gr LCB/LCC +13% Cr.Steel
20	Disc Hinges	ASTM A217 Gr. CA15/SS 316/ASTM A352 Gr. LCB/ A352 Gr.LCB/A352 Gr. LCB	
21	Hinges Pin	ASTM A 479 Gr. SS410/SS 316	
22	Holder	SS316	
23	Clip	SS316	
24	Spring	SS316/Inconel X 750	

VALVE TESTING REQUIREMENTS		
25	Charpy Impact Test	All pressure containing part as per the MOC standard in case charpy test valve not specified in relevant codes and standards than charpy shall be carried at 0 °C and absorbed energy valves Shall be Average 35 J and Minimum 28 J Respectively
26	Hydro Test	
26a	Body Hydro	1.5X Design Pressure
26b	Seat Hydro	1.1 X Design Pressure
27	Marking and Painting	As per API 6D
28	Radiography	100% Applicable

DATASHEET RELIEF VALVES PROTECTION & SLAM SHUT VALVE		
SR. NO.	**MNGL SPECIFICATION**	**REQUIREMENTS**
RELIEF VALVE		
1	Relief Valve Protection	Against Downstream over pressure at low flows
2	Make	Reputed Make, to be approved by MNGL
3	Type	Suitable for required operation
4.	Maximum Capacity	1% of Stream fault capacity
5.	Standard (**Guideline: PNGRB T4S Standard)**	DIN 33821:2009 OR Equivalent
6.	Fire safe design	API 607 FA' 2008
SLAM SHUT VALVE		
6	Make	Reputed Make, to be approved by MNGL
7	Type/Model	Vendor to Specify
8	Body	ASTM A216 Gr WCB or equivalent to suitable for withstanding the pressure & temperature Requirements
9	Accuracy	As per EN 14382:2009
10	Connection	Flanged 300#
11	Standards	EN 14382:2009
12	Fire safe design	API 607 FA' 2008

Differential Pressure Instruments (Typical)			
UNITS : Flow Liquid - m3/hr	Pressure - Kg/cm2 G	Temperature - Deg C	Level/Length - mm
General	1	Function	Transmit and Indicate
	2	Type	Electronic, smart with HART protocol
	3	Case	Manufacture standard
	4	Mounting	Yoke (2" NB Pipe mounting)
	5	Electrical area classification	Zone-1, GR IIA/IIB, T3
	6	Enclosure	WP to IP-65
	7	Hazardous area protection	Intrinsically safe (Note 6)
	8	Air Supply	N/A
	9	Power Supply	
	10	Cable Entry	½" NPTF
	11	Accuracy	±0.04% of span with turn down 1:5 (including linearity, hysteresis & repeatability) used for custody transfer applications. Suitable turndown to be selected provided it meets the other conditions.
	12	Make and model no.	*
Transmitter	13	Output	4-20 mA DC (Note-1 & 2)
	14	Transmitter Power supply	24 V DC (Two Wire)
Controller	15	Out put	
	16	A/M Switch	
	17	No of Positions	
	18	Set point Adjustment	
	19	Manual regulator	
	20	Mode	
	21	Chart	
	22	Chart Drive	
	23	Moving parts Material	
	24	Chart Speed	
Measuring Unit	25	Service	Differential Pressure measurement
	26	Element	Silicon resonant/Capacitance type Diaphragm
	27	Body Material	Carbon steel / Aluminium
	28	Element Material	SS 316
	29	Process Connection	½" NPTF
	30	Process connection location	Bottom entry
	31	Diaphragm Seal	N/A
	32	Static Pressure Rating	100 Kg/cm2

Options	33	3/5 -valve manifold with equalizing valve	Required
	34	Intrinsically safe LCD type O/P meter	Required
	35	Mounting Accessories for 2" pipe mounting (Bracket, U Bolts & Nuts suitable)	Required

* : Vendor to confirm (VTC)

Ultrasonic Flow Meter (Typical)					
UNITS: Flow/ Liquid/ Gas: MMSCMD, Steam: Kg/hr; Pressure; Kg/cm2g; Temperature: °C					
General	1	Tag No.		*	
	2	Line No.		*	
	3	Line Size &Thk./Sch.		**	
	4	Service		Check Meter	
	5	Type		MULTIPATH (Minimum 4 path)	
	6				
Meter	7	End Conn.:-Size & Rating		*/ #300	
	8	Facing & Finish		Flanged/ 125 AARH	
	9	Pulses / m3		*	
	10	Flow Range		**	
	11	Enclosure		Weather Proof	
	12	Cable Entry		*	
	13	Material - Body		As per pipe specs *	
	14	Material - End Connection		Flanged, As per Pipe Spec *	
	15	Bi-directional /Unidirectional		unidirectional	
	16	Radiography/Charpy test		Required	
	17	Overall uncertainty (including lab)		±0.3% of Reading (for Qt<Qi<Qmax)	
	18	Repeatability		±0.1% for qt<qi<qmax&±0.2% for qmin<qi<qt	
Pre-amplifier	19	Type - 2 wire / 3 wire		*	
	20	Pre - amplifier location		Meter Mounted	
	21	Power Supply	Cable Entry	From Transmitter	*
	22	Enclosure		WP to IP65/NEMA-4	
	23	Intrinsically Safe| Ex-proof		Flame Proof	
	24				
Transmitter	25	Power Supply	Cable Entry	*	*
	26	Output		Frequency& RS422/485	
	27	Enclosure		WP to IP65/NEMA-4	
	28	Intrinsically Safe| Ex-proof		Flame Proof	
	29	Mounting		Meter Mounted	
Options	30	**Meter runs (Up & Down stream)**		Required	
	31	**Flow Conditioner/ Profiler**		Required	
	32	**Retractable probes**		Required	
	33	**Press. Tap on Meter Body**		Required:- ½" NPT	
	34	**Cold insulation**			
		a) **On Meter (Jacket type)**		Required	
		b) **On Meter tube (Up & down stream)**		Required	
		c) **Thermowell&Impulse tubing**		Required	
Service	38	Fluid & State		**	
	39	Flow – Min.	Max.	**	
	40	Flow - Normal		**	
	41	Pressure - Oper.	Max.	**	
	42	Temp. °C - Min	Oper.¦ Design	**	
	43	Oper. S.G. ¦ Oper.	Oper. Visc. mPa/s(cP)		
	44	System Pressure Drop		**	
	45	Compressibility factor		**	
	46	Gas Density kg/m3	Mol.Wt.		
	47	CP/CV		**	
	48	Total Sulphur| H2S		As per composition in SOW, if not mentioned then assume 4 ppm	
General	49	Area Classification-IEC		ZONE-1,GR.IIA & IIB, T3	
	50	Make & Model No. - Meter		*	
	51		- Transmitter	*	
	52		- Pre-amplifier	*	
	53	Piggable / Non-Piggable		Non-Piggable	

Notes:

"*" By Vendor
"**" As per Process Data

1. Vendor to submit certificate, confirming the model suitable for Check Metering.
2. Number of paths to be confirmed by vendor confirming to the performance specifications.

3. Maximum permitted velocity through USM is 20 meters / sec.

Rotary Positive Displacement (RPD) Flow Meters(Typical)			
UNITS: Flow Liquid: m*3/hr; Gas: Sm3/hr; Steam: Kg/hr; Pressure: Kg/cm*2 G; Temperature: Deg C; Level/Length: mm			
General	1	Tag No.	*
	2	Line No.	*
	3	Line size &Sch	**
	4	Service (Fluid)	Check Meter | Natural Gas
	5	Application Standard	OIML/EEC/EN standard
Meter	6	G Size	G25/ G40/G65/G100 *
	7	End Connection	2" /3" /4" Flanged, ANSI 125#/300#
	8	Max. Flow Rate	*
	9	Accuracy (including lab uncertainity)	+/-2% in the range Qmin to 0.2 Qmax +/- 1% in the range 0.2 Qmax to Qmax
	10	Rangebility	100:1 in 1% Accuracy range 160;1 in 2% Accuracy range
	11	Intrinsic Safety	Required
	12	Temperature Range	-20 Deg C to +50 Deg C
	13	Max. Working Pressure (bar)	18.0 Bar Abs for 150#/ 49.0 Bar Abs for 300#
	14	Pressure Tapping	Inbuilt; to be provided
	15	Thermo-we	Inbuilt; to be provided
Service	16	Lubrication provision	Required while meterin service
	17	Facing & Finish	RF serrated/ 125AARH
	18	Flow Direction	To be marked on body
	19	Pulse output	Atleast 1No. LF and 1 No. HF (in the meter body)
	20	Pulses /m3	*
	21	Enclosure protection	Weather Proof, IP65
	22	Material - Body	Corrosion resistant Aluminum/ Stee
	23	Rotor	Aluminum/ Stee
	24	Bearing	Stainless Stee
	25	Other Wetted Parts	Stainless Steel /suitable for the service
	26	Oper. Visc (cP)/Density (Kg/m3)	**
	27	System Pressure Drop	**
	28	Gas -Mol Wt.	**
Index Important	29	Compressibility Factor	**
	30	Cp/CV	**
	31	Area Classification	IEC ZONE 1 GR IIA, IIB T3
	32	Volume Totalizer	Mechanical OR Digital Counter
	33	Max Index Reading	8 digit index NON RESETABLE (999999.99)
	34	Unit	M3
	35	Transmitter	1 LF and 1 HF Transmitter
	36	Manufacturer Calibration Certificate	To be Supplied along with each meter
	37	Warranty Certificate	To be Supplied along with each meter
	38	Operation And Maintenance Manua	To be Supplied along with each meter
	39	Make offered	*
	40	Model Offered	*

Notes:

"*" By Vendor
"**" As per Process Data

Meter shall be rated for the maximum design pressure as indicated above.
The offered meter must be designed as per OIML Specifications (OIML R-6/R32/TC8/SC8) and EN Standard EN-12480. The RPD meter shall have 2 nos. of pulse/frequency output for flow computer interface (1 LF and 1 HF).
Velocity through RPD meter shall not exceed 20 m/s.
Type approval for custody transfer application from weights and measures approved laboratories, such as national & international standard laboratories, shall be submitted.
Lubricator pump with lubricant for first fill to be supplied by bidder.
Bidder to provide suitable adapter if required to meet the above-mentioned end connection requirement.
For each RPD meter, bidder to provide calibration certificate performed with air at atmospheric pressure and ambient temperature at the following flow rates:
0.01 Qmax, 0.05 Qmax, 0.10 Qmax, 0.25 Qmax, 0.50 Qmax, 0.75 Qmax, 1.0 Qmax.
Meter casing shall be tamper-proof and corrosion-resistant aluminium or steel suitable for outdoor installation.
Meter internal shall be non-corrosive, tested for low noise, frictionless operation, durable for 20 years life and externally tamper-proof.

Pressure Instruments (Typical)								
UNITS : Flow Liquid - m3/hr Pressure - Kg/cm2 G Temperature - Deg C Level/Length mm								
General	1	Function			Transmit and Indicate			
	2	Type			Electronic, smart with HART protocol			
	3	Case			Manufacture standard			
	4	Mounting			Yoke (2" NB Pipe mounting)			
	5	Electrical area classification			IEC Zone-1, GR IIA/IIB, T3			
	6	Enclosure			WP to IP-65			
	7	Hazardous area protection			Intrinsically safe			
	8	Air Supply			N/A			
	9	Power Supply						
	10	Cable Entry			½" NPTF (two no.)			
	11	Accuracy			±0.075% of calibrated span (±0.04% custody transfer application) linearity, hysteresis & repeatability)			
	12	Make and model no.			*			
Transmitter	13	Output			4-20 mA DC (Note-2 & 3)			
	14	Transmitter Power supply			24 V DC (Two Wire)			
Controller	15	Out put						
	16	A/M Switch						
	17	No of Positions						
	18	Set point Adjustment						
	19	Manual regulator						
	20	Mode						
	21	Chart						
	22	Chart Drive						
	23	Moving parts Material						
	24	Chart Speed						
Measuring Unit	25	Service			Pressure measurement			
	26	Element			Silicon resonant/Capacitance type Diaphrag			
	27	Body Material			Carbon steel / Aluminium			
	28	Element Material			SS 316			
	29	Process Connection			½" NPTF			
	30	Process connection location			Bottom entry			
	31	Diaphragm Seal			N/A			
	32	Static Pressure Rating			100 Kg/cm2			
Options	33	a	3-valve manifold		Required			
		b	Integral orifice					
		c	Air filter Regulator					
		d	Intrinsically safe O/P meter (LCD type)		Required			
		e	Mounting Accessories (Bracket, U Bolts & Nuts suitable) for 2" pipe mounting		Required			

* : Vendor to confirm (VTC)

Notes:

1. Transmitter shall be suitable for external loop resistance of at least 600 ohms when powered with 24 V DC from Control panel/ Control Room.
2. Output 4-20 mA shall be superimposed on digital signal with HART Protocol (for control room mounted flow computer systems).
3. Digital communication shall be possible with hand held communicator.

RTD with Temperature Transmitters (Typical)

UNITS : Flow Liquid - m3/hr, Gas– Sm3/hr, Steam – Kg/hr, Pressure - Kg/cm2 G, Temperature - Deg C, Level/Length - mm

1	Function	Transmit and Indication	24	Sheath Material	SS 316
2	Type	Electronic, Smart	25	Nipple & Union Material	Cadmium Plated Carbon Steel
3	Case	Manufacturer Standard	26	Number of wires for TT	4 Wires(for RTD input) and 2 wires for output
4	Mounting	Transmitter Remote Mounted	27	Head Cover Type	Screwed Cap & SS Chain
5	Electrical area Classification	IEC Zone-I, Group II A/II B, T3	28	Head Material	Cast Aluminium
6	Enclosure	Weatherproof	29	Cable entry	½" NPTF
7	Enclosure Class	IP-65 As Per IS-13947	30	Number of Entries	*
8	Intrinsically safe	Yes Required	31	Enclosure Type	Weatherproof to IP-65 As Per IS-13947
9	Power supply	24 VDC	32	Thermowell	Required
10	Cable Entry	½" NPTF (2 no:s)	33	Material	SS 316
11	Accuracy	± 0.15 % of FSD	34	Construction	Drilled Barstock
12	Repeatability	± 0.05% of FSD	35	Process Connection	1 ½' Flanged
13	Transmitter Output	4~20 mA	36	Instrument Connection	½" NPT
14	Transmitter Power Supply	24 V DC (	37	Thermowell	*
15	Service	Temperature Measurement	38	Make	
16	Element	4 wire RTD Class A type	39	Model No.	
17	Assembly	*	40		
18	Number of Elements	Single			
19	Calibration	As Per DIN 43760/IEC-60751-2			
20	Element Material	Platinum			
21	Resistance at Zero Degree Centigrade	100 Ohms (PT-100)			
22	Leads	Mineral Insulated			
23	Sheath O.D.	6.0 mm			

Tag no.	Element Length (mm)	Temperature		Well Dimension		Flange		Service	Location	Range Set
		Normal	Maximum	U	T	Material	Rating, Facing, Finish			
Vendor to provide as per EDB,P&ID and other Tender documents										

* : By Vendor

* **Notes:**
* Calibration Range shall be –30 to 70 deg C for all line mounted temperature instrument.
* CCOE approval certificate is required for temperature transmitter.
* LCD type intrinsic safe Integral output meter shall be provided for all temperature transmitters.
* Output 4- 20 mA DC shall be super imposed on digital signal with HART Protocol(For CR mounted FC Skid).

LIST OF VENDORS FOR BOUGHT-OUT ITEMS

1) PRESSURE REGULATOR AND SLAM SHUT VALVE

1) M/S PIETRO FIORENTINI S.P.A. (ITALY)
2) M/S EMERSON PROCESS MANAGEMENT (USA)
3) M/S RMG-REGEL MESSTECHNIK (GERMANY)
4) M/S MOKVELD VALVES BV (NETHERLANDS)
5) M/S SCHLUMBERGER (USA)
6) M/S GORTER CONTROLS B V (NETHERLANDS)
7) M/S INSTROMET INTERNATIONAL NV
8) M/S EMERSON PROCESS MGMT ASIA PACIFIC PTE LTD.
9) M/S NIRMAL INDUSTRIAL CONTROLS PVT LTD. (UP TO 6" SIZE ONLY)
10) M/S ESME VALVES LTD
11) M/S KAYE & MACDONALD INC.
12) M/S NUOVO PIGNONE SPA (ITALY) (GE OIL CO.)
13) M/S RICHARDS INDUSTRIES (FORMERLY TRELOAR)
14) M/S SAMSON AG MESS-UND REGELTECHNIK
15) M/S TORMENE GAS TECHNOLOGY
16) M/S DRESSER INC, USA (UPTO 8" SIZE, 300# CLASS ONLY)

2) FLOW COMPUTERS

1) M/S DANIEL MEASUREMENT AND CONTROL INC. (USA)
2) M/S INSTROMET INTERNATIONAL (BELGIUM)
3) M/S FMC MEASUREMENT SOLUTIONS (UK)
4) M/S EMERSON PROCESS MANAGEMENT (SINGAPORE)
5) M/S BISTOL BABCOCK
6) M/S RMG (GERMANY)
7) M/S OMNI FLOW COMPUTERS INC.
8) M/S THERMO FISHER, USA

3) POSITIVE DISPLACEMENT FLOW METERS

1) M/S FMG
2) M/S RMG (GERMANY)
3) M/S ELSTER INSTROMET
4) M/S ROMET
5) M/S DRESSER
6) M/S ITRON GMBH (GERMANY)

4) JUNIOR/ SIMPLEX ORIFICE FITTINGS (METER RUN, FLOW CONDITIONER, ORIFICE PLATE AND ASSEMBLY)

1) M/S EMERSON
2) M/S FMC, USA
3) M/S PIETRO FIORENTINI. ITALY
4) M/S CANALTA CONTROLS, CANADA
5) M/S ROCKWIN

5) BALL VALVES, PIPE LINE (API 6D)

1) M/S HOPKINSONS LIMITED (UK)
2) M/S O.M.S. SALERI (ITALY)
3) M/S PIBI VIESSE SPA (ITALY)
4) M/S NUOVO PIGNONE (ITALY)
5) M/S PERAR SPA (ITALY)
6) M/S LARSEN & TOUBRO LTD. (NEW DELHI)
8) M/S PIETRO FIORENTINI (ITALY)
9) M/S RAIMONDI VALVE S.P.A. (ITALY)
10) M/S VIZA VALVES (CHINA)
11) M/S COOPER CAMERON VALV ITALY SRL-FRM, ITLY
12) M/S FRAZ SCHUCK GMBH, GERMANY (FORMERLY BORSIG)
13) M/S ITAG, GERMANY
14) M/S KITAMURA VALVE MANUFACTURING CO. LTD
15) M/S MSA A.S.
16) M/S PCC BALL VALVES SRL
17) M/S PETROL VALVES SRL
18) M/S TORMENE GAS TECHNOLOGY SPA (VALVITALIA)
19) M/S VIRGO ENGINEERS LTD. INDIA
20) M/S WEIR VALVES & CONTROLS UK LTD.
21) M/S MICROFINISH VALVES LTD, INDIA
22) M/S FLOWCHEM, INDIA
23) M/S FLOW CONTROL TECHNOLOGIES (FRANCE)
24) M/S FRIEDRICH KROMBACH GMBH &CO.KG
25) M/S GROVE VALVE AND REGULATORS CO (USA)
26) M/S JC FABRICA DE VALVULAS S.A. (SHARJAH)
27) M/S GUICHON VALVES (FRANCE)
28) M/S HINDLE COCKBURNS LIMITED
29) M/S CAMERON ITALY SRL
30) M/S PETRO VALVES PRIVATE LIMITED
31) M/S NSSL ITALIA
32) M/s Magwen Industries, Pune
33) M/s Adko Valves, Mumbai
34) M/s Delval Flow Controls, Pune
35) M/s Oswal Industries Ltd, Mumbai

Plug Valves

7) M/S GROVE DRESSER ITALIA S.P.A. (ITALY)
8) M/S NORDSTROM VALVES INC. (USA)
9) M/S SERCK AUDO VALVES (ENGLAND)
10) M/S BREDA ENERGIA SESTO INDUSTRIA SPA (ITALY)
11) M/S FISHER XOMOX SANMAR LTD. (CHENNAI)
12) M/S L&T (AUDCO INDIA) LTD. (NEW DELHI)
13) M/S PETRO VALVES PRIVATE LIMITED

6) GLOBE VALVES

1) M/S BDK ENGINEERING INDUSTRIES LIMITED,HUBLI, (KARNATAKA)
2) M/S DATRE CORPORATION LIMITED KOLKATA
3) M/S KSB PUMPS LTD, NOIDA
4) M/S LARSEN & TOUBRO LTD.
5) M/S KF INDUSTRIES ALBERTA, CANADA
6) M/S ORNATE VALVES PVT. LTD., MUMBAI
7) M/S PANCHVATI VALVES & FLANGES PVT. LTD., MUMBAI
8) M/S STEEL STRONG VALVES INDIA PVT. LTD., INDIA
9) M/S A.V. VALVES LTD. AGRA
10) M/S SHALIMAR VALVES PVT. LTD.,NAVI MUMBAI
11) M/S JC FABRICA DE VALVULAS, S.A BARECELONA SPAIN

7) CHECK VALVES

1) M/S MALBRANQUE (FRANCE)
2) M/S MANNESMANN DEMAG (GERMANY)
3) M/S PETROL VALVE (ITALY)
4) M/S TRUE FLOW RONA (BELGIUM)
5) M/S L&T (AUDCO) INDIA LTD. (CHENNAI)
6) M/S BHEL, OFE & OE GROUP (NEW DELHI)
7) M/S ADVANCE VALVES PVT LTD.
8) M/S A V VALVES LTD.
9) M/S BDK ENGINEERING INDUSTRIES LTD. INDIA
10) M/S FORESS ENGG (I) LTD. (AURANGABAD)
11) M/S VALVITALIA ITALY
12) M/S KSB PUMPS LTD. LOIMBATTORE), INDIA
13) M/S NANDINA IRON & STEELS
14) M/S NITCON VALVE INDUSTRIES PVT. LTD. INDIA
15) M/S OSWAL INDUSTRIES LTD. INDIA
16) M/S PANCHVATI VALVES & FLANGES PVT. LTD. INDIA
17) M/S PETROCHEMICAL ENGINEERING ENTERPRISES, INDIA
18) M/S SAKHI ENGINEERS PVT. LTD.
19) M/S SHALIMAR VALVES PVT. LTD.
20) M/S STEEL STRONG VALVES INDIA PVT. LTD., INDIA

8) CONTROL PANEL & ACCESSORIES

1) M/S KELTRON CONTROLS LTD., KERALA
2) M/S ELECHMEC CORPORATION LTD., MUMBAI
3) M/S INDUSTRIAL CONTROLS & APPLIANCES PVT. LTD.,
4) M/S ALSTOM SYSTEM LTD., NOIDA
5) M/S ABB INSTRUMENTS LTD., NEW DELHI
6) M/S EMERSON PROCESS MANAGEMENT (I) PVT. LTD.
7) M/S LARSEN & TOUBRO LTD.
8) M/S CONTROL & AUTOMATION, NEW DELHI
9) M/S GE FANUC SYSTEMS PVT. LTD., NEW DELHI
10) M/S ROCKWELL AUTOMATION (I) LTD., GHAZIABAD
11) M/S HONEYWELL AUTOMATION LTD.
13) M/S RITTAL
14) M/S PYROTECH ELCRONICS PVT LTD.
15) M/S POSITRONICS PVT LTD.
16) M/S ELECTRONICS CORPORATION OF INDIA LTD.

9) SS FITTINGS / TUBING

1) M/S SWAGELOCK (USA)
2) M/S PARKER (USA)
3) M/S HOKE (USA)
4) M/S SANDVIK
5) M/S ARYA CRAFTS & ENGINEERING PVT LTD
6) M/S AUTOCLAVE ENGINEERS FLUID COMPONENTS
7) M/S ANDERSON GREENWOOD CROSBY
8) M/S BAUMER TECHNOLOGIES INDIA PVT. LTD
9) M/S COMFIT & VALVES PVT. LTD.

10) INDICATORS & CONTROLLERS

1) M/S YOKOGAWA
2) M/S EUROTHERM CHESSEL
3) M/S HONEYWELL
4) M/S EMERSON

11) FITTINGS FROM SEAMLESS PIPE-CARBON STEEL

1) M/S COMMERCIAL SUPPLYING AGENCY, MUMBAI
2) M/S DEE DEVELOPMENT ENGINEERS LTD.
3) M/S EBY INDUSTRIES, MUMBAI
4) M/S FLASH FORGE PVT. LTD., VISHAKHAPATNAM
5) M/S GUJARAT INFRA PIPES PVT. LTD., VADODARA
6) M/S M.S. FITTINGS MFG. CO. PVT. LTD., KOLKATA
7) M/S STEWARTS & LLOYDS OF INDIA LTD., KOLKATA
8) M/S TEEKAY TUBES PVT. LTD., MUMBAI
9) M/S PIPE FIT,BARODA
10) M/S SKY FORGE, FARIDABAD
11) M/S S&G, FARIDABAD
12) M/S SAWAN ENGINEERS, BARODA
13) M/S EBY FASTENERS, INDIA
14) M/S R.N. GUPTA & CO. LTD, INDIA
15) M/S EXTEN ENGG PVT LTD
16) M/S SIVANANDA PIPE & FITTINGS LTD
17) M/S CHERO PIPING SPA, ITALY
18) M/S CSA FITTINGS, INDIA
19) M/S EBY FASTENERS, INDIA
20) M/S FITTNOX SRL, ITALY
21) M/S KEONSAE HIGH PRESSURE CO. LTD., SOUTH KOREA
22) M/S MUNRO & MILLER FITTINGS LTD., U.K.
23) M/S TK CORPORATION, SOUTH KOREA
24) M/S TUBE TURN (INDIA) PVT LTD., INDIA
25) M/S TOPAZ PIPING INDUSTRIES, INDIA
26) M/S TECHNOFORGE SPA, ITALY
27) M/S P.K. TUBES & FITTINGS PVT. LTD., INDIA
28) M/S VIVIAL FORGE PVT. LTD., VADODARA

29) M/s United Forge, Vadodara
30) M/s Pipe Fit,Vadodara

12) FLANGES :

- M/S ADITYA FORGE LTD., VADODARA

- M/S AMFORGE INDUSTRIES LTD., MUMBAI
- M/S CD ENGINEERING CO., GHAZIABAD
- M/S ECHJAY FORGINGS PVT. LTD. (BOMBAY), MUMBAI
- M/S ECHJAY INDUSTRIES LTD., RAJKOT
- M/S FORGE & FORGE PVT. LTD., RAJKOT
- M/S GOLDEN IRON & STEEL WORKS, NEW DELHI
- M/S JK FORGINGS, NEW DELHI
- M/S METAL FORGINGS PVT. LTD., MUMBAI
- M/S PERFECT MARKETINGS PVT. LTD., NEW DELHI
- M/S SKY FORGE, FARIDABAD
- M/S S&G, FARIDABAD
- M/S CHAUDHRY HAMMER WORKS LTD, INDIA
- M/S JAV FORGINGS (P) LTD, INDIA
- M/S KUNJ FORGINGS PVT LTD, INDIA
- MS FITTINGS MGF. CO. PVT. LTD.
- M/S R.N. GUPTA & CO. LTD, INDIA
- M/S R.P. ENGINEERING PVT LTD, INDIA
- M/S SANGHVI FORGINGS & ENGINEERING LTD
- M/S SHRI GANESH FORGINGS LTD., INDIA
- M/S UMA SHANKAR KHANDELWAL & CO., INDIA
- M/S SAWAN ENGINEERS, BARODA
- M/S STEWARTS & LLOYDS OF INDIA LTD., KOLKATA
- M/S ENGINEERING SERVICES ENTERPRISES
- M/S ABASI ENGINEERSING WORKS, INDIA
- M/S ANANDMAYEE FORGINGS PVT LTD, INDIA
- M/S CD INDUSTRIES., INDIA
- M/S FIVEBROS FORGINGS VOT LTD., INDIA
- M/S GOOD LUCK ENGINEERING CO., INDIA
- M/S KOREA FLANGE, SOUTH KOREA
- M/S LAL METAL FORGE LTD, INDIA
- M/S MELESI OFFICINE
- M/S AMLROJIE MELESI & C. SRL. ITALY
- M/S NICOLA GALPERTI & FIGLIO S.P.A INDIA
- M/S PARAMOUNT FORGE, INDIA
- M/S PRADEEP METAL LIMITED, INDIA
- M/S PUNJAB STEEL WORKS (THE), INDIA
- M/S R.D.FORGE, INDIA
- M/S SHAH INDUSTRIAL & COMML. CORPORATION, INDIA
- M/S VIVIAL FORGE PVT. LTD., VADODARA
- M/s United Forge, Vadodara
- M/s Pipe Fit,Vadodara

13) PIPE – CARBON STEEL (SEAMLESS) TO ASTM STDS.

1) M/S BHEL (TRICHY), INDIA
2) M/S HEAVY METALS & TUBES LTD (MEHSANA), INDIA
3) M/S INDIAN SEAMLESS METAL TUBES LTD, AHMEDNAGAR, INDIA
4) M/S INDIAN SEAMLESS METAL TUBES LTD, BARAMATI, INDIA
5) M/S JINDAL SAW LTD (NASHIK WORKS), INDIA
6) M/S MAHALAXMI SEAMLESS LTD, INDIA
7) M/S MAHARASHTRA SEAMLESS LTD, INDIA
8) M/S SAINEST TUBES PVT LTD, INDIA
9) M/S WUXI ERQUAN SPECIAL STEEL TUBE CO. LTD.

14) PIPE - CARBON STEEL (WELDED) TO ASTM STANDARDS

1) M/S JINDAL SAW LTD (KOSI WORKS) , INDIA
2) M/S LALIT PROFILES & STEEL IND LTD. , INDIA
3) M/S MAN INDUSTRIES LTD, INDIA
4) M/S MUKAT TANKS & VESSELS LTD., INDIA
5) M/S RATNAMANI METALS & TUBES LTD
6) M/S SURINDRA ENGINEERING CO LTD (MUMBAI), INDIA
7) Tata Steel Limited

15) FIELD INSTRUMENTS (P, DP, F, L, T)

1) M/S ABB LTD (FARIDABAD), INDIA

2) M/S ABB AUTOMATION LTD, INDIA
3) M/S EMERSON PROCESS MGMT ASIA PACIFIC PTE LTD,
4) M/S EMERSON PROCESS MGMT INDIA PVT LTD,
5) M/S FUJI ELECTRIC INSTRUMENTS CO LTD
6) M/S HONEYWELL AUTOMATION INDIA LTD,
7) M/S HONEYWELL INC.
8) M/S YOKOGAWA ELECTRIC CORP.
9) M/S YOKOGAWA INDIA LTD
10) M/S INVENSYS INDIA PVT.LTD

16) GAS CHROMATOGRAPH

1) M/S ABB LTD (FARIDABAD), INDIA
2) M/S DANIEL MEASUREMENT & CONTROL
3) M/S INSTROMET INTERNATIONAL, NV
4) M/S RMG REGAL+MESSTECHNIK GMBH
5) M/S YOKOGAWA
6) M/S HONEYWELL INC.

17) JUNCTION BOXES (FLAME PROOF)

1) M/S BALIGA LIGHTING EQUIPMENTS (P) LTD, INDIA
2) M/S FCG FLAMEPROOF CONTROL GEARS P. LTD., INDIA
3) M/S FCG POWER INDUSTRIES PVT LTD, INDIA
4) M/S FLAMEPROOF EQUIPMENTS PVT LTD, INDIA

1) M/S FLEXPRO ELECTRICALS PVT LTD, INDIA
2) M/S GOVAN INDUSTRIES (INDIA) P LTD, INDIA
3) M/S PROMPT ENGINEERING WORKS, INDIA
4) M/S SUDHIR SWITCHGEARS PVT LTD, INDIA

18) PRESSURE GAUGES

1) M/S AN INSTRUMENTS PVT LTD
2) M/S BADOTHERM PROCESS INSTRUMENTS B.V.
3) M/S BAUMER BOURDON HAENNI S.A.S
4) M/S BRITISH ROTOTHERM CO LTD
5) M/S BUDENBERG GAUGE CO LTD
6) M/S DRESSER INC
7) M/S FORBES MARSHALL (HYD) PVT LTD
8) M/S GENERAL INSTRUMENT CONSORTIUM
9) M/S H. GURU INSTRUMENTS (SOUTH INDIA) PVT LTD
10) M/S MANOMETER (INDIA) PVT LTD
11) M/S NAGANO KEIKI SEISAKUSHO LTD
12) M/S HIRLEKAR PRECISION, INDIA
13) M/S WAAREE INSTRUMENTS LTD
14) M/S WALCHANDNAGAR INDUSTRIES LTD (TIWAC DIVN)
15) M/S WIKA ALEXANDER WIEGAND & CO GMBH
16) M/S WIKA INSTRUMENTS INDIA PVT LTD
17) M/S ASHCROFT INDIA PVT LTD.

19) TEMPERATURE GAUGES

1) M/S AN INSTRUMENTS PVT LTD.
2) M/S BADOTHERM PROCESS INSTRUMENTS B.V.
3) M/S BOURDON HAENNI S.A.
4) M/S DRESSER INC.
5) M/S GENERAL INSTRUMENTS CONSORTIUM
6) M/S H. GURU INSTRUMENTS (SOUTH INDIA) PVT LTD
7) M/S NAGANO KEIKI SEISAKUSHO LTD
8) M/S SOLARTRON ISA
9) M/S WALCHANDNAGAR INDUSTRIES LTD (TIWAC DIVN)
10) M/S WIKA ALEXANDER WIEGAND & CO GMBH
11) M/S WIKA INSTRUMENTS INDIA PVT LTD
12) M/S PYRO ELECTRIC, GOA
13) M/S ASHCROFT INDIA PVT LTD.

20) TEMPERATURE ELEMENTS, THERMO-WELLS

1) M/S ABB AUTOMATION LTD

2) M/S ALTOP INDUSTRIES LTD
3) M/S BOURDON HAENNI S.A.
4) M/S DETRIV INSTRUMENTATION & ELECTRONICS LTD
5) M/S GENERAL INSTRUMENTS CONSORTIUM
6) M/S INVENSYS SOFTWARE SYSTEMS (S) PTE LTD.
7) M/S JAPAN THERMOWELL CO LTD

8) M/S NAGMAN SENSORS PVT LTD
9) M/S TECNOMATIC SPA
10) M/S TEMPSEN INSTRUMENT INDIA LTD
11) M/S THERMO ELECTRIC CO. INC.
12) M/S THERMO-COUPLE PRODUCTS CO
13) M/S THERMO-ELECTRA B.V.
14) M/S WIKA ALEXANDER WIEGAND & CO GMBH
15) M/S ALTOP INDUSTRIES LTD., BARODA
16) M/S NAGMAN SENSORS (PVT.) LTD.
17) M/S PYRO ELECTRIC, GOA

21) ULTRASONIC FLOW METERS

1) M/S DANIEL (USA)
2) M/S RMG (GERMANY)
3) M/S INSTROMET (BELGIUM)
4) M/S SICK MAIHAK, GERMANY
5) M/S FMC, GERMANY

Note : The successful bidder shall obtain prior approval from the Purchaser/Consultant for the make of all items not explicitly covered under the approved vendor list.

For such items, the bidder shall submit complete technical credentials of the proposed vendor, including documentary evidence demonstrating that the vendor has supplied similar items within the last five (05) years and that such supplies have been operating satisfactorily. The same shall be subject to evaluation and approval by the Purchaser/Consultant.

In case of subletting of works/ part of works by the prime bidder to other agency not specified in above list, bidder may propose for prior approval to Engineer-in-charge before engaging the sub-contractors strictly.

For any other items which are not listed above, shall be subject to prior approval from MNGL.

MAHARASHTRA NATURAL GAS LIMITED	**Tender for supply, installation & commissioning of a Check Metering Skid (CMS) with PRS at MNGL's proposed CGS at Bhiknoor for Nizamabad GA.** **Bid Doc. No. MNGL/CP/2026-27/139**

SECTION-VII

UNPRISED SCHEDULE OF RATES

Schedule of Rates (SOR) / BOQ is enclosed separately on e-tendering portal. following unpriced schedule of rates to be submitted along with Technical Bid duly filled in, quoted / not quoted:

BOQ No.	Item Description	Unit	Qty.	Quoted / Not quoted
1	Design, Engineering, Manufacturing, Testing, Name Plate Marking, Painting, Inspection, Packing & Forwarding, Transportation, Shipment, Calibration & Supply (including insurance, customs clearance, handling and unloading at port as well as at MNGL's Stores / Site (at Bhiknoor, Nizamabad GA)) of Check Metering skid with filtration and PRS and panel-mounted Flow Computer, Gas Chromatograph, Spares including assistance in configuration, interfacing, erection, installation, testing and commissioning inclusive of comprehensive AMC for the first year. Process Parameters /Details: 35000 SCMH Metering skid with 3 Stream PRS (2 streams of 100% capacity & 1 stream of low flow capacity) along with a 2-stream metering system 1 USM & 1 RPD (G-100) & 1 stream with spool piece, along with field instruments, panel-mounted flow computer (FC), Gas Chromatograph (GC) & associated items with material instruments, vents, piping, valves, Flanges & fittings, etc. Product: Natural Gas, Max Flow (SCMH): 35000, Design Pressure: 49 Kg/cm2g (300#), Design Temperature (Min/Max): (-)29°C to 65 °C, Inlet Pressure (Min/Max): 30 to 45 Kg/cm2g, Outlet Pressure (Min/Max): 19-25 Kg/cm2g Inlet Presuure Size/Rating = 6 inch 300# Outlet Pressure Size/Rating = 6 inch 300# Filtration: Flow (SCMH) (Min/Max): 600 / 35000, Inlet Pressure (kg/cm2g) (Min/Max): 30/45 Meter (Ultrasonic High Flow): Flow (SCMH) (Min/Max): 4500 / 35000, Inlet Pressure (kg/cm2g) (Min/Max): 30/45	LS	01	

	Meter (RPD): Flow (SCMH) (Min/Max): 80 / 4500, Inlet Pressure (kg/cm2g) (Min/Max): 30/45 PRS (High Flow): Flow (SCMH)(Min/Max): 4500 / 35000, Inlet Pressure(kg/cm2g) (Min/Max): 30/45, Outlet Pressure (kg/cm2g) (Min/Max): 19/25 PRS (Low Flow): Flow (SCMH)(Min/Max): 600 / 4500, Inlet Pressure(kg/cm2g) (Min/Max): 30/45, Outlet Pressure (kg/cm2g) (Min/Max): 19/25			

Notes:

1. Evaluation shall be done on an overall least-cost basis to the Purchaser.
2. Bidder must quote for all items, including sub-items of the price schedule (SOR) / BOQ.
2. Bidder shall indicate the following rates considered in the prices indicated in the Price Schedule above.
3. Bidder shall note that any error in estimating these taxes & duties will be to Bidder's Account.

a. Goods & Service Tax @----------
Please indicate the break-up of the above GST as below:
   i) CGST @_____
   ii) SGST @_____
   iii) IGST @_____
   iv) UGST @_____

Seal & Signature of Bidder